ESPON Action 2.1.5: Territorial Impacts of European Fisheries Policy.

Third Interim Report, December 2005

Part I Summary

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1 Executive summary

1.1 Introduction

The European fisheries policy (CFP) is regarded as one of the sector policies with substantial implications for amongst other employment, cohesion and regional economic strength, particularly in some coastal regions and in fisheries dependent areas. In accordance with this, the purpose of ESPON Project 2.1.5 is to strengthen the knowledge of territorial, social and economic cohesion through an analysis of territorial impacts of the (CFP).

Fishing and aquaculture are two of the most important sectors which use and produce living resources (European Environment Agency 2002), and both sectors are undergoing profound changes. The most resent changes in the European Fisheries Policy (CFP) were adopted in late 2002, and a number of measures will be implemented in the near future. The main aim of the changes is to strengthen the competitiveness of the sector and to ensure its sustainability.

Fisheries and aquaculture plays a varying role in the economy of different countries and regions within the ESPON space, and impacts from structural changes and policy regulations will accordingly vary in different parts in Europe. A main tendency in recent years has been a concentration of activity within fishing to urban centres, but in many cases seafood industries are still located in areas outside commuting distance to cities and with few alternative income sources. In some parts of Europe, the fishing industry still plays an important role in an otherwise underdeveloped rural economy.

Aquaculture plays an increasing role in the supply of seafood and may represent an important factor of the reinforcement of territorial and socio-economic cohesion in some regions. The challenges within this industry differ from those in the fishing industry, as the aquaculture industry is more regionally concentrated. It is located in the coastal zone, and competes with or has impacts on other activities and interests in the coastal zone.

Processes of restructuring, reduction, expansion and development are occurring side by side and in various combinations within the seafood industry in Europe. The effect of this will vary between regions and the territorial impacts on short and long term will also be different. The changes, the diversity of effects, the potentials and the spatial impacts constitute the thematic frame for the project on fisheries and aquaculture.

Impact analyses
The analysis of territorial impacts of changes in CFP, will concentrate on the following elements:

- Impacts on employment, social cohesion and demography
- Impacts on regional economic strength

- Impacts on environment and integrated coastal zone management (ICZM)

The study of territorial/ spatial impacts will be done with references to the aims of cohesion, territorial balanced and sustainable development and also ESDP-perspectives focusing on polycentric development. In particular, the project will study:

- The position of coastal regions in developing of the territorial system of EU and of specific countries. Of particular importance is CFP impacts on the disparities between regions within EU and inside the different nations.
- The position of the coastal regions in the overall Community policies (as the ESDP) and the structural policies (as the Cohesion fund, ERDF, ESF). Questions related to the coastal regions' in-/out phasing in different types of regional policy measures, are of specific importance in the study. Cf. those questions mentioned above and the need for specific policies interventions in fisheries regions as "restructuring of the fisheries sector outside the objective 1 area".
- The territorial development inside coastal regions. The project will examine the possibility for doing intra regional/area analyses on different levels. For instance by using data on LAU levels for spatial analyses on NUTS 3 level, and data on NUTS 3 level for analysing spatial changes on NUTS 2/1 level. The analyses will be related to ESPD perspectives as polycentric development and a balanced rural-urban development.
- Demographic-, social- and economic changes inside the coastal regions and if possible inside different types of coastal regions in order to identify the regions which most negatively and positively affected by changes in European fisheries policy.

Due to large problem with data collection, and lack of data on NUTS 3 level, it has not been possible to carry out so extensive analyses as planned for in IR3, cf. scientific summary, section 2.5. Hence, some of the results are still of a rather preliminary character. This is particularly so for the work package focusing on impacts on regional economic strength where unforeseen events have made it impossible to complete the planned analyses within the time frame for the third interim report, IR3. The analysis presented in IR3, therefore, is the same version as the one published in IR2. However, as mentioned in the second interim report example studies have become more important in the project, and Part III of IR3 presents eight example studies based on data on a lower geographical level, i.e. below NUTS3 level. These will be further elaborated in the final report to highlight impacts of the fisheries policy in the different coastal regions.

Expected results
The third interim report intends to cover the following elements listed in Terms of Reference (ToR):

> m) Presentation of a comprehensive working report on tentative results of the research, applying the methodology, analysis of the hypothesis previously developed, including the following elements:
>
> - Draft final analysis /diagnosis of the fisheries and aquaculture sector in Europe as well as the existing territorial imbalances and regional disparities in fisheries/aquaculture;
> - Presentation and description of a European coastal typology and the diversity of the fishing industry related to the typology;

- Tentative results on the spatial effects at European level, in individual countries and their coastal areas in terms of the economic, social and environmental factors;
- Tentative results on territorial impacts in relation to ICZM activities in different types of coastal regions;
- Draft policy recommendations on improvement of the sector policy and the instruments in favour of territorial cohesion, balance and polycentrism, including institutional aspects.

n) Updated input to the ESPON database and map collection.

1.2 Hypotheses on territorial impacts of CFP

The hypotheses refer mainly to CFP and their respective measures and to some extent also to the development of aquaculture. Related territorial impacts projects within the ESPON program has been taken into consideration in the development of the hypotheses. The main hypotheses are applied to the analyses in the different work packages, in which also specific hypotheses are developed. These sub hypotheses are presented in each chapter and related to the work packages (chapter 5-8 in IR3 Part II).

The work with a further development of the main hypotheses and identification of supplementary hypotheses will continue along with the impact analyses which will be fully presented in the third interim report. The development of hypotheses has been and will also be done in connection with the work with TIA.

The hypotheses are grouped in different categories. Some hypotheses are more general whereas others are more specific, and we have divided them according to this simple principle. General hypotheses are holistic and important for the structure of the project and reports as such whereas specific hypotheses relate to more explicit research questions concerning certain impacts.

The hypotheses are grouped in the following four groups, cf. chapter 4 in IR3 Part II:

General impact hypotheses:

General impact hypotheses relate to all work packages analysing territorial impacts, i.e. WP3, WP4 and WP5, cf. chapter 5-8 in IR3 Part II.

Social and economic impact hypotheses:

Social and economic impact hypotheses relate to WP3 and WP4, cf. chapter 7 and 8 in IR3 Part II.

ICZM/environment hypotheses:

ICZM/environment hypotheses relate to WP5, cf. chapter 6 in IR3 Part II.

Fishery hypotheses:

The fishery hypotheses deals with questions of structural changes in the seafood industry, innovation in marine sectors, financial instruments etc, and relates to WP2, cf. chapter 5 in IR3 Part II.

1.3 Diagnosis of the Development of the Fishery Sector

Chapter 5 in Part II of the third interim report provides a diagnosis of the development of the fishery sector. First, it lines out a set of hypotheses applicable to the fisheries sector in the EU, Iceland and Norway. Second, it gives a comprehensive overview of the development within the European Union focusing on different aspects in the Common Fisheries Policy. Included in the section on the CFP is a special section on Estonia as an example of the new member states, which have just entered the European Union. The example is informative since the most new member states share the characteristic of having recently embraced market economy, which puts them in a special situation. Third, the chapter presents fisheries policies and overall developments in Norway and Iceland.

1.3.1 The Fisheries Sector in EU

The European fisheries sector is changing rapidly. Processes of restructuring, reduction and expansion are occurring simultaneously in the various sub-sectors as a response to numerous developments. The effects of these changes vary, clearly, among member states. Conservation of the fish stocks is probably the largest challenge to European fisheries policy due to the heavy exploitation of a number of commercially important stocks, of which a number are outside what is defined as 'safe biological limits'. Over the last decades fish has become the single most internationally traded food in the World. The continued globalisation of the trade in fish and fish products has a major impact on the structure of the European fisheries sector. EU is the World's biggest market for fish and fish products and increasingly the European fish processing sub-sector is sourcing raw material and semi processed products from suppliers all around the globe. This development together with increased both horizontal and vertical integration within the fisheries sector affects the localization of the industry.

It is in the context of this study interesting that the agreed measures within the framework of the CFP have important territorial impacts in the regions, where fishing and related activities takes place – usually coastal regions and often areas where there is little prospect of growth in alternative economic sectors. This makes the CFP and related policies important for coastal regions throughout Europe. The situation is most outspoken in the areas most dependent on fisheries and related activities. Such areas can – depending on the level of disaggregation - be identified in many European countries. Furthermore, the impact of the measures varies between the fisheries dependent regions, as not all regions are equally well suited to face the processes of restructuring, reduction and expansion. This means that some regions might benefit from the measures agreed while others might not. Taking into account the severity of the present situation for the EU fisheries it might be fairer to say that most fisheries dependent regions are facing problems but some regions are facing more problems than others.

Territorial Implications of the Conservation Policy

The conservation policy is the centrepiece of the Community's fisheries policy. The basic regulation of the CFP is both the legislative act, whose objectives the remaining fisheries policy areas have to relate to and have to draw their justification from, and the act, which outlines the basic framework for the protection of fisheries resources in Community waters.

In general it could be said that none of the restrictive conservation measures - be it quotas, effort control or marine protected areas etc. - are territorially neutral since they in general aim to restrict fishing pressure, which might in the long turn lead to higher

catches but in the short and medium term reduce catching possibilities and increase costs for the fleet. Most of the pressure of quotas is obviously on the fleets, which exploit specific threatened stocks. This has important territorial implications, in so far as fleets from different regions traditionally exploit different stocks - both because of tradition and because of geographical proximity. Vessels from the regions, which exploit the most threatened stocks, can consequently expect to be worse off than vessels from the regions, which exploit less threatened stocks. This is reasonably fair considering the objectives of the conservation policy and the state of EU fish resources.

As described in the chapter, the measures can furthermore be expected to increase regional disparities unintentionally in some cases because certain fleet segments will be better physically equipped to 'circumvent' the restrictive measures, e.g. a larger range of operation. This must be considered an unintended side effect with regional implications. Furthermore, this inequality in handling the measures might in itself be counterproductive for the CFP since there is no guarantee that the fleet best able to circumvent the measures are those, which are preferable seen in the light of the objectives of the CFP (e.g. fishing with little damaging impact on the eco-system) - perhaps on the contrary.

Territorial Implications of the Structural Policy

It is obvious that the (re-)distribution of money between regions and member states through the FIFG has direct territorial implications. This is the idea of the EU structural funds, which should ideally support a more balanced regional development on a European scale. However, the criteria used for determining the level of EU support are not related specifically to fisheries. This means that there is a potential risk that fishermen in equal need of support but in different territories will be treated differently.

Some regions and countries benefit more from EU FIFG support than others. This picture has probably been more or less stable over the last decade. However, in the future the situation will probably change as the main beneficiaries of the support increasingly will be situated in the new member states. This may also foster new alliances in the Council. Anyway, a case study in one or more of the new member states will serve to highlight the importance of the FIFG support in this geographical area.

The European Commission has kindly provided information – based on member states' reports - on the allocations of EU aid under the FIFG to NUTS2 regions in the period from 2000 to 2004. The programme has not come to an end yet. However, the data provided in the sheets seem to indicate that Spain's share of the FIFG is still substantial. However, the figures have to be treated cautiously since the programme is still running and the sheets do not even cover one full year with 25 member states in the EU. Several member states have, furthermore, not provided these sheets; among these is most importantly Portugal. However, based on the information provided in the sheets Spain has received more than 62% (954.92 million €) of the total EU aid accounted for in the sheets (1533.52 million €). Galicia remains the most-favoured NUTS2 region in the EU with more than 24% of the EU funds; and Andalusia is still number two with almost 8%. It is clear that these figures will be reduced somewhat when figures for especially Portugal are included.

Territorial Implications of the Market Policy

An example, which highlights how the rules for external trade rules under the market policy can have varying territorial impact, is the recent safeguard measures targeting (especially Norwegian) farmed salmon with the explicit goal of protecting employment generated by salmon farming in parts of Scotland and Ireland. These safeguard measures have led to loss of jobs in certain enterprises in municipalities depending on processing of

Norwegian Salmon in the Danish NUTS3 region of Nordjyllands Amt; a region, which is one of the most disadvantaged in Denmark and a relatively high unemployment rate. In recital 120 of the regulation it states: *"The areas in which salmon farming is undertaken tend to be remote - mainly on coastal areas of Western and Northern Scotland and the West coast of Ireland. There are limited employment opportunities and the economic activity generated by salmon farming makes an important contribution to these local economies. Without that contribution, many of the small local business which supply goods and services to the Community producers and their employees would cease to be viable. It is therefore in the interests of dependent industries that effective definitive measures are taken."* It is remarkable that exactly the same description could have been applied as regards to salmon processors in Nordjyllands Amt.

Whereas it is not possible to tell if the number of jobs saved in Scotland and Ireland is greater than the amount of jobs lost in the northern part of Denmark, it is certainly a case of benefits and disadvantages being distributed unevenly between regions on a European scale. The use of safeguard measures are consequently not territorially neutral and this should be taken into consideration when applying these measures. This seems to some extent not to have been the case in relation to these specific safeguard measures given that the Commission could claim that no proof of negative effects on employment could be substantiated; at the same time jobs were lost in Denmark as a result of those specific measures.

Territorial Implications of the External Policy

The territorial implications of the external policy can be illustrated by reference to the current failure to get an international agreement on the fishing of Norwegian spring spawning herring (or Atlanto-Scandian herring). This stock is managed within the remits of the NEAFC and the countries involved in the fishery are Norway, Iceland, the Faeroes, Russia and the EU (Denmark, the UK, Sweden, the Netherlands, Germany, France and Ireland). Norway decided in 2002 following its dissatisfaction with its negotiated share of the TAC to opt out of an agreement from 1996 on the allocation of the TAC. No new agreement has so far been agreed. This has - besides the fact that this in the longer perspective puts the state of the stock at risk with following negative impact for all regions with fleets exploiting the species - had negative impact on the Danish processing industry (especially one enterprise in Skagen) and also to some extent on the Danish purse seiner fleet (located in Hirtshals). Both municipalities (NUTS5) are placed in the Danish NUTS3 region of Nordjyllands Amt, which as earlier described is one of the regions with the highest rate of unemployment in Denmark. The situation has affected the purse seiner fleet adversely by denying them access to fishing for Norwegian spring spawning herring in Norwegian zone during the first months of the calendar year, which is when this is interesting for them. The processing industry has been affected negatively by the fact that Norwegian vessels as a consequence of the missing agreement have landed their catches of herring in Norway instead of in Skagen. The agreements made within the RFOs are consequently of importance for the regions, which hosts fleets that fish in the areas.

Diagnosis of the Fisheries Sub-Sector

The value of the landings in EU15 (by all vessels) increased from approximately € 5,990 million in 1995 to € 6,230 in 2003. This is an increase of approximately 4 percent. However, if we take inflation into account (and calculate with an average annual inflation of just below 2 percent) the increase ought to have been more than 15 percent just to maintain *status quo*. The value of the landed catch in real terms therefore decreased, even though the average kilo price of fisheries products increased over the same period of time.

However, there are significant differences as to how the development has been in the different member states. Denmark is one of the countries where the difficulties of some segments of the European capture fisheries sub-sector has been felt most. The landings in Denmark in 1995 had a value of € 499 million in 1995. In 2003 this figure had dropped to € 390 million. In the other end of the scale is the development of the landings in Ireland, which increased from a value of € 140 million in 1995 to € 253 million in 2003.

That the problems in the capture fisheries sub-sector has been felt differently in the different member states and regions can be explained by reference to structural differences between countries and regions; these differences concern for instance:

- Differences in the *geographical area* in which the fishing takes place (e.g. the North Sea, the Mediterranean or third countries waters) – the regions are on this point affected unequally by the conservation provisions of the CFP.
- Differences in the *type of fishing carried* out, e.g. *small-scale coastal* or *offshore* (demersal, pelagic or industrial), and the species fished for - the regions are on this point affected unequally by the conservation provisions (and other elements) of the CFP.
- Differences related to the *national implementation* of the Common Fisheries Policy.
- Differences in the impact of provisions of the Common Fisheries Policy, which are not directly linked to the state of the fish stocks, e.g. financial assistance and market regulations.

Diagnosis of European Aquaculture

The aquaculture production rose from 1995 to 2002 with 8.8%. Production peaked in 1999 and has been gradually declining since then. The value of the aquaculture production has been rising substantially in the same period, namely 51.7%. The value peaked in 2001. The increase can partly be explained by the scarcity of European fish products, which has driven up prices, but it must also be ascribed to increased farming of more valuable species. The average value of aquaculture products was € 2.29 pr. kg (live weight) in 2002.

The Commission's strategy for the aquaculture sub-sector includes three main aims: 1) "Creating long term secure employment, in particular in fishing dependent areas", 2) "Assuring the availability to consumers of products that are healthy, safe and of good quality, as well as promoting high animal health and welfare standards", and 3) "Ensuring an environmentally sound industry". The overall economic goal of the Commission is continued growth in the aquaculture sub-sector and thereby the creation of 8,000 to 10,000 jobs (full-time equivalents) over the period from 2003 to 2008. These jobs should mainly be created by means of developing mollusc and cage farming in areas dependent on (capture) fisheries, which will be negatively affected by the reformed Common Fisheries Policy. Success in relation to this main target is, again according to the Commission, dependent on the ability to 1) increase the growth rate to 4 % pr. year, 2) solve conflicts for space, 3) promote market development, and 4) improve governance. The future economic situation of the aquaculture sub-sector (at EU level as well as regionally) will, consequently, depend on its (or policy-makers) ability to address the abovementioned issues. The statistics from the most recent years show that continuous growth in the aquaculture sub-sector is not self-evident, even though the sub-sector has the potential to supply farmed fish as a substitute to threatened wild fish species in European waters such as e.g. cod.

Diagnosis of the Fish processing Sub-Sector

Problems facing the processors are primarily focused on employment, raw material supply and competition from extra-EU imports. To an extent these issues are all interconnected – particularly the costs associated with employment and raw materials leading to processor concerns over their ability to compete with third country imports. There is general movement in the EU towards added value and away from primary processing, which for the most part can be done more cost-effectively outside the EU in regions with closer access to raw material and / or far lower labour costs. The fish processing sub-sector is becoming less distinct from the wider food processing sector as raw material sourcing is less associated with local landings. Consolidation of the sector results in integration with larger food processing companies and moves towards added value products, such as ready meals where fish is only one of many ingredients used. A process of consolidation is underway in almost every corner of the EU fish processing sub-sector and is resulting in the formation / evolution of a smaller number of generally larger businesses, with a handful of very large businesses forming in most member states. The corollary of this process is that significant numbers of businesses are failing or being absorbed / bought-out by larger food companies.

1.3.2 Diagnosis of the fisheries sector in Norway

Norway is one of the world leaders in fisheries and was the tenth largest seafood production nation in the world measured in terms of volume of aquaculture and fishing in 2001. Norway is, moreover, in the absolute top among the worlds largest net exporters of seafood products as around 90 percent of the production is exported. The importance of this export for the country, which is only exceeded by that of crude oil, is significant and makes fisheries an important economic sector in Norway. Norway was, consequently, also the first nation in the world to create a separate Ministry of Fisheries in 1946. It is worth noticing that aquaculture is increasing in importance relative to capture fisheries.

The Norwegian fisheries sector is of most importance in the northern part of the country. Here fisheries form an important part of a strategy aiming at keeping viable settlements along the coast. Changes in the overall conditions of the fisheries sector will, consequently, be felt most significantly in the northern part of the country. This is e.g. the case as regards the changes in the behaviour of the Russian fleet, which traditionally has landed much of its catch for processing in the northern part of Norway.

There is no doubt that the fisheries sector will continue to be of major importance in Norway in the future. However, globalisation will undoubtedly change the structure and relative importance of the various sub-sectors. Aquaculture will most probably be the driver of the main development in the fisheries sector in the future.

- The future of the capture fisheries sub-sector is relatively bright. The state of the resources is acceptable for many of the most important species, even though recommendations from ICES are not always followed, and policy-changes are increasingly making the fleet economically efficient. It cannot, however, be expected that this sub-sector will provide more jobs in the future. On the contrary, technological changes are leading to more and more efficient vessels, which need less manual labour. Anyway, the unknown factor is the development of the fish stocks, which also fluctuate naturally. There is, however, nothing which indicates that the Norwegian capture fisheries sub-sector as such is facing major problems. However, this sub-sector will not in the future be the great provide of jobs as it has been in the past.

- The aquaculture sub-sector is in good shape and the perspectives for the future are bright. Considerable expansion is expected in salmon aquaculture, and cod aquaculture is increasingly looking promising even though it has not taken off yet. New jobs can be expected to be created within this sub-sector in the years to come as it has also been the case in the past years. This is in line with the expected development worldwide; where it is projected that aquaculture will increase dramatically in importance relative to capture fisheries. This will of course increase competition but the global market for fish is growing and Norway is particularly well suited for aquaculture of cod, salmon and other species.
- The processing sub-sector is in a more difficult situation than the other two sub-sectors. This is due mainly to the effects of globalisation, which means that it is becoming increasingly profitable to process the raw material in countries with lower costs. Supply of resources from Russian vessels is also becoming less than in previous years due to the introduction of factory trawlers. Possible solutions are to take advantage of economies of scale and reduce the number of plants, which can then work at a higher technological level. This would to some extent be in contrast with the regional policy objectives in the fisheries policy and would in any case result in fewer jobs.

1.3.3 Diagnosis of the fisheries sector in Iceland

The fisheries sector is tremendously important in Iceland, which is - despite its modest population of less than 300,000 - the eleventh largest seafood producing nation in the world measured in terms of volume of catch. From the mid-nineties to 2003 fishing and processing represented between approximately 10 and 13 percent of the Icelandic overall GDP - and the value of fisheries products constituted more than 60 percent of the value of exported goods and 40 percent of the value of exported goods and services. Approximately three quarters of the export value of fish products goes to other EAA countries - the biggest importer of Icelandic fish products is the UK. Thus, the state of the Icelandic fisheries sector strongly influences the overall state of the Icelandic economy.

A key question in relation to the territorial consequences of the Icelandic fisheries policy is whether the smaller, local fishing communities are worse off with the ITQ system than they would otherwise be. A major issue for the local fishing communities and in the debate over the ITQ system in Iceland has been the transferability of the quotas, which means that quotas can be 'sold away' from local fishing communities, which then do not have access to the resources anymore with loss of fishermen's jobs and problems in the local processing sub-sector as a result. A result of the ITQ system has according to some researchers been marginalisation of some fishing communities. This has especially been the case for the smallest communities under 500 inhabitants. These small communities have lost to the larger communities in a competition for quotas.

The ITQ system has supposedly not only led to a consolidation in terms of larger companies but also a relative concentration of activity in larger fishing communities leaving the smaller communities without alternative sources of income as the processing plants loose their source of raw material.

The prospects for the Icelandic fisheries sector are mixed - with variable outlooks for the different sub-sectors:

- The capture fisheries sub-sector is relatively economically healthy and the state of the resources is good compared to other places. Anyway, in terms of employment this

sub-sector cannot be expected to provide more jobs in the future as technological developments continuously increase the efficiency of the fishing vessels, which leads to less and less input of manual labour to catch the quotas. This development is, furthermore, supported by the incentives provided by the Icelandic ITQ system, which in itself gives incentives to larger, more efficient vessels.

- The aquaculture sub-sector is in a position to generate new jobs in the future, especially if farming of cod takes off. Iceland is, together with Norway and the UK (Scotland), one of the few places where farming of cod is expected to be possible. The future development of aquaculture in Iceland is, furthermore, dependent on the development in wild fish resources, especially cod, and the outcome of experiments with other potential aquaculture species. The future of the aquaculture sector looks, all in all, positive, given that the global demand for fish products is expected to increase in the years to come.
- The perspectives for the processing sub-sector are, despite the support from the government, less positive. One reason for this is that more processing takes place onboard the vessels as a result of the introduction of factory trawlers. A second reason is the globalisation of the market in fish products, which makes it easier and increasingly cheaper to export raw material for processing in countries with lower costs. This development is probably reinforced by the Icelandic ITQ system, which must be expected gradually to remove the traditional links between local quota holders and vessel owners, local ports of landing and local processing plants. In other words, the processing sub-sector is facing great challenges and it is probably fair to assume that the development in the future will be negative, at least in terms of jobs.

1.4 Environmental impacts and integrated coastal zone management (ICZM)

1.4.1 European fisheries and environmental impacts

Chapter 6 in Part II of the third interim report provides an analysis of environmental impacts and ICZM. According to EEA a chronic overexploitation of fishery resources is the greatest current environmental concern of the fishery policy in Europe. European Environmental Agency (EEA) has developed an indicator based approach to assessing the environmental performance of European marine fisheries and aquaculture, based on statistics from ICES, GFCM, FAO, Eurostat, etc. We will primary make use of indicators developed and presented by EEA.

Fishing fleet trends

The fishing fleet is regarded as too big for the available resources. But according to EEA, the kea message on this issue is rather positive because *the EU 15 fishing fleet (1989-2000) has decreased both in numbers of vessels (10 %), in tonnage (6 %) and power (12 %)*. On the negative side, the EFTA fishing fleet (Norway and Iceland) has in the same period dramatically increased in tonnage (31 %) and in power (6 %), despite that the fleet has decreased in number (27 %). However, during the last years the fleet is decreasing also in tonnage and power. For Norway and Iceland, the reduction of the fleet came in 2001 in terms of absolute number, and reduction in terms of tonnage and engine power came in 2002. From 2000 to 2005 the Norwegian fleet have a very sharp decrease, with 37.1 % in number and 45.6 % by engine power. By contrast the fleet of the other EEA country, Iceland changed relatively little over the same period.

Despite the overall drop in size and capacity (power and tonnage) experienced by the EU fleet in the past 15 years, according to EEA no visible improvement in the condition of the fish stocks has so far been observed. Conservation measures according to the CFP have persistently been undermined by fishing activities at levels well beyond the level of pressure that the available fish stocks could safely withstand. As new technology makes fishing vessels ever more efficient, the capacity of the fleet should be reduced to maintain a balance between fishing capacity and the quantities of fish that can safely be taken out of the sea by fishing. EEA conclude that compared with the indicative policy objectives, only modest reductions in the capacity of the European fleet as a whole have been achieved over the past decades.

Development in catches

Total fish landings of all species in all European sea regions[1] *have increased by 20 % (1.6 million tonnes) between 1990 and 2000*. This is largely due to an increase in landings by vessels of the EU 15 and EFTA countries, which account for an average of 93 % of total European landings by weight. Landings reached a peak in 1997 of over 12 million tonnes and declined to 11 million tonnes in 2000. *From 1995 to 2002 the total catches of the EU25 fleet has dropped from app. 8 million tonnes to app. 6.8 tonnes* (in live weight).

Increases or decreases in landing do not, however, signal a healthy or unhealthy fishing industry or marine environment, as increases in fish landings may be driven by either increasing amounts of available fish or increasing fishing effort. Similarly, decreasing landings may be the result of a lack of available fish or a change in management measures of fishing patterns. FAO statistics do no not take into account those organisms that are caught but not landed (discards). Most discarded species, especially fish and marine mammals, do not survive. Landings statistics, therefore, underestimate the total catch of fishing vessels and, thus, the impact on the marine environment. Also illegal, unregulated and unreported fishing (IUU-Fising) still remains a huge problem.

Percentage of stocks outside safe biological limits

One central indicator in the EEA list of environmental impact indicators in relation to CFP is commercial fish stocks outside safe biological limits. This is defined as the point where the indicators of the state of a stock predict a low risk for transgressing certain so called 'limit reference point', for instance values of biomass or fishing mortality rate, which are to be avoided. In other words, stocks are characterises as being outside safe biological limits when mortality exceeds recruitment and growth.

According to EEA, *most fish stocks of commercial importance in European waters appear to be outside safe biological limits* of the assessed stocks. Following the assessment of stocks 33-60 % of commercial stocks in the North East Atlantic were in 2002 outside safe biological limits. The Baltic and West Ireland are in a better shape (with 33 % of their stocks being outside safe biological limit) and West of Scotland area the worst (with 60 %). For the Mediterranean the percentage of stocks outside safe biological limits range from 10 to 20 %. In the OSPAR area, 40 of the 60 major commercial stocks were assessed outside safe biological limits in 1999.

[1] North East Atlantic Ocean (including the Baltic Sea), Mediterranean Sea, Black Sea and Arctic Ocean. The Caspian Sea and Aral Seas are not included, as these are considered to be "inland waters" by FAO.

Fisheries impact on habitats and ecosystems

Fishing gear is designed to maximise yields of target species and minimise cost of effort but they also trap non-target species and damage the marine environment and habitats. Non-target organisms affected include benthos, birds, marine mammals, marine reptiles (turtles), plants and non-target fish. Capture fisheries tend to target the more valuable larger fish that are at higher trophic levels such as species that eat other fish. However, as over fishing reduces the populations of these fish, the landings of fish lower down the food web such as those species that eat zooplankton make up a larger proportion of the overall catch. This means a change in the ecosystem composition from fish eating species to plankton eating species. This is generally indicative of a negative impact on the whole ecosystem caused by fishing and has been called 'fishing down marine food webs'. An ecosystem-based approach for fisheries management has been highlighted to protect the vulnerable marine wildlife and habitats.

1.4.2 Development of aquaculture and environmental impacts

European aquaculture production has continued to increase rapidly during the last 10 – 15 years, due to expansion in the marine sector in the EU and EFTA countries. In 2002, aquaculture represents 17 % of total fishery production in Europe. For EU15 the aquaculture production rose from 1995 to 2002 with 8.8 %. This increase represents, according to EEA, a rise in pressure on adjacent water bodies and associated ecosystems in the coastal zone. However, the relationships between many of these pressures and possible impacts are often difficult to establish. The precise level of local impacts will vary according to production scale and techniques as well as the hydrodynamics and chemical characteristics of the region. Generally, significant improvements in the efficiency of feed and nutrient utilisation and improvements to environmental management generally have served to partially mitigate the associated increases in environmental pressure.

Overall production is, however, a simple available indicator on environmental pressure in its various dimensions. As a stand-alone indicator, its meaning and relevance is limited because of widely varying production practices and local conditions. In general, the pressure from nutrients from the intensive cultivation of marine and brackish water is becoming significant in the context of total nutrient loadings to coastal environments. Different types of aquaculture generate, however, very different pressures on the environment. Intensive finfish production in marine and freshwater generates the greatest environmental pressures and it is this kind of production which has increases most rapidly in recent years. Marine finfish production (mainly Atlantic salmon) is making a significant contribution to nutrient loads in coastal waters in Ireland, Scotland and Norway (particular phosphorus and nitrogen). In Norway (particular the west and north coast were the production mainly take place), phosphorus discharges from aquaculture appear to exceeds the total from other sources. However, the published data on total nutrient loadings to coastal waters remains poor in quality and inconsistent in coverage. The data on this mater should therefore be treated with caution.

As mentioned, significant numbers of farmed fish escape from fish cages and may affect wild populations through competition, genetic change and disease transmission. Another environmental impact of farmed Atlantic salmon is the increase of fish lice. These parasites may cause problems for wild fish stocks. Sea trout seem to be particularly heavily infected and this may be one reason for the observed decrease in population of sea trout and salmon in Norwegian waters. But in general, significant improvements in the efficiency of feed and nutrient utilisation as well as environmental management have

served to partially mitigate the associated increase in environmental pressure. A major concern is that the increase in the industry faces challenges to other users and interests in the coastal zone, such as recreation, tourism, nature conservation, etc. A major problem is that aquaculture is an activity that excludes other users close to the actual location. This issue will be further addressed in the example studies on ICZM.

1.4.3 Integrated coastal zone management (ICZM)

Integrated coastal zone management (ICZM) is developed as a general tool to coordinate different and competing interests in the coastal zone. Being an integrated approach the ICZM has potential to offer a broader perspective to aquaculture and most of the fishery related activities. ICZM is a demanding task, which i.a. should have a broad "holistic" and long run perspective, integrating all relevant interests and sectors in the coastal zone. Activities in the coastal zone have traditionally been carried out by different sectoral bodies, and rigid bureaucratic systems. Sectoral policy in marine areas is somewhat separated from spatial planning, and co-operation between them is not yet well developed. ICZM imply a new style of governance, a style that involves and is in partnership with all relevant interest. As the European Commission emphasise, integrated solutions to concrete problems can only be found and implemented at the local and regional level. Related to integration between fisheries and spatial planning it is a challenge that the EU Fisheries policy is one of the EU policies that are least adaptable to regional needs.

The Interreg IIC project Norcoast recommend combining the best elements of the statutory spatial planning system with the best elements of the voluntary partnership approach in order to achieve integrated solutions. An experience from Norwegian regional coastal zone planning is that an open and inclusive decision process does not alone increase the integration capacity of the regional planning. The results rather support the opposite argument of a trade off between the number of actors participating in the decision process and the ability to agree on and implement a joint action which effectively will deal with the problem. Another general experience is that integration at regional level is only possible if the higher levels of administration provide an integrated legal and institutional context.

One lesson from the EU Demonstration programmes is that the spatial planning system alone has some limitations to secure the idea of ICZM. The first is the necessity that the spatial planning system covers both the terrestrial parts and the marine part of the coastal zone. Only few countries have such integration today. The EU Water Framework Directive could secure this element because also coastal waters up to one nautical mile outside the basic line should be included in the river basin management plans. Another limitation is that the spatial planning system often focusing narrowly on development control rather than a broader ICZM focus. In that respect, it could be necessary to combine economic instruments to the planning system. The tradition for protecting coastal areas may also have led to a neglect of the ideas of ICZM as such, where a main purpose is to balance protection and development in coastal communities. ICZM strategies in fishery dependence areas should for instance also focus on new forms for development, such as aquaculture, tourism, etc.

The hypothesis regarding aquaculture in IR2 is that this industry will increase the pressure on the coastal zone, but a management bases on ICZM could contribute to a further sustainable growth. The Norwegian experiences with local coastal zone planning indicate that this could be a suitable instrument to balance the increase of aquaculture with other interests. A central challenge is to find a balance between the need for long-

term steering and predictability on the one side, and the need for flexibility on the other side. A precondition is broad participation from the relevant local interests and stakeholders, and the relevant sectoral administrative bodies to find an acceptable balance between growth in aquaculture and other interests as protection, recreation, coastal fisheries, etc. It is, however, a need for a regional approach across the municipalities regarding the development of the industry. Regional coastal zone planning and planning in accordance to the Water Framework Directive can contribute to more integration across municipalities and a more ecosystem-based management, also in the case of aquaculture.

1.5 Social cohesion impacts

Chapter 7 in Part II of the third interim report provides two types of analyses. One is the substantial analysis related to hypotheses on social impacts developed in IR 1 and 2. Another is the investigation of the opportunities, mainly caused by the availability for obtaining data, for carrying out territorial impact analyses.

The more specific content of the chapter is:

- An examination of the availability of relevant data in the ESPON-databases as well as in national sources. For the moment bases on both of these levels lack a lot of data and we have not identified data registering systems which for the moment will make such data available.
- An attempt on revising and building new ideas of the territorial dimensions of European fisheries which can substitute or complete the traditional fisheries dependency perspective.
- An attempt to analyse the territorial distribution of the CFP policies measures (FIFG and the fisheries resource regulations)
- An analysis of the direct impacts on fisheries from CFP, analysed by using data on fisheries employment.
- Analysis of socioeconomic changes in European fisheries specialised regions compared with the development in other European coast regions. In these analyses we have used three variables: Population changes, income changes and household consumption changes.

All analyses are based on mapping indexes developed in the analyses. The chapter is discussing the experiences from the analyses regarding using TIA in CFP-analyses, giving three types of policies recommendations based on the conclusions from the mapping as well as the example studies.

1.6 Economic cohesion impacts

The analysis of CFP impacts on regional economic strength can assume two different forms, depending on the time reference period, cf. chapter 8 in IR3 Part II. If made on the past CFP it will be a mere retrospective analysis or mid term /ex-post evaluation of fishery policy measures. If made on what is planned to be the follow up of the CFP, according to the reform proposals, then the analysis will assume the form of an ex-ante or prospective assessment.

Ex-ante assessment
It is difficult to carry out an impact assessment analysis based on the future changes of the CFP, given the impossibility to obtain the necessary data for the overall European space. In the light of the constraints on data availability (both in terms of areas, especially at NUTS3 level - and time period's coverage), what we can do, if relating to the future CFP is the following:

1. the simulation of changes in policy interventions by the use of models and assessment techniques developed in previous researches and based on example studies;
2. a judgement evaluation, based on a SWOT analysis, or other qualitative techniques, of what has been planned to be the financial support to the European enlarged fishery sector for the period 2007-2013, by means of the new financial instrument, the European Fishery Fund (EFF).

For the analysis of regional economic strength it will be appropriate to use a model which is developed within the PECHDEV project. Even if the model has been developed and applied only to 5 European NUTS3, it must be stressed that the NUTS3 level selected as case-studies within the PECHDEV project are representatives of the different form that the fishery sector assumes all around the European space. They, in fact, represent very different realities both in geographical terms (they are based in the Mediterranean, Atlantic and Baltic seas) and in relation to the structure of the fishery sector they host.

The most important changes in CFP that will have an impact on the economy of coastal regions will be related to:

- consistency of fishing fleets (number of vessels and fishermen);
- production in weight and value of fish catching activities;
- share of the fishery sector on total GDP (value added);
- employment in fish catching activities and in fish related activities

If an ex-ante evaluation of the planned allocation of the fishery structural funds is needed, it will be possible only on a qualitative basis, given the high constraints on data availability. Under the proposal, EUR 4, 96 billion will be allocated to the EFF for the 2007-13 programming period for the enlarged Europe. This amount corresponds, more or less, to financial assistance planned for the EU at 15 Member states for the period 2000-2006 (EUR 3,7 billion).

Ex-post assessment
If made on the past CFP it will be a mere retrospective analysis or mid term /ex-post evaluation of fishery policy measures. Retrospective evaluation can take the form of qualitative assessment, like the SWOT analysis, that can be particularly useful in mid-term evaluations as it can provide clues about the intermediate objectives of the programme (as the ability to exploit the opportunities and to avoid the threats). But a number of quantitative analysis can be used in order to evaluate the impact of policy actions. The choice strongly depends on data availability. Among the most common quantitative techniques there are econometric models and regression analyses. Assessment methods based on regression and correlation techniques will be used when analysing territorial distribution of FIFG allocations.

Hypotheses relating to territorial distribution of FIFG funds
The quantitative assessment will test if and to what extent:

- The CFP have different impacts between coastal regions, and also within the regions themselves.
- To test this, the distribution of CFP support between different types of regions in Europe will be analysed.
- Impacts differ in accordance with the extent the regions are dominated by coast fishing and small vessels, fishing in distant waters with greater vessels, landings, fishing processes or aquaculture.
- In order to test this hypothesis, the most appropriate typology to be used is the one based on the number of workers in the fishery sector. If the number of employees is available by the three main sectors, i.e. harvesting, aquaculture and processing, it could be useful to see how the structure of the sector influences the use of the FIFG funds.
- Territorial impacts of the CFP may contradict with the aims of cohesion, territorial balanced development and polycentrism.
- Here we will particularly test if the CFP favour the prosperous regions and disfavour the most remote regions that are supposed to be highly dependent on fisheries.
- Restructuring processes deriving from the CFP measures in the last decades has led to a decrease of regional economic productions (GDP).
- This hypothesis can be tested by involving a variable representing the European regions classified by means of the fishery dependency typology and a variable for the rate of change in the regional GDP
- More favourable regions are able to take greater advantage of the measures included in the FIFG due to closer access to products and markets.
- In order to test this hypothesis it could be useful to estimate correlation coefficients between the level of FIFG support at NUTS 3 level and the classification of NUTS3 regions by mean of accessibility indicators.

1.7 Conclusion and preliminary policy recommendations

1.7.1 Conclusion chapter 5 - Diagnosis of the Fishery Sector

The hypotheses outlined in the beginning of this chapter were related to different elements of the CFP (and fisheries politics in general): five hypotheses were related to conservation policy, two to market policy, two to structural policy, and one to external policy. On a general level the hypotheses have been supported by the analysis of the different policy areas. In the following discussion we will go through each hypothesis and sum up the main findings, mainly related to the CFP. However, the discussion and findings below apply in general also to the situation in Norway and Iceland, which are more or less subject to the same situation as the EU countries. However, the two countries are at present in a better situation in regards to the sustainability of stocks and the economic situation of the sector than the EU countries on average.

Conservation Policy Findings

Five hypotheses, which related to conservation policy, were outlined in the beginning of this chapter. The first hypothesis related to the intentional territorial impact of the CFP, which occurs from the allocation of fishing opportunities through quotas. Quotas are not allocated on the basis of need but following a principle of 'relative stability'. This creates territorial impacts across nations on a very general level. Some nations might be better at

matching their allocations to the structure of their sector, which gives them (and their regions) an advantage over other countries. The second hypothesis was also supported by the analysis of the future direction of the CFP, which must be expected to move towards EAF. This will - at least in the short or medium term - lead to negative impacts because of lower (or at least not significantly higher) TACs, which are supposed to result in lower fishing pressure. The third hypothesis has mainly been dealt with in the section on Iceland. The analysis seems to support the assumption that ITQs in some instances lead to unintentional regional redistribution, as well as to the desired restructuring of the sector towards larger, more efficient units. Market based management systems have, however, not yet been applied on a European scale. The fourth hypothesis related to the fact that recovery plans might have unintentional consequences. As discussed, recovery plans are intended to 'punish' or at least restrict the fleets targeting endangered stocks. This might be considered the intentional impact; an unintentional - partly territorial - impact is that the different fleet segments are put in different situations. Larger vessels might be able to utilise resources far from where they have homeport, whereas this possibility does not exist for smaller coastal vessels. This is unfortunate as it is often not the smallest vessels, which constitute a problem for the resources or destroy habitats. Therefore it seems unfortunate that they have to carry the largest burden. The fifth hypothesis was general and related to the distribution of negative impacts of the conservation policy. The analysis has to a high degree supported the hypothesis that the most important factor in determining how the negative impacts will be distributed across regions is the state of the stocks the fleets utilise. This is hardly surprising but the most important information related to this is in fact also the varying unintentional impacts; for instance the different possibilities to change gear or sea area.

Structural Policy Findings

Two hypotheses were related to the impacts of the structural policy. The analysis supports the hypothesis that the policy has significant territorial impact; this is actually the whole idea of it. However, more interesting is the fact that some regions are able to get more funding from the EU based on considerations, which are wholly or partly unrelated to the situation of their fisheries sector. This puts unintentionally some regions in a better situation than other regions. Furthermore, the analysis has also shown how some countries and regions receive a very significant part of the total EU support, which in general puts their regions in a favourable situation *vis-à-vis* others. Galicia could be mentioned as one region, which gets a surprisingly large share of the total FIFG support. Finally, it is also interesting to see how the structural policy has - until recently - supported modernisation and renewal of the EU fleet in a situation, where overcapacity is considered one of the main problems facing the conservation policy. The second hypothesis related to the fact that the EU structural policies are increasingly becoming less important because of increasing impacts of the surrounding environment, i.e. the global development. Although this might be true, the impact of the direct injections of money through the FIFG (whether these are viewed as positive or negative) should not be underestimated. It could be argued that the FIFG support is important exactly to tackle a situation where the local markets and fleets are increasingly becoming part of a world market. In the new member states this is happening simultaneously with a demanding transition towards market economy.

Market Policy Findings

The analysis of the market policy supported the assumption that this policy has serious territorial effects. The effects relate not so much to the direct financial transfers under the price support mechanism, which are relatively insignificant compared to those distributed under the FIFG. Rather, the varying territorial impacts are related to the different impacts

of tariffs and external trade measures. An example provided in the preceding chapter was the decision to put an extra tax on (especially Norwegian) salmon. This was done in order to protect salmon producers in Scotland and Ireland but the safeguard measures had serious negative impact on salmon processors in Denmark, which depend heavily on Norwegian raw material. The analysis supports also the assumption that fish products will increasing be affected by other policies not directly stemming from the fisheries market policy. The policy on traceability is provided as one example of such.

External Policy Findings

The analysis clearly showed that the external policy has territorial impact, which varies across regions. This relates especially to fisheries agreements, which are of most importance for the southern EU member states. The transfer of money through the fisheries agreement could be seen as subsidies for the vessels engaged in these fisheries. However, also bilateral and international agreements or the failure to conclude these could have significant impact, as illustrated with the failure to get agreement with Norway over Atlanto-Scandian herring, which are of importance to a number of Danish ports.

In Sum

The analysis in this chapter has supported the outlined hypotheses and in this way also supported the underlying general hypothesis that the CFP (and fisheries policies in general) has significant territorial impacts – intentional as well as unintentional. It is, consequently, possible to conclude that these hypotheses provide a good basis for the analyses in the following chapters on territorial impacts and example studies related to this. The chapter has, furthermore, outlined a number of concrete examples of territorial impacts as well as provided a thorough introduction to the structure of the sector in the EU, Norway and Iceland.

1.7.2 Conclusion chapter 6 - Environmental impacts and ICZM

Environmental impacts

Two of the hypotheses regarding environmental impacts of the fishery policy made in IR2 are:

- The changes in CFP from 2002 will contribute to a faster reduction and restructuring of the fishing fleet, both in absolute numbers, tonnage (GT) and engine power (kw).
- Changes in CFP will probably be directed towards improvements of the marine environment and marine resources. In the long run this may lead to higher and more stable fish stocks, but only if the fishing effort is sufficiently reduced.

CFP seem to be successful regarding reduction of the fishing fleet, which is a necessary precondition for a sustainable resource management. However, it is to too early to see if the changes in CFP from 2002 have contributed to an even faster reduction in the fishing fleet. The reduction from 2002 to 2003 was approximately of the same quantity than the years before.

From 1995 to 2002 the total catches of the EU25 fleet has dropped from app. 8 million tonnes to app. 6.8 tonnes (in live weight), which seem to have a connection to the decrease in the fishing fleet. However, the total fish landings of all species in all

European sea regions[2] have increased by 20 % (1.6 million tonnes) between 1990 and 2000, but with a small decrease from 1997 to 1999. The indicators on stocks outside biological limits indicate that the changes in CFP, i.e. reducing the fishing fleet capacity, are still not sufficiently for a sustainable marine development. It is still an imbalance between fishing capacity and available resources. However, for a sustainable resource management, EU is dependent on that also other countries outside EU reduce their fishing fleet capacity according to the available resources. In that respect, a major concern is the agreements between EU and other countries regarding fishing.

At the same time, there is a need for a greater emphasise on the whole marine environment and ecosystems, and not only assessments for single species. During the last years there has been a greater focus on ecosystem approach in marine (including fisheries) management. However, it is a challenge to implement these ideas in the management regime. One central element is to move away from the single-species approach characteristic of the existing CFP and to adopt a multi-species and ecosystem-based management approach as indicated in the 2001 Reykjavik Conference on Responsible Fisheries in the Marine Ecosystems.[3] Ecosystem-based management models are also needed to assess external impacts on fisheries such as accidental and operational discharges from oil exploitation and shipping activities toxic algae blooms, and runoff from land causing eutrophication and contamination (EEA 2002). An ecosystem approach should also be considered in a larger extent regarding development of indicators on this issue. The EU Water Framework Directive (2000/60/EC) draws up a more ecosystem based development of data and indicators, based on river basins, including coastal waters up to one nautical mile outside the basic line. Also the EUs proposal Marine Strategy Directive is a step in that direction (European Commission 2005).

The increasing production in aquaculture is important for many countries and coastal regions. Aquaculture development is spread widely over Europe and often in rural zones or peripheral areas depending on fisheries, where alternative employment opportunities are lacking. In general, significant improvements in the efficiency of feed and nutrient utilisation as well as environmental management have served to partially mitigate the associated increase in environmental pressure in the coastal zone. Different types of aquaculture, however, generate very different pressures on the environment. Intensive finfish production generates the greatest environmental pressures and it is this kind of production which has increases most rapidly in recent years. The challenges in countries with high finfish production like Norway, UK and Ireland. The growth in aquaculture is also a challenge for the coastal zone management and planning, particular regard to adapt the locations to other coastal interests like tourism, recreation, nature and cultural heritage, coastal fishing, etc. Further expansion should be addressed through the concept of integrated coastal zone management (ICZM), which also the EU Strategy for the sustainable development of European aquaculture emphasise.

Integrated coastal zone management (ICZM)

ICZM is a demanding task, which should have a broad "holistic" and long run perspective, integrating all relevant interests and sectors in the coastal zone. Activities in the coastal zone have traditionally been carried out by different sectoral bodies, and rigid bureaucratic systems. Sectoral policy in marine areas is somewhat separated from spatial planning, and co-operation between them is not yet well developed. ICZM imply a new

[2] North East Atlantic Ocean (including the Baltic Sea), Mediterranean Sea, Black Sea and Arctic Ocean. The Caspian Sea and Aral Seas are not included, as these are considered to be "inland waters" by FAO.

[3] ftp://ftp.fao.org/fi/DOCUMENT/reykjavik/Default.htm

style of governance, a style that involves and is in partnership with all relevant interest. As the European Commission (2000) emphasise, integrated solutions to concrete problems can only be found and implemented at the local and regional level. Related to integration between fisheries and spatial planning it is a challenge that the EU Fisheries policy is one of the EU policies that are least adaptable to regional needs.

Norcoast recommend combining the best elements of the statutory spatial planning system with the best elements of the voluntary partnership approach in order to achieve integrated solutions. An experience from Norwegian regional coastal zone planning is that an open and inclusive decision process does not alone increase the integration capacity of the regional planning. The results rather support the opposite argument of a trade off between the number of actors participating in the decision process and the ability to agree on and implement a joint action which effectively will deal with the problem. Another general experience is that integration at regional level is only possible if the higher levels of administration provide an integrated legal and institutional context.

One lesson from the EU Demonstration programmes is that the spatial planning system alone has some limitations to secure the idea of ICZM. The first is the necessity that the spatial planning system covers both the terrestrial parts and the marine part of the coastal zone. Only few countries have such integration today. The EU Water Framework Directive could secure this element because also coastal waters up to one nautical mile outside the basic line should be included in the river basin management plans. Another limitation is that the spatial planning system often focusing narrowly on development control rather than a broader ICZM focus. In that respect, it could be necessary to combine economic instruments to the planning system. The tradition for protecting coastal areas may also have led to a neglect of the ideas of ICZM as such, where a main purpose is to balance protection and development in coastal communities. ICZM strategies in fishery dependence areas should for instance also focus on new forms for development, such as aquaculture, tourism, etc.

The hypothesis regarding aquaculture in IR2 is that this industry will increase the pressure on the coastal zone, but a management bases on ICZM could contribute to a further sustainable growth. The Norwegian experiences with local coastal zone planning indicate that this could be a suitable instrument to balance the increase of aquaculture with other interests. A central challenge is to find a balance between the need for long-term steering and predictability on the one side, and the need for flexibility on the other side. A precondition is broad participation from the relevant local interests and stakeholders, and the relevant sectoral administrative bodies to find an acceptable balance between growth in aquaculture and other interests as protection, recreation, coastal fisheries, etc. It is, however, a need for a regional approach across the municipalities regarding the development of the industry. Regional coastal zone planning and planning in accordance with the Water Framework Directive can contribute to more integration across municipalities and a more ecosystem-based management, also in the case of aquaculture.

1.7.3 Conclusion chapter 7 - Social cohesion

The chapter is written as an examination of the opportunity to carry out social cohesion impacts analyses of the Common fisheries policy in the framework of territorial impact analysis. The most important part of the examination has been concerned about building analytical bridges between: the territorial dimensions and systems of European fisheries; the two major types of CFP (the specific economic measures (FIFG) and the "conservation" policies); the direct impacts of the CFP on the socio-economic systems of

the fisheries; and the impacts on the position of the fisheries regions in the general European territorial systems. The main conclusion is that the attempt presented in the work package is a way that is possible to use in order to carry out relevant territorial impact studies of CFP. However there are several conditions that are not established yet, most of them related with building of valid systems for data registration, collecting and analyses. Moreover there are also other more analytical challenges as:

- The need for building a valid idea about the territorial dimension of the European fisheries. From our point of view there is contraction between the enormous dimension of European fisheries and its minor territorial impacts when measuring those by using traditional fisheries dependencies indicators. We have tried out a solution by using Nuts 2 regions, and from our point of view we have identified relevant territorial fisheries systems by these analyses. However we think that that establishing of more permanent analytical systems of TIA in CFP should be able to use data on Nuts 3 level.
- The need for establishing a system for territorial distribution analyses of FIFG as well as the regulation policies which integrate these dimensions to the territorial systems of the fisheries.
- The need for integrating analyses on fisheries regions and territories into the general analyses of European territorial development and changes. Here are at least two challenges: The first is to establish typologies that integrate fisheries regions characteristics with other ESPON typologies as information about polycentrism, functional/urban and variables registering the emergence of new types of economics. The other is to build valid indicators for comparing of territorial development. In the examination we have used indicators on population changes, income changes and consumption changes. We are not sure that these indicators are the most valid for analysing all types of European regions. The finding in the chapter that it looks like the fisheries specialised regions have experienced more negative trends than the average European regions in the period around 2000 is an argument for establishing indicators for territorial comparison for ESPON space.

1.7.4 Preliminary policy recommendations

We have based the preliminary recommendations on our set of hypotheses, as these are our point of departure for the impact studies.

General policy recommendations

- As the CFP is likely to have different impacts in different regions, and in different types of regions, the policy should be directed towards (possibly by use of best practises) social, economic and territorial cohesion. Special care should be taken to counteract negative development in lagging regions.
- As the CFP is likely to have unintended side effects in coastal/fishery dependent regions, there is a need to develop policies that can counterbalance the non-fishery aspects of these side effects (as listed in hypothesis 5). The same is the situation if impacts of the CFP should be shown to contradict aims of cohesion, territorially balanced development and polycentrism.
- The development in urban-rural relations in the fisheries should be governed by thoughts about polycentric development, and the assumption that such a development is especially advantageous in countries and territories with lower population densities (which is the situation in many fisheries dependent regions)

- The relation between territorial impacts and the structure of the fishing and aquaculture industries of different regions should be a basis for policy recommendations

Policy recommendations related to environmental impacts and ICZM

There is a need for a greater emphasis on the whole marine environment and ecosystems, and not only assessments for single species in the fishery policy. The efforts according to this should be further stimulated, also in regard to the development of indicators for environmental impacts of fishery and aquaculture. Today most of the indicators focus on the development of single fish species with commercial interest.

According to the ICZM example studies, primarily regarding the aquaculture industry, we point out the following policy recommendations:

1. The integration of the terrestrial and marine environment in coastal planning and other ICZM activities should be further developed.
2. The best elements of the statutory spatial planning system should be combined with the best elements of the voluntary partnership approach in order to achieve integrated solutions.
3. To find acceptable balances between further growth in aquaculture and protection and other interests in the coastal zone, it is a precondition with a broad participation from relevant local interests and stakeholders in the planning processes, together with relevant sectoral administrative bodies. Environmental Impact Assessment (EIA) and Strategic Environmental Assessment (SEA) could be useful instruments in the process to find the right balance between protection and use.
4. The aquaculture industry is in a continuously technological change, i.e. introducing new species and in being more offshore based. It is therefore necessary with flexible planning approaches in order to be able to deal with the quick changes. It is, however, necessary to find a suitable combination between the need for long-term steering and predictability on the one side, and the need for flexibility on the other side. The specific choice in this regard will be dependent on the specific planning context.
5. It is a need for a regional approach across the municipalities and other administrative borders regarding the development of the industry. The implementation of the Water Framework Directive can contribute in that direction.

Policy recommendations related to social cohesion

6. There should be a better co-coordination of the implementation of the economic measures in CFP (the FIFG) and the fish resource regulation policy. At this point we lack statistics for safe conclusions, but the impression is that there is no co-ordination between the two, and that FIFG in some countries rather targeting new types fisheries models than the specialised regions. Thereby the structure in the latter regions is in danger of being conserved (becoming rawfish satellites) and territorial differential processes are increased.
7. The interplay between fisheries policies implemented on national and European level should be better integrated. The national level has a central role in the implementation of the part of CFP focusing of economic support for the fisheries. The distribution analyses as well as the example studies demonstrate that the national implementation processes probably in many occasions vary between the nations, and that these variations can have territorial as well as social cohesion impacts in the respective countries as well as in the European space.
8. European sector policies of the fisheries should be adjusted in accordance with the European territorial policies on reduction of social cohesion differences on the

European territory. Despite the restriction of the actual data, the conclusion can be that these two types of policies do not pull the European territorial development in the area of social cohesion in the same direction.

2 Scientific summary

2.1 Concepts, methodologies, typologies and indicators

This section first presents the main indicators for the project, and goes through information concerning territories as statistical, analytical and typological geographical units. Secondly, it gives an overview of the overall methodological framework in the project.

2.2 Indicators and typologies

Chapter 2 of Part II presents our main indicators for the project at this stage, and goes through information concerning territories as statistical, analytical and typological geographical units.

Indicators
The following indicators are presented as the main indicators for the project:

- Population and population density of EU average, population density (population/area) 1995-1999 (ESPON data base)
- Unemployment rate 1995-2001, total, and according to age and gender, active population (numbers) (ESPON data base)
- Lagging regions (lagging, non-lagging, potentially lagging) (ESPON data base)
- Urban / rural / settlement structure – FUA (ESPON data base)
- Fishery dependency indicators, 1997 (Regional Socio-Economic Studies on Employment and the level of Dependency on Fishing, 1999)
- GDP per inhabitant and total, 1995-2000 (ESPON database)
- Population density (1995-99) and average population, 1995-2000 (ESPON database)
- Potential accessibility by road, 2001 and accessibility indicators of population to market by car, 1999 and 2000 (ESPON database)
- Percentage of stocks outside safe biological limits, 1960-2000 (ICES, GFCM)
- Aquaculture production, (National sources, FAO/FIDI, Eurostat)
- Regional water indicators, (OECD and Eurostat)
- Land use indicators, (OECD, Eurostat and Corine Land cover data base)

NUTS and typologisation
The NUTS territories used for typologisation by ESPON differs from the geographical units you would usually prefer for typologisation (as homogeneous territories as possible)

as they are generally very heterogeneous geographical units. Heterogeneous territories will reduce the possibilities for statistical differentiation between territories in scientific analysis, and will also make the possibilities for typologisation more diffuse. Heterogeneity can probably in some instances be less of a problem if the territories to be typologised constitute functional urban regions, for even though these regions will have great internal differentiation, they will also constitute separate urban systems, with possible non-urban areas outside these regions being typologised separately. We can say that:

- The NUTS 3 territories, which are used as the geographical level for most typological work within ESPON can not be looked upon as functional regions in any other sense than as administrative territorial units and/or as territorial units created for a specific purpose.
- With few exceptions the NUTS 3 level is not constituted by bounded areas with some kind of internal homogeneity that distinguish them from surrounding areas.
- Homogenous geographical units are the units that will give the greatest difference between geographical units.
- Typologies of NUTS regions based on average scores (average in the meaning that it is the aggregate of statistics for smaller territories that is not available) for the NUTS territories only will, by concealing the great internal variation within each territory as a rule conceal more than it reveals, even though the statistical situation can often make use of such averages necessary.
- When dealing with NUTS 3 territories one should therefore strive to include information on the heterogeneity of the territories. This can best be done in connection with a kind of criterion for functional regions.
- Whatever technique one might use for the typological work, this can not change the fact that mapping/analysis on the NUTS 3 level still involves the heterogenisation described above.
- Independent of typological methodology, use of NUTS 3 territories as opposed to smaller geographical units reduces variation between the coastal types in the statistical analysis.
- Even though the criteria for a territorial typology might be sound, the fact that internal variation between municipalities in a number of NUTS 3 units will probably be greater than the variation between NUTS 3 units, will imply that the geographical level for which the typology is used to describe differentiation can possibly make it unfit for analysis of certain processes that are primarily operating on another geographical level than the one used for typologisation.
- The typology will however be able to show quite marked differences between different coastal regions for the indicators being typologised.
- As impacts of fisheries will probably be very unevenly spread within most NUTS territories, making the averages of heterogeneous NUTS territories potentially unsuitable in the analysis, classifications that is based on homogeneity instead of averages for entire NUTS territories, like structure fund zones can be very useful
- In many cases, however, typologies that are classified according to situation, i.e. relative location seems easier to use without modification than those based on site, where the problem of heterogeneity will more often present difficulties.
- There is a need for structural indicators that can be used to identify in which kind of economies we will find impacts of the fisheries policy.

Rules for typologisation
For the typological work on the requested main coastal typology, the rules below were made to give structure to the typology. They are also important for the other geographical typological and classification work within the project, but for this work, not all the basic rules have to be fulfilled. A main typology of coastal regions based on NUTS 3 regions should:

- include every NUTS 3 regions within ESPON with a coastline, i.e. territories bordering an ocean
- partly be based on previous ESPON typologies
- differentiate between typological elements and a main typology
- take specific coastal issues into consideration
- be both site and situation oriented
- to some extent be based on statistics at lower geographical levels than NUTS 3 or typological elements based on such geographical levels – which means that the typology should include internal diversity in each NUTS 3 region as a criterion, and connected to this;
- include a criterion for *functional regions within the territories*, which also means that;
- it should be possible for example studies in smaller geographical areas to be connected to a sub territorial geographical typological level within the NUTS 3 region
- define typologies where the difference between regions within each type should be as small as possible, and difference between types as big as possible for analysis within the aim of the project (which is made difficult by the geographical level to be used for the typology)

The main typology

The purpose behind the typology is to contribute to studies of regional variation in *coastal* territories, where it aims at providing a useful basis for analysing differences between regions according to their relation to Functional Urban Areas and population density.

As stated in chapter 2, Part II, the main typology should express information from some of the typological elements. The most basic requirement for being included is of cause that the NUTS territory should have a coastline. It seems necessary also to include the FUA typology. The last element of the typology is population density. The main classification of the coastal regions is (for meaning of the coding, see chapter 3)

	FUA coding	**Population density coding**	**Description**
1.	000, 00, 01, 02, 03, 04	1, 2	NUTS 3 territories with no FUA centre, and very low population density
2.	000, 00, 01, 02, 03, 04	3	NUTS 3 territories with no FUA centre, population densities at least 50 per cent of European average
3.	000, 00, 01, 02, 03, 04	4, 5	NUTS 3 territories with no FUA centre, population densities at least on European average

4.	21, 22	1, 2	Regional/local FUAs, not regional demographic dominance, low population density
5	21, 22	3, 4, 5	Regional/local FUAs, not regional demographic dominance, medium or high population density
6.	23, 24	1, 2	Regional/local FUAs, regional demographic dominance, low population density
7.	23, 24	3, 4, 5	Regional/local FUAs, regional demographic dominance, medium or high population density
8.	31, 32 33 34	1, 2, 3, 4, 5 1, 2 1	Transnational/national, not regional demographic dominance
9.	33 34	3, 4, 5 2, 3, 4, 5	Transnational/national, regional demographic dominance
10.	41, 42, 43, 44	1, 2, 3, 4, 5	MEGA, regional demographic dominance

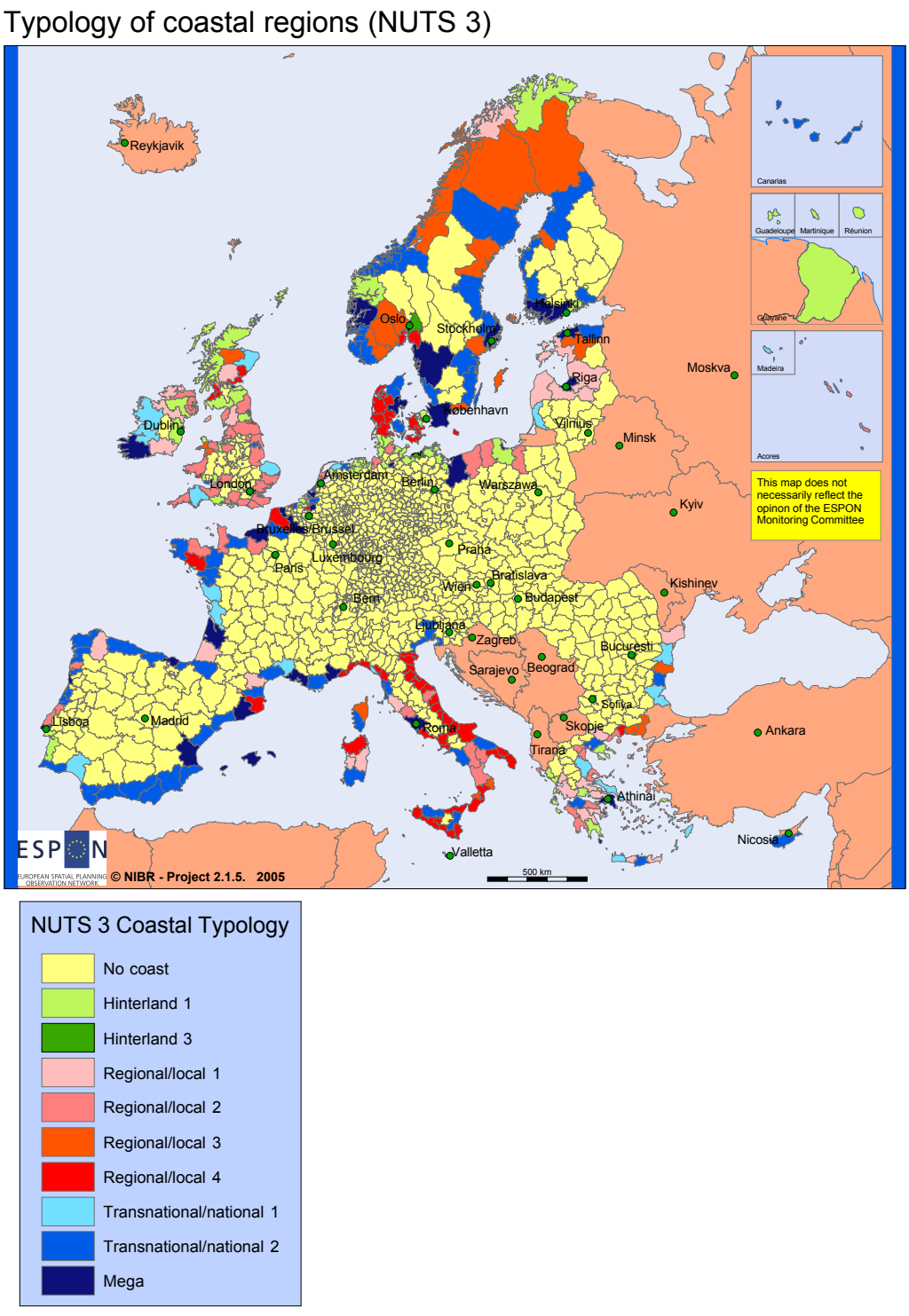
For NUTS territories of the transnational/national and MEGA types, there will not be any NUTS region with low population density unless most of the territory is without population, making a distinction according to population density meaningless.

It will possibly be necessary to make special territorial classifications for some of the WPs, and it can also be relevant to make typologies from the results.

Typology issues postponed for the Final report
For IR 3 we should have presented the diversity of the fishing industry related to the typology. Due to difficulties with data collection, we have not received finished data files from WP leaders, so here we have not been able to fulfil our obligation at this stage.

Below is presented a map of a typology of coastal regions at NUTS 3 level.

Figure 2.1 *Typology of coastal regions (NUTS 3)*



2.3 Methodology for territorial impact analyses

The overall framework for the methodology in the project is founded on:

1. the tender document of the project, where its thematic scope and context have been decided and the general objectives have been addressed
2. the Territorial Impact Analysis (TIA) as elaborated by ESPON project 3.1

In ESPON and ESDP the term TIA is related to Territorial Impact Assessment, which has been used as "a tool for analysing, assessing and evaluating the impacts of certain projects on the spatial development of the surrounding territory". At the most basic level, the specific methodological shape of the TIA of any ESPON impact study is said to relate to on the one hand territorial data characteristics (relevance, reliability etc.) and on the other hand to subject matter data characteristics: policy with or without endogenous territorial intentions, certain programmes, single interventions/projects. There has, however, not been established a common assessment methodology within the ESPON impact studies as it is acknowledged that it is hardly possible to use one assessment methodology for the entire range of sectoral policies of the EU. This is partly due to the fact that:

- the EU policy programmes concerned are still far away from actually taking into account territorial objectives despite having clear potential territorial impacts
- they show a dramatic lack of territorial differentiation of data on policy implication
- the elaboration of spatial development goals in the wake of ESDP is still going on, and has hardly achieved results operational for assessment application so far

Two key concepts are regarded to have a "genuine territorial dimension", namely: 'territorial cohesion' and 'polycentric development'. Polycentric development, however, can be seen as a spatialised expression of territorial cohesion.

Territorial cohesion is a concept for the balanced distribution of human activities across the EU, translating the EU goal of sustainable and balanced development into territorial terms. It is a complementary concept to economic and social cohesion. The following dimensions are relevant for an operationalisation of territorial cohesion:

- domains (thematic layers) – for ESPON the most relevant are probably ESDPs "triangle of sustainability"; economy, environment and society
- components of territory – its own features (potential), its features with regard to those of other territories (position) which enables potential interactions with them, and its effective interactions (exchanges, cooperation) with other territories (integration)
- scale(s) – for the ESPON project a three level reference set have been developed; macro (European level), meso (transnational/national level) and micro (regional/local level)

Polycentric spatial development is regarded as a 'bridging concept' as it merges the two policy aims of ESDP; economic growth and balanced development. Polycentricity can refer to different geographical levels (cf scale in the discussion of territorial cohesion). The most important level for ESPON 2.1.5 is the regional/local level. The aim here is to increase the number of centres providing regional services from one or a few dominating ones, in which fisheries should be viewed in the light of the division of labour and

functional specialisation within the regional urban system. Polycentricity on the trans-national/national level might also be of importance, as the fisheries in some instances can be an aspect of the aim of a more balanced tissue of cities. At the global or European level fisheries are of only minor importance today. Polycentrisity can also be linked to the division into micro, meso and macro perspectives.

The TIA manual will, as proposed by project 3.1, be regarded as a kind of check-list for scoping, analysing and assessing within the impact chapters.

Mapping and example studies
When looking at impacts of fisheries policies in polycentric terms, the national level and levels below the national one stands out as the most relevant ones for impacts on the geographical levels defined by ESPON. This implies that example studies should be central in the 2.1.5 project, and that the European level primarily constitutes a geographical level for mapping fisheries and for typological work, and to a lesser extent is a feasible unit of analysis. Due to statistics deficiencies, the example studies will become more central for the Final report than we have previously perceived. The use of example studies might imply a:

- Compilation of the policy measures in *certain regions*, recording what spatial development goals they follow, and that
- The structural status/changes in these regions should be evaluated against the chosen spatial development goals

The TIA manual emphasise the importance of using cause-effect relations in the past as the basis for predicting the effects of future interventions. Since changes in CFP are quite new this implies that the project must focus on similar experiences of former changes in CFP in order to make evaluations of new changes in EU policy.

At this stage of the process, we have asked the different WP leaders to comment on their use of and experience with TIA. These texts are included in the impact chapters. One important general experience when considering the use of TIA in territorial impact analysis of fisheries policy is the lack of data at the relevant geographical level, i.e. on NUTS3 level or lower. This is related to the fact that territorial impacts of fisheries policy primarily are territorially significant on lower geographical levels.

2.4 Networking and co-operation

There has been one project meeting for the TPG in the period between the second and the third interim report. The meeting took place in Tallin, Estonia, 15-16. September 2005. The preparation of the third interim report was the main topic at the meeting, and particular attention was paid to questions of scientific harmonisation and ESPON guidelines, and the increased significance of example studies in project 2.1.5 due to lack of appropriate data on NUTS 3 level.

The lead partner attended the lead partner meeting in Luxembourg 12th May which focussed on the scientific platform for ESPON projects, particularly on indicators and typologies. The project leader and the Norwegian ECP which also takes part in the 2.1.5, have also participated in ESPON seminars in Luxembourg 17-18th May and in Manchester 7 – 8th November 2005, and in ESPON scientific seminar in Luxembourg 13 – 14th May.

The lead partner has been and still is involved in other ESPON projects (1.1.1, 1.1.4 and 2.4.2), and has previously commented on drafts for the final reports of ESPON projects, such as the CAP impact study 2.1.3 and on the Urban-rural project 1.1.2. All this ESPON activity has clearly benefited the project.

2.5 Further research issues and data gaps

Due to very late incoming texts and lacking deliveries of statistics, we have not been able to include information on the diversity of the fishing industry related to the typology for IR3. This part of the project will probably not be possible to make comprehensive on NUTS 3 for ESPON Space.

We have, at the time of delivery of this report, not received completed data sets from our WP leaders, which mean that it is not possible to produce detailed information on data gaps. However, this situation is due to a very difficult process of obtaining data on the fisheries, where much of the statistics is not obtainable for free, and where no specific fisheries statistics is reported as part of the deliveries to international organisation from the 2000/2001 censuses. It has proved very difficult to obtain data on the NUTS 3 level, and also on the NUTS 2 level there are many data gaps.

As the data gaps are many, but there are much statistics available from many of the most important countries within the European fisheries, a stronger focus has been put on example studies than originally intended. The example studies are only at a preliminary stage, and will have to be more strongly related to the different hypotheses of the project. Many of our hypotheses require example studies.

The need for example studies was originally seen as essential for the ability to look into matters concerning developments on the urban-rural dimension, like possible tendencies for a concentration of activity within fishing to urban centres (even though in many cases seafood industries are still located in areas outside commuting distance to cities and with few alternative income sources). We have to look at the fisheries in local contexts also without the urban-rural focus, as in some parts of Europe the fishing industry still plays an important role in an otherwise underdeveloped rural economy.

The project needs to get a better integration of the so called macro, meso and micro scales within the analysis. For the fisheries, however, the meso scale seems to be of minor relevance. We will relate the ESPON Space analysis to the macro scale, viewing the macro scale as directly related to CFP, and use the example studies for analysis from the national perspective (micro scale), where this perspective is related to the national implementation of the CFP. The meso scale seems more relevant for ICZM than for the fisheries sector. The meso perspective is dependent on the possible inclusion of information on Interreg projects and to some extent of relevant research projects already completed. There is a need for linking the policy recommendations better to the macro, meso and micro scale.

There is a need to sophisticate the maps so far produced for the project. Especially, there is a need for choosing graduated colours that make the maps possible to read for colour blind, and to use only one set of values per map.

ESPON Action 2.1.5: Territorial Impacts of European Fisheries Policy.

Third Interim Report, December 2005

Part II Analyses and results of the project

Submitted by Norwegian Institute for Urban and Regional Research (NIBR), Lead Partner for ESPON 2.1.5

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1 Introduction

1.1 Background and aim of the project

The European fisheries policy (CFP) is regarded as one of the sector policies with substantial implications for amongst others employment, cohesion and regional economic strength, and particularly in some coastal regions and in fisheries dependent areas. In accordance with this, the purpose of ESPON Project 2.1.5 is to strengthen the knowledge of territorial, social and economic cohesion through an analysis of territorial impacts of the (CFP).

Territorial cohesion calls for policies that reduce disparities and promote a more balanced and sustainable development of the European territory in line with the European Spatial Development Perspective (ESDP). It was presented as a third dimension of cohesion in addition to economic and social cohesion in the Second and Third Report on Economic and Social Cohesion from January 2001 and February 2004 respectively. Territorial cohesion calls for a better coordination of territorially relevant decisions. This implies for example the identification of needs for further studies of territorial impacts of structural as well as sector policies.

Fishing and aquaculture are two of the most important sectors which use and produce living resources (European Environment Agency 2002), and both sectors are undergoing profound changes. The most resent changes in the European Fisheries Policy (CFP) were adopted in late 2002, and a number of measures will be implemented in the near future. The main aim of the changes is to strengthen the competitiveness of the sector and to ensure its sustainability. The policy includes:

- Conservation of fish stocks
- Restructuring of fishing and fish farming
- Organisation of the market for fish and associated products and agreements on fishing with third countries (European Commission 2004)
- Agreements on fishing with third countries (European Commission 2004)[1]

The most important changes with likely implications for the fishing industry, and particularly for employment in the sector are:

- Multi-annual management plans for all stocks
- Reductions in quotas
- Reductions in the fishing fleet
- Limitations on how, when and where fishing can take place
- Limitations on financial support for modernizing and building of new vessels

There has been a significant change in the fishery policies and fisheries sector within the EU and in the EFTA area (Norway and Iceland) even though the CFP is not a part of the EEA agreement. Fisheries and aquaculture plays a varying role in the economy of different countries and regions within the ESPON space, and impacts from structural changes and policy regulations will accordingly vary in different parts

[1] A new partnership for cohesion. Third report on economic and social cohesion.

in Europe. A main tendency in recent years has been a concentration of activity within fishing to urban centres, but in many cases seafood industries are still located in areas outside commuting distance to cities and with few alternative income sources. In some parts of Europe, the fishing industry still plays an important role in an otherwise underdeveloped rural economy. The Third Cohesion Report points out that CFP will have significant effects on a number of regional economies within the EU, and especially in Spain and Portugal.

Employment in the aquaculture sub sector has increased in recent years and this development is expected to continue. Aquaculture, therefore, may represent an important factor of the reinforcement of territorial and socio-economic cohesion in some regions. Aquaculture also plays an increasing role in the supply of seafood. The challenges within this industry differ from those in the fishing industry, as the aquaculture industry is more regionally concentrated. It is located in the coastal zone, and competes with or has impacts on other activities and interests in the coastal zone. Balancing of the different interests has to be solved through the concept of integrated coastal zone management (ICZM). Processes of restructuring, reduction, expansion and development are therefore occurring side by side and in various combinations within the seafood industry in Europe. The effect of this will vary between regions and the territorial impacts on short and long term will also be different. The changes, the diversity of effects, the potentials and the spatial impacts constitute the thematic frame for the project on fisheries and aquaculture.

There are some specific challenges with regard to the time period for the impact analysis. The planned reference period for the project is from 1990 – 2003/2004. Changes in CFP, however, did not take place before late 2002 and many measures have just been implemented or are about to be implemented. Data for many of the indicators will at best be available up to 2003/2004 within the project period. It will therefore be difficult to relate impacts directly to the 2002 changes in CFP. However, structural changes have taken place in the fisheries and aquaculture, and policy measures have also been carried out within the fishery policy during the years prior to 2002 in many European countries. Therefore, it should be possible to analyse the impact of almost similar type of changes which are assumed to follow from CFP. Fleet reduction and quotas, for instance, have been introduced long time before the CFP was implemented.

1.2 Impact analysis and geographical level

Changes in European Fisheries Policy (CFP) involve capture fisheries, processing and aquaculture. These sub-sectors have different dynamics, different technologies, and different use of territory. Fishing and aquaculture, however, are both elements in what may be called the European Seafood Industry. They are often located in the same regions and they are subjected to the same sector policy. Changes in CFP, however, are only one of several external factors which may have territorial impacts on coastal regions and fishery dependent areas. The report points out how to deal with methodological questions for impact analysis see for instance chapter 8 in IR3 Part II.

The analysis of territorial impacts of changes in CFP, will concentrate on the following elements:

- Impacts on employment, social cohesion and demography
- Impacts on regional economic strength
- Impacts on environment and coastal zone management

The most central impacts resulting from changes in the CFP are probably connected to a decrease of landed fish resources. The project examines these impacts with regard to territorial balance and cohesion on different geographical levels. Changes in CFP do not affect all regions in the same way, and to the same extent. However, a large majority of fisheries dependent regions are in objective 1 or objective 2 areas (or similar outside the EU). Accordingly, a starting point for our study has been to identify and categorise the diversity of coastal regions in Europe, cf. chapter 2 in IR3 Part II Indicators and typologies.

The study of territorial/ spatial impacts will be done with references to the aims of cohesion, territorial balanced and sustainable development and also ESDP-perspectives focusing on polycentric development (cf. ESPON 1.1.1). In particular, the project will study:

- The position of coastal regions in developing of the territorial system of EU and of specific countries. Of particular importance is CFP impacts on the disparities between regions within EU and inside the different nations.
- The position of the coastal regions in the overall Community policies (as the ESDP) and the structural policies (as the Cohesion fund, ERDF, ESF). Questions related to the coastal regions' in-/out phasing in different types of regional policy measures, are of specific importance in the study. Cf. those questions mentioned above and the need for specific policies interventions in fisheries regions as "restructuring of the fisheries sector outside the objective 1 area".
- The territorial development inside coastal regions. The project will examine the possibility for doing intra regional/area analyses on different levels. For instance by using data on LAU levels for spatial analyses on NUTS 3 level, and data on NUTS 3 level for analysing spatial changes on NUTS 2/1 level. The analyses will be related to ESDP perspectives as polycentric development and a balanced rural-urban development.
- Demographic-, social- and economic changes inside the coastal regions and if possible inside different types of coastal regions in order to identify the regions which most negatively and positively affected by changes in European fisheries policy.

1.3 Project meetings, networking and references to other ESPON projects

There has been one project meeting for the TPG in the period between the second and the third interim report. The meeting took place in Tallin, Estonia, 15-16. September 2005. The preparation of the third interim report was the main topic at the meeting, and particular attention was paid to questions of scientific harmonisation and ESPON guidelines, and the increased significance of example studies in project 2.1.5 due to lack of appropriate data on NUTS 3 level.

The lead partner attended the lead partner meeting in Luxembourg 12th May which focussed on the scientific platform for ESPON projects, particularly on indicators and typologies. The project leader and the Norwegian ECP which also takes part in the 2.1.5, have also participated in ESPON seminars in Luxembourg 17-18th May and in Manchester 7 – 8th November 2005, and in ESPON scientific seminar in Luxembourg 13 – 14th May.

The lead partner has been and still is involved in other ESPON projects (1.1.1, 1.1.4 and 2.4.2), and has previously commented on drafts for the final reports of ESPON projects, such as the CAP impact study 2.1.3 and on the Urban-rural project 1.1.2. All this ESPON activity has clearly benefited the project.

1.4 IR3 and further work

Due to large problem with data collection, and lack of data on NUTS 3 level, it has not been possible to carry out so extensive analyses as planned for in IR3, cf. scientific summary, section 2.5. Hence, some of the results are still of a rather preliminary character. This is particularly so for the work package focusing on impacts on regional economic strength where unforeseen events have made it impossible to complete the planned analyses within the time frame for the third interim report. The analysis presented in IR3, therefore, is the same version as the one published in IR2. However, as mentioned in the second interim report example studies have become more important in the project, and Part III of IR3 presents eight example studies based on data on a lower geographical level, i.e. below NUTS3 level.

Difficulties related to data collection also caused huge delays in analyses and deliveries to lead partner for editing and finalising the third interim report. The project team has been working with the analyses until shortly before the ESPON deadline. There has been little or no time for discussing and commenting

within the TPG before editing the report and accordingly not much time for "cultivating" inputs into a coherent report. This will be done in the final report in which both mapping and example studies will be elaborated in a far more comprehensive way.

Completed files of specific fishery data for the project have not been received by the lead partner. The data delivery will therefore have to be postponed until we have received and evaluated the statistics. The statistics will include Iceland and this will also be reflected in the maps in the final report.

1.5 Expected results in IR3 and structure of the report

The third interim report intends to cover the following elements listed in Terms of Reference (ToR):

1. m) Presentation of a comprehensive working report on tentative results of the research, applying the methodology, analysis of the hypothesis previously developed, including the following elements:
   - Draft final analysis /diagnosis of the fisheries and aquaculture sector in Europe as well as the existing territorial imbalances and regional disparities in fisheries/aquaculture;
   - Presentation and description of a European coastal typology and the diversity of the fishing industry related to the typology;
   - Tentative results on the spatial effects at European level, in individual countries and their coastal areas in terms of the economic, social and environmental factors;
   - Tentative results on territorial impacts in relation to ICZM activities in different types of coastal regions;
   - Draft policy recommendations on improvement of the sector policy and the instruments in favour of territorial cohesion, balance and polycentrism, including institutional aspects.
2. n) Updated input to the ESPON database and map collection.

The letter m) concerns aspects which are dealt with in all work packages in the project. The first bullet point is dealt with in WP2, whereas the second point is dealt with in wp1 (except the diversity of the fishing industry related to the typology, cf. IR3 part I, chapter 2.2). The third bullet point is dealt with in WP 3, 4[2] and 5 respectively, while WP5 also deals with the fourth bullet point. The last bullet point is dealt with in WP3, 4 and 5. Maps are an integrated part of the third interim report whereas updated input to ESPON database is postponed due to problems of data collection, cf. IR3 part I, chapter 2.5.

The report is organised in four parts. Part I contains the executive and scientific summary of the report. Part II presents the tentative results of the analyses in the project. Part three lines out the example studies in the project, and Part IV contains the annexes of the report. References in Part II of the third interim report are organised according to the chapters, and so are the annexes.

Part I of IR3 is separated in executive and scientific summary in order to present substantial findings and theoretical and methodological questions in a perspicuous manner. Part II of IR3 follows a structure that highlights the substantial work packages in chapter 5-8, whereas chapters 2-4 are of a more general and integrating nature. Part III of IR3 gives a short introduction to the example studies and then presents the studies grouped by geographical areas from north to south in ESPON Space.

The structure of part II of the third interim report after the introductory chapter is as follows:

Chapter 2; Indicators, data and typologies, presents a preliminary list of the main indicators and data to be used for impact analyses of the WPs covered by chapter 5-8. It also includes relevant typologies from other ESPON projects and a preliminary typology of the coastal regions. The chapter also contains a discussion of the NUTS territories as territorial levels for typologisation and analysis.

[2] Due to unforeseen events the work package responsible for the analysis of economic cohesion, has not been able to complete the analysis and fulfil the obligation for IR3. Therefore, the analysis presented in IR3 is the same version as the one published in IR2.

Chapter 3, territorial impact analysis (TIA), represents a slightly changed version of the text in IR2. Short comments on general experiences with TIA are includeded, whereas specific experiences within the different work packages can be found in chapters 5-8. At this stage of the project, the work packages have acquired more experiences with TIA.

Chapter 4 presents the hypotheses for the project, grouped in various categories. The preliminary hypotheses have also been applied, further developed and partly revised by the different WPs, and these specific and/or sub hypotheses are included in the respective chapters. Chapter 5-8 are structured in accordance with the different impact WPs. Chapter 5 gives a draft final analysis/diagnosis of CFP and the policy in the EFTA countries Iceland and Norway. Chapter 6 presents tentative results of environmental impacts and integrated coastal zone management (ICZM). Chapter 7 lays out tentative results of social cohesion impacts of CFP, looking into demography, unemployment etc. Chapter 8 deals with economic cohesion impacts and presents a methodology for assessment of how CFP may influence regional economic strength.

Chapter 9 presents the conclusions and tentative policy recommendations. More thoroughly worked out policy recommendations linked to macro, meso and micro scales will be presented in the final report.

2 Indicators and typologies

This chapter deals with the data needs as far as they can be overviewed at this stage of the project, and lists the main indicators of the project as defined by the different WPs (also listed in context with the different parts of the impact analysis in chapter 5-8). It also relates the analysis to relevant geographical levels, to typologies from other ESPON projects, and to typologies developed, and to be developed, within the project.

2.1 Territorial impacts studies on fisheries

Territorial impacts are primarily discussed in chapter 5-8, which means that we in this chapter shall make only some general comments for the project at large. The project will include three major types of concepts and methodology where the overall research question is how the changes of CFP impacts on:

- The position of coastal regions in the territorial systems of higher level (EU, the actual countries);
- The position of the coastal regions in overall policies and particularly in structural policy;
- The restructuring processes inside coastal regions

The challenge of these three issues is to be able to examine the relations between the implementation of fisheries policy changes, and changes in the territorial systems and socio-economic structures. The intention is to solve that problem by putting high effort on developing concrete studies of where the policies changes in the fisheries are implemented. With regard to the restructuring processes inside coastal regions, there are several problems related to the geographical levels on which socio-economic data is available, which means that data can not be presented for ESPON Space. LAU levels are primarily desirable for example studies. There are three possible ways to conduct such example studies for the project that we want to utilise, namely to:

- use information from evaluations of Interreg IIIB projects
- use relevant research projects already completed
- make an analysis based on statistics from countries with relevant data on lower geographical levels

The use of example studies makes the combination of ESPON macro- meso- and micro scale better for the impact analysis. While the mapping involves the macro scale, the use of Interreg projects and to some extent of relevant research projects already completed involves the meso scale. Other research projects already completed and analysis based on statistics from countries with relevant data on lower geographical levels will be studies on the micro level.

2.2 Suggested main indicators

The analysis on territorial impacts of changes in CFP will concentrate on environment and coastal zone management (chapter 6) employment, social cohesion and demography (chapter 7), and regional economic strength (chapter 8). This means partly to carry out the analysis based on fishery specific statistics, and partly to utilise statistics gathered by and analysed for other sectors by other ESPON impact

or thematic projects. Sharing statistics with other impact studies are important for comparability with other impact projects. In developing indicators it is important to bear in mind that they should:

- Be limited in number;
- Be easy to read, relevant and consistent.

As mentioned in IR1 and IR2, we want to develop a limited number of indicators that are easy to read, and that are relevant and consistent. The main indicators of the project are:

- Population and population density of EU average, population density (population/area) 1995-1999 (ESPON data base)
- Unemployment rate 1995-2001, total, and according to age and gender, active population (numbers) (ESPON data base)
- Lagging regions (lagging, non-lagging, potentially lagging) (ESPON data base)
- Urban / rural / settlement structure – FUA (ESPON data base)
- Fishery dependency indicators, 1997 (Regional Socio-Economic Studies on Employment and the level of Dependency on Fishing, 1999)
- GDP per inhabitant and total, 1995-2000 (ESPON database)
- Population density (1995-99) and average population 1995-00 (ESPON database)
- Potential accessibility by road, 2001 and accessibility indicators of population to market by car, 1999 and 2000 (ESPON database)
- Percentage of stocks outside safe biological limits, 1960-2000 (ICES, GFCM)
- Aquaculture production, (National sources, FAO/FIDI, Eurostat
- Regional water indicators, (OECD and Eurostat)
- Land use indicators, (OECD, Eurostat and Corine Land cover data base)

Due to the statistical situation for much of the fisheries specific statistics of the project, more of the ESPON Space mapping will have to be conducted on either the NUTS 2 level or on the national level.

There will be a difference between indicators used for the mapping exercise and those used for the example studies, as the example studies will not be limited to statistics that covers as much as possible of ESPON coastal space. Within the example studies again, there are differences between those that are based on statistics for countries with the best statistical situation, those that can be based on previous and ongoing research projects in specific regions and those that can be based on Interreg evaluations. For these example studies it is at this stage not possible to make a substantial list of indicators, as these will vary according to the selection of example studies for the project.

2.3 A typology of coastal regions

A typology of coastal regions was mentioned already in the Crete Guidance Paper as one among the typologies for specific geographical situations. All NUTS 2 and NUTS 3 regions with coastline was identified and included in the ESPON data base. As the coastal regions are parts of the larger ESPON territory, this could to some extent be viewed as sufficient, as the typologies defined by other ESPON projects could be used to compare the identified coastal regions with other geographically defined territories within ESPON space. This could answer the need to differentiate between types of coastal regions, and not only tell if a region has a coastline or not. However, a typology is linked to a defined purpose, meaning that a relevant typology is not the same as placing together different typologies or using different typologies developed for other ESPON projects for NUTS territories with a coastline. A specific coastal typology should therefore combine a specific aim with selected techniques of delimitation and relevant available data, where the purpose defined for the typology should guide the construction of it.

The purpose behind this typology is to contribute to studies of regional variation in coastal territories, where it aims at providing a useful basis for analysing differences between regions according to their relation to Functional Urban Areas and population density.

This chapter will also look into which among the existing typologies used in other ESPON projects that are especially relevant for use in this impact study. Before this, we will make some conceptualisations and make a short evaluation of the NUTS 3 units as geographical level for typologisation, make some preliminary comparisons between coastal and other NUTS territories, and present what we think is the basic requirements for a standard typology of coastal regions. The typology must be regarded as preliminary; as there has not been time for testing, and as possible indicators relevant for this impact study has not yet been collected for all countries (completeness for the ESPON space coastal territories should be required for indicators to be used in the typology). We are collecting statistics for Iceland, so for IR3 the regional typologies will also include this country, even though it is outside ESPON space.

2.4 Typologies, classifications and indicators; a conceptualisation

When making a typology there is need for a set of concepts to distinguish as clearly as possible between different meanings. For this chapter the following distinctions have been made:

A typological element is a classification of a single phenomenon that is developed as one of the building blocks of a typology.

A typology is a grouping that is constructed on the basis of at least two typological elements to be used in a specific project.

A standard typology is a grouping that is constructed on the basis of at least two typological elements to be used as an authoritative typology also outside of a specific project.

A classification is a grouping of a single phenomenon to be used in a specific project. A classification is not developed as a building block of a typology.

A standard classification is a classification of a single phenomenon that is to be used as an authoritative classification of the selected phenomenon outside a specific project. The standard classification is not developed as a building block of a typology.

A key indicator is a tool developed for the political sphere for selection, filtration, comprimation, concentration, simplification, processing and making accessible information for clearly defined purposes (Foss 2004), while ***a core indicator*** is an indicator as defined by social sciences.

A number of standard classifications from other ESPON projects should be included in 2.1.5, and so should some typological elements for the construction of the coastal typology, with possibly some alternative typologies for coastal regions made for special purposes. It could be argued that classifications and typologies already developed should be of primary importance, for the sake of comparison between ESPON projects. For each typological element there must be available statistics at the NUTS 3 level or a more detailed geographical level that makes it possible to typologise the entire coastal ESPON. A standard classification on the other hand, can also be used if statistics is not available for the entire ESPON territory. A proposition for standard classifications and typological elements is described below. This list of standard classifications should be increased as part of the project. Indicators will be further discussed as part of the TIA.

2.5 NUTS 3 as territorial level for construction of typologies

The territorial units used for regionalised mapping in the project on impacts of changes in fisheries policies are primarily those that constitute the NUTS 3 level. This is also the main level for statistics used by the ESPON projects at large. With the exception of Luxembourg and Cyprus the states that are part of ESPON territory are represented with a national subdivision on this level, varying from Malta's two to

Germany's 441 NUTS 3 regions. Being the most detailed of NUTS levels, the territories defined can be aggregated to the NUTS 2 and NUTS 1 levels. For statistical reasons and to secure comparability with other ESPON projects we use the NUTS division from 1999 as the basis for the typologisation.

According to NUTS regulation, NUTS 3 regions should fall within certain population thresholds, the minimum population for NUTS 3 regions should be 150 000 inhabitants, the maximum 800 000. The NUTS 3 territories do however comprise territories with population numbers outside the thresholds laid down by the regulations, as the territories often equals one of the administrative territorial levels within a country.

Territorial levels more detailed than NUTS 3, often referred to as NUTS 4 and NUTS 5, are today named "Local Administrative Units" (LAU), and are not subject to the NUTS Regulation. For typologisation of NUTS 3 regions the LAU levels are primarily of relevance for typological elements used to tell about the inner diversity of NUTS regions. They are also relevant for example studies on impacts of changes in fisheries policies.

The NUTS nomenclature serves according to Eurostat as a reference for:

a) the collection, development and harmonisation of Community regional statistics
b) the socio-economic analyses of the regions
c) the framing of Community regional policies

The regions lagging behind (objective 1) have been classified on the NUTS 2 level, but areas eligible under the other priority objectives have mainly been classified at the NUTS 3 level. When making a typology of the coastal areas, we will in other words use the geographical territorial level most associated with regional priority objectives within the EU, which makes typologisations on NUTS levels seemingly highly relevant.

However; when making typologies based on geographical territories, one has to take into consideration the degree of homogeneity of the geographical units that are the basis for the typologisation. Geographical typologisation will usually be based on territories being as homogenous as possible. This makes typologisation of NUTS regions a great challenge, as they are generally very heterogeneous geographical units. Heterogeneous territories will reduce differentiation between territories, and the heterogeneity will also make the possibilities for typologisation more diffuse. Heterogenity can be regarded as less of a problem if the territories to be typologised constitute functional urban regions, for even though these regions will have great internal differentiation, they will also constitute separate urban systems, with possible non-urban areas outside these regions being typologised separately.

The NUTS 3 territories which are used as the geographical level for most typological work within ESPON can not be looked upon as functional regions in any other sense than as administrative territorial units and/or as territorial units created for a specific purpose. With few exceptions the NUTS 3 level is not constituted by bounded areas with some kind of internal homogeneity that distinguish them from surrounding areas. In countries where the NUTS 3 territories are smaller and often constitute elements of larger regions, like in Germany and Belgium, the diversity between NUTS 3 territories will be potentially much larger than in other countries (these more homogenous NUTS 3 territories falls mainly outside the coastal regions), resulting in potentially greater differences between geographical types and less difference within the types. In other words: Homogenous geographical units are the units that will give the greatest difference between geographical units. Typologies of NUTS regions based on average scores (average in the meaning that it is the aggregate of statistics for smaller territories that is not available) for the NUTS territories only will therefore as a rule, by concealing the great internal variation within each territory conceal more than it reveals, even though the statistical situation can often make use of such averages necessary. To get a better grip on the NUTS 3 territories we will therefore also include information on the heterogeneity of the territories. This can best be done in connection with a kind of criterion for functional regions.

One should however remember that whatever technical grip that might be used for the typological work, this does not change the fact that mapping/analysis being based on the NUTS 3 level still involves the

heterogenisation described above when discussing such crude geographical levels. Independent of typological methodology, use of NUTS 3 territories as opposed to smaller geographical units reduces variation between the coastal types in the statistical analysis.

Even though the criteria for a territorial typology might be sound, the fact that internal variation between municipalities in a number of NUTS 3 units will probably be greater than the variation between NUTS 3 units, will imply that the geographical level the typology is used to describe can possibly make it unfit for analysis of certain processes that are primarily operating on another geographical level than the one used for typologisation. The typology will however be able to show quite marked differences between different coastal regions for the indicators being typologised.

2.6 Coastal NUTS 2 and NUTS 3 territories within ESPON space

The necessary first step in typologisation of the coastal regions is of cause to identify the NUTS 3 and NUTS 2 territories with coastline. This has already been done by project 2.1.1 in ESPON. 29 percent of all NUTS 3 regions have a coastline (table 2.1), and as much as 48 percent of NUTS 2 regions (table 2.2). This illustrates well a point discussed above; the larger territories are more heterogeneous than those on more detailed geographical levels, which mean that typologisation based on the larger territories as a consequence of their larger heterogeneity reduces difference between the territories on that geographical level compared to smaller territories. Considering making a typology of coastal regions based on a territorial level that included almost half of the territorial units of that level within ESPON space would be rather meaningless. If this makes the level meaningless for typologies, it is of cause still a level that can be used for analysis.

Table 2.1 NUTS 3 regions with and without coastline. Nation and ESPON space.

Country code	Number of NUTS 3 regions	Number of NUTS 3 regions with coastline	Percent of regions with coastline
BE Belgique-België	43	5	12
DK Danmark	15	15	100
DE Deutschland	441	29	7
GR Ellada	51	40	78
ES España	52	24	46
FR France	100	30	30
IE Ireland	8	7	88
IT Italia	103	56	54
LU Luxembourg (Grand Duché)	1	-	0
NL Nederland	40	18	45
AT Österreich	35	-	0
PT Portugal	30	14	47
FI Suomi/Finland	20	10	50
SE Sverige	21	14	67
UK United Kingdom	133	82	62
BG Balgarjia	28	3	11
CY Kypros	1	1	100
CZ Ceska Republica	14	-	0
EE Eesti	5	4	80
HU Magyarország	20	0	0
LT Lietuva	10	1	10
LV Latvija	5	4	80
MT Malta	2	2	100
PL Polska	44	6	14
RO România	42	2	5
SI Slovenija	12	3	25
SK Slovenská Republika	8	-	0

NO Norge	19	17	89
CH Schweiz	26	-	0
Total	**1329**	**387**	**29**

The counties within ESPON space that will be totally excluded from a coastal typology are Luxembourg, Austria, the Czech Republic, Hungary, Slovakia and Switzerland. All the NUTS 3 territories of Denmark, Cyprus and Malta are included.

As very few German and Belgian NUTS 3 territories are coastal regions, the number of the small, more homogeneous territories found in these two countries and in the Netherlands has little influence on the typology.

Table 2.2 NUTS 2 regions with and without coastline. Nation and ESPON space.

Country code	**Number of NUTS 2 regions**	**Number of NUTS 2regions with coastline**	**Percent of regions with coastline**
BE Belgique-België	11	3	27
DK Danmark	1	1	100
DE Deutschland	40	5	13
GR Ellada	13	12	92
ES España	18	11	61
FR France	26	15	58
IE Ireland	2	2	100
IT Italia	20	15	75
LU Luxembourg (Grand Duché)	1	-	0
NL Nederland	12	6	50
AT Österreich	9	0	0
PT Portugal	7	7	100
FI Suomi/Finland	6	5	83
SE Sverige	8	8	100
UK United Kingdom	37	27	73
BG Balgarjia	6	2	33
CY Kypros	1	1	100
CZ Ceska Republica	8	-	0
EE Eesti	1	1	100
HU Magyarország	7	-	0
LT Lietuva	1	1	100
LV Latvija	1	1	100
MT Malta	1	1	100
PL Polska	16	3	19
RO România	8	1	13
SI Slovenija	1	1	100
SK Slovenská Republika	4	-	0
NO Norge	7	6	86
CH Schweiz	7	-	0
Total	**280**	**135**	**48**

The number of countries with all their NUTS 2 territories included increases dramatically compared to on NUTS 2. While all NUTS 3 territories had coastline in Denmark, Cyprus and Malta, the list of countries with coastline in all territories on a NUTS level is increased with Ireland, Portugal, Sweden, Estonia, Lithuania, Latvia, and Slovenia on NUTS 2. With exception of Ireland (2), Portugal (7) and Sweden (8) the counties are represented with their national level on NUTS 2. There is in other words no regionalisation present for many coastal states on this level, which also means that a typology on this level would be very difficult, comparing regions and states.

2.7 Basic requirements for a standard typology of coastal regions

A standard typology of coastal regions based on NUTS 3 regions should:

- include every NUTS 3 regions within ESPON with a coastline, i.e. territories bordering an ocean
- partly be based on previous ESPON typologies
- differentiate between typological elements and a main typology
- take specific coastal issues into consideration
- be both site and situation oriented
- to some extent be based on statistics at lower geographical levels than NUTS 3 or typological elements based on such geographical levels – which means that the typology should include internal diversity in each NUTS 3 regions as a criterion, and connected to this;
- include a criterion for *functional regions within the territories*, which also means that;
- it should be possible for example studies in smaller geographical areas to be connected to a sub territorial geographical typological level within the NUTS 3 region
- define typologies where the difference between regions within each type should be as small as possible, and difference between types as big as possible for analysis within the aim of the project (which is made difficult by the geographical level to be used for the typology)

The coastal typology should include elements on the urban – rural dimension according to a division into functional regions. We will in other words not use the urban – rural typology made for ESPON, which is not complete, and is not satisfactory according to thoughts about functional regions, and been found unfit for the demographic analysis of ESPON project 1.1.4, demography also being central to this project. We will however take a look if this typology can be relevant for some work within the project.

Some other ESPON typologies have however been used in the construction of the typology of coastal regions, and more should be used separately in the project. The typology for Functional Urban Areas (FUAs) has been essential, giving the necessary inclusion of a building block for representing functional regions within the NUTS 3 areas. ESPON works on proximity has also been important as a typology to be used in the project.

There are a number of standard typologies from other ESPON projects that might be used in 2.1.5:

- Functional Urban Areas (FUAs)
- 6 Type NUTS 3 FUAs
- 19 Type NUTS 3 FUAs
- Rural-urban typology
- Accessibility and GDP
- Lagging regions
- Settlement structure

There are a number of standard classifications and indicators other than the geographical ones from other ESPON projects that might be used in 2.1.5:

- Population change
- Population change in regions with high share of elderly people
- Migratory balances by age
- Depopulation
- Structural fund spending

2.8 Classification of NUTS 3 regions according to Functional Urban Areas – an urban-rural classification according to functionality

A classification of NUTS 3 regions based on Functional Urban Areas (FUAs) is a way of creating a typology telling about the urban-rural dimension within each single NUTS 3 region. It is also a classification that uses typological work already developed within ESPON as its basis and in combination with one of the reference geographical levels for regional support within the EU. We combine information on the NUTS classification with the classification of FUAs. The classification combines the share of population of the NUTS territories living within FUAs with the population size of the FUAs as typologized within ESPON and the location of the centres of the FUAs. This means that we get information on the urban-rural dimension when typologising to what extent the population of the NUTS regions live within functionally centralised regions, and the size of these regions. This way of classifying the NUTS regions also means that we will be able to use the typology for example studies, being geographically flexible. As the hypotheses of the project takes into consideration an urban/non-urban dimension this is very important.

An alternative to population size of the FUAs is to use the combined index for different topics that, like the grouping of FUAs according to size groups these functional regions into a span from global to local, taking into account the inclusion of more than one FUA in some regions. Choosing the one or the other solution should be done according to the purpose of analysis.

As this classification represents the urban hierarchy to a better extent than size alone, the global – local typology should be included to the exclusion of size. This means a typology combining urban hierarchy with information on each FUAs hierarchical level on several topics, making the assessment of polycentric spatial development and economic, social and territorial cohesion (point 8 of the TIA) better connected to the project. The typologisation attempts to show the level of urbanisation in the territories, implying that the level of urbanisation is highly relevant for amongst others the demographic development of the regions.

NUTS territories with FUAs on more than one level are classified according to the highest level represented within each territory. We don't make any distinction between NUTS territories with one and several FUAs.

The share of the population living in FUAs gives some indication to the level of heterogeneity of the NUTS territory.

The classification is then:

FUA level	*FUA population*
00 no FUAs	0 no FUA population
0 no centre of a FUA	1 less than 25 %
1 FUA centre on level 1	2 25-49 %
2 FUA centre on level 2	3 50-74 %
3 FUA centre on level 3	4 75-100 %
4 FUA centre on level 4 or 5	

This gives the following 21 *potential* combinations:

000
01, 02, 03, 04
11, 12, 13, 14
21, 22, 23, 24
31, 32, 33, 34
41, 42, 43, 44

An alternative classification of FUA levels, based on the FUA typology into 1 Regional/local FUAs, 2 Transnational/national FUAs and 3 Metropolitan European Growth Areas reduces the typology to 17 potential combinations:

000
01, 02, 03, 04
11, 12, 13, 14
21, 22, 23, 24
31, 32, 33, 34

2.8.1 Population density

Population density is an indicator for potential pressure on environmental resources both of the coastal regions as such and also on the coastal zones. It should therefore be used as an indicator, but not necessarily be included in a main typology of coastal regions. At the same time as high densities indicates high pressure on coastal areas, very low population densities is a difficulty for certain regions that were acknowledged by the EU with the accession of Sweden and Finland. The low population density regions are primarily found in the Nordic periphery. This periphery constitutes a geographical rarity within Europe not only in that the population densities are especially low, but also because they have centres with generally few inhabitants, and distances between centres are longer than in more central parts of these countries not to speak of in continental Europe. Regional policy has aimed at supporting such peripheries in the Nordic countries. The Nordic periphery was also acknowledged by the EU in the membership discussions with Finland, Sweden and Norway in preparation for the 1995 EU enlargement, a separate structure fund being implemented for geographical areas with low population density and peripheral location. Such regions often have serious problems related to distance factors, influencing also job opportunities. At the same time many of the fishery dependent communities within the ESPON territory are located within such geographical areas.

We propose the following division of coastal regions according to population density:

(i) Below level defined for support from EU structure funds for peripheral regions (maximum 12.5 inhabitants per square kilometre)
(ii) Above 12.5 inhabitants per square kilometre but not more than half of European average (12.6 – 54)
(iii) Below European average, but above half of European average number of inhabitants per square kilometre (55 - 107 persons per square kilometre)
(iv) Over European average, but less than twice the EU average (108-214 inhabitants per square kilometre)
(v) More than twice the European average (215 or more inhabitants per square kilometre)

The coastal NUTS regions with below European average population density include almost the entire Baltic Sea region and Norway, the capital NUTS territories being the major exception. Also most of Greece coastal regions are included. Even though Spain is generally more densely populated in the coastal territories than in the interior, also many of the coastal ones have population densities below the national one, as does Portugal south of Lisbon. France, like Spain is most thinly populated in the interior. However, along the Atlantic about half the NUTS 3 regions are below average population density. Most of Ireland and Scotland also falls within NUTS 3 territories with below average population.

The concentration of coastal regions with high population densities is found within the pentagon, and also includes much of the Italian and Portuguese coast. However, the most densely populated NUTS 3 regions in Europe are primarily non coastal NUTS territories located in England, Belgium, the Netherlands, Germany and Northern Italy.

2.8.2 Proximity/accessibility

As part of other ESPON projects there has been made some typologies of proximity or accessibility of different NUTS territories based on indicators developed by the projects. Such typologies can be utilised by the project. There is a need for information on proximity for the coastal regions, to get information on the relative location of the coastal regions in a European context. As there has been made several typologies on aspects of proximity within ESPON, these can be used as an indicator of territorial situation/proximity.

We propose the following indicators:

Accessibility, multimodal

By using the accessibility indicators, we basically use land logic, finding certain information on proximity between regions on land. In matters concerning the fishing trade, air accessibility is becoming more important. This is however only part of the reality, as the often peripheral located fishing regions might be brought closer together by sea logic. As part of the project we will look into the possibilities for making an accessibility indicator based on sea transportation.

2.8.3 Regions with structure fund support

The regions will also be typologized according to what kind of structure funds are made available within the NUTS 3 region. This should not be included in the main typology of coastal regions as it is less territorially stable than what should be expected from an element used for the main typology. Objective 1 and objective 2 territories have been linked to each coastal NUTS 3 territory.

2.8.4 Fishery dependency

For a project on impacts of fisheries policies it is of cause essential to include a classification connected to fisheries. We propose to develop the list of fishery dependent regions from annex 2 of Interim Report 1 to as many nations of ESPON space as possible and to Iceland. We will also compile statistics on the fishery industry – number of workers – for countries where this statistics have been made available from recent censuses or from statistical registers.

No NUTS 3 region will be truly fishery dependent, which makes it necessary to typologise fishery dependency according to fishery dependency in regions within the NUTS 3 territories. The typology element will in other words be an expression for the existence of regions/municipalities within the NUTS 3 territory being fishery dependent (most likely the number of regions within the NUTS territory). This kind of statistics will not be available for all countries with a coastline, and will therefore primarily be of interest for example studies based on access to data in a country represented in the TPG. This typology will not be ready before IR3, when also the relevant example studies will have been decided upon.

2.9 The main typology

As already mentioned, the main typology should express information from some of the typological elements. It seems necessary to include the FUAs. For the main typology we have chosen the FUA typology rather than the FUA classification according to population size. The other element of the typology is population density.

	FUA coding	**Population density coding**	**Description**
1.	000, 00, 01, 02, 03, 04	1, 2	NUTS 3 territories with no FUA centre, and very low population density
2.	000, 00, 01, 02,	3	NUTS 3 territories with no FUA centre, population densities

	03, 04		at least 50 per cent of European average
3.	000, 00, 01, 02, 03, 04	4, 5	NUTS 3 territories with no FUA centre, population densities at least on European average
4.	21, 22	1, 2	Regional/local FUAs, not regional demographic dominance, low population density
5	21, 22	3, 4, 5	Regional/local FUAs, not regional demographic dominance, medium or high population density
6.	23, 24	1, 2	Regional/local FUAs, regional demographic dominance, low population density
7.	23, 24	3, 4, 5	Regional/local FUAs, regional demographic dominance, medium or high population density
8.	31, 32 33 34	1, 2, 3, 4, 5 1, 2 1	Transnational/national, not regional demographic dominance
9.	33 34	3, 4, 5 2, 3, 4, 5	Transnational/national, regional demographic dominance
10.	41, 42, 43, 44	1, 2, 3, 4, 5	MEGA, regional demographic dominance

For NUTS territories with the European/MEGA types, there will not be any NUTS region with low population density, making a distinction according to population density meaningless.

2.9.1 Population density

Population density can possibly be combined with group 1 and group 2 of FUA-related NUTS 3 regions. If so, only category 1 (most thinly populated areas) will be included.

2.9.2 Fishery dependency

Fishery dependency can be described in a main typology according to the existence of or non existence of fishery dependent regions within the NUTS 3 territory. At its most basic, this implies a typology where fishery dependency is combined with FUA related NUTS 3 territories and NUTS 3 territories without FUAs.

As this typology is a typology of *coastal regions*, propositions for further coastal elements that can be included, for which it is available statistics covering the ESPON nations would be appreciated.

The project will probably need to develop further classifications and possibly standard classifications as part of the development of the impact study. A potential revision of the coastal typology will be based on a revision of the typological elements.

2.10 Territorial typologies for EU15

It can be argued that, as CFP in an ex post evaluation there can also be included some territorial typologies based on EU15 only, as we will mainly look into a time period prior to enlargement. Some of these are highly relevant for impact studies. These are:

2.10.1 Dominant Structural funds spending

(TPG: 2.2.1. Spatial scope: EU15. Territorial level: NUTS 3)

R Regional development, productive infra-structure
A Agricultural, fishery, rural development
S Social integration, human resources
C Basic infrastructure, European cohesion

2.10.2 Structural Fund spending and regional performance

(TPG: 2.2.1. Spatial scope: EU15. Territorial level: NUTS 2)

Low Spending – High Performance
Low Spending – Medium Performance
Low Spending – Low Performance
Medium Spending – High Performance
Medium Spending – Medium Performance
Medium Spending – Low Performance
High Spending – High Performance
High Spending – Medium Performance
High Spending – Low Performance

2.10.3 Structural Fund spending and change of regional performance ranking

(TPG: 2.2.1. Spatial scope: EU15. Territorial level: NUTS 2)

Low Spending – Rise in Ranking
Low Spending – Stable in Ranking
Low Spending – Fall in Ranking
Medium Spending – Rise in Ranking
Medium Spending – Stable in Ranking
Medium Spending – Fall in Ranking
High Spending – Rise in Ranking
High Spending – Stable in Ranking
High Spending – Fall in Ranking

2.11 For descriptive purposes

For the description of the fisheries dependent regions, one could also possibly include Settlement structure from TPG 3.1, which ESPON space as spatial scope, and with NUTS 3 as territorial level, even though it has little meaning to include this typology in the analysis. The regional types are:

(i) Central areas in agglomerated regions
(ii) Highly densely areas in agglomerated regions
(iii) Densely areas in agglomerated regions
(iv) Rural areas in agglomerated regions
(v) Central areas in densely populated regions
(vi) Densely areas in densely populated regions
(vii) Rural areas in densely populated regions
(viii) Rural area more densely populated
(ix) Rural area less densely populated

2.11.1 Regional R&D performance

(i) Weak at undertaking R&D and innovation
(ii) Average strengths in R&D
(iii) Mixed fortunes in undertaking R&D and innovation

(iv) Strong system of R&D and innovation
(v) Exceptionally strong system of R&D and innovation

2.11.2 R&D and innovation capacity

High R&D capacity and high innovation capacity
High R&D capacity but low or medium innovation capacity
Low or medium R&D capacity but high innovation capacity
Medium R&D capacity and medium innovation capacity
Low R&D capacity and low innovation capacity

2.11.3 Urban – rural typology – 10 types

(i) Urban, densely populated and high urban integration
(ii) Urban-rural, densely populated and high urban integration
(iii) Urban-rural, not densely populated but high urban integration
(iv) Urban-peripheral, not densely populated and low urban integration
(v) Rural-urban, densely populated and high urban integration
(vi) Rural-urban, not densely populated but high urban integration
(vii) Rural-peripheral, not densely populated and low urban integration
(viii) Peripheral-urban, densely populated and high urban integration
(ix) Peripheral-rural, densely populated but high urban integration
(x) Peripheral, not densely populated and low urban integration

2.12 Further typological work

There has been a very slow process of statistics collection in the project, which means that it at this time is not possible to be quite specific on what will have to be done. The statistics situation indicates certain needs:

(i) As much of the statistics on levels below the national will be used in example studies within a perspective of national implementation, there is ideally a need for typologies based on the different nations, and not on ËSPON Space
(ii) There can be a need for typologies combining typologies based on ESPON Space and on the different nations (like accessibility – where one could single out central regions within nations that are peripheral on the European scale etc.)
(iii) Due to the statistical situation in the project, much more of the typologies must be selected from the NUTS 2 level. This is very unfortunate, as this will mix states and territories within states as the geographical units in the typologies.

Below is presented three maps, first, a typology of coastal regions at NUTS 3 level; second a map of NUTS 3 regions with coastal borders; and third, a similar map of NUTS 2 regions.

Figure 2.1 Typology of coastal regions (NUTS 3)

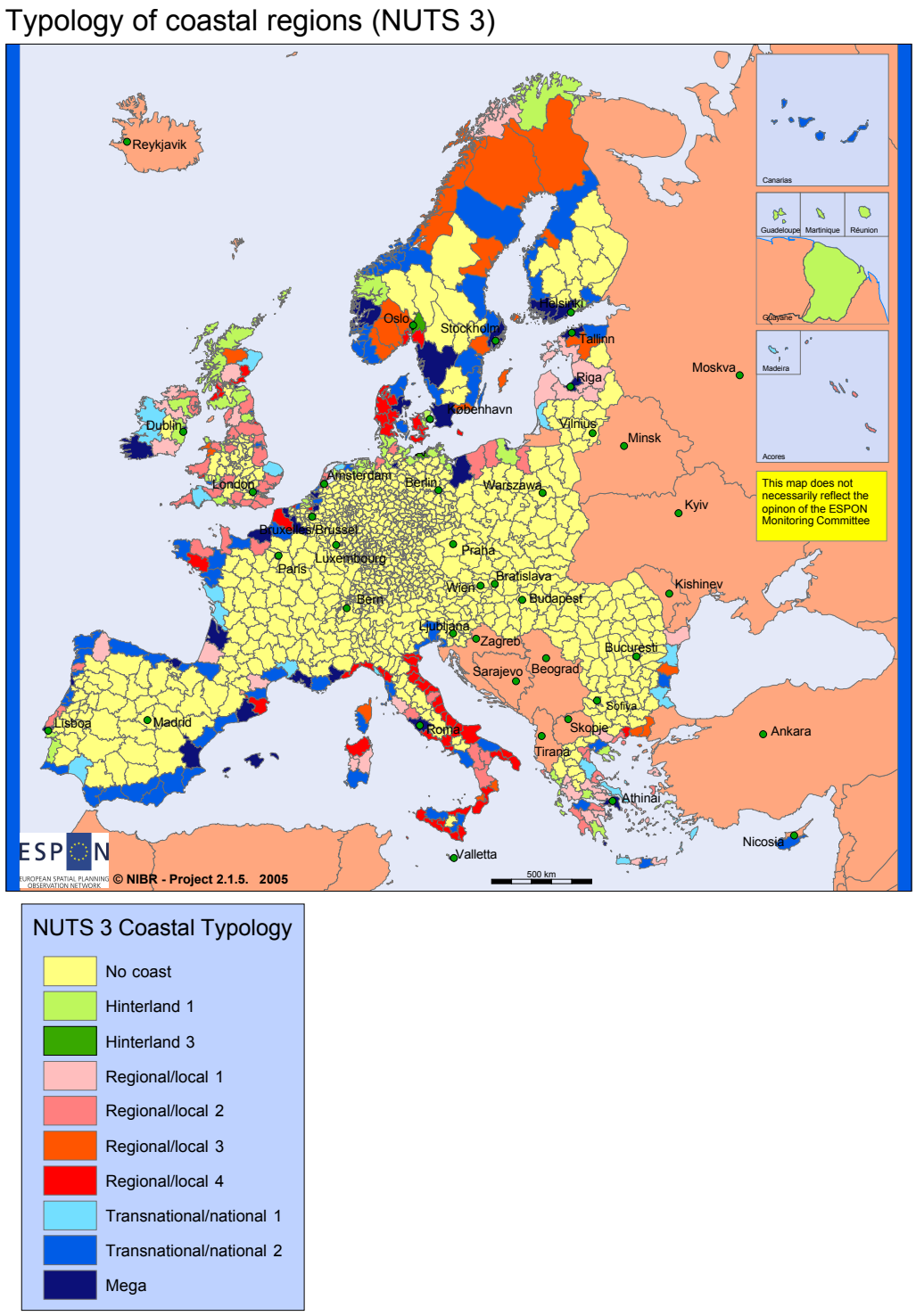


Figure 2.2 NUTS 3 regions with coastal border

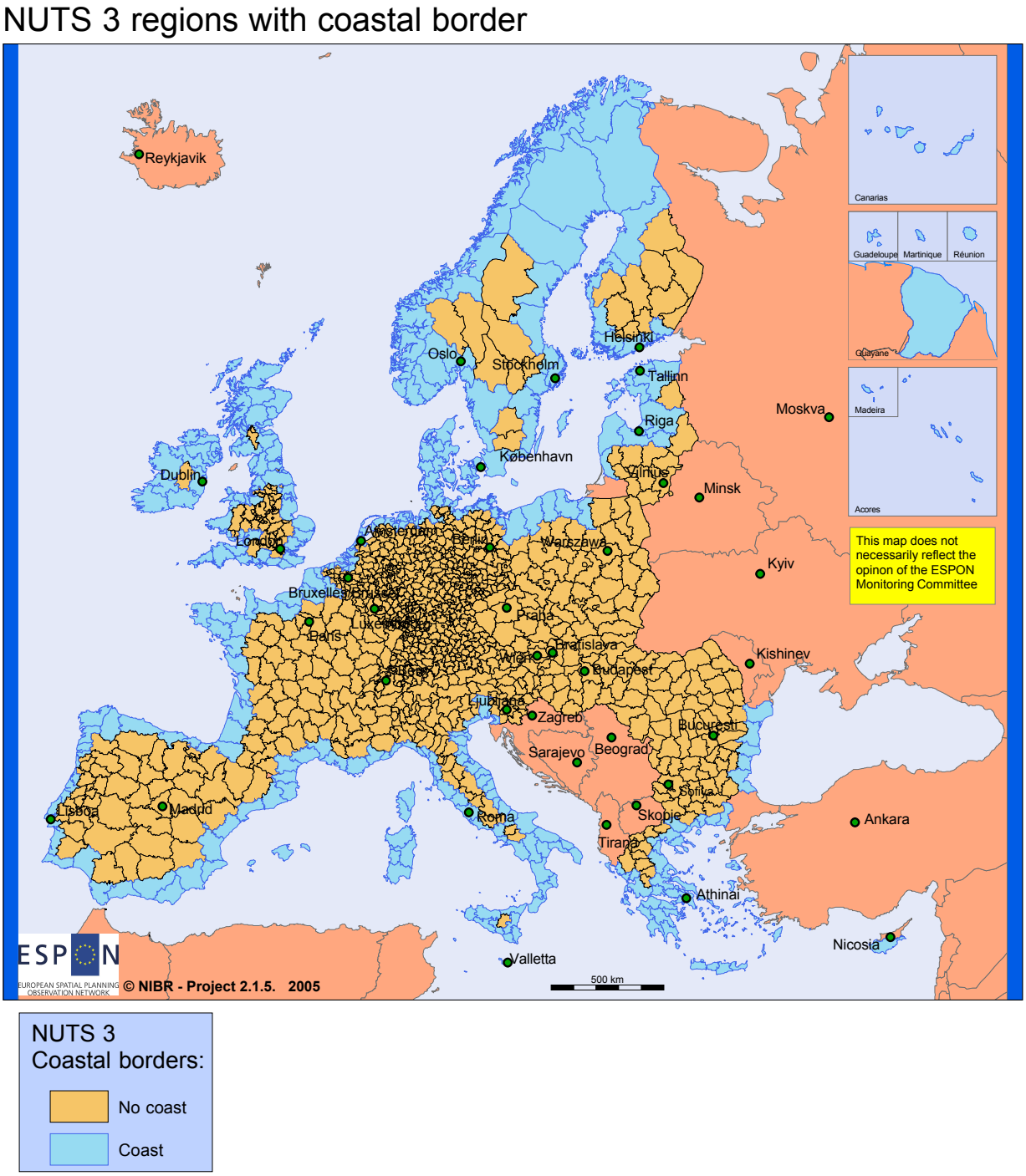
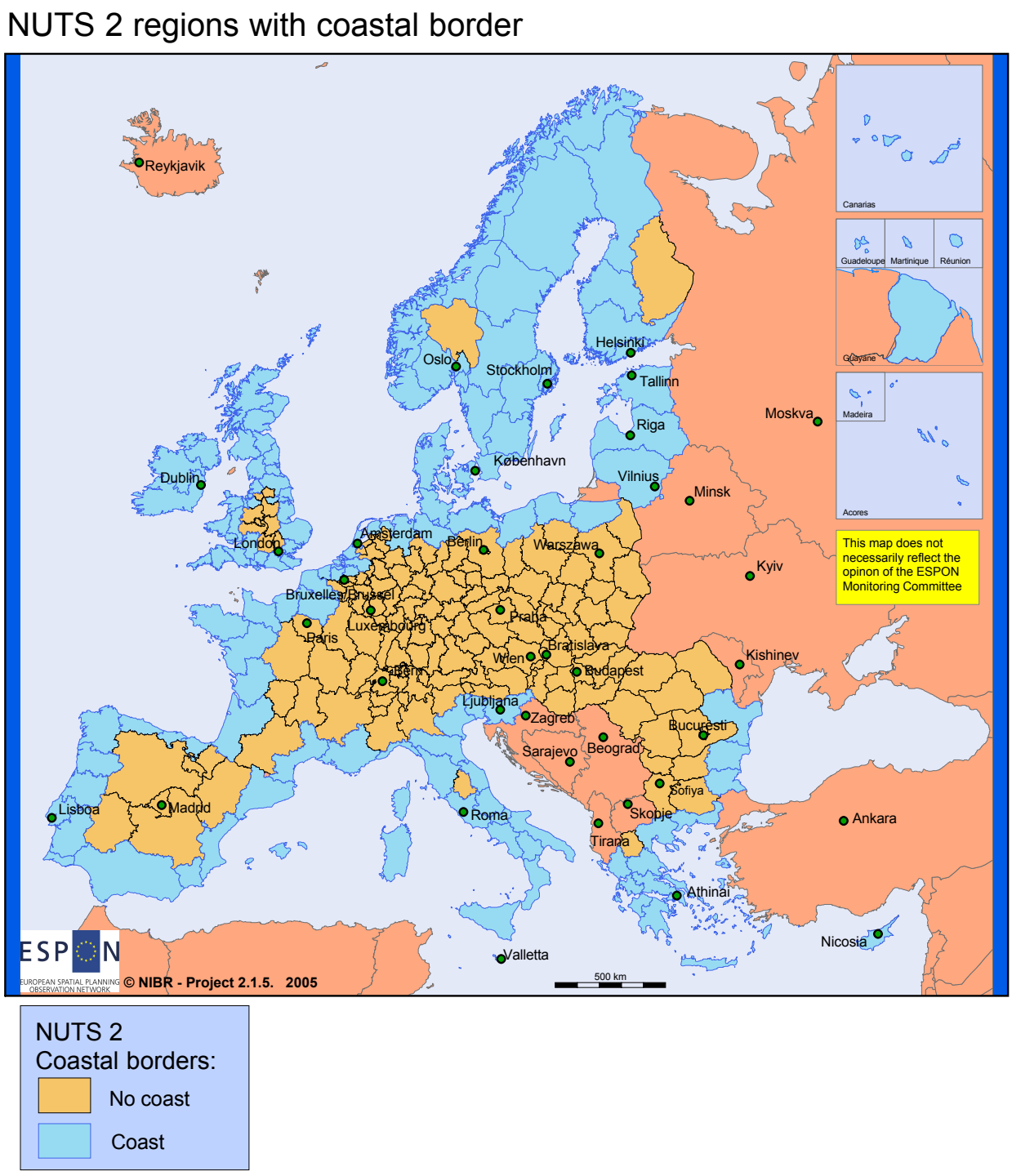


Figure 2.3 NUTS 2 regions with coastal border



2.13 Interreg – a tool for interregional cooperation and networking

The Interreg III-programmes ends at the end of 2006, and it is therefore also too early to conclude to what extent the programmes have contributed to interregional cooperation and networking across countries. The Interreg programmes are regarded as important instruments in the EUs "community initiatives", which strive to strengthen economic, social and territorial cohesion and regional balance across Europe. Moen and Skålnes (2005) give summaries of all the seven mid-terms evaluations of Interreg III programmes that were performed by external researchers and consultants. All evaluations were undertaken during 2003, which meant that some of the programmes had advanced to the mid-term stage "formally", but not in reality since some of them were of to a rather late start. This was especially the case for the Interreg III B and C programmes that work with bigger and broader partnerships that what is generally the case in Interreg III A programmes and projects.

According to Moen and Skålnes (2005:20) "all the seven programmes get good marks from the evaluators. In most cases the recommendations concern only minor matters of fine-tuning the programmes' courses or some extra effort to achieve a better balanced project generation between the programmes' priorities and measures in order to achieve the planned mix of activities as stated in the programme documents and – complements. Between two thirds and three quarters of the resources from the Structural Funds were already committed to projects. One common theme in many of the MTEs was that successfully operating Interreg programmes and projects are not only a question of *what* is being done in the programmes and projects. Very often, the important question is *how* things are done: in short: *participation and partnership building* are often the clues to successful Interreg engagements".

Interreg can be seen as a sort of course in cooperation between regions across different countries and an arena for mutual learning. The experiences from the Norwegian participants are that "Interreg is considered as a new and powerful policy instrument for regional development and as a way to innovate the Norwegian interventions for a more balanced regional development. An additional effect is the accumulation of knowledge by learning to work together across borders in big projects within a broad partnership with members from different "walks of life" as well as educational backgrounds" (ibid:23). Further, the Norwegian engagement has been an important part of the modernisation of Norway's policies for regional development: "Cross-border, trans-national and interregional cooperation in the framework of Interreg is best conceptualized as a modernization of Norwegian regional policy development with important implications for approaches as well as tasks and partnership building as a way of working together at the regional level" (ibid:24). One important condition for these positive impacts of the Interreg programmes is their long term programming with perspectives reaching six to seven years.

Despite the positive experiences with Interreg cooperation, it is, however, often difficult and time-consuming to establish well-balanced partnership. This have mostly been "a problem for projects in the Interreg B and C programmes where many of the partnerships are big, broad and far reaching which entail long distances between partners and high travel costs" (ibid:27).

3 Methodology for impact assessment (TIA)

In IR3 the TIA methodology is divided between this chapter and the impacts chapters, where specific experiences from the different WPs are presented. The TIA manual on which the method is based has been developed within ESPON project 3.1, and constitutes an annex of Part C of the final report. The Territorial Impact Analysis is further elaborated in chapter 9.3 of ESPON 3.1. What has been developed in project 3.1 is to be considered as a check list, and not as a standard for ESPON impact studies, or a tool for analysis.

3.1 TIA as methodology for impact analysis

The overall framework for the methodology is founded on:

(i) the tender document of the project, where its thematic scope and context have been decided and the general objectives have been addressed
(ii) the Territorial Impact Analysis (TIA) as elaborated by ESPON project 3.1

In ESPON (and ESDP – European Spatial Development Perspective) terms, TIA means Territorial Impact Analysis. The term is related to Territorial Impact Assessment, which has been used as "a tool for analysing, assessing and evaluating the impacts of certain projects on the spatial development of the surrounding territory" (ESPON 3.1 final report, page 425). What is new with the ESPON TIA compared to its use so far in ESDP is its application for EU policies and programmes. This has, however, proved difficult as these policies and programmes have not been committed to goals of territorial development.

At the most basic level, the specific methodological shape of the TIA of any ESPON impact study is said to relate to on the one hand territorial data characteristics (relevance, reliability etc.) and on the other hand to subject matter data characteristics: policy with or without endogenous territorial intentions, certain programmes, single interventions/projects. There has, however, not been established a common assessment methodology within the ESPON impact studies as it is acknowledged that it is hardly possible to use one assessment methodology for the entire range of sectoral policies of the EU. According to ESPON project 3.1 this is due to the very different character of the spatial dimension and implications of the different policy areas, and the different theoretical state of the art of applied research and planning in the different areas. ESPON 3.1 also state that "Current techniques are not sufficient to meet the challenge presented by the desire to consider the spatial implications of different policy interactions" (page 429 of the final report).

The project mentions the following deficiencies of subject matter to be assessed and for assessment criteria for a TIA of EU policies and programmes:

- the EU policy programmes concerned are still far away from actually taking into account territorial objectives despite having clear potential territorial impacts
- they show a dramatic lack of territorial differentiation of data on policy implication
- the elaboration of spatial development goals in the wake of ESDP is still going on, and has hardly achieved results operational for assessment application so far

Among key concepts 3.1 regard only two to have a "genuine territorial dimension"; 'territorial cohesion' and 'polycentric development'. At the same time, polycentric development can be seen as a spatialised expression of territorial cohesion.

Territorial cohesion is a concept for the balanced distribution of human activities across the EU, translating the EU goal of sustainable and balanced development into territorial terms. It is a complementary concept to economic and social cohesion. According to ESPON 3.1 the following dimensions are relevant for an operationalisation of territorial cohesion:

- domains (thematic layers) – for ESPON the most relevant are probably ESDPs "triangle of sustainability"; economy, environment and society
- components of territory – its own features (potential), its features with regard to those of other territories (position) which enables potential interactions with them, and its effective interactions (exchanges, cooperation) with other territories (integration)
- scale(s) – for the ESPON project a three level reference set have been developed; macro (European level), meso (transnational/national level) and micro (regional/local level)

For an impact study, time is also essential for the analytical work.

Polycentric spatial development is by 3.1 regarded as a 'bridging concept' as it merges the two policy aims of ESDP; economic growth and balanced development. Polycentricity can refer to different geographical levels (cf. scale in the discussion of territorial cohesion). The most important level for ESPON 2.1.5 is the regional/local level. The aim here is to increase the number of centres providing regional services from one or a few dominating ones, in which fisheries should be viewed in the light of the division of labour and functional specialisation within the regional urban system.

Polycentricity on the trans-national/national level might also be of importance, as the fisheries in some instances can be an aspect of the aim of a more balanced tissue of cities. At the global or European level fisheries are of only minor importance today.

The ESPON 3.1 studies found it feasible to develop a common methodological approach (the TIA manual) instead of a common assessment policy for the ESPON impact projects. In the draft for the final report from ESPON 3.1, the TIA manual is regarded as a kind of check-list and it contains the following elements:

Scoping

1. Reference to policy interventions;

Designation of the causing interventions assignable to the EU budget development

Question to be answered: What is causing the impact?

3. Hypothesis on cause-effect-relations;

Basis: hypothesis concerning cause-effect-relations (with varying empirical proof)

Question to be answered: What is changed by the intervention(s)?

4. Regional scale of observation;

Designation of geographic reference to be used: regions concerned by intervention/effect; territorial level(s) of observation; covering all or selected (by what criteria) regions cause-effect-relations

Question to be answered: What is the level of observation and analysis?

5. Reference to past and future;

Cause-effect relations in the past as the basis for predicting the effects of future interventions; empirical experiences as well as outlooks to the future crucial for analytic treatment and political perception

Question to be answered: What has happened, what may happen in the future?

Analysing

6. **Interventions and effects measured;**
   Implementation of the hypothesis concerning cause-effect-relations

   Question to be answered: What is registered, measured, appraised?

7. **Quantitative/qualitative appraisals;**
   Designation of type of indicators selected

   Question to be answered: By what kind of indicators is the topic described?

8. **Technique of analysis;**
   Designation of type of analysis used

   Question to be answered: How is the analysis performed?

Assessing

9. **Goals referred to;**
   Designation of criteria for evaluation derived from the two ESPON key concepts focusing on the spatial dimension. Other goals derived from official documents may also be taken into account if they are related to types of regions or particular spatial entities mentioned below in point 9.

Polycentric spatial development

- at the European level: several metropolitan regions as global integration zones
- at the transnational level: enforcement of a polycentric system of metropolitan regions, city clusters and city networks
- at the national level: systems of cities including the corresponding rural areas and towns, development within city regions (intra-regional)

The manual acknowledges that polycentric development at one level does not necessarily go along with the same at the other levels.

Cohesion (economic, social and territorial)

- *economic:* balanced territorial development concerning economic performance
- *social:* balanced territorial development concerning employment, income, education, population
- *territorial:* fair access for citizens and economic operators to services of general economic interest; balanced distribution of human activities

Question to be answered: What goals are referred to?

10. **Applied meaning of 'spatial/territorial';**
    Designation of the concept of 'spatial/territorial' used according to the policy area concerned

    Question to be answered: What concept of 'spatial/territorial' is applied?

11. Territorial coverage of outcome;

esignation of the general format of results

Question to be answered: What do the results look like?

3.2 Further work – mapping and example studies

When it comes to regional scale and its relation to polycentrism the European level seems not to be relevant for 2.1.5. The transnational level also seems to be of minor relevance. This means that when looking at impacts of fisheries policies in polycentric terms, the national level and levels below the national one stands out as the most relevant ones for impacts on the geographical levels defined by ESPON. This implies that example studies should be central in the 2.1.5 project, and that the European level primarily constitutes a geographical level for mapping fisheries and for typological work, and to a lesser extent is a feasible unit of analysis. Compared to what was originally planned, the data situation on fisheries now seems to indicate a need for stronger emphasis on the example studies.

A further point in favour of example studies is that as the impacts of CFP can only roughly be isolated from the effects of other measures of influences. ESPON 3.1 has made suggestions that might imply a:

- Compilation of the policy measures in *certain regions*, recording what spatial development goals they follow, and that
- The structural status/changes in these regions should be evaluated against the chosen spatial development goals

With regard to both choice of geographical level and the time frame of analysis, point 4 of the TIA manual emphasise the importance of using cause-effect relations in the past as the basis for predicting the effects of future interventions. Considering the changes in CFP being too new for empirical analysis, this represent an argument for focussing on empirical experiences of former changes in CFP, and potentially for using much of the resources on example studies which are already finished or are in preparation.

As mentioned, the TIA manual is to be considered as a check list, not as a standard assessment tool for ESPON projects. This means that there are no methodologies for impact projects that have been recommended, so the points under analysis and assessment will have to be decided upon either in the single work package or by the work packages together with the lead partner. For scope, we stated in IR 2 that it seemed necessary to:

- Distribute the hypothesis from IR1 on the work packages
- Use NUTS3 as regional scale of observation when mapping the ESPON coastal regions, but more detailed geographical levels for example analysis
- Base analysis on former changes in the fishery policies, and using these to make evaluations of new changes in EU policy

The second of these points have proved impossible to fulfil, as there has been far less statistics on NUTS 3 available for the project than anticipated. At this stage, it seems that much more of the ESPON Space analysis will be conducted on NUTS 2, and that more specific regional impacts will have to be looked at in the example studies.

3.3 Preliminary experiences with TIA

At this stage of the project, the specific experiences with TIA are presented as part of the impact chapters.

One important general experience when considering the use of TIA in territorial impact analysis of fisheries policy is the lack of data at the relevant geographical level, i.e. on NUTS3 level or lower. This point is clearly stated particularly in the work packages which will analyse social cohesion and regional

economic strength. Data on territorial distribution of fisheries policy measures, socio-economic development and regional performance, are scarce or not available at a relevant geographical level. This is related to the fact that territorial impacts of fisheries policy first and foremost are significant on lower geographical levels. Some regions and municipalities are heavily dependent on fisheries but changes in fisheries policy are hardly or not at all traceable on a national or European level. Fisheries policy, therefore, are a rather "constricted" policy area and territorial impacts are usually only observable in particular regions and areas.

4 Hypotheses on territorial effects of CFP

The second interim report presented a list of hypotheses of territorial impacts related to European fisheries policy. The hypotheses referred mainly to CFP and their respective measures and to some extent also to the development of aquaculture. Related territorial impacts projects within the ESPON program was taken into consideration in the development of the hypotheses. The response from ESPON CU was very positive with regard to the hypotheses and stated that "all hypotheses are reflecting the main objectives in the project". The time period between first and second interim report, therefore, has mainly been used to apply the main hypotheses and to develop specific hypotheses within the different work packages. These sub hypotheses are presented in the beginning of each chapter related to the different work packages, see chapter 5-8.

The work with a further development of the main hypotheses and identification of supplementary hypotheses will, however, continue along with the impact analyses which will be fully presented in the third interim report. The development of hypotheses has been and will also be done in connection with the work with TIA. As suggested from ESPON CU the hypotheses have now been grouped in different categories. Some hypotheses are more general whereas others are more specific, and we have divided them according to this simple principle. General hypotheses are holistic and important for the structure of the project and reports as such whereas specific hypotheses relate to more explicit research questions concerning certain impacts.

The hypotheses have been grouped in the following four groups:

General impact hypotheses:

General impact hypotheses relates to all work packages analysing territorial impacts, i.e. WP3, WP4 and WP5 (previous H1, H3, H4 and H5 in IR1):

1. The CFP will have different impacts between coastal regions, and within regions. Processes on restructuring, reduction and expansion will occur side by side and in various combinations. Impacts of CFP will be more significant the lower the geographical levels.
2. Economic, social and demographic impacts of the CFP will vary between urban and remote areas. Socio-economic effects related to employment, migration, age structure of the labour force etc., may be less devastating in urban regions than in fisheries dependent regions and areas.
3. Territorial impacts of CFP will vary with different structures of the fishing and aquaculture industries of the regions. Impacts will differ in accordance with the extent the regions are dominated by coast fishing and small vessels, fishing in distant waters with greater vessels, landings, fishing processes or aquaculture.
4. Territorial impacts of the CFP may contradict with the aims of cohesion, territorial balanced development and polycentrism. The CFP may favour the prosperous regions and disfavour the most remote regions, i.e. favour regions which are not particularly fisheries dependent at the cost of regions which are strongly dependent on fisheries.

Social and economic impact hypotheses:

Social and economic impact hypotheses relates to WP3 and WP4 (previous H2, H10, and H11 in IR1):

1. The CFP has unintended side effects in coastal regions or fishery dependent regions. Significant territorial impacts may be:

- Economic effects such as increasing unemployment
- Decreasing regional economic productions (GDP)
- Population decreasing due to out-migration particularly in fisheries regions
- Altered age composition in fisheries dependent regions, with an increasing share of elderly
- population. Indication of gender and age biases in fishing dependent regions
- Change in population density in fisheries regions

1. As the restrictions on harvesting activities mainly target the fishing fleet these measures have strongest negative impacts in remote, coastal regions, while the more urban regions involved in fish processing still are able to source raw fish through e.g. import from 3rd countries.
2. It follows from hypothesis 6 and 16 that the incidence of the CFP on the regional level is not consistent with the social and economic cohesion objectives of the EU due to the unintended territorial effects of CFP. More favourable regions are able to take greater advantage of the measures included in the FIFG due to closer access to products and markets.

ICZM/environment hypotheses:

ICZM/environment hypotheses relates to WP5 (previous H12-H16 in IR1):

1. Subsidies to support incomes or costs reduction in the fisheries sectors result in an increase of the fishing effort which has undesirable effects on social and environmental sustainability. Industrialised countries are particularly concerned with overexploitation aspects, and due to biological constraints, fishing subsidies mainly aim at capacity reduction.
2. Increasing awareness of the need to assure resource sustainability and to preserve the whole marine environment, CFP measures aim at reduction of quotas and/or to the reduction of fishing effort. The changes in CFP from 2002 will contribute to a faster reduction and restructuring of the fishing fleet, both in absolute numbers, tonnage (GT) and engine power (kw).
3. Changes in CFP will probably be directed towards improvement of the marine environment and marine resources. In the long run this may lead to higher and more stable fish stocks but only if the fishing effort is sufficiently reduced.
4. Aquaculture will continue to expand, but the further development may be more regional concentrated both with regard to value added and employment.
5. A management based on ICZM principals will contribute to a further sustainable growth in aquaculture.

Fishery hypotheses:

The description and diagnosis of fisheries policy lay down the basis for the territorial impact studies. The fishery hypotheses deals with questions of structural changes in the seafood industry, innovation in marine sectors, financial instruments etc, and relates to WP2 (previous H6-H9 in IR1):

1. Changes in CFP may contribute to increased concentration and centralisation of the seafood industry. This will be a particular disadvantage for the most fishery dependent and remote areas, which are often underperforming regions in an accessibility perspective.
2. Innovation is generally concentrated in cities and urban areas. If the same tendency occurs in the marine sector, the potential and the preconditions for innovation and restructuring in this sector are probably highest in regions with larger cities or in close distance to larger cities (FUA).
3. Territorial impacts of the CFP measures are dependent on how the measures in use are implemented in the various regions. Impacts will also vary by the structure of the fisheries in the respective regions and the access to alternatives, such as fishing opportunities, sources of fish raw material for processing, alternative job opportunities etc.
4. Less prosperous regions of the EU receive more CFP support through the FIFG (Financial Instrument for Fisheries Guidance) than the more prosperous regions.

5 Diagnosis of the Development of the Fishery Sector

5.1 Introduction

This chapter provides a diagnosis of the development of the fishery sector. First, it lines out a set of hypotheses applicable to the fisheries sector in the EU, Iceland and Norway. Second, it gives a comprehensive overview of the development within the European Union focusing on different aspects in the Common Fisheries Policy. Included in the section on the CFP is a special section on Estonia as an example of the new member states, which have just entered the European Union. The example is informative since the most new member states share the characteristic of having recently embraced market economy, which puts them in a special situation. Third, the chapter presents fisheries policies and overall developments in Norway and Iceland. It is recognised that the national implementation of the CFP is important but the CFP is nonetheless the dominating policy framework within the EU wherefore national policies of EU member states will not be dealt with individually. As Iceland and Norway are not members of the EU - and both countries are very important fishing nations - separate descriptions of their fisheries policies are justified. Experiences with the use of TIA conclude the chapter.

5.2 Hypotheses for the Fisheries Sector in EU, Iceland and Norway

Conservation policy

1. TAC management allows for quantitative allocation of fishing resources (catches) at all territorial levels (EU/international, regional and local) and the establishment of "relative stability" between geographical areas/territories; adopted at international level in the EU (and in some case at national level, e.g. by the UK - via allocation to Producer Organizations). This implies intentional territorial impact.
2. EAF and precautionary approach management implies that fishing effort will have to be reduced in waters/fish stocks involved and that catches from some stocks may be permanently lower but less fluctuating over time. This implies loss of jobs in the affected communities (onboard fishing vessels and in the related trades). The economic outcome may be positive but will directly benefit fewer people. The less fluctuating catches, which are also expected, will provide improved opportunities for investment planning. Unintentional negative territorial impact in the short and medium is one result.
3. Applying market principles in the allocation of access rights to fish resources (e.g. ITQs) implies concentration of the fishing industry in territorial terms and fewer, larger and more efficient production units in the fisheries sector. Territorial impacts are not intended and sometimes negative impacts can be counteracted by policy measures.
4. Recovery plans for depleted fish stocks (involving closed areas, closed seasons, catch/effort limitations etc.) will in the short and medium term have negative impact on the fishing communities dependent on these resources. The more immobile and inflexible the fishing fleet and the more species dependent the processing industry the more impact. Coastal communities dependent on small-scale fishing may be particularly vulnerable. This implies unintentional territorial impacts in the short and medium term.

5. Fishing communities dependent on the exploitation of fish stocks that are within safe biological limits (e.g. North Sea herring and mackerel) are operating on a more stable resource basis and are thus experiencing less negative territorial impacts from fisheries resource management measures at both political and private business levels.

Market policy

1. Fisheries market policies counterbalancing the free market forces have intended territorial impacts that may be on international (EU), national and local levels. Unintended impacts may occur in other territories/territorial levels.
2. The territorial impact of specific fisheries sector oriented market policies is of decreasing importance compared to the impact of general international and national market and food policies. This especially counts for territories dependant on import or export of fish products (fish raw material for processing value-added products). The territorial impacts are unintended.

Structural policy

3. Fisheries structural policies have intended territorial impacts that may be on international, national, regional and local levels. Unintended impacts may occur in other territories or on other territorial levels.
4. Territorial impact in fisheries dependent areas are increasingly determined by global or national agendas, developments and policies rather than by EU sector specific structural policies.

External policy

5. The policies relating to fisheries agreements with third countries have territorial impact in regions with fleets, which utilise these agreements. Failures to renegotiate agreements or changes in circumstances around agreements have unintentional negative impact in affected regions. Impact can also be felt in regions not exploiting the agreements because they serve to keep some excess capacity out of Community waters.

5.3 The Global Context

The following sections from *'Overall Fisheries Production'* to *'Fisheries Regulations'* are largely quoted from Greenfacts' summary of the FAO report on the *State of The World Fisheries and Aquaculture*, 2004 (http://www.greenfacts.org/links/webmaster/summary-page/fisheries.htm). The section *'Future Prospects for Fish and Fishery Products'* is quoted from the FAO report itself (http://www.fao.org/documents/show_cdr.asp?url_file=/docrep/007/y5600e/y5600e00.htm).

5.3.1 Overall Fisheries Production

In 2002 the global production from fishing and aquaculture combined reached about 133 million tons. Capture fisheries are stagnating, but aquaculture has been expanding.

Capture fisheries remained stable at about 93 million tons per year between 1999 and 2002. The quantities fished in seas and oceans increased from 1998 to 2000, and stabilized at a slightly lower level since 2001 (84 million tons). This slight decrease is mainly due to lower catches in the Southeast and Northwest Pacific, but trends vary greatly between regions and for different species. During the past decade marine catches brought to land increased slightly compared to the preceding decade. Most marine catches take place in coastal waters. However, the share of catches from the open ocean have increased in recent decades and reached 11% of all marine catches in 2002.

Catches from inland waters accounted for a little less than 10% of the total catch in 2002. The bulk of world production came from developing countries, particularly in Africa and Asia. China alone

accounted for a quarter of global inland water fishing. Statistics of inland catches are, however, unreliable.

Aquaculture is the fastest growing animal based food-producing sector, particularly in developing countries. This sector alone contributes nearly a third of the world's supply of fish products. China and other Asian countries are by far the largest producers. Unlike terrestrial farming, where the bulk of production is based on a limited number of species, aquaculture produces more than 220 species. Of these species, carps and related fish form the largest group in terms of quantity. Other groups include molluscs and aquatic plants. Fast growing emerging activities are for instance the farming of Atlantic cod and fattening of wild-caught tuna.

5.3.2 The State of Fishery Resources

In many areas, traditional fish stocks have been depleted and less valuable species are being targeted by fishers. About three quarters of monitored marine stocks are now fully exploited, overexploited, or even depleted. The remaining quarter are under- or moderately exploited. Available data indicate that the global maximum potential for marine capture fisheries has been reached and that restrictive management measures are needed. Therefore, there seems to be no further potential for increasing marine catches. The current state of fishery resources and their ecosystems allows little room for delay in actions that should have been taken in the last three decades.

Fishery policies and management have usually focused on single fishery stocks. Growing concerns about ecosystems have prompted a call for increased research into processes that affect, or are affected by, fisheries. Much more needs to be known about interactions with habitats, aquatic communities, land-based activities, climatic changes, and so on. However, the current state of fishery resources and their ecosystems allows little room for delay in management actions that should have been taken in the last three decades.

Inland fishery resources are often undervalued and under threat from unsustainable fishing activities as well as from habitat alteration or degradation. Many river basins, especially in developing countries, support intensive fisheries, and in many cases catches are increasing.

5.3.3 Use of Fishery Products

More than three-quarters of the world fish production is consumed by humans fresh or processed in frozen, canned, or cured form. Most of the remaining portion is fed to animals, particularly in the form of fishmeal.

Fish and seafood consumption vary greatly between different regions of the world, from 1 kg to more than 100 kg per person per year. The worldwide average use of food fish reached 16.2 kg per person in 2002. Per capita production and consumption is particularly high in China and in other Asian countries. Developing countries now supply 70% of all the fish for human consumption, making an important contribution to their economy.

5.3.4 Trade in Fishery Products

World fish trade has increased in terms of both value and quantity. In 2002, China overtook Thailand for the first time to become the world's main exporter of fish and fish products, with exports valued at an estimated US$4.5 billion. The largest importer in 2002 was Japan, with over one fifth of the world's imports.

As fish is highly perishable, more than 90% of internationally traded fishery products are processed (frozen, canned, or cured). Products derived from aquaculture account for an increasing share of the international trade in fishery commodities.

Fish exports are an increasing source of foreign exchange earnings for many developing countries. These earnings are significantly higher than those coming from other commodities such as rice, coffee, and tea.

Exports from developing countries are gradually shifting from providing raw material for the processing industry in developed countries to selling high-value live fish or processed products. Trade in fishery products is increasingly covered by international agreements. Major market segments for fishery products include salmon, tuna, other finfish, shrimp, squid, and octopus, as well as fishmeal used to feed animals. Increased international trade offers many benefits but also presents new safety and quality challenges.

5.3.5 Fisheries Regulations

International interaction and collaboration on fisheries matters relies on a large number of regional fishery bodies. In the last 50 years, these have gained a more active role in decision-making. Their role particularly changed after the early 1990s as a result of the growing awareness of the scarcity of fishery resources. However, strengthening regional bodies does not always translate into more effective fisheries management. Their actions can be limited if countries do not give them enough power or do not implement their decisions. http://www.greenfacts.org/fisheries/l-2/07-regulation.htm - 1

Aquaculture is being increasingly regulated, by measures such as labeling for origin, traceability, and veterinary drug residues. Major importing regions and countries have begun to set stringent standards and regulations to ensure quality and safety and to reduce the social and environmental impacts of production. In many developing countries, however, progress towards sustainable practices is slow.

Development policies increasingly perceive aquaculture as an engine for economic growth. The aquaculture sector does indeed expand, diversify, intensify, and advance technologically at a faster pace than any other animal-producing sector.

The "The State of the World Fisheries and Aquaculture" concludes that developments in world fisheries and aquaculture during recent years have continued to follow the trends that were already becoming apparent at the end of the 1990s: capture fisheries production is stagnating and aquaculture output is expanding faster than any other animal-based food sector.

There are growing concerns with regard to safeguarding the livelihoods of fishers as well as the sustainability of both commercial catches and the aquatic ecosystem from which they are extracted.

5.3.6 Future Prospects for Fish and Fishery Products

According to the projections there would be a global shortage of supply of fish in future. Although the severity of the shortage would differ among countries, the overall effect would be a rise in the price of fish. Prices for all types of fish would increase in real terms by 3.0 and 3.2 percent by the years 2010 and 2015, respectively.

At world equilibrium prices, growth in world fish production is projected to slow down from the rate of 2.9 percent per year recorded during the past two decades to 2.1 percent per year between 1999/2001 and 2015. Global fish production in developing countries is projected to grow at 2.7 percent per year during the projection period, which is at half the rate recorded, on average, during the past two decades. In these countries, capture fisheries are expected to grow at only 1 percent per year. Therefore, most of the increase would come from aquaculture, which is expected to grow at 4.5 percent per year. The share of developing countries in world fish production is expected to increase from 75 percent in 1999/2001 to 81 percent by 2015. Total fish production in developed countries would only grow at 0.3 percent per year; this, however, represents an improvement with respect to the negative growth experienced during the past two decades. As a result, the share of developed countries in total world fish production is expected to fall from about 25 percent to 19 percent by 2015. Capture fisheries production in developed countries is expected to stagnate or even decline in absolute terms during the projection period.

On average, people will be consuming more fish in 2015, but increases henceforth are likely to accrue more slowly than in the past two decades. At equilibrium prices, global per capita fish consumption would increase at an annual compound rate of 0.8 percent from 1999/2001 to 2015, down from the rate of 1.5 percent achieved over the past 20 years. Developing countries would lead with per capita demand

growth projected at 1.3 percent per year, while per capita demand would decrease yearly, on average, by 0.2 percent in developed countries.

5.3.7 Fish Consumption to 2030 in the European Union

FAO has commissioned a study[3] on the long-term projections for fish consumption in the EU. The study indicates that, compared with 1998, per capita fish consumption[42] in the EU-25 countries[5] during the period 2005–30 will show an increasing trend (varying from 1 to 12 percent) in 19 countries[6] and a decreasing trend (from 1 to 4 percent) in 6 countries.[7]

General consumption trends for the pre-2004 EU-15 countries reflect an increase in the consumption of seafood products. This rise is supported by an increase in the consumption of convenience products. Frozen products tend to be on a downward trend, while the consumption of fresh fish will stagnate or decrease. The rising share of supermarkets in the retail of seafood products will also increase their availability, leading to increased consumption, while growing consideration of the health benefits of seafood may further fuel the positive trend in consumption.

Improvement of economic conditions is the main force behind the increased per capita consumption in the new member countries. Frozen fish still represents the bulk of fish consumption but the variety of species in this group will increase, with small pelagic species losing ground to demersal or other more exotic species such as crustaceans, molluscs or cephalopods. Freshwater fish will gradually be replaced by marine species, as the latter are often easier to prepare, offer wider variety in terms of taste and are becoming increasingly available owing to the spread of supermarkets.

The increase of the net supply will be possible because of a rise in imports from third countries (mainly Asian, African and South American countries) and an increase of aquaculture production in some countries (Greece, Spain, Norway and the United Kingdom). The addition of new countries to the EU will increase intra-European trade: firstly, because a large proportion of external European trade is currently between Western countries and Eastern and Northern countries; secondly, as a consequence of the relocation of Western plants to newly joined Eastern countries such as Poland or the Baltic States; and, thirdly, because of a reduction of re-export mechanisms among Western countries. In the same vein, decreasing trade barriers and improvements in the quality of processed fish products from developing countries will lead to restructuring within the European processing industry.

5.4 The Fisheries Sector in the European Union

The European fisheries sector is changing rapidly. Processes of restructuring, reduction and expansion are occurring simultaneously in the various sub-sectors as a response to numerous developments. The effects of these changes vary, clearly, among member states. Conservation of the fish stocks is probably the largest challenge to European fisheries policy due to the heavy exploitation of a number of commercially important stocks, of which a number are outside what is defined as 'safe biological limits'. In the last decades the overcapacity of the EU fleet has put considerable pressure on fish stocks, best exemplified by the development and current situation of the cod in the North Sea. Hence, a major challenge of the CFP has been and still is to improve the balance between harvesting capacities and fish resources available for exploitation. Over the last decades fish has become the single most internationally traded food in the

[3] The projections of future fish consumption are based on assumptions derived from past trends, literature review and expert consultations. More than 1 200 assumptions were made for growth rates in capture fisheries, aquaculture, commodity production, and imports and exports of commodities. For capture fisheries, it is likely that the European vessel production will face zero growth up to 2030. Aquaculture is growing at a substantial rate for salmon, sea bass and sea bream, but environmental constraints, coastal zone occupation choices by civil society and health regulations will not allow fish farming to continue its exponential trends in the future.

[4] Total apparent consumption (net supply for human consumption) divided by the number of inhabitants of a country.

[5] Austria, Belgium-Luxembourg, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Malta, the Netherlands, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden and the United Kingdom.

[6] Austria, Belgium-Luxembourg, the Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Italy, Latvia, Lithuania, Malta, the Netherlands, Poland, Slovakia, Slovenia and the United Kingdom.

[7] Cyprus, Estonia, Ireland, Portugal, Sweden and Spain.

World. The continued globalisation of the trade in fish and fish products has a major impact on the structure of the European fisheries sector. EU is the World's biggest market for fish and fish products and increasingly the European fish processing sub-sector is sourcing raw material and semi processed products from suppliers all around the globe. This development together with increased both horizontal and vertical integration within the fisheries sector affects the localization of the industry.

It is in the context of this study interesting that the agreed measures within the framework of the CFP have important territorial impacts in the regions, where fishing and related activities takes place – usually coastal regions and often areas where there is little prospect of growth in alternative economic sectors. This makes the CFP and related policies important for coastal regions throughout Europe. The situation is most outspoken in the areas most dependent on fisheries and related activities. Such areas can – depending on the level of disaggregation - be identified in many European countries. Furthermore, the impact of the measures varies between the fisheries dependent regions, as not all regions are equally well suited to face the processes of restructuring, reduction and expansion. This means that some regions might benefit from the measures agreed while others might not. Taking into account the severity of the present situation for the EU fisheries it might be fairer to say that most fisheries dependent regions are facing problems but some regions are facing more problems than others.

The European Union accounts for approximately 5 percent (7,414,166 tonnes in 2001, EU15) of the world's fish production (catch and aquaculture) in terms of volume; this makes the Union the World's third largest producer, capture fisheries remain the most important primary activity but aquaculture is becoming increasingly important, not least because demand is increasing and yield from capture fisheries are decreasing. However, the internal aquaculture and capture fisheries production is not nearly enough to satisfy the demands of the Union's more than 450 million consumers and the EU is therefore net-importer of fish products both in terms of value and volume. This makes the Union an important market for a number of exporting countries, including Norway and Iceland. The trade deficit in fish products of EU15 was in 2002 around € 10.5 billion, based on total exports amounting to approximately € 14 billion and total imports amounting to approximately € 24.5 billion.[8] Most individual EU member states are net-importers, the most notable exception being Denmark, which had a trade surplus of a little more than € 1 billion in 2002. The largest individual net-importers are Spain, France and Italy, which all had trade deficits of more than € 2 billion including intra-EU15 trade in 2002 (European Commission, Eurostat, 2003, p. 50ff). Fish related activities take place almost everywhere in the European Union, mainly in the forms of freshwater aquaculture in inland areas and capture fisheries and marine aquaculture in the coastal areas. The most important activities are capture fisheries and processing in coastal areas.

5.4.1 The Common Fisheries Policy

The requirement to adopt a common policy in the area of fisheries was provided already by the founding Treaties from 1957 by including products of fisheries in the definition of agricultural products, for which the Treaties required that a common market should be established. However, nothing much happened in the area of fisheries before the end of the 1960ies. The Commission issued the first report regarding the prospect of a common fisheries policy in 1966 and two years later concrete proposals were presented. Actual decisions were, nevertheless, not taken until Denmark, Norway, Ireland and the UK applied for membership; all four countries had comparatively important fishing sectors. This made the majority of the six original member states favour agreement on a common fisheries policy before the accession of these states. The basic principles of the CFP were, consequently, agreed on 30 June 1970 - one day before negotiation with the four applicants began. The content of Council Regulation (EEC) No 2141/70 on structures and Council Regulation (EEC) No 2142/70 on markets became as a result part of the *acquis communautaire*. Especially one provision in the regulation on structures was problematic in the eyes of the four applicant countries: the principle of 'equal access', which meant that Community vessels would have equal access to the waters of all Community member states. No conservation policy was agreed at the time, partly because it had not been requested by any of the six member states and partly because an effective conservation policy needs to cover the whole area, which is inhabited by a fish stock, and at the time the exclusive economic zones (EEZ) claimed by the EU member states were 12 nautical miles as the

[8] Note that the figures for import and export, which are for EU15, include intra-EU trade.

200 nautical miles EEZs of the EU member states were not claimed until later. Denmark, Ireland and UK joined the Community as from 1 January 1973; whereas Norway following a negative referendum, in which the issue of jurisdiction over fisheries played an important role, stayed outside.

In 1976 the EU member states decided - prompted by the spirit of emerging international law - to collectively extend their EEZs to 200 nautical miles from 1 January 1977 (with special provisions applying inside the 12 miles zone). Following the provisions of the regulation on structures a Community sea with equal access was automatically created, something that made the adoption of a comprehensive conservation policy a *de facto* possibility for the first time. Moreover, the Commission was granted the right to negotiate agreements with third countries and represent the member states in relevant international fisheries organisations. This established a Community external fisheries policy.

The first basic regulation of the CFP, Council Regulation (EEC) No 170/83, was agreed on 25 January 1983 together with a number of other regulations relating to fisheries. Based on the agreed principle of equal access between 12 and 200 miles it was clear that some system to limit the catches was necessary to prevent overfishing in the Community waters. The system agreed was to be that of TACs broken into national quotas, mostly because a system of TACs was familiar to fisheries administrators from the North East Atlantic Fisheries Commission (NEAFC). It was agreed that the TACs should be set on the basis of scientific advice from the International Council for the Exploration of the Sea (ICES). However, the connected issue of allocating the catch possibilities between the member states proved hard to settle. The outcome of the negotiations was the establishment of the principle of 'relative stability' meaning that the member states were allocated a fixed share of the agreed TACs for the different stocks. This core element of the present CFP must be seen as one of the most concrete testimonies of the recognition of the potential territorial impact of EU fisheries policy - here with the member states as the principal territorial unit.

The regulations of 1983 completed the establishment of a CFP with the introduction of a conservation policy. Many of the contours of the present CFP became clear with the adoption of the first basic regulation but the CFP has been under major reform in two rounds, in 1992/1993 and most notably as late as 2002/2003.

A number of measures have been implemented and others are foreseen/in the pipeline to achieve a sustainable fisheries sector in the EU. Total allowable catches (TAC) and quotas, fleet reduction schemes, effort regulation schemes, minimum landing size and mesh limitations are some of the most important. The scope of the CFP as it is outlined in the current basic regulation can be examined in the box beneath.

Scope of the Common Fisheries Policy:

1. *The Common Fisheries Policy shall cover conservation, management and exploitation of living aquatic resources, aquaculture, and the processing and marketing of fishery and aquaculture products where such activities are practised on the territory of Member States or in Community waters or by Community fishing vessels or, without prejudice to the primary responsibility of the flag State, nationals of Member States.*

2. *The Common Fisheries Policy shall provide for coherent measures concerning:*
   - *(a) conservation, management and exploitation of living aquatic resources,*
   - *(b) limitation of the environmental impact of fishing,*
   - *(c) conditions of access to waters and resources,*
   - *(d) structural policy and the management of the fleet capacity,*
   - *(e) control and enforcement,*
   - *(f) aquaculture,*
   - *(g) common organisation of the markets, and*
   - (h) *international relations.*

(Council Regulation (EC) No 2371/2002, art. 2, para. 1)

A description and discussion of the CFP and its reform can be structured in various ways. However, the Common Fisheries Policy has traditionally been thought of as consisting of four main areas:

conservation[9] (which is arguably just as much about allocation), structures, markets and relations with third countries. The area of conservation is usually understood as the cornerstone of the CFP and is dealt with in the basic regulation - after 1 January 2003: Council Regulation (EC) No 2371/2002 - which the other areas of the policy have to relate to although their basic provisions are set out in separate regulations. In the following sections each of these four areas will be dealt with. Some of the actual policy-elements of the area and some of the changes, which were the result of the recent and ongoing reform of the CFP, will be the main focus. Along the way the potential territorial impact of the policies will be discussed.

Conservation Policy

The conservation policy is the centrepiece of the Community's fisheries policy. The basic regulation of the CFP is both the legislative act, whose objectives the remaining fisheries policy areas have to relate to and have to draw their justification from, and the act, which outlines the basic framework for the protection of fisheries resources in Community waters. The basic regulation, Council Regulation (EC) No 2371/2002, is consequently the key EU legal act specifically relating to fisheries.

A basic regulation was first agreed upon in 1983 as described in the introduction. Many of the key elements are today in essence the same but especially the reform of 2002 put increasing focus on multi-annual management and fishing effort limitation and set supposedly a new course for the future by changing the balance of the policy towards a more holistic environmental perspective rather than a more narrow fisheries perspective. In other words, the basis for the development and management of the fisheries sector in the EU changed significantly with the adoption of the new basic regulation of the CFP in December 2002. The regulation includes the basic provisions for the measures relating to the protection of resources, fishing fleet, monitoring/control and governance.

The Objectives of the CFP and the Conservation Policy

Certain changes in the objectives of the basic regulation, which are outlined in the box beneath, can be considered important in relation to the future course of the CFP. Most notable in relation to conservation is the commitment to an eco-system-based approach and the application of a precautionary approach[10], which are mentioned in the objectives of the new basic regulation as opposed to the previous. This can *ceteris paribus* be expected to lead to less fishing pressure in the short and medium term with negative impact in the affected coastal regions in general. However, in the longer term the regions will possibly benefit from more stable and possibly higher catches.

The eco-system approach can be described as a marine strategy, which entails that, on one hand, eco-system considerations (in this case fisheries' impacts on eco-systems) are taken into consideration when developing management strategies and, on the other hand, that eco-system considerations are implemented where such effects are known and can be integrated into management.

Objectives of the Common Fisheries Policy:

The Common Fisheries Policy shall ensure exploitation of living aquatic resources that provides sustainable economic, environmental and social conditions. For this purpose, the Community shall apply the precautionary approach in taking measures designed to protect and conserve living aquatic resources, to provide for their sustainable exploitation and to minimise the impact of fishing activities on marine eco-systems. It shall aim at a progressive implementation of an eco-system-based approach to fisheries management. It shall aim to contribute to efficient fishing activities within an economically viable and competitive fisheries and aquaculture industry, providing a fair standard of living for those who depend on fishing activities and taking into account the interests of consumers.
(Council Regulation (EC) No 2371/2002, art. 2, para. 1)

[9] Incl. resources, fleet (an overlap with the structural policy), monitoring and governance issues.

[10] Application of a 'precautionary approach' to fisheries management *"means that the absence of adequate scientific information should not be used as a reason for postponing or failing to take management measures to conserve target species, associated or dependent species and non-target species and their environment"* (Council Regulation (EC) No 2371/2002, art. 3(i)).

Protection of and Access to Resources

The objective of the conservation policy is primarily to protect the fish stocks by limiting the amount of fish taken out of the sea each year and to ensure that this is respected. This is mainly done through a system of TACs for each stock, based on advice from the International Council for the Exploration of the Sea (ICES)[11], which are divided into national quotas[12] on the basis of the core principle of 'relative stability'.

> Allocation of fishing opportunities between the member states:
>
> (i) The Council, acting by qualified majority on a proposal from the Commission, shall decide on catch and/or fishing effort limits and on the allocation of fishing opportunities among Member States as well as the conditions associated with those limits. Fishing opportunities shall be distributed among Member States in such a way as to assure each Member State relative stability of fishing activities for each stock or fishery.
>
> (ii) When the Community establishes new fishing opportunities the Council shall decide on the allocation for those opportunities, taking into account the interests of each Member State.
>
> (iii) Each Member State shall decide, for vessels flying its flag, on the method of allocating the fishing opportunities assigned to that Member State in accordance with Community law. It shall inform the Commission of the allocation method.
>
> (iv) The Council shall establish the fishing opportunities available to third countries in Community waters and allocate those opportunities to each third country.
>
> (v) Member States may, after notifying the Commission, exchange all or part of the fishing opportunities allocated to them.
>
> (Council Regulation (EC) No 2371/2002, art. 20)

Relative stability means that the quotas are calculated on the basis of a combination of 1) historic catches, 2) special provisions for coastal communities, which are heavily dependant on fishing, and 3) compensation for jurisdictional losses in catches in third countries' waters, which were the result of the creation of 200 nautical miles exclusive economic zones (EEZ) by the coastal states in the mid-70s (Holden, 1994, pp. 41-45). The member states manage their own quotas and they have thereby the possibility to take special regional considerations into consideration when allocating the quotas as long as the chosen approach does not conflict with the provisions of the CFP or other Community legislation.

Relative stability is a popular principle among most member states (with the most notable exception of Spain) but the Commission has nonetheless announced that it will look into how market forces can be allowed to play a greater role in the allocation of fishing opportunities within the Community.[13] Depending on the mode of implementation this might give rise to the same issues as experienced under the Icelandic ITQ system (see section about Iceland), where the smallest fishing communities have lost access to resources compared with the larger communities. This might change the balance between the regions across the member states by allowing fleets with for instance excess capital to gain access to quotas from other fleets. This has to some extent already been experienced with the so-called 'quota hopping', which refers to the situation where economic actors in the form of shipowners - invoking Community laws giving them the right to exercise their activity in any of the member states - buy up used or license new vessels in other member states allowing them to fish on those member states' quotas – this has especially been the case with Spanish and Dutch shipowners. Although some countermeasures – in the shape of demands for a 'real economic link' - have been taken by the targeted member states, the phenomenon of quota hopping highlights the challenges in upholding a territorial logic of an economic sector within a single European market (Lequesne, 2000a). The EU framework does in this way in itself create a push toward more market based management options - also within the fisheries sector.

[11] The final decision on the TACs is taken in the Council and the decision is political, although the scientific advice is the background of the decision.
[12] In case the stock in question is shared with one or more third countries, agreements are initially made with these on the allocation of the total TAC for the specie.
[13] DG Fish website: http://europa.eu.int/comm/fisheries/reform/access_en.htm (8 March 2005).

Consequently, a possible change towards a market based management system will have territorial impact but the form and extent of impact will be very much depending on the actual mode of implementation.

The concrete measures, which are used to govern access to waters and resources, are outlined in the basic regulation and can be found in the box beneath. Specific measures have assumed increasing importance in relation with the reform in 2002.

Measures governing access to waters and resources and the sustainable pursuit of fishing activities:

(a adopting recovery plans under article 5;
(b adopting management plans under article 6;
(c) establishing targets for the sustainable exploitation of stocks;
(d limiting catches;
(e) fixing the number and type of fishing vessels authorised to fish;
(f) limiting fishing effort;
(g) adopting technical measures, including:

- *(i) measures regarding the structure of fishing gear, the number and size of fishing gear on board, their methods of use and the composition of catches that may be retained on board when fishing with such gear;*
- *(ii) zones and/or periods in which fishing activities are prohibited or restricted including for the protection of spawning and nursery areas;*
- *(iii) minimum size of individuals that may be retained on board and/or landed;*
- *(iv) specific measures to reduce the impact of fishing activities on marine eco-systems and non target species;*

(h) establishing incentives, including those of an economic nature, to promote more selective or low impact fishing;
(i) conducting pilot projects on alternative types of fishing management techniques.

(Council Regulation (EC) No 2371/2002, art. 4, para. 2)

One of the most important new elements in relation to the resource policy is the obligation or possibility for the Council to adopt multi-annual recovery or management plans for certain fish stocks, which are *"outside safe biological limits"*[14] or *"at/or within safe biological limits"* (Council Regulation (EC) No 2371/2002, art. 5, para. 1 and art. 6, para. 1). This is by many considered to be one of the main achievements in relation to protection of resources of the reform in 2002. Linked to this is the increasing focus on fishing effort (in terms of vessel days-at-sea) as an useful and necessary policy instrument. The instrument is not popular in all member states and it has so far been applied in the most critical situations in relation to the recovery plans.[15] The focus has so far been on the recovery plans (see also box beneath), which should be agreed for the most threatened stocks, but it is also expected that the management plans will prove important and be part of the general shift towards more long-term planning of management. This shift has presently very high - if not the highest - priority among the changes currently being implemented.

Provisions for recovery plans:

1. *The Council shall adopt, as a priority, recovery plans for fisheries exploiting stocks which are outside safe biological limits.*
2. *The objective of recovery plans shall be to ensure the recovery of stocks to within safe biological limits.*

They shall include conservation reference points such as targets against which the recovery of the stocks to within safe biological limits shall be assessed.
Targets shall be expressed in terms of:

[14] 'Safe biological limits' is defined as the point where the indicators of the state of a stock predict a low risk of transgressing certain 'limit reference points', for instance values of biomass or fishing mortality rate, which are to be avoided (Council Regulation (EC) No 2371/2002, art. 3(j) and (l)).
[15] The first multi-annual recovery plans were adopted for the most depleted cod stocks by the Council in December 2003 and included fishing-effort limitation.

(a) population size and/or
(b) long-term yields and/or
(c) fishing mortality rate and/or
(d) stability of catches.

Recovery plans may include targets relating to other living aquatic resources and the maintenance or improvement of the conservation status of marine eco-systems.

Where more than one target is set, recovery plans shall specify the order of priority of these targets.

3 Recovery plans shall be drawn up on the basis of the precautionary approach to fisheries management and take account of limit reference points recommended by relevant scientific bodies. They shall ensure the sustainable exploitation of stocks and that the impact of fishing activities on marine eco-systems is kept at sustainable levels.

They may cover either fisheries for single stocks or fisheries exploiting a mixture of stocks, and shall take due account of interactions between stocks and fisheries.

The recovery plans shall be multi-annual and indicate the expected time frame for reaching the targets established.

4. Recovery plans may include any measure referred to in points (c) to (h) of Article 4(2) as well as harvesting rules which consist of a predetermined set of biological parameters to govern catch limits.

Recovery plans shall include limitations on fishing effort unless this is not necessary to achieve the objective of the plan. The measures to be included in the recovery plans shall be proportionate to the objectives, the targets and the expected time frame, and shall be decided by the Council having regard to:

(a) the conservation status of the stock or stocks;
(b) the biological characteristics of the stock or stocks;
(c) the characteristics of the fisheries in which the stocks are caught;
(d) the economic impact of the measures on the fisheries concerned.

5. The Commission shall report on the effectiveness of the recovery plans in achieving the targets.

(Council Regulation (EC) No 2371/2002, art. 5)

The starting point for the negotiations on the reform was situation, which had developed and persisted over many years, with overcapacity of fishing fleets (estimated to be up to 40%) relative to the fishing opportunities and several fish stocks in a depleted state. The management strategy that the EU adopted in connection with the reform in 2002 will among other things aim at limiting the fishing effort through application of the days-at-sea instrument and possibly closed areas for the most depleted fish stocks. This strategy will, as described above, be implemented within a multi-annual quota-system, in which the quotas are combined with days-at-sea restrictions. The days-at-sea instrument implies that the number of vessel days-at-sea for those fleet segments that are fishing on the stocks that are managed under recovery plans will be reduced. The days-at-sea instrument will increasingly expose the economic consequences of the excess capacity as is already seen in those fleets which depend on stocks for which low quotas have been set. This can be expected to lead to capacity reductions and can in the short and medium term be expected to lead to smaller allowable catches and consequently landings. In the long run this should ideally lead to larger and more stable fish stocks. However, in a more pessimistic but highly likely scenario the fishing effort will not be sufficiently reduced because of the size of the present overcapacity. This will imply the continuation of the crisis management of fish stocks in many years to come. In other words, if the increasing economic incentives for reducing capacity do not bring about the needed reductions the quotas and/or combined days-at-sea restrictions will continue to work restrictively with negative effects for the affected regions.

The reduction of quotas that will most certainly be implemented in the short and medium term implies that for economic reasons (namely the cost of having unused excess capacity) it will be necessary to reduce the capacity of important segments of the fishing fleet until the depleted fish stocks have recovered. The segments, which are under most pressure, are those exploiting depleted stocks such as most cod stocks, some sole, nephrops and hake stocks. In this respect it is useful to distinguish between, on one side, the fleets targeting pelagic species where it generally speaking seems that a reasonable balance has been found, which means that the quotas are not restrictive in the sense that there is not

severe overcapacity, and, on the other hand, the very diversified group of vessels targeting demersal species where such a balance has not been found, which means that overcapacity is a major problem and that quotas and quota reductions and/or effort reductions are more restrictive and have larger negative impact. It could be added that the pelagic species are from a biological point-of-view on average in a better condition than the demersal. Regions with pelagic fleets are consequently in a better position to cushion the effects of the future fisheries restrictions than regions with demersal fleets. In relation to this it should be added that the fleets targeting pelagic species have to a certain extent been forced to restructure at an earlier stage and are now run as efficient enterprises.

Most of the pressure of quotas is obviously on the fleets, which exploit specific threatened stocks. This has important territorial implications, in so far as fleets from different regions traditionally exploit different stocks - both because of tradition and because of geographical proximity. Vessels from the regions, which exploit the most threatened stocks, can consequently expect to be worse off than vessels from the regions, which exploit less threatened stocks. This is reasonably fair considering the objectives of the conservation policy and the state of EU fish resources. However, as just described, this policy is by no means territorially neutral. There will, furthermore, be differences among the regions, which are affected negatively by the quotas. Some regions have fleets, which are able to redirect their fishing effort to other species, either by changing gear type or simply sailing to another area or a combination of the two. Other regions have fleets, which have physical constraints making them more vulnerable to the restrictions imposed by the policy, e.g. lack of ability to change gear or travel long distances.

Consequently, the different coastal regions can in theory be placed on a continuum ranging from regions with fleets, which are not targeted by quotas which are restrictive relative to the regional fishing capacity, over regions with fleets, which are targeted by restrictive quotas but if necessary able to redirect effort, to regions with fleets, which are targeted by restrictive quotas without being able to redirect fishing effort.[16] The first group includes regions, which have fleets that fish either on species not subject to quotas or species where there is enough quota or at least not decreasing quotas. The second group includes regions with fleets, which fish on stocks with low and/or declining quotas that are able to redirect fishing effort to other species. These include for instance larger, modern vessels. The last group includes regions, which have fleets that are targeted by quota reductions and have little possibility of redirecting fishing effort. It seems likely that the small, traditional coastal vessels will form a significant part of those. A quota system, which is at first glance protecting the resources and being reasonably 'fair' by targeting the fleets, which are fishing on these species, can consequently involve less reasonable or rational distribution of disadvantages across different regions. However, it should be remembered that the member states have something to say on this matter because the allocation of the national quota is up to the member states.

The days-at-sea instrument, which in connection with the recovery plans has been introduced in connection to the TAC system, distributes on its own disadvantages territorially unevenly, too. Again the issue is the flexibility of the vessels. The days-at-sea system means that certain vessels targeting specific species will only be allowed to be in a certain geographical area for a period corresponding to their awarded number of days-at-sea. This does not, however, prevent the vessels from targeting other species outside this area in the remaining time. For this to be feasible the vessel must - like in the case of the quotas - be able to travel to another place and possibly change gear. This puts different fleet segments in qualitatively different situations, something which cannot be explained with reference to the objectives of the CFP, and thereby also different regions in different situations because similar types of vessels often concentrate in certain regions or ports.

The TAC and days-at-sea system is supported by a number of technical measures, which are directed mainly at preventing the (by-)catching of juvenile fish or non-target species. The technical measures include: minimum mesh sizes, minimum landing sizes, rules as to what fishing gear to be used and where, seasonal bans on fishing, closed areas/marine protected areas (MPA) etc. (see also box on measures governing access to waters and resources and the sustainable pursuit of fishing activities). These measures are not territorially neutral and they can potentially have severe impact on the general situation of the

[16] A region can of course have parts of a non-targeted fleet and parts of a targeted fleet without alternatives. This is probably how it will most often be. However, the distinction between the three types is analytically useful but it should be kept in mind that the reality is more mixed.

fishing dependent regions, which host fleets fishing under these restrictions. This is in some sense self-explanatory since the technical measures restrict and regulate fishing activities in order to protect the resource base. However, like in the case of quotas and days-at-sea the technical measures can also have unintended side-effects, which place different regions in unequal situations. The explanation for this is basically the same as in relation to the quotas, namely that some vessels are more flexible than other, which means that they can for instance in the case of areas being closed sail to other open areas to fish (this equals a situation with no days-at-sea in a certain region).

Another important element of the CFP's resource policy is the core principle of equal access for EU vessels to the EU waters, which was described briefly in the introduction. However, special provisions apply within the member states' 12 nautical miles zone, where only foreign vessels with a historic record in the area are allowed to fish between 6 and 12 nautical miles off the coast. This exemption to the principle of equal access was upheld with the reform of the CFP in 2002 and must now be considered an institutionalised feature of EU fisheries policy, which has important regional implications. The 12 miles zone protects, on one hand, national (small-scale coastal) fleets by reserving a special area for them. This has, on the other hand, negative effects on vessels from other member states' regions, which are excluded from the area. The regions and member states, which benefit the most from this arrangement, are those with a sound fishable resource base inside the zone and in general a long coastline.

The Mediterranean

The Mediterranean Sea constitutes a special case within the area of conservation policy and is only fully integrated into the CFP in the areas of structural and market policies. In regards to the conservation policy, the main measure of TACs has traditionally not been applied in the area (COM (2002) 535 final, p. 4 and 9) and the only specie in the Mediterranean, for which there is presently a TAC applying (since 1998), is bluefin tuna.[17]

Two regional fisheries organisations (RFO) are active in the Mediterranean: the International Commission for the Conservation of Atlantic Tunas (ICCAT) and the General Fisheries Commission for the Mediterranean (GFCM) (COM (2002) 535 final, p. 10). The fact that the conservation policy of the CFP has not been extended to the Mediterranean Sea can be explained with reference to a number of specific characteristics regarding the fisheries in these waters:

- A distinctive feature of the fisheries in the Mediterranean Sea is that most fishing takes place near to the coast within the territorial waters of the member states. The EEZs in the Mediterranean Sea is generally not extended beyond the 12 nautical miles territorial sea although some countries (for instance Spain and Malta) have claimed larger fisheries protected zones (FPZ), which opposed to EEZs only concern the fish resources. Consequently, there is a large area of international waters relative to the area under national control in the Mediterranean Sea. Connected to the fact that most stocks (excluding some highly migratory) concentrate within the 12 miles zone is the fact that relatively few fish stocks are shared between nations. The number is, however, increasing due to the development of new fisheries. Also, the perception of what fish stocks are shared is changing due to new scientific knowledge (COM (2002) 535 final, p. 4-5).
- The average size of the vessels in the Mediterranean Sea is smaller than in the rest of the European Union. The landings constitute a modest share of EU landings in terms of volume but a significantly higher share in terms of value because most of the catches are used for human consumption. The large number of fishermen (42 percent of the jobs in the capture fisheries sector in the EU15 are found in the four member states bordering the Mediterranean Sea) operating small vessels from mostly small landing sites makes control and enforcement particularly difficult in this area, even though the control provisions of the CFP apply (COM (2002) 535 final, p. 5-6).
- The GFCM has a Scientific Advisory Committee (SAC) but its role and importance is not comparable to that of ICES in regard to the North Atlantic. Consequently, the institution, which should coordinate and promote scientific activities, is not sufficiently developed (COM (2002) 535 final, p. 6).

[17] DG Fish website (TACs and quotas 2004): http://europa.eu.int/comm/fisheries/doc_et_publ/pub_en.htm (3 December 2004).

The state of the resources in the Mediterranean Sea is problematic in so far as most species are considered to be overexploited. This, among other things, has led to low catch in several fisheries. However, only few stocks have been reported in risk of collapse. Estimates by ICCAT and GFCM suggest that fishing effort in fisheries targeting overexploited stocks should be reduced by 15 to 30 percent (COM (2002) 535 final, p. 6). Furthermore, the total volume of catches in the Mediterranean has been declining significantly from the mid-nineties until today (Eurostat database, 3 December 2004).

This situation has led to action from the European Commission in relation to the ongoing reform of the CFP. Until now the main CFP legislation in relation to management of resources in the Mediterranean Sea has been a regulation from 1994 on technical measures (Council Regulation (EC) No 1626/94). However, due to the developments in the area in regards to fishing pressure and declining catches, the Commission has proposed a Mediterranean Sea regulation (COM (2003) 589 final), which aims at introducing for instance strengthened technical measures, stronger control measures and effort regulations in the area. The fate of this proposal is at present not predictable, but it will surely not go unaltered though the legislative system of the European Union.

A likely future development in the Mediterranean is lower caches - either because of increasing and continued overexploitation or because of more structured management initiatives and/or Mediterranean policy agreements, for instance reinforcing effort control policy. Both scenarios can potentially lead to lower catches in the short term. This development could have severe negative regional impact in the area since many of the most fisheries dependent areas are traditionally found there.

Fleet

Among the major changes in the conservation policy from 1 January 2003 was the adoption of overall fishing fleet capacity ceilings and discontinuation of the capacity reduction programmes in the form of Multi-Annual Guidance Programmes (MAGP I to IV), which had been in place since 1983 with mixed success. Especially the last MAGP IV (1998 to 2002) was deemed inefficient, mainly because the objectives agreed were modest to the extent where it was questionable whether it was actually possible to talk about a *de facto* decrease in fishing effort due to technological advances in the corresponding period. Instead of setting targets for capacity reduction for different groups of vessels, as it was done in the MAGPs, the new strategy aims at creating an environment, which makes it increasingly profitable to reduce capacity in order to be more in line with the available resources. This is for instance done thought the multi-annual recovery plans where excess capacity will be excluded from the affected areas by restricting fishing effort through use of the days-at-sea instrument, which will as earlier mentioned expose the economic consequences of not having a reasonable balance between capacity and available resources. It will be up to the member states to get rid of excess capacity.[18]

Provisions for a capacity ceiling:

Entry/Exit scheme and overall capacity reduction

1. *Member States shall manage entries into the fleet and exits from the fleet in such a way that, from 1 January 2003:*
   - *(a) the entry of new capacity into the fleet without public aid is compensated by the previous withdrawal without public aid of at least the same amount of capacity,*
   - *(b) the entry of new capacity into the fleet with public aid granted after 1 January 2003 is compensated by the previous withdrawal without public aid of:*
     - *(i) at least the same amount of capacity, for the entry of new vessels equal or less than 100 GT, or*
     - *(ii) at least 1,35 times that amount of capacity, for the entry of new vessels of more than 100 GT.*
2. *From 1 January 2003 until 31 December 2004 each Member State which chooses to enter into new public aid commitments for fleet renewal after 31 December 2002 shall achieve a reduction in the overall capacity of its fleet of 3 % for the whole period in comparison to the reference levels referred to in Article 12.*
3. *Implementing rules for the application of this Article may be adopted in accordance with the procedure laid down in Article 30(2).*

[18] DG Fish website: http://europa.eu.int/comm/fisheries/reform/q&a_en.htm#9 (10 March 2005).

(Council Regulation (EC) No 2371/2002, art. 13)

Monitoring and Control

Control and enforcement remains after the reform largely the responsibility of the member states, as was the case before the 2002 reform. Although, the Commission's role in this area have been slightly strengthened in the new basic regulation and some movement towards more uniform control and sanctioning can perhaps be expected (Council Regulation. (EC) No 2371/2002, art. 26 and 27). The Commission has lately put forward a proposal (COM (2004) 289 final) on the creation of a Community Fisheries Control Agency (to be established in Spain), which must be seen as a move towards more uniform control and enforcement.

Strengthening of Community control and monitoring will benefit regions in which control is already efficient in comparison with regions where lean control is been traded for social peace (House of Lords, Select Committee on the European Union, 2003, p. 16). However, in the short term stronger control and enforcement must be expected to have a general negative impact on the fisheries dependent regions because of the increased difficulties in supporting the vessel with money earned on for instance 'black fish'. Nevertheless, it should not be ignored that control and enforcement serves an important goal by protecting the resource base. In economic terms it could also be argued that stricter control serves to ensure fair competition between the regions; stopping the supply of illegal, possibly undersized fish would serve to increase prices, which would have a positive effect in the affected areas.

Governance

A reoccurring critique of the CFP has been its failure to include stakeholders in the decision-making process. An innovative element and response to this criticism is that the new basic regulation provides the legislative basis for the creation of Regional Advisory Councils (RAC), which should be established in order to provide advice on management in fishing zones covering areas under the jurisdiction of at least two member states. Representatives of the affected interests (commercial fishermen, representatives of aquaculture or processing industries, environmentalists, consumers, and scientists) can participate in the RACs as members. Also regional or national administrators can be accepted as members (see box beneath).

Regional Advisory Councils, basic setup and mandate:

1. Regional Advisory Councils shall be established to contribute to the achievement of the objectives of Article 2(1) and in particular to advise the Commission on matters of fisheries management in respect of certain sea areas or fishing zones.
2. Regional Advisory Councils shall be composed principally of fishermen and other representatives of interests affected by the Common Fisheries Policy, such as representatives of the fisheries and aquaculture sectors, environment and consumer interests and scientific experts from all Member States having fisheries interests in the sea area or fishing zone concerned.
3. Representatives of national and regional administrations having fisheries interests in the sea area or fishing zone concerned shall have the right to participate in the Regional Advisory Councils as members or observers. The Commission may be present at their meetings.
4. Regional Advisory Councils may be consulted by the Commission in respect of proposals for measures, such as multi-annual recovery or management plans, to be adopted on the basis of Article 37 of the Treaty that it intends to present and that relate specifically to fisheries in the area concerned. They may also be consulted by the Commission and by the Member States in respect of other measures. These consultations shall be without prejudice to the consultation of the STECF and of the Committee for Fisheries and Aquaculture.
5. Regional Advisory Councils may:

(a) submit recommendations and suggestions, of their own accord or at the request of the Commission or a Member State, on matters relating to fisheries management to the Commission or the Member State concerned;
(b) inform the Commission or the Member State concerned of problems relating to the implementation of Community rules and submit recommendations and suggestions

addressing such problems to the Commission or the Member State concerned;
(c) conduct any other activities necessary to fulfil their functions.

Regional Advisory Councils shall inform the Committee for Fisheries and Aquaculture of their activities.
(Council Regulation (EC) No 2371/2002, art. 31)

This new creation is directed at removing the feeling among the affected interests[19] that EU fisheries policy is unnecessary top-down, command control and created by faraway central institutions (Grieve, 2001, p. 13). The specifics regarding the RACs have subsequently been set out in a Commission decision in which it is stated that there can be seven of these councils: Baltic Sea, Mediterranean Sea, North Sea (operational as the first from 9 November 2004), north-western waters, south-western waters, pelagic stocks and high seas/long distance fleet (Commission Decision 2004/585/EC, art. 2(1)). It is not at this point in time possible to give a feasible prediction of the territorial impact of these councils, which have not been granted decision-making capabilities in relation to management. An interesting question is if the RACs will acquire such capabilities in the future and if so the extent of those. If that turns out to be the case this will open up for new perspectives on regional fisheries management. Nevertheless, it is clear that the establishment of the RACs serves as an indicator of the increasing awareness of the importance of thinking in regional terms in relation to EU fisheries management.

Summing up the Territorial Implications of the Conservation Policy

In general it could be said that none of the restrictive conservation measures - be it quotas, effort control or marine protected areas etc. - are territorially neutral since they in general aim to restrict fishing pressure, which might in the long turn lead to higher catches but in the short and medium term reduce catching possibilities and increase costs for the fleet.

As described, the measures can furthermore be expected to increase regional disparities unintentionally in some cases because certain fleet segments will be better physically equipped to 'circumvent' the restrictive measures, e.g. a larger range of operation. This must be considered an unintended side effect with regional implications. Furthermore, this inequality in handling the measures might in itself be counterproductive for the CFP since there is no guarantee that the fleet best able to circumvent the measures are those, which are preferable seen in the light of the objectives of the CFP (e.g. fishing with little damaging impact on the eco-system) - perhaps on the contrary. To describe these mechanisms with reference to the entire European space on NUTS3 level is not possible but example studies will highlight some of these issues on a more concrete level than what has been presented above.

Structural Policy

The EU structural policy for the fisheries sector relates to the Community's Economic and Social Cohesion Policy. The main measure of the CFP's structural policy is the Financial Instrument for Fisheries Guidance (FIFG), the objectives of which are presented in the box below. The FIFG provides support to the development of the capture, processing, aquaculture sub-sectors, for protected areas and for harbour development etc.

Objectives of the EU FIFG:

(a) to contribute to achieving a sustainable balance between fishery resources and their exploitation;
(b) to strengthen the competitiveness of structures and the development of economically viable enterprises in the sector;
(c) to improve market supply and the value added to fishery and aquaculture products;
(d) to contribute to revitalising areas dependent on fisheries and aquaculture.
(Council Regulation (EC) No 1263/1999, art. 1, para. 2)

The allocation of funds through the FIFG has clear territorial implications as some regions get more EU support than others and some get none. Since all regions contribute to financing the EU budget (through

[19] Especially the commercial fishermen, who to a certain extent feel that the EU does not take due account of their experience-based knowledge.

the member states) the allocation of funds redistributes money between the regions; this is also in general the idea. In ideal terms the regions, which receive the most, should also be the ones with the greatest need for structural aid for fisheries. This is, however, not necessarily always the case due to the criteria (for instance average GDP) establishing, which regions can get the highest share of EU support. Furthermore, the enlargement of the Union with 10 new member states, of which the majority has greater need for structural support than the regions of the old member states, might have disproportionate implications for the regions, which will in the future receive less funds. The funds have consequently 1) direct impact on the wellbeing of eligible regions because of the transfer of money and 2) impact on the balance between regions, which are not necessarily able to receive the same share of funding to similar fisheries related projects.

The structural policy of the CFP is increasingly being seen as an integral part of the conservation policy; a development, which can be traced back to the beginning of the nineties. This is also indicated by the fact that some structural policy provisions were incorporated in the reform in 2002 and written into the basic regulation under the heading 'Adjustment of Fishing Capacity' (Council Regulation (EC) No 2371/2002, ch. III). It can be expected that the links between the conservation and structural policies of the CFP will continue to be strengthened in the years to come.

The multi-annual guidance programmes (MAGP) have in the past been one of the main ways of coordinating the structural policy with the conservation policy. However, these programmes were deemed too ineffective with respect to the aim of reaching a better sustainable balance between resources and fishing pressure. The MAGPs involved the setting of targets for capacity reduction for different groups of vessels for each member state in order to bring capacity in line with the available resources. If these targets were not met the member state could for instance not receive aid for fleet renewal and modernisation. A new approach, which is described in the previous section on the conservation policy and in the section on the FIFG 2000 to 2006, was decided in connection with the reform in 2002. The last MAGP (IV) ended on 31 December 2002 and no new MAGP was proposed. However, the targets as of December 2002 were used as reference levels in the new scheme.[20]

The current FIFG programme runs from 2000 to 2006 but the measures, for which assistance can be given, were changed in connection with the reform of the CFP in 2002. However, information on the actual regional implementation of the FIFG programme, which ran from 1994 to 1999, is more complete than for the current programme.

The present discussion of the CFP's structural policy will take its point of departure in and focus on the FIFG programme from 1994 to 1999. In the following section the present FIFG programme and the changes, which were decided in December 2002 will be examined. The provisions of the programme, which will run from 2007 to 2013, have not yet been finally decided upon but the Commission has presented a proposal containing the contours of a European Fisheries Fund, which will also be presented. Finally, the territorial implications of the structural policy will be summarized.

Although the FIFG is the main financial instrument, which targets the fisheries sector, other programmes have targeted the sector. One of these is the Pesca initiative (1994-99), which had a clear territorial focus. This initiative is presented in the box beneath.

The Pesca initiative 1994 to 1999:

To cushion the worst effects of restructuring on regions dependent on fisheries, a special Pesca Community initiative was introduced in addition to the FIFG. Pesca combined several elements and sought to help the fisheries sector make a successful transition by diversifying fishermen's activities away from fishing and contributing to the diversification of coastal regions by developing new employment opportunities.

The Community contribution to Pesca was approximately ECU 260 million for the period 1994-1999. Pesca, as with all Structural Fund interventions, requires joint financing by the Member State and, in some cases, by the private beneficiaries.

[20] DG Fish website: http://europa.eu.int/comm/fisheries/news_corner/press/inf02_61_en.htm and http://europa.eu.int/comm/fisheries/pcp/faq2_en.htm (9 March 2005).

The Pesca initiative has ended but similar measures, such as aid to fishermen to help them retrain and diversify their activities outside marine fisheries and aid for the organisation of electronic trade and other information technologies to disseminate technical and commercial information, are now available under the FIFG.[21]

The total budget of the Pesca initiative was rather small compared to that of the FIFG for the period. The main beneficiaries (in absolute terms) were Spain, Italy, Greece, Portugal, France and the UK.[22]

FIFG 1994 to 1999

The projects, which were funded by the FIFG programme 1994 to 1999 had in total a budget of a little more than € 5 billion. The EU contributed with € 2.125 billion (hereafter referred to as EU FIFG support, expenditure etc.) and the member states with a little less than € 1 billion. The rest was financed by local and private funds, in other words the beneficiaries.

That a certain share has to be paid by the beneficiaries themselves has potential territorial implications. There is an obvious risk that financial support may not always go into the regions, which have the greatest need for support. This might be especially relevant for countries, where most of the country is defined as objective 1 despite the fact that there are differences between regions within the countries. In other words, all the regions are lacking behind but some are lacking more behind than others. This issue is particularly relevant in relation to the new member states, which are generally defined as objective 1 areas (minus Cyprus and very small areas around the capitals of the Czech and Slovak Republics), but the problem is by no means restricted to these member states.

The problem is that due to the better economic situation (and the possibility to finance for instance 50% themselves) enterprises situated in more developed areas are also those, which send in more applications. Poor enterprises in poor areas are in contrast possibly not able to cover self-financing and are thus not eligible. In conclusion there is a very real risk that most of the money may fall into the more developed areas of the in general underdeveloped areas. This is contradictory to the objectives of the structural funds including the FIFG.

A similar idea has been put forward by Lequesne (2004, p. 94) - although not with a specific territorial perspective but the parallel is obvious: *"Admittedly, European distribution and redistribution are not necessarily synonymous with a reduction in individual inequalities. In the case of structural funding, the professional actors who are locally the best organised, and particularly the industrial shipowners, often demonstrate a capacity to take maximum advantage of Community subsidies to which the territory in which they are established can lay claim"*.

The areas, for which assistance could be given under the FIFG programme, were the following (see also *Appendix on the FIFG 1994 to 1999*):

(a) adjustment of fishing effort (27.1% of EU FIFG support);
(b) renewal and modernisation of fishing fleet (26.3% of EU FIFG support);
(c) aquaculture (8.0% of EU FIFG support);
(d) protected marine areas (0.9% of EU FIFG support);
(e) fishing port facilities (6.0% of EU FIFG support);
(f) processing/marketing of products (22.1% of EU FIFG support);
(g) promotion (2.8% of EU FIFG support);
(h) other measures (6.5% of EU FIFG support);
(i) socio-economic measures (0.4% of EU FIFG support).

[21] From DG Fish website: http://europa.eu.int/comm/fisheries/pcp/faq3_en.htm (3 March 2005)
[22] Information on the regional distribution of the EU structural funds allocated through the Pesca can be found on NUTS2 on DG Fish's website: http://europa.eu.int/comm/fisheries/doc_et_publ/liste_publi/ifop/ifop_en.htm

The areas of assistance can furthermore be broken down to specific measures. A list of these measures can be found in the *Appendix on the FIFG 1994 to 1999*. Data on the financial implementation of the programme (divided on respectively area of assistance plus specific measure and on member state) can be found in the same appendix.

Three areas of assistance accounted for more than 3/4 of the total EU FIFG support given, namely 1) adjustment of fishing effort, 2) renewal and modernisation of fishing fleet and 3) processing/marketing of products. Inside these areas most EU FIFG support was given for these specific measures: scrapping of vessels (€ 376.64 million), construction of new vessels (€ 367.57 million) and increasing processing capacity (new production units and/or extension of existing production units) (€ 267.95 million). These three specific measures accounted for close to half of all EU FIFG support given in the period. It is noticeable that the Union supported construction of new vessels with almost the same amount of money as scrapping of vessels in a situation with a generally accepted overcapacity of the European fleet in the neighbourhood of 40 percent. This paradox was not approached until the reform of the CFP in 2002, which will be touched upon in the section on the FIFG from 2000 to 2006.

However, in the context of this study it is just as interesting how the support was distributed between the different member states.[23] In the *Appendix on the FIFG 1994 to 1999* the distribution between the different member states is presented. However, the figures cannot be compared directly because the presence of fishing activities differs throughout the Union as does the size of the member states in terms of population. It is noteworthy that Spain received almost half of all EU FIFG support in the period from 1994 to 1999.

The regions, which could get up to 75% (collective infrastructures and premiums) or 50% (investment in businesses) of the eligible costs of the projects funded by the EU, were those lagging behind in development (objective 1 of the EU structural funds) or regions with very low population density (objective 6 of the EU structural funds).[24] Regions outside objective 1 or 6 areas were eligible to up to 50% (collective infrastructures and premiums) or 30% (investment in businesses) cost sharing. Whether a region is defined as an objective 1 or 6 area or not is therefore important. This places (in some cases) fishermen from different regions in different situations with regards to EU support. This is not necessarily 'fair' - in the sense that the ones with the most need for support should also have access to most support. The criteria for being an objective 1 or 6 region is not linked specifically to the situation of the fishermen but rather to the GDP or population density of the region as a whole. A specific example is the fact that the Spanish NUTS2 region of Galicia was and is defined as an objective 1 region, while the NUTS2 region of the Basque country (Pais Vasco) is not. The fishermen in Galicia and the Basque country are more or less equally in need of support but the former can nonetheless get more co-funding from the EU to FIFG projects (Lequesne, 2004, p. 363). Similarly it is not always obvious that fishermen in areas with low population density are in a worse position than fishermen in densely populated areas.

The fisheries and aquaculture sector appeared in 32 FIFG programmes in total.[25] 15 of these programmes were integrated regional development programmes in objective 1 or 6 areas:

- Belgium: Hainaut (1 programme);
- France: Corse & Départements d'Outremer (5 programmes);
- Netherlands: Flevoland (1 programme);

[23] Sweden, Austria and Finland were not eligible until they entered the Union on 1 January 1995.
[24] The eligible regions in objective 1 or 6 areas were: Belgium: Hainaut; Denmark: none; Germany: Berlin-Öst, Brandenburg, Mecklenburg-Vorpommern, Sachsen, Sachsen-Anhalt, Thüringen; Greece: whole country; Spain: Andalucia, Asturias, Canarias, Cantabria, Castilla y León, Castilla la Mancha, Ceuta y Mellila, Extramadura, Galicia, Murcia, Comunidad Valenciana; France: Corse & Départements d'Outremer; Ireland: whole country; Italy: Abruzzo, Basilicata, Calabria, Campania, Molise, Puglia, Sardegna, Sicilia; Luxembourg: none; Netherlands: Flevoland; Austria: Burgenland; Portugal: whole country; Finland: Etelä-Savo, Kainuu, Lappi, Pohjois-Karjala; Sweden: Jämtlands län, Norrbottens län, Västerbottens län; United Kingdom: Highlands & Islands of Scotland, Northern Ireland, Merseyside. From DG Fish website: http://europa.eu.int/comm/fisheries/structures/objectif_en.htm (3 March 2005).
[25] From DG Fish website: http://europa.eu.int/comm/fisheries/structures/liste_en.htm (3 March 2005).

- Austria: Burgenland (1 programme);
- Portugal: Açores & Madère (2 programmes);
- Finland: Etelä-Savo, Kainuu, Lappi, Pohjois-Karjala (1 programme);
- Sweden: Jämtlands län, Norrbottens län, Västerbottens län (1 programme);
- United Kingdom: Highlands & Islands of Scotland, Northern Ireland, Merseyside (3 programmes).

Another 6 FIFG programmes were specific fisheries programmes in objective 1 areas (one programme per member state):

- Germany (Berlin-Öst, Brandenburg, Mecklenburg-Vorpommern, Sachsen, Sachsen-Anhalt, Thüringen);
- Greece (whole country);
- Spain (Andalucia, Asturias, Canarias, Cantabria, Castilla y León, Castilla la Mancha, Ceuta y Mellila, Extramadura, Galicia, Murcia, Comunidad Valenciana);
- Ireland (whole country);
- Italy (Abruzzo, Basilicata, Calabria, Campania, Molise, Puglia, Sardegna, Sicilia);
- Portugal (mainland).

The remaining 11 FIFG programmes, of which there were one for each of the following member states, were outside objective 1 or 6 areas: Belgium, Denmark (whole country), Germany, Spain, France, Italy, Luxembourg (whole country), Netherlands, Finland, Sweden and United Kingdom. The funds for these projects were given through the FIFG under the specific objective 5a in order to accelerate the modernization of agricultural and fishery structures.

For the FIFG 1994 to 1999 it is possible to get information on the regional distribution of the support on NUTS2 level (see *Appendix on FIFG implementation NUTS2 1994 to 1999*). It is consequently possible to see, which regions benefited the most from EU FIFG support (in absolute terms). The table beneath gives an overview of the nine NUTS2 regions, which have each received more than 2 percent of the total EU FIFG support given in the period 1994 to 1999. It should be kept in mind that this is by no means a perfect indicator for the impact of EU FIFG support, which very much depends on the level of fisheries related activities and the size of the region in terms of population.

Table 5.1 The nine most favoured NUTS2 regions in relation to EU FIFG support

Member state	NUTS2 code	Region	EU FIFG support	Share of total
Spain	ES11	Galicia *	€ 433.49 million	20.39%
Spain	ES61	Andalucia *	€ 192.93 million	9.08%
Denmark	DK00	Denmark	€ 95.25 million	4.48%
Spain	ES21	Pais Vasco	€ 75.22 million	3.54%
Spain	ES70	Canarias *	€ 65.27 million	3.07%
Germany	DE80	Meckl. Vorp. *	€ 54.88 million	2.58%
Spain	ES52	C. Valenciana *	€ 54.23 million	2.55%
Italy	ITG1[26]	Sicilia *	€ 48.88 million	2.30%
Portugal	PT16[27]	Centro *	€ 46.05 million	2.17%
* = objective 1 region			€ 1,066.20 million	50.16%

[26] New NUTS code compared to data in *Appendix on FIFG implementation NUTS2*. Same geographical region.
[27] New NUTS code compared to data in *Appendix on FIFG implementation NUTS2*. The new Centro region includes part of the former PT13 region, which means that the support given to the new Centro region in the period from 1994 to 1999 was probably larger than indicated here.

The nine NUTS2 regions, which received the most EU FIFG support in the period from 1994 to 1999, accounted for more than half the total support given; this has to be compared with the fact that more than 150 NUTS2 regions received EU FIFG support in the period. The Spanish region of Galicia received more than 20 percent of the total and constitutes in this way an extreme. Most EU support in Galicia targeted 'adjustment of fishing effort' (€ 146.54 million) followed by 'renewal and modernisation of fishing fleet' (€ 125.71 million) and 'processing/marketing of products' (€ 107.43 million).[28] It can furthermore be concluded that seven of the nine regions were defined as objective 1 regions.

Lequesne (2004, p. 363) mentions Galicia, Brittany and Scotland as examples of areas where the EU (FIFG and Pesca, combined with national and regional) structural aid for the fisheries sector constituted a significant injection of money in the period from 1994 to 1999.

FIFG 2000 to 2006

The FIFG programme 2000 to 2006 is now under implementation. A mid-term evaluation was conducted in 2004. Information on the projected implementation of the programme divided on area of assistance and member state is presented in *Appendix on the FIFG 2000 to 2006*. The total budget of EU support to the programme is a little more than € 3.7 billion. Spain is once again the main beneficiary member state, receiving 46.3% of the EU aid. Approximately € 1.1 billion are likely to be allocated to areas not defined as objective 1 regions.[29]

Preference is still given to regions in objective 1 areas, which now covers both low population density and low GDP, but some regions are no longer eligible under the criteria and receive therefore transitory support.[30] As mentioned earlier this has implications for fisheries in these areas because the criteria for being an objective 1 region depends on the average level of the GDP pr. capita and population density and not on the actual situation of the fisheries sector. The former objective 6 areas (low population density, FIFG 1994 to 1999) have been merged with the present objective 1 areas in connection with a general reduction of the number of different objectives under the structural funds. The maximum rate of assistance to investments in businesses in objective 1 areas has been reduced from 50% in the previous FIFG programme to 35% in the current; outside these areas the reduction has been from 30% to 15%. The maximum support rates for collective infrastructures and premiums (respectively 75% and 50%) have been maintained. Objective 5a has ceased to exist but funds are made available from the FIFG outside objective 1 areas (with the reduced support rates), which creates a situation similar to the previous system.[31]

The legal basis of the current fisheries structural policy programme is Council Regulation (EC) No 2792/1999 and Council Regulation (EC) No 1263/1999. The objectives are presented in the beginning of this section on the structural policy (see box). The specific areas of assistance in the FIFG programme 2000 to 2006 are:

- fleet renewal and modernisation of fishing vessels,
- adjustment of fishing effort,
- joint enterprises,
- small-scale coastal fishing,
- socioeconomic measures,
- protection of marine resources in coastal waters,
- aquaculture,

[28] Galicia had furthermore access to approximately 12 million ECU under the Pesca initiative. From DG Fish website: http://europa.eu.int/comm/fisheries/doc_et_publ/liste_publi/ifop/esen.htm (3 March 2005).
[29] From European Union website: http://europa.eu.int/scadplus/leg/en/lvb/l60017.htm (4 March 2005).
[30] These regions are: Belgium: Hainault; France: Corse and the arrondissements of Valenciennes, Douai and Avesnes; Germany: Ostberlin; Ireland: Southern and Eastern; Italy: Molise; Netherlands: Flevoland; Portugal: Lisboa e Vale do Tejo; Spain: Cantabria; United Kingdom: Northern Ireland, Highlands and Islands of Scotland. From DG Fish website: http://europa.eu.int/comm/fisheries/news_corner/doss_inf/ifop4_en.htm (3 March 2005).
[31] From DG Fish website: http://europa.eu.int/comm/fisheries/news_corner/doss_inf/ifop4_en.htm (6 March 2005).

- fishing port facilities,
- processing and marketing of fishery and aquaculture products,
- measures to find and promote new market outlets,
- operations by members of the trade,
- temporary cessation of activities and other financial compensation,
- innovative actions and technical assistance.

(Council Regulation (EC) No 1263/1999, art. 2, para. 3)

An overview of the distribution of the planned allocation of aid between the different areas of assistance (slightly different categories than mentioned above) can be found in the *Appendix on the FIFG 2000 to 2006*. Again fleet renewal, scrapping and measures supporting processing and marketing are the areas with the largest budget - accounting for more than 60 percent of the total funds.

An important discussion in relation to the FIFG in the negotiations of the reform of the CFP in 2002 was whether or not to continue public aid (EU or national) for the construction and modernisation of fishing vessels. This would - without any action taken - be continued under certain conditions until 2006. The granting of aid for building or modernising of fishing vessels in a situation with severe overcapacity was by many thought to undermine the objectives of the conservation policy. However, it has to be kept in mind that aid can be given for modernising without increasing the fishing capacity. This goes for instance for aid given for improving the working conditions on board. Consequently, one thing is to give aid, which results in increasing fishing capacity, another thing is to give aid for modernising to live up to sanitary regulations. Important elements of the (complex) final compromise on structural support were the introduction of a transition period until 31 December 2004 where aid could still be given for building of new vessels under 400 gross tonnes under conditions of an equivalent or larger capacity withdrawal and an overall three percent capacity decrease in 2003-2004 in those member states, which chose to give public support to fleet renewal (Council Regulation (EC) No 2369/2002, point 9 and Council Regulation (EC) No 2371/2002, art. 13, para. 1 and 2). After the end of 2004 it is not possible to give public aid to the construction of new fishing vessels in the EU.

New arrangement on aid decided as part of the CFP reform in December 2002:

Public aid for fleet renewal and for the equipment of fishing vessels, including for the use of more selective fishing techniques and of Vessel Monitoring Systems or for the modernisation of fishing vessels may be granted only on the following conditions and those set out in the second subparagraph of Article 3(3) and in Annex III:

(a) public aid for the renewal of fishing vessels may be granted until 31 December 2004;

(b) public aid for the renewal of fishing vessels may be granted only for vessels under 400 GT;

(c) public aid for the equipment of fishing vessels, including for the use of more selective fishing techniques and of Vessel Monitoring Systems, or for the modernisation of fishing vessels may be granted provided that:

(i) the aid does not concern capacity in terms of tonnage or of power;

(ii) the aid does not serve to increase the effectiveness of the fishing gear;

(d) by derogation from point (c)(i), public aid for the modernisation of fishing vessels may be granted subject to the provisions of Article 11(5) of Regulation (EC) No 2371/2002.

(Council Regulation (EC) No 2792/1999, art. 9 para. 1, consolidated version)

The decision to phase out aid for new vessels was the result of a compromise between to major blocks in the Council, namely the 'Amis de la Pêche'[32] group (consisting of Spain, France, Greece, Italy, Portugal and Ireland) and the 'Friends of Fish' network (consisting of Germany, Sweden, UK, the Netherlands, Belgium and to some extent Finland, although not on the issue of aid). The alliances within the Council give some evidence to the different member states' general perspective on the importance of public aid to fisheries - perspectives which were also influenced by the member states' different perceptions of whether or not public aid to renewal or modernisation would in one way or the other eventually result in

[32] In English: Friends of Fishing.

increasing fishing capacity or could be limited to improving e.g. hygienic standards However, other factors were also decisive in the way the discussions evolved; for instance the lack of involvement of the Scottish Parliament on EU matters, the strong involvement of the Galician local government, as well as the fact that a 'green' party was in government in Germany and another constituted the parliamentary basis of the Swedish government.

In the context of the multi-annual recovery plans a 'scrapping fund' - operational from 2003 to 2006 with a budget of € 32 million - was established in the context of the reform in December 2002 in order to assist member states in balancing fishing effort with the available resources. Decommissioning premiums, which were up to 20% higher than under the FIFG, were made available to vessels whose fishing effort had to be reduced by at least 25%.[33]

The new member states are eligible for EU support under the present FIFG from May 2004 to the end of 2006. Information on the allocation of possible EU support between the different new member states is included in *Appendix on the FIFG 2000 to 2006*. Poland will be the main beneficiary and the country is projected to receive more than 3/4 (in absolute terms a little more than € 200 million) of the total amount allocated to the new member states. The impact of the enlargement of the EU on the regions of the old member states with respect to the present FIFG programme is probably marginal as the programme was negotiated before the enlargement. However, the impact in the new member states could be substantial because of the increased access to EU funds compared to the pre-accession period. In relation to the old member states it should be expected that the enlargement will have more significant impact in the coming programming period.

The European Commission has kindly provided information – based on member states' reports - on the allocations of EU aid under the FIFG to NUTS2 regions in the period from 2000 to 2004 (see *Appendix on FIFG implementation NUTS2 2000-2004*). The programme has not come to an end yet. However, the data provided in the sheets seem to indicate that Spain's share of the FIFG is still substantial. However, the figures have to be treated cautiously since the programme is still running and the sheets do not even cover one full year with 25 member states in the EU. Several member states have, furthermore, not provided these sheets; among these is most importantly Portugal. However, based on the information provided in the sheets Spain has received more than 62% (954.92 million €) of the total EU aid accounted for in the sheets (1533.52 million €). Galicia remains the most-favoured NUTS2 region in the EU with more than 24% of the EU funds; and Andalusia is still number two with almost 8%. It is clear that these figures will be reduced somewhat when figures for especially Portugal are included.

European Fisheries Fund 2007 to 2013

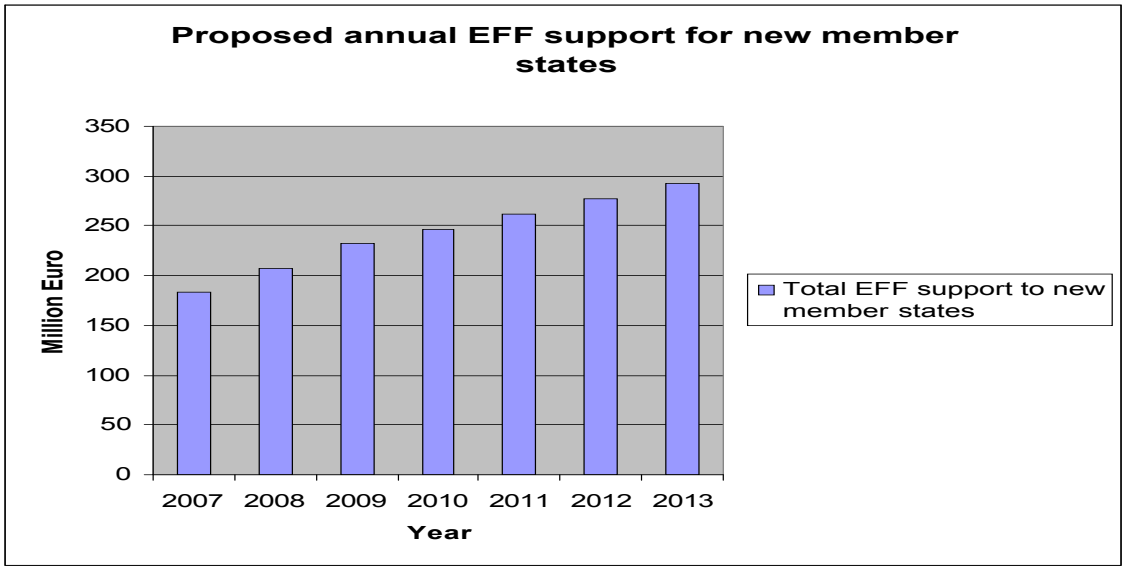
A new European Fisheries Fund (EFF) with a total budget of € 4,963 million has been proposed by the European Commission as the new instrument for the structural policy of the CFP from 2007 to 2013. The proposal aims to amend the relevant FIFG regulations (Council Regulation (EC) No 1263 and Council Regulation (EC) No 2792/1999). It is estimated that approximately 3/4 of the overall budget under the EFF will be allocated to the least-favoured regions (of which many are situated in the 10 new member states). For the remaining regions, the funds will be distributed between the member states according to the size of the fisheries sector, the number of people working in the sector and the adjustments considered necessary for fisheries and the continuity of measures in hand.[34]

The future allocation of structural funds has important territorial implications. The amount, which will be available for the old member states' regions through the EFF, will be smaller in the period from 2007 to 2013 than it is in the current FIFG programme 2000 to 2006. The total aid in 2004 prices for the new member states is proposed to be € 1,702 million (see figure beneath), which means that the old member states will receive a little more than € 3.25 billion compared to € 3.7 billion under the FIFG 2000 to 2006. The regions lagging behind in the old member states will be receiving approximately € 2 billion

[33] DG Fish website: http://europa.eu.int/comm/fisheries/news_corner/press/inf02_61_en.htm (10 March 2005).
[34] From European Union website: http://europa.eu.int/scadplus/leg/en/lvb/l66004.htm (4 March 2005).

compared to approximately € 2.6 billion under the FIFG 2000 to 2006.[35] The annual amount of aid to the new member states will increase over the period from 2007 to 2013.

Figure 5.1 Proposed annual EFF support for new member states



Data from DG Fish website: http://europa.eu.int/comm/fisheries/news_corner/press/inf04_31_en.htm (4 March 2005)

The EFF aims to support the overall objectives of the CFP and will help to implement the changes made with the reform in 2002. In view of the developments in the sector and the recent enlargement of the Union, the EFF will among other things aim at ensuring sustainable fisheries and diversify economic activities in fishing areas.[36] The proposed objectives of the EFF are to:

- ensure the long-term future of fishing activities and the sustainable exploitation of fishery resources;
- reduce pressure on stocks by matching Community fleet capacity to available fishery resources;
- strengthen the development of economically viable enterprises in the fisheries sector and make operating structures more competitive;
- foster the protection of the environment and fishery resources;
- encourage sustainable development and the improvement of the quality of life in marine, lake and coastal areas affected by fishing and aquaculture activities;
- promote the development of human resources and equality between women and men active in the fisheries sector.

  (COM (2004) 0497 final, art. 4)

Compared with the objectives of the current FIFG 2000-2006 it seems that there is a redirection of focus (at least in wording) towards the environmental aspects of the CFP, and a stronger link with the objectives of the conservation policy. This is reflected in the areas of assistance and the associated measures.

The five priority axes/areas are: 1) measures for the adjustment of Community fishing fleet, 2) aquaculture, processing and trade of fisheries and aquaculture products, 3) measures of collective interest, 4) sustainable development of fishing coastal zones, and 5) technical assistance (COM (2004) 0497 final, art. 4, explanatory memorandum, point 17). Under each of the priorities different measures can be supported:

[35] From DG Fish website: http://europa.eu.int/comm/fisheries/news_corner/press/inf04_31_en.htm (4 March 2005).
[36] From European Union website: http://europa.eu.int/scadplus/leg/en/lvb/l66004.htm (4 march 2005).

Ad.1: *Financial assistance will be available to fishermen and fishing vessel owners affected by the measures taken to combat overfishing. In particular, this will include aid for the temporary or permanent laying up of fishing vessels and for training, reskilling and early retirement of fishermen;*

Ad. 2: *The EFF will promote the acquisition and use of gear and methods that reduce the impact of fishing on the environment. The aid will be concentrated on small and micro enterprises;*

Ad. 3: *The following projects will be eligible for the aid: those which contribute to the sustainable development or conservation of resources, the strengthening of markets in fishery products or the promotion of partnerships between scientists and operators in the fisheries sector;*

Ad. 4: *The EFF will support measures and initiatives aimed at diversifying and strengthening economic development in areas affected by the decline in fishing activities;*

Ad. 5: *The Fund may finance action relating to preparation, monitoring, administrative and technical support, evaluation, audit and control necessary for implementing the proposed Regulation.* [37]

However, it should be kept in mind that the provisions for the EFF have so far only the status of a proposal from the Commission. Taking into consideration that the Commission is usually more inclined towards environmental and sustainability concerns than the Council it might not be unreasonable to expect some changes. In any case it is still up to the member states to turn the words into action.

Summing up the Territorial Implications of the Structural Policy

It is obvious that the (re-)distribution of money between regions and member states through the FIFG has direct territorial implications. This is the idea of the EU structural funds, which should ideally support a more balanced regional development on a European scale. However, the criteria used for determining the level of EU support are not related specifically to fisheries. This means that there is a potential risk that fishermen in equal need of support but in different territories will be treated differently.

Some regions and countries benefit more from EU FIFG support than others. This picture has probably been more or less stable over the last decade. However, in the future the situation will probably change as the main beneficiaries of the support increasingly will be situated in the new member states. This may also foster new alliances in the Council. Anyway, a case study in one or more of the new member states will serve to highlight the importance of the FIFG support in this geographical area.

Market Policy

The market policy is, as described in the introduction, one of the two 'original' policy areas of the CFP. The common market policy has since 1970 outlined provisions and measures for 1) common trade standards, 2) price intervention, 3) producer organizations (POs) and 4) trade with third countries. The basic act of the market policy is Council Regulation (EC) No 104/2000 of 17 December 1999 on the common organisation of the markets in fishery and aquaculture products.38 This regulation was the result of a reform of the market policy in response to extensive changes in the markets for fisheries products due to depleted stocks, changing consumer preferences, globalisation of markets etc.

Common trade standards refer to classification by quality, size or weight, packing, presentation, labelling and issues such as consumers' right to know the origin of the fish he or she is buying. Connected to this issue is also the fact that traceability will from 2005 be required for food products (Council Regulation (EC) No 178/2002). The aim of traceability is to be able to carry out a precise and efficient withdrawal of products form the market if something turns out to be wrong with them. Dependent on the mode of

[37] From European Union website: http://europa.eu.int/scadplus/leg/en/lvb/l66004.htm (4 March 2005).
[38] The basic description of the market policy is based on DG Fish website: http://europa.eu.int/comm/fisheries/news_corner/doss_inf/info76_en.htm (10 March 2005).

implementation this may have important consequences for the supply of fisheries products to the EU in the short and medium term. This could potentially have negative impact in regions depending on raw material for processing from third countries, which may have difficulties living up to increasingly detailed EU regulations in this area.

The Community's market intervention mechanism works mainly through the POs, which are described beneath. The mechanism is activated when the market prices of certain products fall below a defined threshold, guideprices (based on average prices in the preceding three years in representative ports). The Community will in these cases offer some financial support for the POs, which pay for removing (at least for a certain period of time) the products from the market in order to balance supply and demand. The budget of the price intervention mechanism is rather insignificant compared to the FIFG as it can be seen from the following two tables, which outline, firstly, the expenditure divided between EU15 member states in the period from 1988 to 1998 and, secondly, the projected total annual expenditure from 2000 to 2006. Although insignificant compared to the FIFG, the support through the market intervention mechanism has direct territorial impact in the regions where fishermen and fish farmers benefit from it. Detailed accounts of this on regional level is, however, not available on a European scale.

Table 5.2 EU assistance under the market policy 1988 to 1998, EU15 (1000 euros)

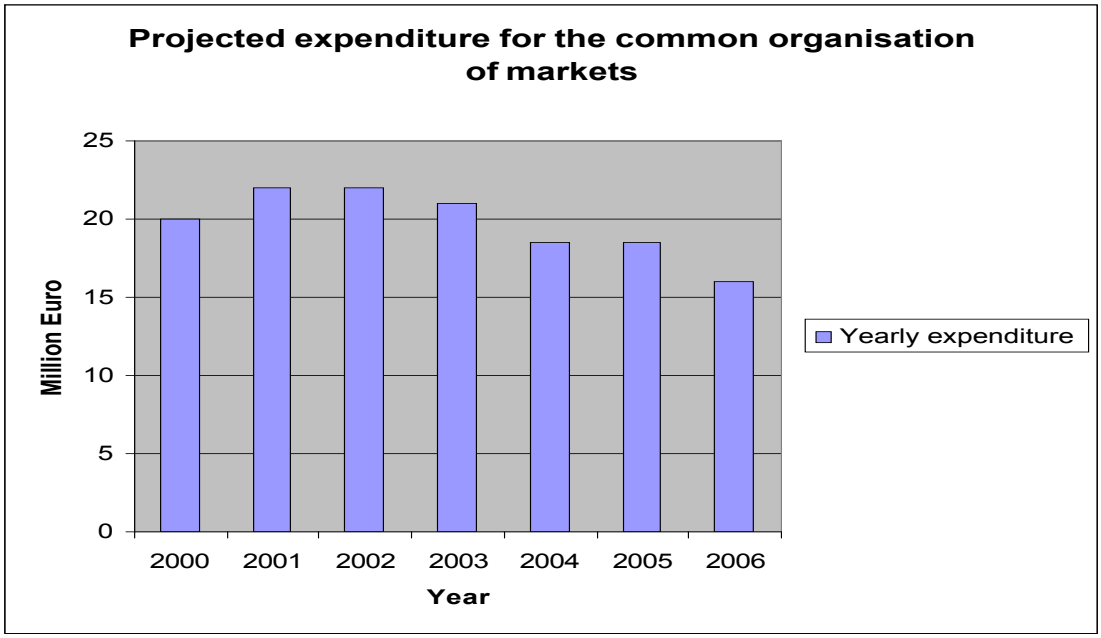
	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Belgium	76	306	351	176	132	375	82	300	200	200	100
Denmark	1546	1598	1157	1523	1407	3508	5426	5900	8400	3400	1800
Germany	488	267	271	101	2009	309	398	300	300	0	0
Greece	337	429	594	771	740	855	1056	900	0	0	100
Spain	19384	8679	8872	11254	11468	8332	7977	3100	200	5955	200
France	18221	6123	7314	6789	9852	9190	11237	10000	6530	5500	3000
Ireland	978	915	1161	1133	1880	2585	2178	3100	3030	1400	1500
Italy	2786	2282	1658	1894	1371	1293	696	700	0	0	0
Netherl.	65	280	103	13	29	82	35	200	100	100	100
Austria	0	0	0	0	0	0	0	0	0	0	0
Portugal	474	728	710	818	1596	1829	2120	1600	1000	1500	900
Finland	0	0	0	0	0	0	0	0	0	0	0
Sweden	0	0	0	0	0	0	0	200	2340	500	400
The UK	2690	2389	1406	1682	1591	2041	1835	1800	3100	3100	2700
EU15	46915	23996	23597	26154	32075	30399	33040	28100	25316	21809	10907

Source: European Commission, DG Fish, from Lequesne, 2004, p. 95.

The table indicates that it is difficult to point out main beneficiaries between the different member states. The amounts vary from year to year. Seen over the entire period the UK, Spain and France stand out as the countries, which benefit relatively much from this arrangement, but the amounts are as earlier mentioned modest compared to FIFG expenditure. Nevertheless, the subsidies do not support the aim of capacity reductions, which are crucial in other areas of the CFP.

Annual expenditure for the common organisation of markets is projected to decline in the period from 2000 to 2006 as new rules involving smaller aid for withdrawals - decided as part of the reform of the market policy in 1999 - are implemented (see figure beneath).

Figure 5.2 Projected expenditure for the common organisation of markets



Data from DG Fish website:
http://europa.eu.int/comm/fisheries/news_corner/doss_inf/info76an5_en.pdf (10 March 2005)

The *producer organisations* are a key element of the market policy and have a number of functions. They are, as mentioned above, parties in implementing the price intervention mechanism. The POs are organisations set up voluntarily by fishermen, or in the case of aquaculture fish farmers, to achieve the best possible marketing conditions for the products covered by the PO, which is usually geographically defined but also in some cases defined by the stocks exploited. They are due to their position between production and market in a unique position to implement measures relating to resource management, adding value to products and contribute to the stabilisation of markets (like through the price intervention mechanism).

The exact responsibilities and importance of the POs vary to a wide extent from member state to member state. However, the POs could potentially have territorial impact insofar as they are territorially defined. This means that a well functioning PO, which is able to balance the supply from its members to the demands of the market etc., could potentially be a valuable asset for the region in which the PO operates by increasing profitability for its members.

The final part of the market policy relates to *trade with third countries*. The overall framework for this part of the policy is the agreements, which have been made initially within the General Agreement on Tariffs and Trade (GATT) and subsequently by membership of the World Trade Organisation (WTO). These agreements set limits as to what the EU can do or not do in this area of its fisheries policy.

An example, which highlights how the rules for external trade rules can have varying territorial impact, is the recent safeguard measures targeting (especially Norwegian) farmed salmon with the explicit goal of protecting employment generated by salmon farming in parts of Scotland and Ireland (Commission regulation (EC) No 206/2005). However, the safeguard measures have *de facto* a negative impact on employment in other regions in the Union where the processing of Norwegian salmon has created employment, even though this is predicted not to be the case in the decision (Commission regulation (EC) No 206/2005, recital 130).[39]

[39] The negative impact of the safeguard measures on the Danish processing industry in the northern part of Jutland has been described in several local as well as national medias in the first months of 2005.

Provisions for safeguard measures:

Where, by reason of imports or exports, the Community market in one or more of the products listed in Article 1 is affected by, or is threatened with, serious disturbance likely to jeopardise the achievement of the objectives set out in Article 33 of the Treaty, appropriate measures may be applied in trade with third countries until such disturbance or threat of disturbance has ceased.
(Council Regulation (EC) No 104/2000, art. 30, para. 1)

These safeguard measures have led to loss of jobs in certain enterprises in municipalities depending on processing of Norwegian Salmon in the Danish NUTS3 region of Nordjyllands Amt; a region, which is one of the most disadvantaged in Denmark and a relatively high unemployment rate. In recital 120 of the regulation it states: *"The areas in which salmon farming is undertaken tend to be remote - mainly on coastal areas of Western and Northern Scotland and the West coast of Ireland. There are limited employment opportunities and the economic activity generated by salmon farming makes an important contribution to these local economies. Without that contribution, many of the small local business which supply goods and services to the Community producers and their employees would cease to be viable. It is therefore in the interests of dependent industries that effective definitive measures are taken."* It is remarkable that exactly the same description could have been applied as regards to salmon processors in Nordjyllands Amt.

Whereas it is not possible to tell if the number of jobs saved in Scotland and Ireland is greater than the amount of jobs lost in the northern part of Denmark, it is certainly a case of benefits and disadvantages being distributed unevenly between regions on a European scale. The use of safeguard measures are consequently not territorially neutral and this should be taken into consideration when applying these measures. This seems to some extent not to have been the case in relation to these specific safeguard measures given that the Commission could claim that no proof of negative effects on employment could be substantiated; at the same time jobs were lost in Denmark as a result of those specific measures.

The case above highlights (as an extreme case) that protective measures are not territorially neutral. Relaxing or lifting the same protective measures (no matter what shape they assume) will likewise also have varying impact in different regions. The most competitive regions will benefit from more free trade while it will have a negative impact in less competitive regions.

Relations with Third Countries

The last element of the CFP is the policy, which deals with relations with the outside world. There are two main elements in this policy area. The first is to set up bilateral fisheries agreements with third countries to grant access for EU vessels and the second is participation in regional organisations, which regulate fishing outside the EEZ areas, also known as the 'high-seas'. Fisheries agreements will be dealt with in the first part of this section, and regional fisheries organisations in the second part.

Fisheries Agreements

The Community policy on fisheries agreements entered into force with the creation of the Community EEZ in the Atlantic and the North Sea from 1 January 1977. The decision aimed at protecting the economic interests of the Community after unilateral declarations made by other sovereign states. At the same time, it was established that both fishing by third country vessels within the Community EEZ and the fishing rights for EU vessels in third country waters should be laid down in accordance with EU agreements on fisheries.

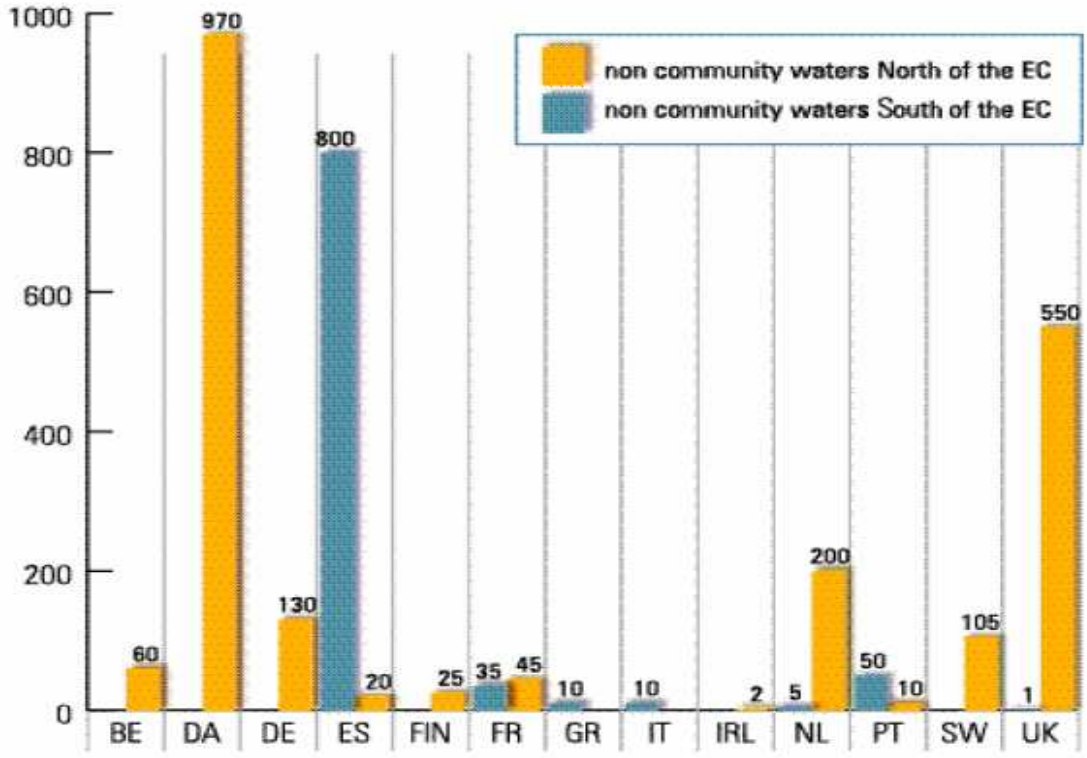
The first fisheries agreements were concluded in 1977. The number of such agreements increased significantly after the entry of the Iberian countries to the EU in 1986, as well as the entry of Finland and Sweden in 1995.

Since 1990, the fishing activities of Community vessels must observe the practices and measures approved at international level on this matter, in particular the Law of the Sea (UNCLOS) and the FAO

Code of Conduct for Responsible Fisheries. This brought a change in the responsibilities of the European Commission on full administration of fisheries agreements.

There are in 'geographical terms' two main categories of bilateral fisheries agreements. The first type is the northern agreements, which in general are reciprocal agreements on exchange of fishing opportunities in each others waters. These agreements have consequently no direct EU budgetary implications. The other type is the southern fisheries agreements, which usually involve some sort of financial transfer to the third country as compensation for fishing opportunities. Both types of fisheries agreements have territorial implications - sometimes important.

Figure 5.3 Vessels operating, solely or partially, outside Community waters (average 1993-97)



Source: European Commission, DG Fish (2001, p. 9)

In relation to this illustration it should be noted that a number of the northern fisheries agreements were rendered obsolete with the acceptance of the ten new member states into the Union. Furthermore, in terms of employment the southern fisheries agreements are by far the most important, accounting for approximately 83% of the total 40,650 jobs depending on fisheries agreements in the period. The financial costs of the external dimension of the CFP amounted to € 276 million in 2000 (after the failure to reach an agreement with Morocco). This can be considered as financial aid to the fleets depending on the southern agreements (European Commission, DG Fish, 2001, p. 9f).

Third country agreements are also important in relation to relocating European excess fleet capacity and thereby reducing the pressure on domestic resources.

There are presently three purely reciprocal northern fisheries agreements, namely agreements with Iceland, the Faeroes and Norway. The one with Norway is of most importance (the content of the agreement is described in the chapter on Norway) also in relation to territorial impact. The agreement is important because it provides access to fishing in Norwegian waters when this is most profitable and *vice versa*. In other words the reciprocal agreements facilitate more rational fishing behaviour for both of the involved parties. Failure to agree on exchange of quotas in each others waters will consequently have negative effect in the regions, where the fleet commonly fish in third countries' zones.

The importance of the northern agreements is as described above not comparable to that of the southern agreements. However, in some regions the agreements are important. These regions are most importantly situated in Denmark, United Kingdom and Germany, which are the main beneficiaries of the northern agreements and together accounted for around 80% of the catch value from 1993 to 1997 (IFREMER, 1999, p. 11).

The development of fisheries agreements with developing countries (southern agreements) is territorially particularly important because these agreements are in general utilised by only a few member states, primarily Spain (more than 80% of catch value 1993 to 1997 (IFREMER, 1999, p. 11)), and a large number of jobs depend on them (European Commission, DG Fish, 2000, p. 12).

The southern and northern agreements can be divided into three generations:

Firstly, *first generation or "classical" agreements* based on financial compensations in exchange for allowing access to fishing grounds. Such agreements are quite diverse and a distinction could be made between:

- Reciprocal agreements: The European Community allows fishing in the waters of EU member states in exchange for equivalent quantities in the waters of the third country in question. In general, these are states located geographically close to the EU, which exploit shared stocks. This is the case for most non-EU countries of the North Atlantic such as Norway, the Faeroe Islands or Iceland, as well as the Baltic countries that have recently entered the EU, such as Estonia, Latvia, Lithuania and Poland.

- Agreements allowing access to surplus stocks: Community fishing vessels are authorized to fish in the waters of the third country on the surplus stock of certain fish populations. The agreement with the USA, which expired at the end of 1993, and the agreement negotiated and signed with Canada in 1992 but not ratified by this country fall into this category.

- Agreements allowing access to resources in exchange for access to markets: In this case a third country provides fishing opportunities for Community vessels in exchange for tariff concessions.

- Agreements to exchange access rights to resources for economic compensations: In this kind of agreement the Community acquires fishing rights (fishing licences) in exchange for an economical compensation, which is mainly financed by the EU budget but also by vessel owners' contributions. Most fishing agreements with African countries – both bordering the Atlantic and the Indic Ocean - are of this type. A significant example was the agreement with Morocco

- Agreements establishing the access to resources through an economical compensation together with the application of tariff concessions: This is the case of the fisheries agreement with Greenland.

Secondly, *second generation agreements based on the creation of joint ventures* between the Community industry and that of the third signing country. This kind of agreement requires the third country to have a well-developed fishing industry. A typical example of this would be the agreement with Argentina.

At the end of the 80's the Community had concluded several fishing agreements based either on reciprocal access to resources (mostly agreements with North Atlantic countries) or on the payment of financial compensations in exchange for the access to living marine resources (agreements with African countries). Each of these models had its reason and could be explained by the historical rights and the agreements previously made and based on bilateral relations between sovereign states or on the fact that there were shared fish populations in the EU fishing

zones and those of the third countries which took part in the agreement.

However, it was acknowledged that it was necessary to broaden the spectrum of Community fisheries agreements in order to be able to offer additional fishing opportunities, which met the goal of maintaining the operational capacity of the Community fleets and, at the same time, contributed to the modernization of third country fleets and to the development of their fishing sectors.

The most innovative result of this reflection was the definition and conclusion of second generation agreements. According to these agreements, the fishing opportunities in third country waters would be based on the creation of joint ventures by Community vessel owners as well as on the fishing interests of third countries.

In later discussions it was planned that those Community fishing vessels, which took part in the agreement (mostly deep-sea trawlers), would be permanently (that is the case for joint ventures) or temporarily (time-limited joint ventures) transferred to third country waters. This implied the "export" of the fishing effort, which has been strongly criticized in international forums.

In the framework of these agreements, it is laid down that there should be cuts on differential tariffs on exports of certain fishing products for the third country. In other words, these products should "enter" the EU market with reduced and preferential tariffs (under the market policy). Obviously, this is subject to precondition that a trade agreement between the European Community as a whole and the signing country exists.

This type of agreement also establishes scientific and technical cooperation programs aimed at developing the fishing sector of the third country.

Finally, *third generation agreements based on the combination of the two previous types* but focusing on the development cooperation with the third country and the Community interests on fishing. This could be a kind of agreement of interest to Morocco. These agreements include the whole fishing sector - not only catches (as it happens with second generation agreements) - as well as the processing sector (canned products) and the marketing sector (product distribution and commercialization).

Third generation agreements entail a financial compensation granted to the authorities of the third country, which should try to create the suitable environment for the cooperation between sectors (vessel owners, processors, traders), Community and third country interests. Such financial compensation granted by the Community can be used by the third signing country to develop its fishing sector or to finance certain classical measures in different fields (technical training of staff, research, port or distribution infrastructure etc.), which help meet the cooperation goals.[40]

The fact that the EU has negotiation powers over any international fishing agreement has both negative and positive consequences for the affected regions, which host fleets fishing under the agreements. The positive impact from the arrangement is that the EU as a whole is a much more powerful actor in negotiations with third countries than the individual member states (or regions) would be. This leads logically to better agreements for the affected regions. Anyway, failure to reach agreements can have severe negative implications for the affected regions, which have little to say in these negotiations. The failure to reach an agreement with Morocco is an example of this, which led to support from the FIFG being directed to the affected fleets in Spain and Portugal. Furthermore, the countries, which benefit

[40] These development initiatives do not imply the suspension of the aids financed under the epigraph of the European Development Fund (EDF) or those measures planned by the Centre for Industrial Development (CID), nor all of the other aids and grants laid down in other programs of development aid.

noticeable from non-reciprocal agreements, are few, which naturally creates some scepticism towards this budgetary post in other member states.

Regional Fisheries Organisations

The Common Fisheries Policy, such as it is presently defined, gives the European Community exclusive power over preservation and administration of fishing resources. The Council made the European Commission responsible for the negotiation of fishing rights and the representation of the Community in international fisheries organizations. The Commission and DG Fish in particular are assisted in this task by member States representatives and the Secretariat of the Council.

The European Union is contracting party in 11 regional fisheries organisations (RFOs), which have been created through international agreements. These are:

- North-West Atlantic Fisheries Organisation (NAFO)
- North-East Atlantic Fisheries Convention (NEAFC)
- Indian Ocean Tuna Commission (IOTC)
- North Atlantic Salmon Conservation Organisation (NASCO)
- International Baltic Sea Fishery Commission (IBSFC)
- Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR)
- International Commission for the Conservation of Atlantic Tuna (ICCAT)
- General Fisheries Council for the Mediterranean (GFCM)
- Western Central Atlantic Fishery Commission (WECAFC)
- Fishery Committee for the Eastern Central Atlantic (CECAF)

South-East Atlantic Fisheries Organisation (SEAFO)

These organisations provide a framework for cooperation on the management of shared fish stocks and fish stocks in the high seas. The RFOs make recommendations on management and conservation measures, which must then be implemented by the contracting parties, and in some cases such as the NEAFC and the IBSFC the RFOs serve as the forums where agreements on the distribution of fishing access are made. Nevertheless, compliance cannot be guaranteed, although some RFOs have joint inspection programmes to ensure that contracting parties abide by the adopted measures.[41]

The territorial implications of the external policy and RFOs can be illustrated by reference to the current failure to get an international agreement on the fishing of Norwegian spring spawning herring (or Atlanto-Scandian herring). This stock is managed within the remits of the NEAFC and the countries involved in the fishery are Norway, Iceland, the Faeroes, Russia and the EU (Denmark, the UK, Sweden, the Netherlands, Germany, France and Ireland).

Norway decided in 2002 following its dissatisfaction with its negotiated share of the TAC[42] to opt out of an agreement from 1996 on the allocation of the TAC. No new agreement has so far been agreed. This has - besides the fact that this in the longer perspective puts the state of the stock at risk with following negative impact for all regions with fleets exploiting the species - had negative impact on the Danish processing industry (especially one enterprise in Skagen) and also to some extent on the Danish purse seiner fleet (located in Hirtshals). Both municipalities (NUTS5) are placed in the Danish NUTS3 region of Nordjyllands Amt, which as earlier described is one of the regions with the highest rate of unemployment in Denmark. The situation has affected the purse seiner fleet adversely by denying them access to fishing for Norwegian spring spawning herring in Norwegian zone during the first months of the calendar year, which is when this is interesting for them. The processing industry has been affected

[41] DG Fish website: http://europa.eu.int/comm/fisheries/doc_et_publ/factsheets/facts/en/pcp4_3.htm (2 December 2004).
[42] The total TAC is based on advice from ICES.

negatively by the fact that Norwegian vessels as a consequence of the missing agreement have landed their catches of herring in Norway instead of in Skagen.

The agreements made within the RFOs are consequently of importance for the regions, which hosts fleets that fish in the areas.

5.4.2 The Capture Fisheries Sub-Sector

The capture fisheries sub-sector is in economic terms of limited importance on a common EU or national scale. However, capture fisheries are in some regions very important as it has been stated several times in this report. In the following sections an introductory description of the overall structural development of EU capture fisheries will be provided based mainly on Eurostat data, which is presented in the following appendixes: *landings and catches, the fishing fleet and aquaculture*. This introduction will provide background data for approaching the structural developments, which will enable us to move down to greater levels of regional disaggregation and study the effects of the Common Fisheries Policy there by the means of for instance example studies.

The data in these sections are mainly taken from the Eurostat database, which includes statistics on volume of catches, volume and value of landings; the fishing fleet etc.[43] Eurostat obtains data from national statistics and from FAO. The information, which can be obtained from statistics on capture fisheries, is ambiguous. There are various reasons for this. Some of these are: 1) Fishing vessels are not obliged to land in ports of the country, whose flag they are flying. When vessels land in a port of a foreign (EU) country the value of the landing (first sale) will be ascribed to the value of landings in that country, irrespective of the fact that the profit actually ends up benefiting the economy of a region in another country. The spin-off effect of the landing will benefit the country of the landing. 2) The black economy in the capture fisheries sub-sector is generally estimated to be considerable, which means that official statistics underestimate the *de facto* economic importance of the sub-sector (and in biological terms the volume of catches). This is of course also the case for other economic sectors but the capture fisheries are particularly difficult to control.[44] 3) The data accuracy and compilation routines differ from country to country. One reason is that it is easier to control e.g. landings in a country with a small number of large vessels landing in a small number of ports like for example UK and Denmark than in a country with a large number of small vessels landing in a large number of ports, which is the situation in for instance Greece and Italy.[45]

The Fleet

An indicator of the structural changes in the European capture fisheries sub-sector is the development of the fleet. The interesting aspect of the fleet is the development of its fishing power. The fishing power of a fleet is notoriously difficult to measure and the size of the European fleet is therefore presently measured in three units: absolute numbers, tonnage (GT), and engine power (kw). The development in engine power in terms of kilowatt is presently considered the best indicator of the development of the actual fishing capacity of the fleet, even though 'technological creep'[46] is not taken into consideration.

[43] 'Catches' refers to fish caught by vessels from a certain country (this is the information needed in order to manage quotas), whereas 'landings' refers to fish landed in the ports of a certain country, regardless of the country of origin of the supplying vessel.

[44] A related problem concerns the fact that the volume of (legal as well as illegal) discards has to be estimated, which creates a distortion of the data on the impact of fishing activities. However, this statistical problem is mostly relevant when making biological research. Discarded fish do not contribute to the economy and the problem is in this way not relevant to this study.

[45] In the context of this project it is furthermore a problem that the statistics are more focussed on volume than value. Volume is in the case of fisheries not a suitable indicator for economic importance because the kilo prices for different species can be very, very different, not least because some species are caught for industrial use.

[46] Due to so-called technological creep the fishing power of a fleet will actually increase over time even if the engine power in terms of kilowatt is kept stable. This means that if the fishing power of a fleet should be kept stable, the engine power of the fleet should continuously be decreasing.

The development of the EU15 fishing fleet from 1995 to 2003 in terms of absolute numbers, tonnage and engine power is outlined in the table beneath.

Table 5.3 EU15 – indicators on the fleet

	1995	1996	1997	1998	1999	2000	2001	2002	2003
Number	103,633	101,141	102,063	100,133	97,751	95,381	92,328	90,129	88,122
Tonnage[47] (1000 GT)	1,998	1,985	2,021	1,996	1,995	2,007	2,006	1,965	1,912
Power (1000 kw)	8,187	7,958	7,973	7,823	7,702	7,601	7,472	7,274	7,107

Source: Eurostat database, 19 November 2004

The size of the European fishing fleet decreased in the period from 1995 to 2003 in terms of absolute numbers (15%) and tonnage (4.3%) as well as the most important indicator: engine power (decrease 13.2%).

The development of the fleets of EU15 member states from 1990 to 2003 in terms of numbers, tonnage and power can be found in the *Appendix on the Fishing Fleet.* The tables in the appendix show that some member states have contributed more to this decrease than others. The Irish and French fleets increased their capacity, while for instance Denmark, Greece and Spain decreased their capacity significantly in the same period. However, it should be kept in mind that also the scrapping of an inactive (but registered) vessel counts as a decrease. Although in different paces, most member states decreased their capacity in kilowatt over the period. The size of the fleets of the EU15 member states in terms of engine power in respectively 1995 (first year with full EU15 coverage) and 2003 is gathered in the table beneath (including Iceland and Norway for comparison). The developments of the EU15 fleet can also be examined in the maps beneath

Table 5.4 Size of fleet in EU15 states and others in 1995 and 2003, kw engine power

	1995	2003
Belgium	65,965	66,869
Denmark	407,760	324,957
Germany	169,182	160,248
Greece	669,272	572,228
Spain	1,631,818	1,176,727
France	990,784	1,108,446
Ireland	210,662	227,041
Italy	1,494,088	1,291,249
Netherlands	521,193	470,202
Portugal	394,749	393,614
Finland	224,742	187,696
Sweden	268,072	220,845
UK	1,138,663	906,720
EU15	**8,186,950**	**7,106,842**
Norway[48]	:	1,355,745
Iceland	:	538,442

Source: Eurostat database (see *Appendix on the Fishing Fleet*)

[47] The registration of the tonnage changed over a period from 1996 from Gross Registered Tonnage (GRT) to Gross Tonnage (GT), which is generally higher. This might partly explain that the tonnage does not seem to have decreased in the same regular pace as engine power.

[48] Norway is not included because of unexplainable inconsistencies in the data reported to Eurostat regarding power. An explanation from the Directorate of Fisheries in Norway has been requested.

Figure 5.4 Development of the number of wessels in EU15 countries 1995-2003

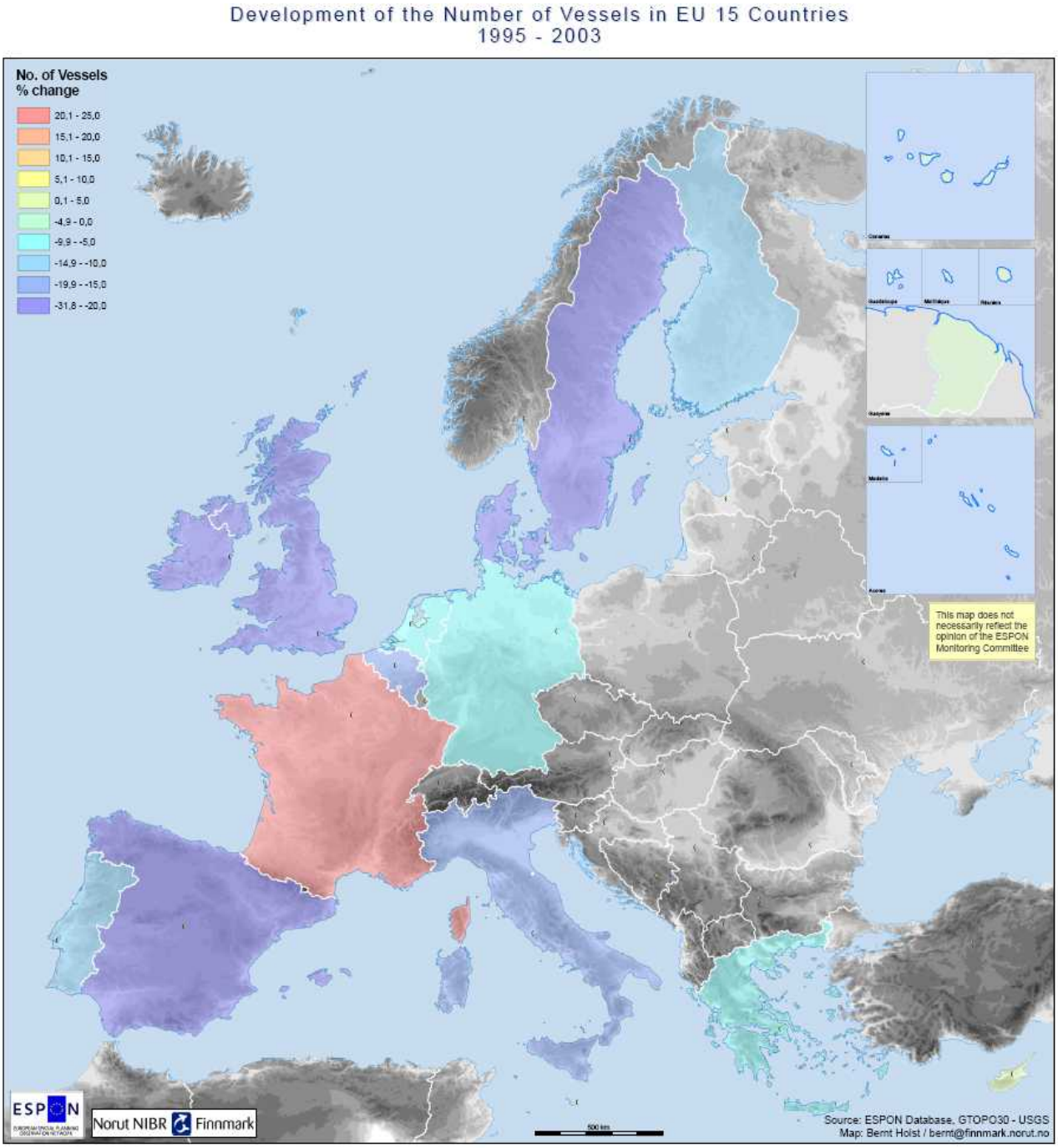


Figure 5.5 Development of the Tonnage of the fleet in EU 15 countries 1995 – 2003

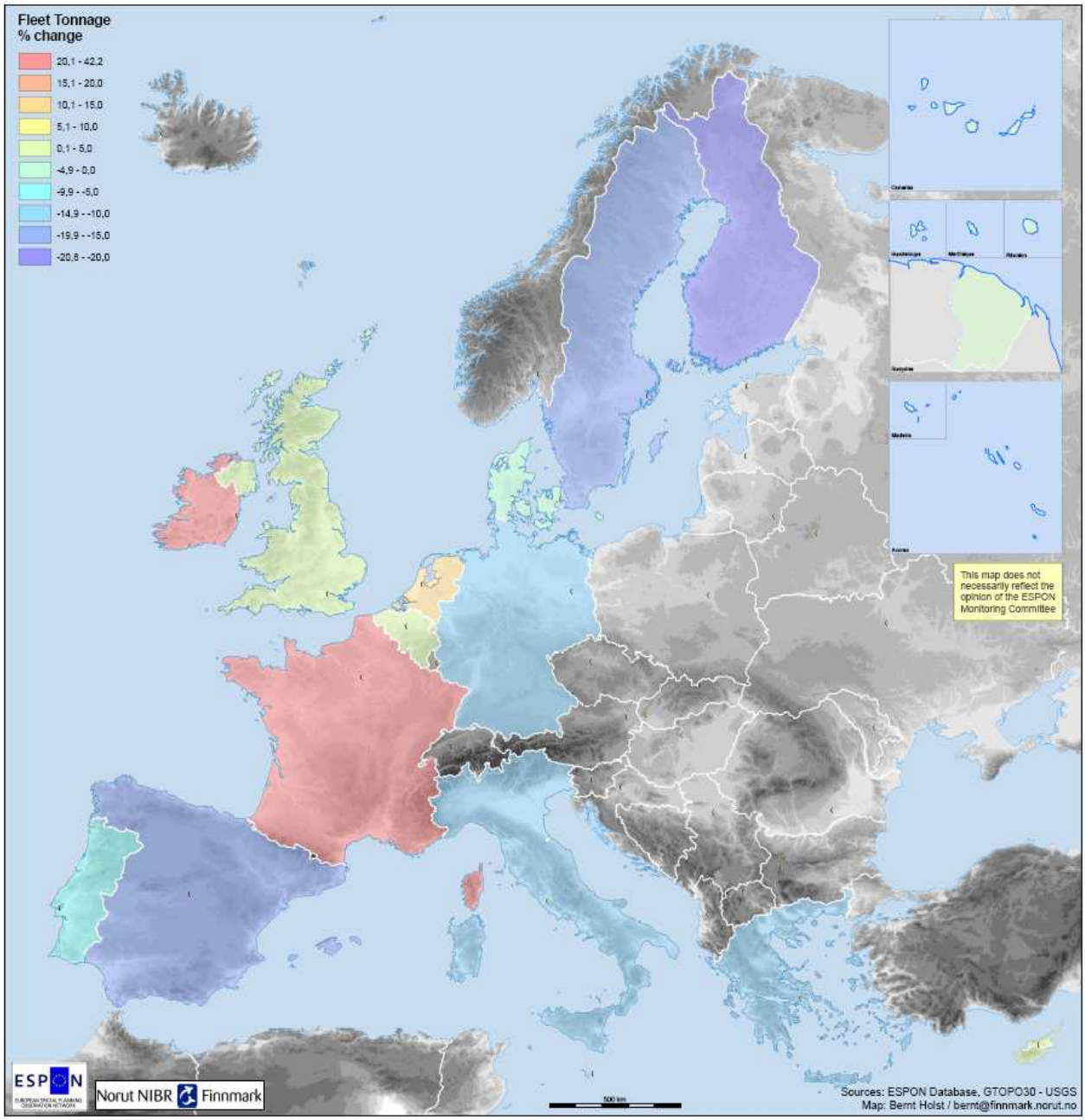
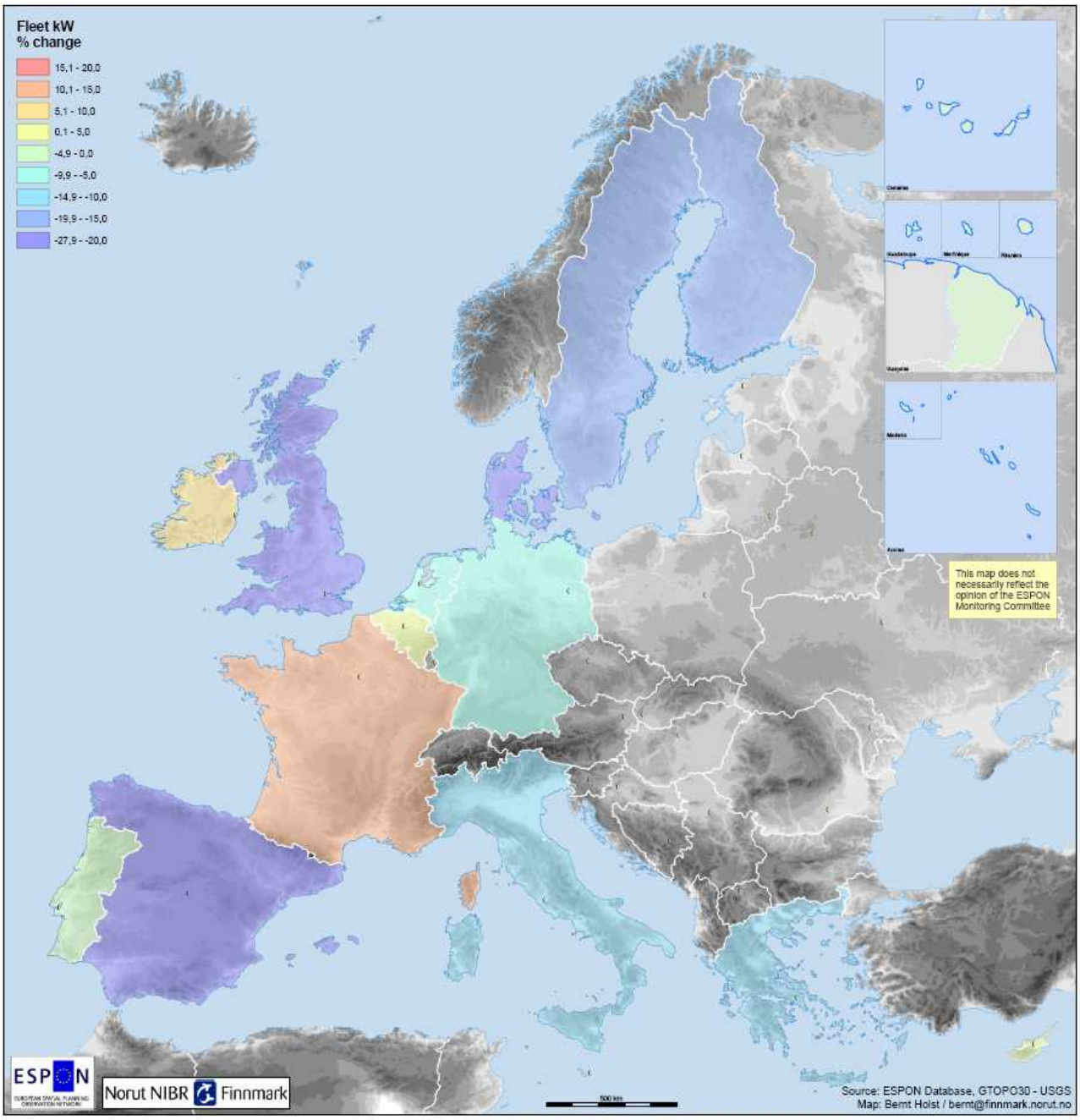


Figure 5.6 Development of the Tonnage of the fleet in EU 15 countries 1995 – 2003



In the context of this study, vessels less than 12 meters of length are defined as engaged in *small-scale coastal fishing*. This definition is similar to the definition applied by the EU in the context of the structural policy under the Common Fisheries Policy (Council Regulation (EC) No 2792/1999, art. 11(1)). As for the composition of the EU fleet more than 80 percent of the vessels are less than 12 meters long. Vessels above the length of 12 meters are pr. definition not engaged in small-scale coastal fishing but in *offshore fishing*. The proportion of vessels over the length of 30 meters is just above 2 percent (2003 figures). The balance between the different vessel length segments seems to be rather unaffected by the decrease in absolute numbers, indicating that the decrease has taken place in all segments (Eurostat database, 26 November 2004).

The EU15 capacity in terms of kilowatt of vessels under 12 meters was a little more than 2.1 million whereas the capacity of vessels over 12 meters was a little more than 4.9 million in 2003. The difference between the two segments is considerably bigger when calculated in terms of tonnage where the group over 12 meters accounts for more than 10 times the tonnage of the vessels under 12 meters (see *Appendix on the Fishing Fleet*).

However, there are great differences between the different EU countries when it comes to the composition of the fleet. Belgium and Finland constitute the extremes. No Belgian vessels are less than 12 meters long and 48 percent of the vessels of the Belgian fleet (numbering only 125 vessels) are more than 30 meters long. In the other end of the spectrum is Finland, where more than 94 percent of the vessels are less than 12 meters long and none over 30 meters long[49] (Eurostat database, 26 November 2004).

Information on the length composition of the EU15 member states' fleets in 2003 in terms of numbers, tonnage and power can be found in the *Appendix on the Fishing Fleet*. A total for respectively vessels under and over 12 meters have been calculated for each member state. The totals in regards to kilowatt engine power are gathered in the table beneath (including Iceland and Norway for comparison).

Table 5.5 Engine power (kw) by vessel lengths, over and under 12 meters[50]

	Total under 12 m	Total 12 m +
Belgium	0	66,869
Denmark	77,328	247,629
Germany	34,779	125,469
Greece	345,294	226,931
Spain	177,851	980,063
France	472,558	635,888
Ireland	34,436	192,608
Italy	301,976	987,740
Netherlands	8,739	461,462
Portugal	130,414	263,194
Finland	131,651	34,648
Sweden	78,465	142,384
UK	333,731	572,955
EU15	**2,127,222**	**4,937,840**
Norway[51]	?	?
Iceland	152,043	386,068

Source: Eurostat database (see *Appendix on the Fishing Fleet*)

[49] However, Finland does not fit very well to the chosen definition because many of the vessels are engaged in the Finnish speciality of inland (not coastal) fisheries, which are also managed under the Common Fisheries Policy. Better examples are the Mediterranean member states' fleets.

[50] The lengths of some vessels are unknown. These vessels are not included in the figures, see instead *Appendix on the Fishing Fleet*.

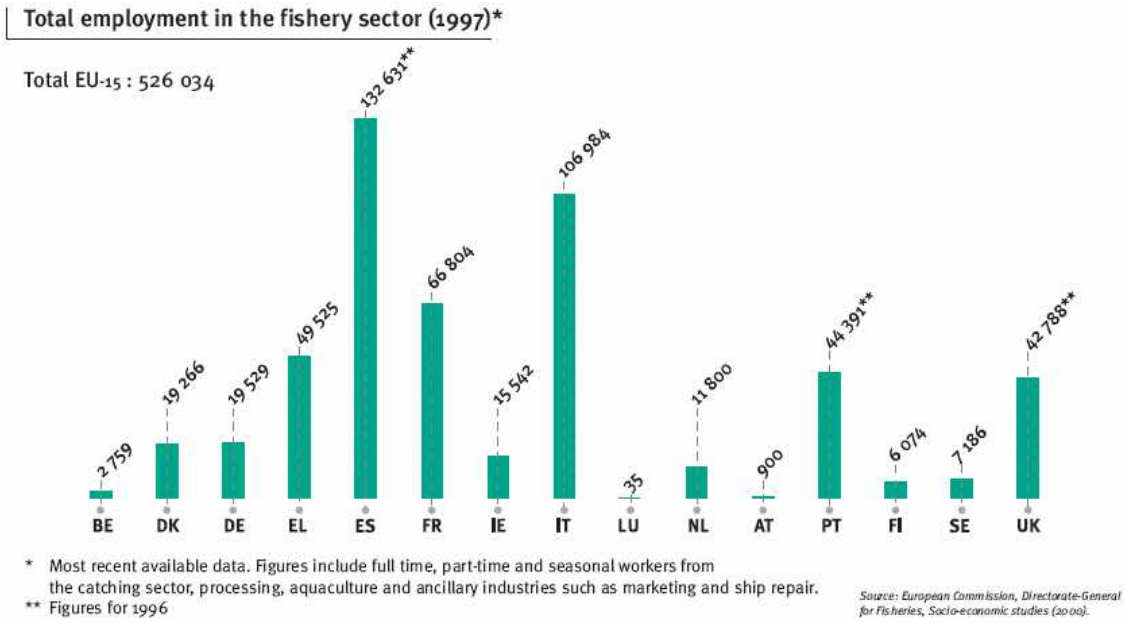
[51] Norway is not because of incorrect data in the Eurostat database.

The small-scale fleet constitutes consequently an important segment in EU15 total as well as in a number of member states.

Employment

Data on employment in the capture fisheries sub-sector is in general scattered and of variable quality making comparison difficult, which makes Eurostat less useful in this area. However, according to the Commission's latest data there were a total of 526,034 persons employed within the *entire* fisheries sector in 1997.

Figure 5.7 Total employment in the fisheries sector by member state in 1997



Source: European Commission, DG Fish (2004, p. 11)

It was in connection with the publication of the Commission's reform proposals in 2002 estimated that 66,000 jobs (a decrease of 22 percent) had been lost in the capture fisheries sub-sector in the period from 1990 to 1998. This suggests an employment figure of approximately 234,000 in the capture fisheries sub-sector in 1998. It was, furthermore, predicted that the reform would lead to the maximum loss of yet another 28,000 jobs over the period from 2003 to 2006 (COM (2002) 181 final, p. 3 and p. 20). It has to be kept in mind that the prediction was based on the Commission's proposals and that the final provisions eventually agreed in the Council were not as far-reaching as the measures proposed. Furthermore, only part of the jobs is lost because of reform; many of the jobs would be lost anyway due to technological advances. It can be concluded that jobs will continue to be lost in this sector and that this process will probably be to some extent accelerated by the ongoing reform.

Catches and Landings

The total catches of the EU25 fleet was approximately 8 million tons (live weight) in 1995. This figure had in 2002 dropped to approximately 6.8 million tonnes. (European Communities, Eurostat, 2004, p. 248). Figures indicating the value and volume of landings in 2000 and 2002 for EU15 member states can be found in the *Appendix on Landings and Catches*, where also data on the volume of catches for each EU27 country in the period from 1990 to 2003 can be found.

It is possible to get reasonable data on the catches by different countries. Using statistics over catches as an indicator of territorial impact is as earlier described not unproblematic because vessels can land in other countries than that of their homeport. Anyway, in the table beneath the catch figures for EU27 in respectively 1990 and 2003 are gathered. Areas with catches below or around 10,000 tonnes pr year in the reference period have been excluded (see *Appendix on Landings and Catches* for the full time series for all areas).

Table 5.6 Catches by EU member states and others (tonnes)

	1990	2003
Belgium	41,470	26,324
Denmark	1,475,716	1,031,204
Germany	326,316	260,675
Greece	132,381	74,338
Spain	1,126,318	840,495
France	689,662	694,370
Ireland	215,485	265,604
Italy	371,873	283,218
Sweden	250,985	286,875
Netherlands	404,816	524,125
Portugal	324,776	209,049
Finland	123,024	121,956
UK	766,904	635,938
EU15	**6,250,260**	**5,254,542**
Latvia	162,827	114,541
Lithuania	137,598	155,246
Estonia	131,178	79,083
Poland	448,292	163,117
EU25	**:**	**5,778,167**
Bulgaria	49,254	12,051
Romania	92,784	:
Norway	:	2,453,699
Iceland	1,521,877	2,002,180

Source: Eurostat database (see *Appendix on Landings and Catches*)

Furthermore, the volume of catches includes species of very different value in the same categories. The most extreme example of this is species caught for industrial purposes *versus* those caught for human consumption. Especially Denmark catches a considerable amount of fish for industrial purposes. Consequently, declining catches in terms of volume does not necessarily indicate an equivalent decline in terms of value. Increasing prices because of lower supply to the market will also to some extent compensate for lower catches. This tendency is, however, decreasing in importance because of import of equivalent species from elsewhere in the world. This development towards less compensation through prices will probably be enforced in the years to come as the market for fish product is becoming increasingly global - increasing demand for fish products will work in the opposite direction. The development of the catches of European countries can be examined in the maps beneath."

Figure 5.8 Total catches in 2002 in tonnes

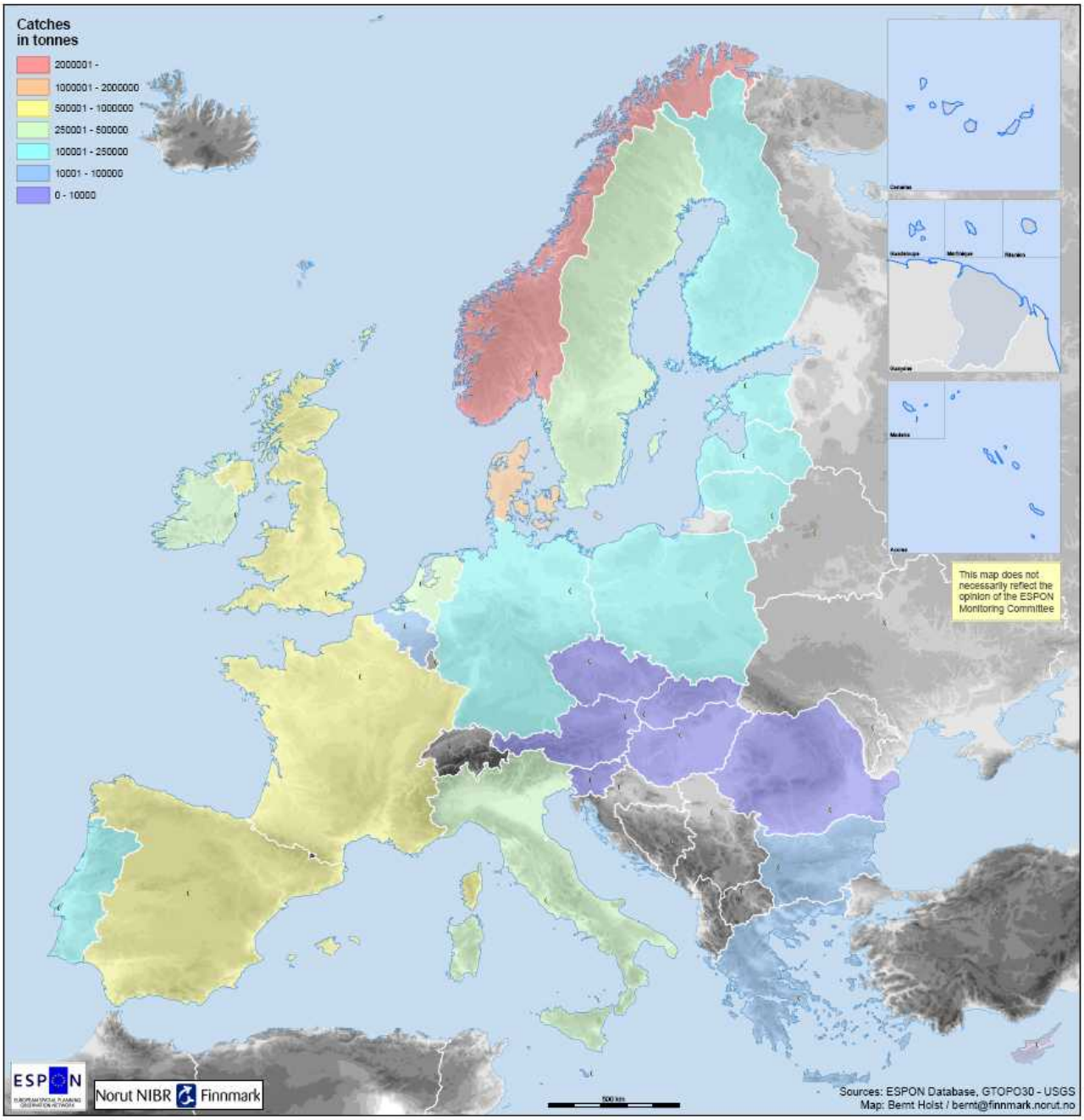


Figure 5.9 Change in volume of catches 1993 - 2002

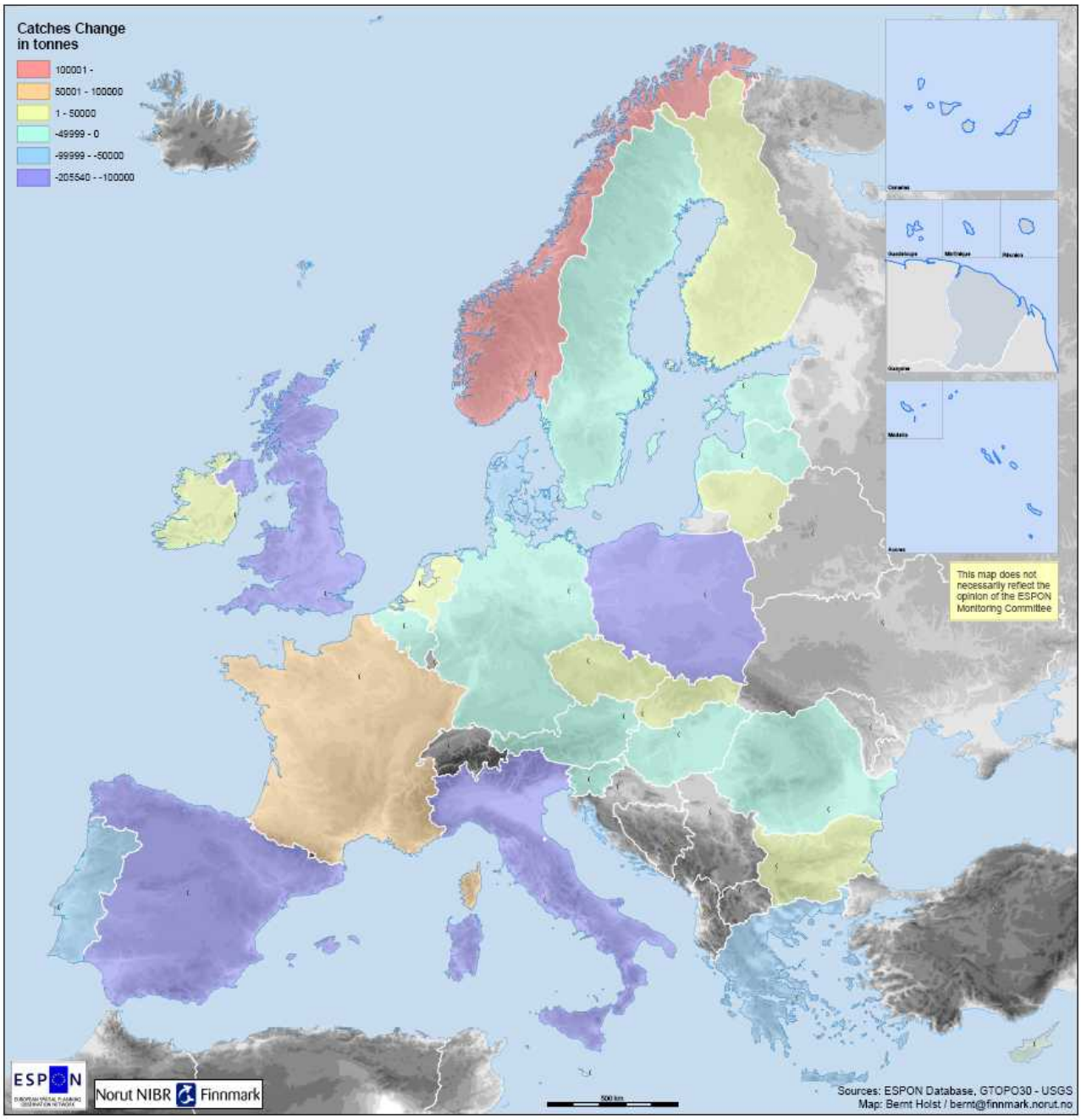
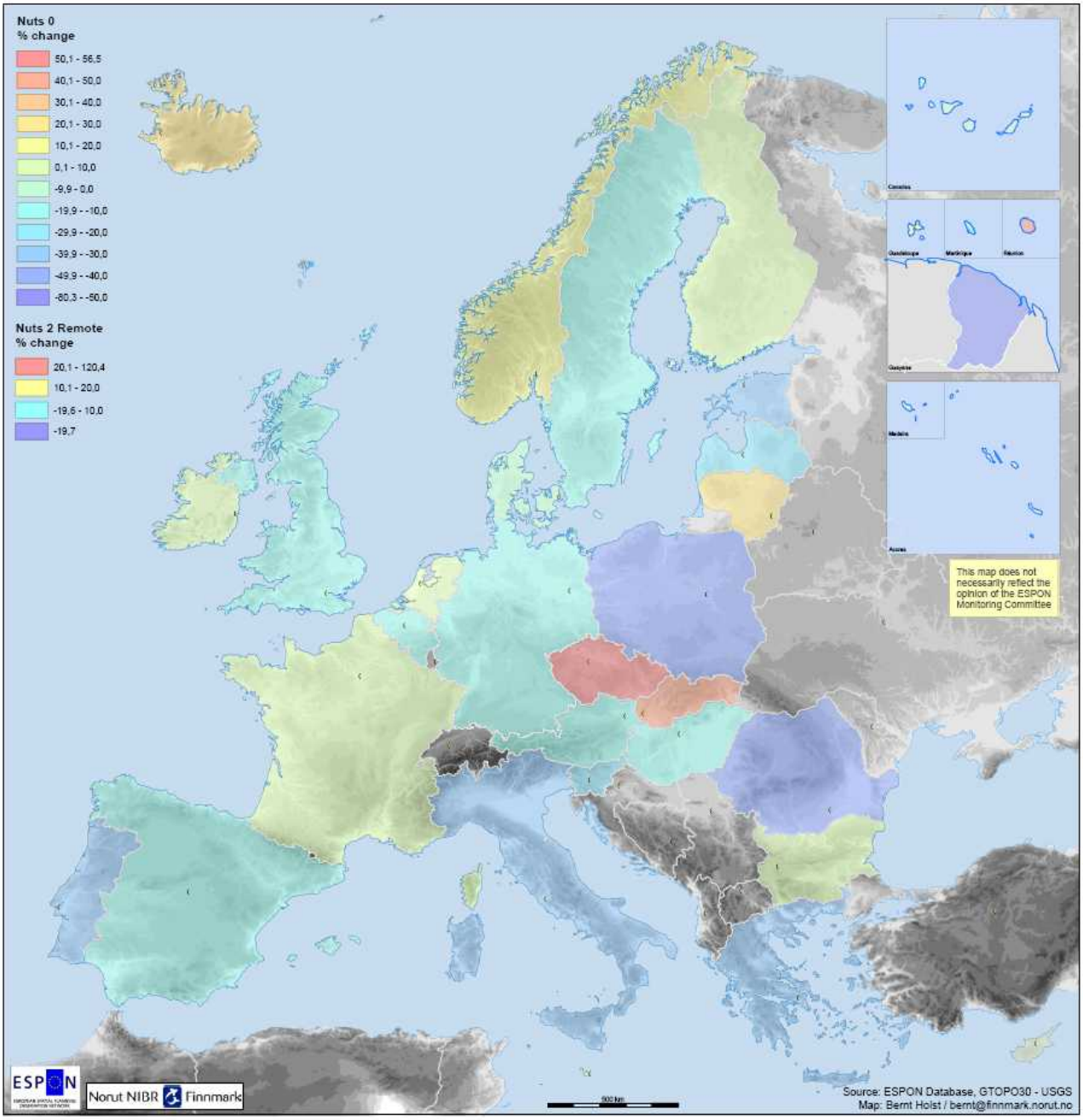


Figure 5.10 Development of volume of catches 1993 – 2002



The value of the landings in EU15 (by all vessels) increased from approximately € 5,990 million in 1995[52] to € 6,230 in 2003[53] (summation on the basis of individual countries' data, Eurostat database, 25 November 2004). This is an increase of approximately 4 percent. However, if we take inflation into account (and calculate with an average annual inflation of just below 2 percent) the increase ought to have been more than 15 percent just to maintain *status quo*. The value of the landed catch in real terms therefore decreased, even though the average kilo price of fisheries products increased over the same period of time (see also *Appendix on Landings and Catches*).

However, there are significant differences as to how the development has been in the different member states. Denmark is one of the countries where the difficulties of some segments of the European capture fisheries sub-sector has been felt most. The landings in Denmark in 1995 had a value of € 499 million in 1995. In 2003 this figure had dropped to € 390 million. In the other end of the scale is the development of the landings in Ireland, which increased from a value of € 140 million in 1995 to € 253 million in 2003 (see *Appendix on Landings and Catches* for full data on the value of landings in EU15 member states in respectively 2000 and 2002).

Challenges to and Potentials of the Capture Fisheries Sub-Sector

That the problems in the capture fisheries sub-sector has been felt differently in the different member states and regions can be explained by reference to structural differences between countries and regions; these differences, which have also been touched upon in the sections on the CFP, concern for instance:

- Differences in the *geographical area* in which the fishing takes place (e.g. the North Sea, the Mediterranean or third countries waters) – the regions are on this point affected unequally by the conservation provisions of the CFP.
- Differences in the *type of fishing carried* out, e.g. *small-scale coastal* or *offshore* (demersal, pelagic or industrial), and the species fished for - the regions are on this point affected unequally by the conservation provisions (and other elements) of the CFP.
- Differences related to the *national implementation* of the Common Fisheries Policy.
- Differences in the impact of provisions of the Common Fisheries Policy, which are not directly linked to the state of the fish stocks, e.g. financial assistance and market regulations.

SWOT Analysis of the Capture Fisheries Sub-Sector

It is clearly difficult to give a diagnosis for something as diversified as the capture fisheries sub-sector of the European Union. However, some common trends for main segments of the sector/fleet are identified in the SWOT table beneath.

SWOT analysis of the capture fisheries sub-sector			
Strengths	**W**eaknesses	**O**pportunities	**T**hreats
Advanced technology and ability to fish anywhere	Severe overcapacity in a many of fleet segments	Further capacity reductions	Increasing competition from third countries beginning to exploit their own resources
High and increasing demand for fish products	Fisheries is increasingly seen as unattractive work	Focussing on branding sustainable fishing when this is possible	Failure to address the issue of overcapacity
Good reputation compared to farmed fish	The bad state of many (demersal) stocks, an increasing resource base has long perspectives	Recovery plans leading to larger more stable catches	Failure to recover stocks
	Some fleets (segments) are ageing due to lack of	National experiments with transferable quotas	Competition from third countries, increasing due to

[52] Finnish figures for 1997 and French figures for 1999.
[53] Portuguese figures for 2000 and Spanish figures for 2002.

	investments		tariff reductions
	Some fishing dependent region far from main markets (ex. Scotland)	Better coordination of supply and demand through the POs	Lack of skilled fishermen due to the perceived unattractiveness of the job
		Introducing new species for human consumption	Competition from aquaculture, also on new species such as cod

5.4.3 The Aquaculture Sub-Sector

Aquaculture is defined as the farming of aquatic organisms, including fish, molluscs, crustaceans and aquatic plants. Farming implies some form of intervention in the rearing process to enhance production, such as regular stocking, feeding, protection from predators, etc. Farming also implies individual or corporate ownership of, or rights resulting from contractual arrangements to, the stock being cultivated. This definition is the one used by Eurostat and in line with the definition developed by FAO and its Coordinating Working Party on Fisheries Statistics (Eurostat database, 15 November 2004).

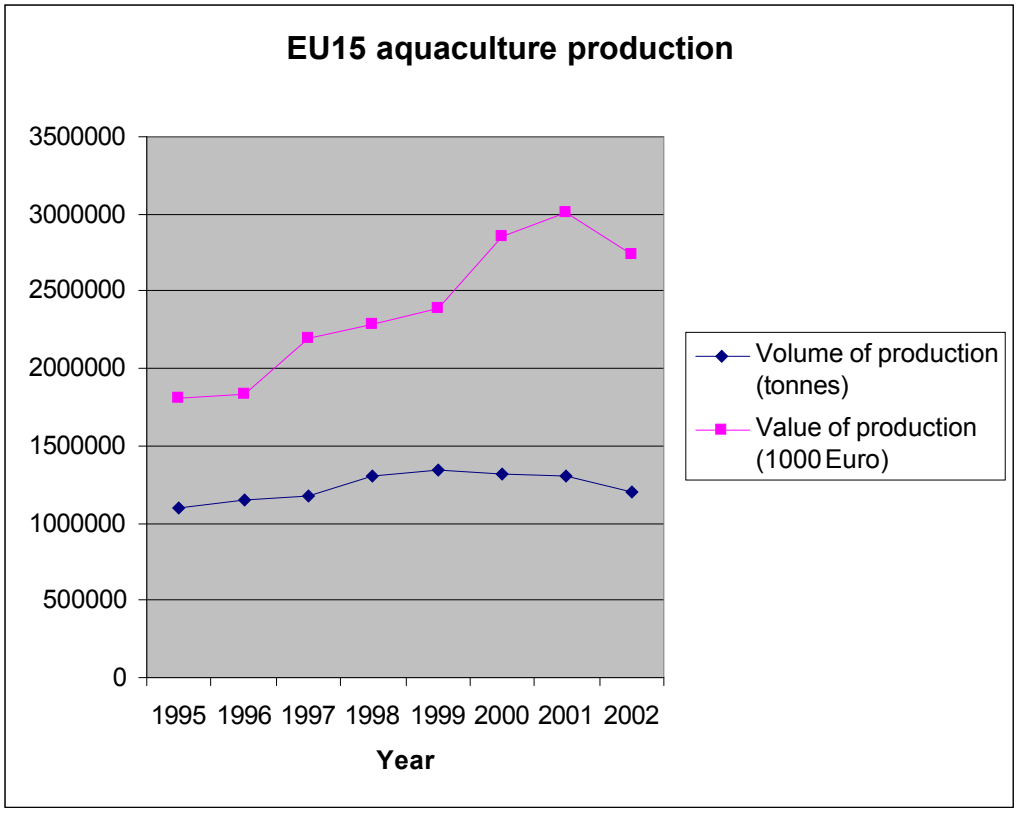
Products from aquaculture have different forms and different intended end uses. FAO distinguishes for instance in the statistics between finfish, molluscs, aquatic plants, crustaceans and other aquatic animals (e.g. crocodiles, turtles etc.). Of these groups finfish is the dominant followed by molluscs and aquatic plants. The majority of aquaculture products are used for human consumption but a significant part is, nonetheless, used for non-food uses (e.g. meal, oil, bait, aquarium fish etc.) (FAO; Fisheries department, 2002, p. 29).

Aquaculture Production in Europe

Aquaculture in Europe is becoming increasingly important relative to capture fisheries. This is the case both in terms of production measured in volume and even more so in terms of value because almost all European aquaculture products are intended for human consumption - as opposed to capture fisheries where for instance Danish vessels catch considerable quantities of species destined for industrial use with a low value pr. kg (e.g. sandeel). A noteworthy point is that much of the captured industrial fish actually ends up as fodder for carnivorous farmed fish.

The figure and table beneath show the development of European aquaculture (EU15) since 1995; in terms of volume of production aquaculture represented 13.3% of the total EU15 fish production in 1995 and 17.5% in 2001. In terms of value the production in 2001 was 33% of the value of the EU15 total fish production (European Communities, 2004, p. 16).

Figure 5.11 EU15 aquaculture production (volume)



Source of data: Eurostat database 9 November 2004.

The aquaculture production rose from 1995 to 2002 with 8.8%. Production peaked in 1999 and has been gradually declining since then. The value of the aquaculture production has been rising substantially in the same period, namely 51.7%. The value peaked in 2001. The increase can partly be explained by the scarcity of European fish products, which has driven up prices[54], but it must also be ascribed to increased farming of more valuable species. The average value of aquaculture products was € 2.29 pr. kg (live weight) in 2002.

The value of the aquaculture production was in EU15 approximately € 7,24 pr. capita in 2002 (2001 population figures). The EU15 aquaculture production represented 2.3% of the world production of which the Chinese production represented remarkable 71.2% (2002 figures) (Eurostat database, 15 November 2004).

The development of the European aquaculture sub-sector can be studied in the *Appendix on Aquaculture*, where data on value and volume of production in the period from 1990 to 2003 of respectively freshwater, brackish water and seawater (marine) aquaculture is presented for each EU27 country. In the table beneath the total value of aquaculture (all types) for each member state in respectively 1990 and 2002 can be examined including Norway and Iceland for comparison.

[54] The increase has been from € 1.20 pr. kg to € 1.39 pr. kg in the period from 2000 to 2002 (European Communities, 2004, p. 10).

Table 5.7 Value of aquaculture production, European countries (1000 euros)[55]

	1990	2002
Belgium	2,311	4,600
Denmark	120,569	118,092
Germany	121,046	206,780
Greece	49,579	257,929
Spain	277,860	374,442
France	414,310	499,303
Ireland	39,586	119,755
Italy	264,256	356,534
Netherlands	51,170	96,864
UK	157,009	576,057
Finland	72,975	39,345
Sweden	25,105	15,577
Portugal	23,202	61,695
Austria	10,451	11,461
EU15	**1,629,428**	**2,738,434**
Poland	39,735	63,651
Czech R.	:	35,309
Latvia	2,808	570
Lithuania	7,436	2,567
Estonia	1,060	806
Hungary	18,218	27,310
Malta	14	3,963
Slovenia	:	3,742
Cyprus	1,327	11,090
Slovakia	:	1,928
EU25	**:**	**2,889,370**
Bulgaria	16,075	5,699
Romania	68,830	17,512
Norway	608,490	1,232,484
Iceland	11,734	17,066

Source: Eurostat database, 16 March 2005.

Most countries have experienced an increase in value of aquaculture production in the period. The most notable examples of this development include Greece and the UK.

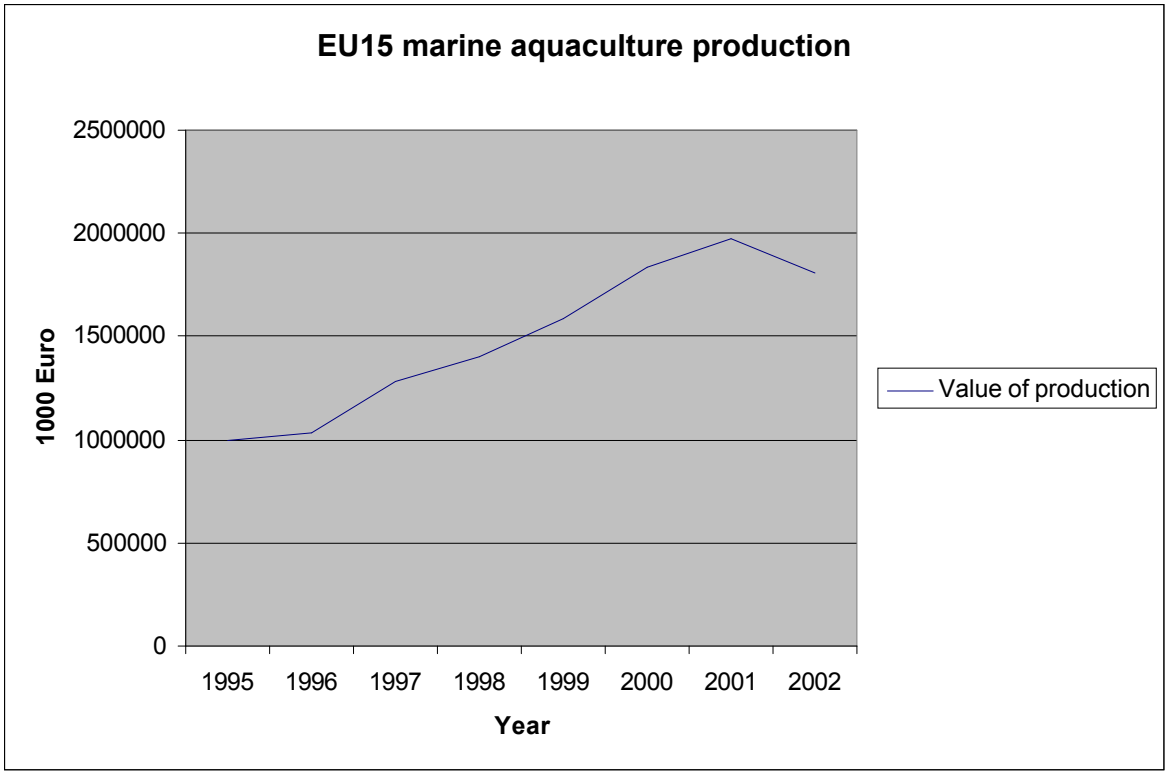
The aquaculture sub-sector employed in 1998 the equivalent of 57,000 full-time persons (COM (2002) 511 final, p. 4).

Marine Aquaculture

The focus of this study is on aquaculture, which takes place in the coastal zones. This is dominantly marine aquaculture of molluscs, fish and others taking place in sea water, which is defined as *"waters where the salinity is high and not subject to significant variation"* (Eurostat metadata, 25 November 2004). The development of marine aquaculture defined in this way from 1995 to 2003 in EU15 is shown in the figure beneath.

[55] Excluding Channel Islands and French overseas territories.

Figure 5.12 EU15 marine aquaculture production



Source of data: Eurostat database, 25 November 2004.

The value of the marine aquaculture has increased with more than 80 percent from 1995 to 2002. Marine aquaculture represented 66% of total aquaculture production by value in 2002, up from 55% in 1995. The development of the marine aquaculture sector for the relevant coastal states with reference years of 1990 and 2002 can be examined in the table beneath, more information is available in the *Appendix on Aquaculture*.

Table 5.8 Value of seawater aquaculture, European countries (1000 euros)[56]

	1990	2002
Denmark	18,171	11,667
Germany	5,958	5,588
Greece	21,443	244,514
Spain	194,195	290,084
France	291,596	379,535
Ireland	37,089	117,532
Italy	43,623	115,394
Sweden	12,731	5,731
Portugal	14,556	56,340
Netherlands	45,414	69,616
UK	120,074	511,961
EU15	**804,850**	**1,807,963**
Cyprus	625	10,630
Malta	0	3,963
Slovenia	:	315
Estonia	120	:
EU25	**:**	**1,822,871**
Bulgaria	0	47
Norway	608,490	1,232,484
Iceland	11,304	7,482

Source: Eurostat database (see *Appendix on Aquaculture*)

The increase in value of seawater/marine aquaculture production has been significant for most countries. Most impressive is the figures for countries like Malta (increased by factor 15), Greece (increased by factor 10), Portugal and the UK (both increased by approximately factor 4). Denmark and Sweden has experienced a decrease in the same period.

Challenges to and Potentials of European Aquaculture

The Commission's strategy for the aquaculture sub-sector[57] includes three main aims: 1) "Creating long term secure employment, in particular in fishing dependent areas", 2) "Assuring the availability to consumers of products that are healthy, safe and of good quality, as well as promoting high animal health and welfare standards", and 3) "Ensuring an environmentally sound industry" (COM (2002) 511 final, p. 21).

The overall economic goal of the Commission is continued growth in the aquaculture sub-sector and thereby the creation of 8,000 to 10,000 jobs (full-time equivalents) over the period from 2003 to 2008. These jobs should mainly be created by means of developing mollusc and cage farming in areas dependent on (capture) fisheries, which will be negatively affected by the reformed Common Fisheries Policy. Success in relation to this main target is, again according to the Commission, dependent on the ability to 1) increase the growth rate to 4 % pr. year, 2) solve conflicts for space, 3) promote market development, and 4) improve governance (COM (2002) 511 final, p. 11).

The future economic situation of the aquaculture sub-sector (at EU level as well as regionally) will, consequently, depend on its (or policy-makers) ability to address the abovementioned issues. The statistics from the most recent years (see *Appendix on Aquaculture*) show that continuous growth in the

[56] Excluding Channel Islands and French overseas territories

[57] The strategy is outlined in a Commission communication: COM (2002) 511 final: *"Communication from the Commission to the Council and the European Parliament: A strategy for the Sustainable Development of European Aquaculture"*. This paper constitutes presently the most important EU policy document directed solely towards the aquaculture sub-sector.

aquaculture sub-sector is not self-evident, even though the sub-sector has the potential to supply farmed fish as a substitute to threatened wild fish species in European waters such as e.g. cod.

SWOT analysis of the aquaculture sub-sector			
Strengths	**W**eaknesses	**O**pportunities	**T**hreats
Many good spots for aquaculture on a long EU coastline	Fluctuating prices	Diversification and introduction of new species	Competition for space in some areas
High and increasing demand for fish products	Not as good reputation as 'wild fish'	More off-shore farming as technology improves	Competition from third countries and new species, increasing due to tariff reductions
Many producers have high technological level	Reputation in some places damaged due to pollution	Making use of the strong political support for aquaculture in the EU (e.g. through FIFG)	Fish diseases
			In some places animal protection organisations target aquaculture
			Risk of (periodical) oversupply because of speed of growth
			Lack of fish meal (used for carnivorous species)

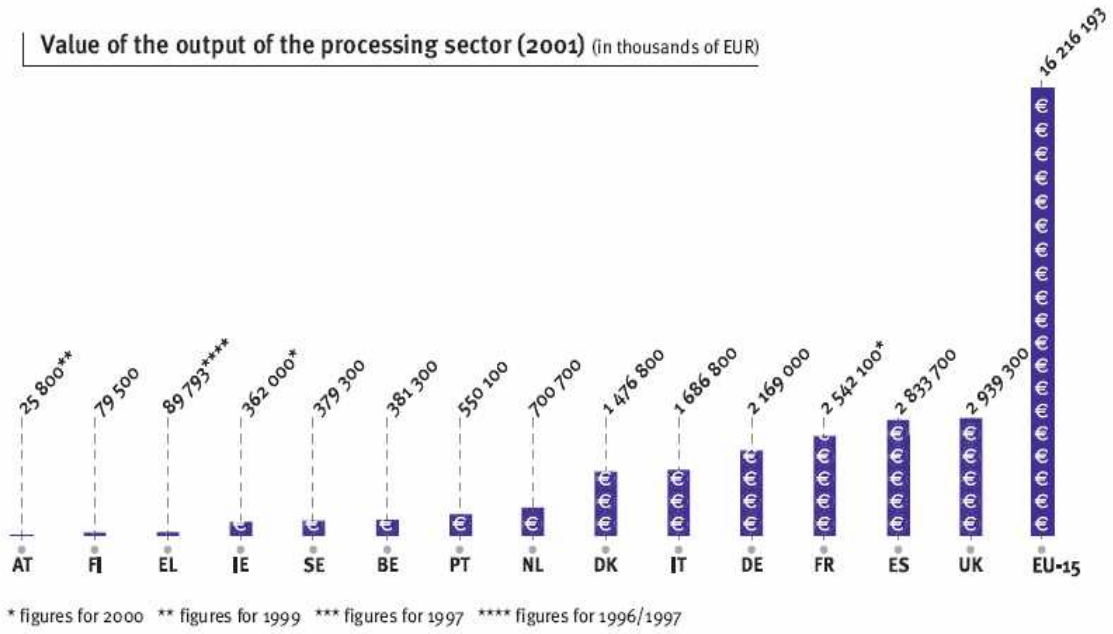
5.4.4 The Fish Processing Sub-Sector

There are over 3,000 processing enterprises in the EU15 with almost 100,000 employees. Most member states have seen a reduction in the number of processing companies in recent years. However, collation of data related to the number of fish processing companies is only undertaken sporadically, making the identification of trends difficult. The criteria defining a fish processor also vary between member states and between surveys within member states, which further complicates comparison. The average number of employees per processing enterprise has increased from 30.4 in 1994 to 37.8 in 2000, an indication of consolidation in the industry.[58]

The value of the output of the EU15 processing sector amounted to more than € 16 billion in 2000. The main processing countries were Denmark, Italy, Germany, France, Spain and the UK, which together accounted for than 80% of the value of output.

[58] The description of the processing sub-sector is primarily based on Nautilus Consultants et al. (2003).

Table 5.9 Value of the Output of the Processing Sector in 2001 (1000 euros)



Source: European Commission, DG Fish (2004, p. 28).

The European processing sub-sector remains for the most part in contraction and consolidation due to supply shortages and competition from cheaper imports. This situation may persist for some years to come as trade barriers such as tariffs and import licences are reduced or stopped through international trade agreements. Third country suppliers of raw material are increasingly taking advantage of lower labour costs and process for export as processing units achieve EU quality standards. Some European trading companies are using the comparative advantages of countries outside the EU. In extreme cases EU-sourced raw material is exported out of the EU for low-cost part processing in countries such as China before being returned to the EU for finishing.

Many employment opportunities in the EU fish processing sub-sector remain temporary in nature, often associated with fishing seasons or seasonal peaks in demand, which makes accurate quantification of sector employment difficult. The major employers are the UK, Spain, France, Denmark and Germany. Employment in the fish processing sub-sector is not recorded on an annual basis, making it difficult to define trends. Overall employment in EU fish processing has not changed significantly since the mid-90s. Individual member states such as the Netherlands and Portugal have seen employment reduction between 1994 and 1999 whereas others have seen increase, notably the UK, Spain, Ireland and Sweden.

There has been a significant decrease in EU landings as described above. The EU processing sub-sector has made up this shortfall in supply with more imports. Extra-Community imports of processed seafood rose from € 6.13 billion in 1994 to € 9.55 billion in 2000 (a 36% increase). In addition, the EU processing sub-sector imported approximately € 4 billion worth of unprocessed seafood products (fresh or frozen whole fish) in 1993.

Intra-Community trade in processed products increased by around 39% from 1994 to 2000 where it totalled € 5.7 billion; this brings total EU imports of processed seafood products in 2000 to over € 15 billion. 86% of the value of EU exports which totalled € 6.6 billion in 2000 is derived from intra-Community trade, less than € 900 million of processed seafood products were exported in 2000. Most member states in the European Union have seen increases in demand for seafood products. In conjunction with reduced landings and increased extra-EU competition, this has contributed to an ever-widening seafood trade deficit between the EU and third countries. Only the continued development and increased production of the European aquaculture sector has been such as to counter this trend, creating a source of raw material for processors and new products for consumers from within the EU.

Problems facing the processors are primarily focused on employment, raw material supply and competition from extra-EU imports. To an extent these issues are all interconnected – particularly the costs associated with employment and raw materials leading to processor concerns over their ability to compete with third country imports.

There is general movement in the EU towards added value and away from primary processing, which for the most part can be done more cost-effectively outside the EU in regions with closer access to raw material and / or far lower labour costs. The fish processing sub-sector is becoming less distinct from the wider food processing sector as raw material sourcing is less associated with local landings. Consolidation of the sector results in integration with larger food processing companies and moves towards added value products, such as ready meals where fish is only one of many ingredients used.

A process of consolidation is underway in almost every corner of the EU fish processing sub-sector and is resulting in the formation / evolution of a smaller number of generally larger businesses, with a handful of very large businesses forming in most member states. The corollary of this process is that significant numbers of businesses are failing or being absorbed / bought-out by larger food companies.

The current situation of the processing sub-sector is very much defined by the globalization of the market in fish products. Some general issues are highlighted in the SWOT table beneath.

SWOT analysis of the processing sub-sector			
Strengths	**W**eaknesses	**O**pportunities	**T**hreats
High and increasing demand for fish products	High labour costs compared to competitors	Increasing ability to source raw materials from wherever the price and/or quality is best	Competition from third countries with lower wages - also intra-EU
	Decreasing access to local resources due to the state of the stocks	Concentrating on value-adding rather than primary processing, which can be done cheaper elsewhere	
	Some plants especially in southern Europe have difficulties living up to new standards	Innovation in terms of new value-added products	
	Prices for raw material sometimes higher than necessary because of protection of domestic suppliers and processors (ex. salmon)		

5.4.5 The fall of the Soviet Union and the Transition to Market Economy

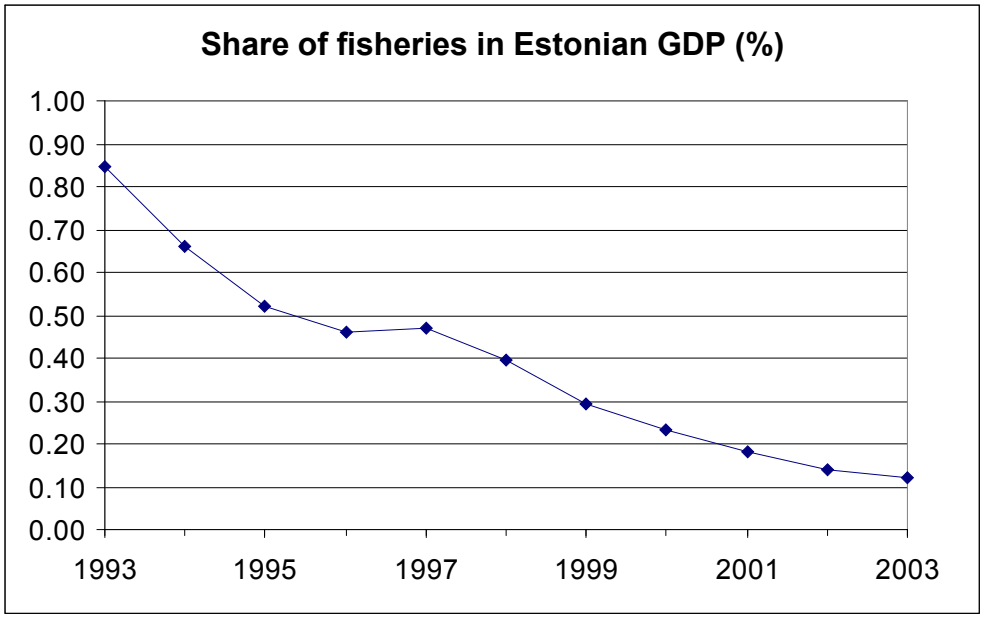
Baltic new EU Member States Estonia, Latvia, Lithuania and Poland accessed EU less than year ago, in May 2004. Therefore it is too early to draw solidly based conclusions of CFP in general or its territorial impacts to these countries.

The life in the Baltic republics and Poland has been very dynamic during the last 15 years. Deep changes in legal, economic and social issues have impacted all sectors of the national economy. Quick rise in the profitability of small-scale coastal fisheries and its later gradual fall has had its deep impact to living standard in coastal villages. Rather analogous development took place in trawling fisheries, which peaked in profitability and importance around 1997. So, due to the very dynamic economic life it is very hard to separate impacts from CFP and other relevant factors.

National Importance of Fisheries

If fisheries of the new Baltic member states are compared to the old member states situated in the Baltic Sea region, then it appears that in new member states the fisheries sector is more important. The number of fishermen is relatively high, both as a share from the total active population, or if expressed as a number of fishermen per length of the coastal strip or territory of Economic Zone. Partly this is a heritage from the Soviet period, but during the beginning of the post-soviet period number of employees and importance of the fishery even increased.

Figure 5.13 Share of fisheries in Estonian GDP (%)

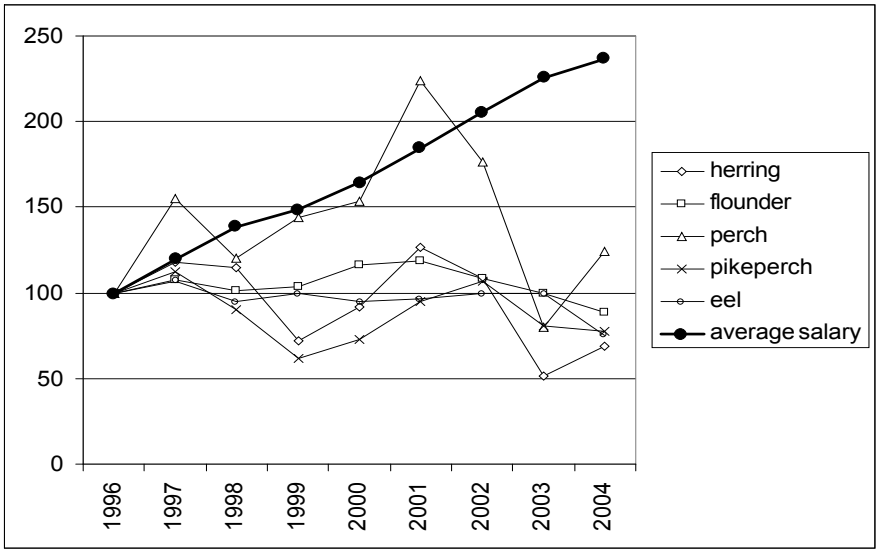


The share of fisheries in the total GDP in the Baltic member states is also very high in comparison with e.g. Sweden or Finland. A few years ago in Latvia the share of overall fishery production was around 1.5% of GDP, and the fisheries sector played a significant role in the national economy, especially in the remote coastal areas. It employed around 13900 people (1.2 % of active population). In Estonia the employment was around 10000 people. However, during the last years the fisheries sector has gradually been losing its importance in all new Baltic member states. This has been taking place during the period when some EU pre-accession funds have already been available. Nevertheless, this development cannot be associated to low possible efficiency of the structural funds. Rather, the decreasing importance of the fisheries is just a logical response to the new economic framework and structural funds have not been able to stop it. The dramatically decreasing importance of fisheries in relation to the national GDP is illustrated in the figure above.

Developments in the Baltic Coastal Fishery

Overall changes in the political and economic life in the Baltic Republics during the last 15 years have affected very deeply the coastal fishing sector. For many reasons, such as restrictions on fishing connected to the border regime, the low value of fish, and the moderate number of fishermen during the Soviet period, the stocks were relatively healthy at the end of the 1980's. Opening of the western markets that followed trade liberalization enabled unlimited exports of Estonian fish. First-buyer prices of high-value species such as perch, pikeperch and pike increased rapidly almost up to the Western European level.

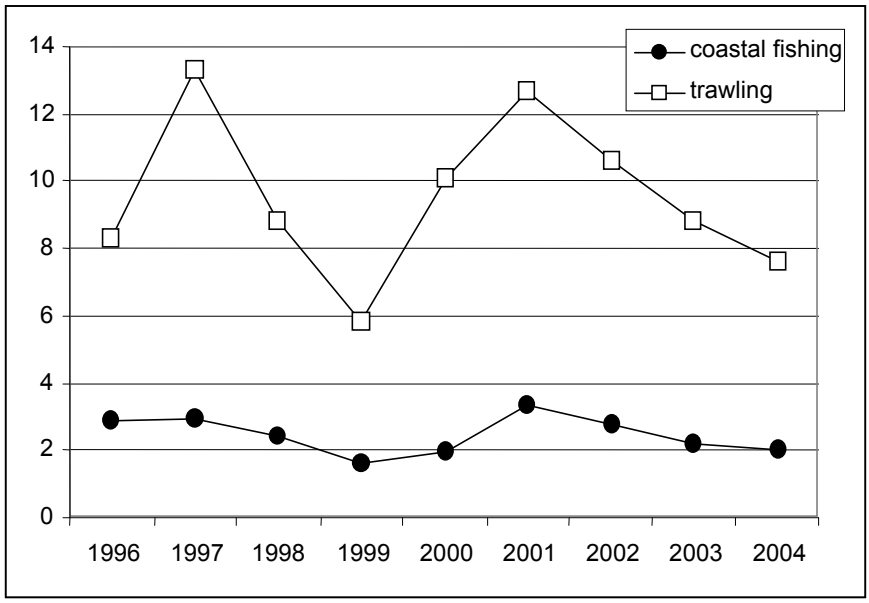
Figure 5.14 The development of raw prices of most important species targeted by coastal fishermen and average salaries in Estonia (indices, 1996=100%)



Due to the high profitability of fishery the pressure on the fish resources increased substantially, both in terms of the total number of fishermen and in fishing effort. Since fishery costs were low and catches and fish buyer prices high, the incomes of fishermen were good. The relative wealth of the people engaged in coastal fishery was also due to the fact that, at that time, most Estonians worked in sectors of the economy that were unable to export to Western Europe. Therefore the earnings of most people at that time were very low.

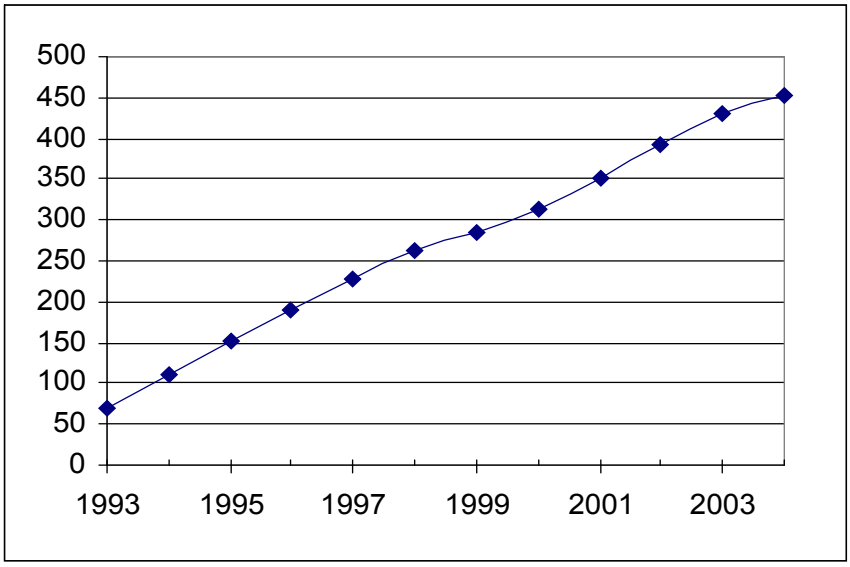
However, after the first prosperous years the incomes of fishermen started to decline first in all in relative, but also even in the absolute sense. The main reason is that the first-buyer prices had already reached levels comparable to Western Europe and could rise no further (see figure above). So, while fishing costs and average salaries in the country increased year-by-year, the total revenue in coastal fishing remained the same (see figure beneath) Soon stocks started to decline. Fishermen who were already used to high incomes increased their fishing effort, which in turn accelerated the decline of stocks.

Figure 5.15 Value of the catch in Estonian coastal fishing and trawling (million euros)



At the same time, dynamic development of the Estonian economy caused a steady increase in all costs connected to fishery. And finally, increases in earnings in other sectors of the economy have increased the average gross wage in the country to a level around ten times as high as that during the first years of independence (see figure beneath).

Figure 5.16 The average gross monthly salary in Estonia (euro)



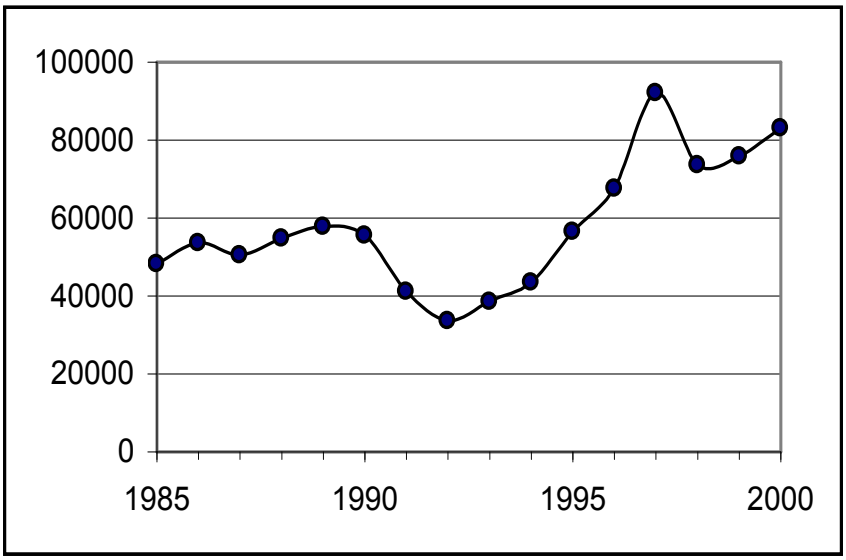
The described developments have resulted in a decline in the importance of coastal fishery during recent years and, as there are few alternative employment possibilities in many coastal areas, increasing social problems have hit households dependent on fishery. In some areas (like Väinameri) over-fished stocks have still not reached the levels of the first post-Soviet years.

The final conclusion is that countries in transition (e.g. future EU members like Romania, Bulgaria etc.) may encounter serious difficulties in the coastal fishing sector arising from privatization and reforms in the financial system and trade. The new economic framework may give rise to high short-term profits, and help communities survive during the difficult years of reorganization. However, there may be a substantial backlash in later years, since the depleted stocks do not enable a normal fishery pattern to be established even years after the establishment of new ruling principles. Needless to say, such a situation will have very negative impacts to coastal communities as a whole.

Developments in the Baltic Trawling

In Baltic trawling targeting herring and sprat the development was different from the coastal fishing sector. During the soviet period the trawling fleet used cheap fuel and machines produced in the Soviet Union, which were uneconomic in terms of fuel use. The disintegration of the centrally planned economy resulted in the discontinuation of subsidies. Furthermore, while small-scale fishing found new markets in the west, it was still only possible to export products made from herring and sprat to the eastern markets (Russia, Ukraine). Price levels in those markets were low, and Russia tried to enforce several trade barriers both to "punish" the Baltic states for their independence and to force them into a closer alliance with the Russian Federation. As a result, the profitability of Baltic trawling decreased sharply and the volume of catches fell during the first years of new independency, 1991-1994 (see figure beneath).

Figure 5.17 Catch (tonnes) of herring and sprat (in total) in Estonian waters taken by Estonian vessels



In the middle of the 90s, however, the trawl fisheries started to grow again. The most important reason for this was the increasing purchasing power in the eastern markets. As those markets were known to Estonian fish processors from the soviet time, exports started to grow quickly. As a result, fish processors were interested in raw material and the prices for raw fish rose. Hence the fishing volume and the degree of utilisation of the national quotas started to grow (see figure above). The national quota or the TAC (a constant part of the TAC for the Baltic Sea) allocated to Estonia by the IBSFC was not used fully in the period 1992-1996. Since a part of the Estonian herring and sprat quota was exchanged with the EU against cod quota, the Estonian national quotas were used up for the first time in 1997. Hence it was expected that in 1998 the first serious conflict between competing interests of different fishing enterprises would appear. However, the Russian financial crisis that broke out in August 1998 decreased drastically marketing possibilities in the eastern markets during 1998-99. Export volumes fell almost to zero and as a result many fishing and processing enterprises, oriented almost exclusively towards the eastern markets, went bankrupt in Estonia.

Estonian trawling sector has not fully recovered until today. Of course, the Russian crisis is over long time ago, but due to the other unfavourable factors (increasing wages in the Baltic member states lower profitability, quotas have been decreasing due to the bad state of the stocks) the profitability and prosperous level of 1997 has never reached again. The value of the catch has fluctuated much, but remained rather same in the very general scale (see figure above on the value of the catch in Estonian coastal fishing and trawling 1996-2004), which mean it has steadily decreased in the relative scale.

Developments in the Fish Processing Sector

Estonian fish processing sector has historically been tightly connected to the catching sector. Some of the biggest processing plants have been owned by enterprises, which have also had own fishing fleets. During the last decade most important source of the raw material for processing industry in the Baltic states has been own fish resources. However, due to the changing markets the importance of imported fish is growing.

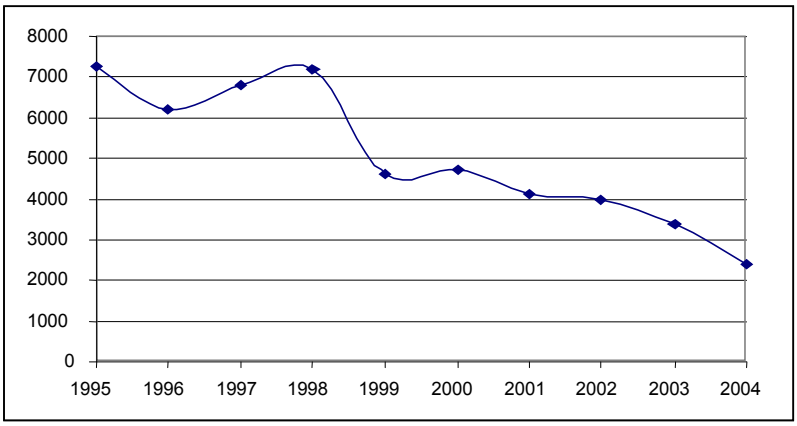
During the soviet period the bulk of the fish products were marketed in the Soviet Union. After the fall of the soviet system the most important market for fish processors of the Baltic states has been Ukraine and Russia. However, production costs (salaries etc.) have been growing in the Baltic States more rapidly than the purchasing power of the main markets. Therefore the profitability of the fish processing sector has declined. Several big enterprises have bankrupted. In Estonia, for example, most important processors on the islands Hiiumaa and Saaremaa (two biggest islands in Estonia, fisheries was one of the most important employers during the soviet period) are today offering only fraction of jobs in comparison with the period a decade ago.

The number of fish processing enterprises is not very good indicator of the situation of the industry, because the size and number of employees can vary much. Very largely, it has been fluctuating around 100 (peaked 135 in 2000). However, their total importance in the country's economy has steadily declined. While the share of fish processing in food industry was around 18% in 1998, then in 2004 it was roughly 11%.

Much more sensitive indicator is the number of employees. Before the Russian financial crisis in 1998 the total number of people working in fish processing sector was around 7500. This number has now declined around three times (see figure beneath).

The possibility to export fish products to Russia has granted (by Russian veterinary authority) to only 26 enterprises. At the same time, more than 50 enterprises have fulfilled normative to export to the EU market. This is good example how Russian administration seeks possibilities to hinder export of Estonian fish processing products.

Figure 5.18 The number of employees in the Estonian fish processing sector[59]



Developments in Aquaculture

The natural conditions for aquaculture are not ideal in the Baltic MS. Two most important species reared are rainbow trout and carp. The number of freshwater water bodies suitable for salmonid rearing is small, especially in the Latvia and Lithuania. In most of the rivers summer peak water temperatures are well over 20°C, which is too high even for the rainbow trout. So, only some cold-water springs can be used for aquaculture plants. In the Baltic Sea the situation is far from ideal too (if compared to e.g. Norwegian conditions) with unfavourably high summer temperatures and too cold winters. Gulf of Riga and Gulf of Finland are usually ice-covered during winters, which is another hindrance. Furthermore, coastal areas are shallow (especially in Estonia) and since coastlines are rather straight they are opened to storms. Deep sheltered cold-water bays like in Norway or northern UK are totally lacking. Finally, in the Baltic Sea there are often problems with toxic blue algae. Since the nutrient loading in the Baltic Sea is already very high, massive aquaculture production is also not very wished scenario.

Natural conditions for the cyprinid (carp) rearing are much better if compared to the possibilities for salmon farming. Especially suitable are Poland and Lithuania, somewhat less Latvia. However, also this sector has not been very profitable and is still small both in sense of employment and value of production. The main problem has been rather low price of carp in Baltic MS due to the small domestic consumption. Big potential markets are situated in the central Europe, but high transport costs are still limiting the usage of these markets.

In general, however, the possibilities for aquaculture have been used in much smaller extent in all Baltic MS than fish resources of the sea and freshwaters. So, the general declining trend of importance typical for catching and processing sector is not shared by the aquaculture sector. The volume and value of aquaculture products in Estonia has been slightly rising in Estonia (see table beneath).

[59] 2004 is expert estimation by Eesti Kalaliit.

Table 5.10 The volume and value of aquaculture production in Estonia[60]

	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
	Volume of the production (tonnes)										
Rainbow trout	297	278	278	194	249	285	147	313	412	287	304
Carp	43	136	30	61	28	23	30	47	52	53	51
Crayfish									0.3	2.6	1.0
Total	**340**	**414**	**308**	**255**	**277**	**308**	**177**	**360**	**464**	**342**	**356**
	Value of the production (1000 euro)										
Rainbow trout					637	774	423	880	1362	949	1041
Carp					30	29	44	66	82	104	87
Crayfish									13	99	32
Total					**667**	**803**	**466**	**946**	**1457**	**1152**	**1160**

Profitability - Outlook for the Future

Baltic MS have comparatively limited fish resources. This is in some contradiction with the traditional importance of the fisheries. As it is typical, number of fishermen is high in less-developed countries, while in parallel to the rising living standard the importance of fishing revenues as source of income decreases. The reason for this development can be illustrated by the figures showing the profitability of pikeperch fishing in Estonia. During the beginning of the 1990s the value of only few tens of kilograms equalled to the average month salary in the country. Today 7-8 times more should be fished. However, if all costs, earnings and salaries will reach the level of Finland, then the profitability decreases even more. Naturally, such an illustration can not include all aspects of the profitability, but the general trend is still clear: the same fish resource can employ at least 10 times less fishermen in today's Finland if compared to the situation which ruled in Estonia at the beginning of 1990s (see table beneath). Therefore the decreasing importance of fishing sector can be prognosticated also for future

Table 5.11 Decrease of profitability in Estonian fishing: ex. pikeperch prices and average salaries

	Estonia					Finland
	1993	1996	1999	2001	2004	2004
First buyer price of pikeperch, euro	1.60	1.98	1.21	1.85	1.53	2.90
Average monthly brutto salary, euro	68	191	291	352	451	2322
Amount pikeperch equalling salary, kg	43	96	240	190	294	801

The number of professional fishermen using the resources of the Baltic Sea in Estonia is rather equal to Sweden (2000-2500). At the same time the size of the economic zone and length of coastline in Sweden surpasses Estonia 5-10 times. Very descriptive is also the comparison with Norway. When the number of fishermen is less than 10 times higher in Norway, their revenues surpass Estonia more than 100 times. Even if Estonian fishermen work mostly only part-time, it is still clear that CFP cannot support such a low efficiency of work. So, in future the decrease in the importance of the fisheries sector as an employer is inevitable and can be foreseen already now. If we take into consideration the general over-exploitation pattern of the Baltic Sea resources and remarkably increased labour efficiency, then it is of no surprise. Therefore, emphasis of the CFP structural support as well as other assisting funds should be rather in finding alternative employment possibilities than in maintaining the existing structure of the fisheries.

Fishing possibilities in Estonia are fully utilised. If price of the fishes is not growing, then also the value generated by the fishing sector cannot grow. In aquaculture, however, maximum possible value can be

[60] Official prices for 1993-96 are lacking.

tens of times higher and therefore the employment in aquaculture can rise remarkably. Recent technical improvements facilitate farming even in such natural conditions, which are not ideal. EU trade barriers can improve profitability, especially in Estonia where the main reared species is rainbow trout, which competes at the market with Norwegian salmon (before the EU accession salmon had free entrance into Estonia).

As mentioned, the importance of the fisheries sector becomes clearer when analysed at lower regional level or at the local level. This is especially relevant to the new Baltic member states. For one thing, three old Soviet republics are small in size, which means that there are no big remote regions strongly dependent on fishery situated far from the main urban centres as e.g. in Norway. Secondly, only Estonia has islands. Latvia, Lithuania and Poland are without islands, which mean that fishery is carried out only from the mainland. In mainland counties there might be only some municipalities depending on fisheries whereas NUTS3 level statistics is not reflecting such dependence or territorial impacts of CFP. However, the general decline in employment as well as share in GDP does not give much ground for optimism.

In conclusion, there is not much data existing, which can in detail reflect the territorial impacts of CFP in Estonia until today. Also, the statistics as it is gathered now in Estonia or in the other Baltic member states is not enabling to follow this development in a very detailed manner. Therefore, there is a need to gather relevant data by key indicators using all possible sources, not only the statistics available on national or EU level.

5.5 The Fisheries Sector in Norway

Norway is one of the world leaders in fisheries and was the tenth largest seafood production nation in the world measured in terms of volume of aquaculture and fishing in 2001 (Ministry of Fisheries, 2003, p. 4). Norway is, moreover, in the absolute top among the worlds largest net exporters of seafood products as around 90 percent of the production is exported. The importance of this export for the country, which is only exceeded by that of crude oil, is significant and makes fisheries an important economic sector in Norway. Norway was, consequently, also the first nation in the world to create a separate Ministry of Fisheries in 1946 (Myrstad, 2000). It is worth noticing that aquaculture is increasing in importance relative to capture fisheries (Ministry of Fisheries, 2003, p. 6).

The main markets for Norwegian seafood are the EU member states (approximately 60 percent of the total export of fish products), among which Denmark, France and the UK are the most important markets. (Myrstad, 2000 and Ministry of Fisheries, 2003, p. 6)

Norway has to some extent a tradition of combining objectives of regional policy with the objectives of fisheries policy. In is, however, questionable whether the link is in reality so strong that it could be said that fisheries policy supports the objectives of the regional policy. Nevertheless, fishing and related businesses are and have always been seen as important elements in maintaining viable settlements along the Norwegian coast. The Norwegian fisheries sector was heavily subsidised from the beginning of the 1960ies until the beginning of the 1990ies. Subsidies in current prices amounted at its highest to approximately 2.7 billion Norwegian kroner (NOK) (approximately € 330 million) in 1987 compared to an export value of seafood products of a little more than NOK 11 billion (a little less than € 1.35 billion) the same year. This policy changed dramatically over a relatively short time span in the beginning of the 1990ies. Since 1995 the subsidies have been less substantial - in the neighbourhood of NOK 100 million (a little more than € 12 million) per year[61] compared to an export value of between NOK 20 billion (a little under € 2.5 billion) in 1995 and NOK 31 billion (more than € 3.75 billion) at its most in 2000 (Ministry of Fisheries, 2003, p. 7).

Norway has applied for membership of the European Union twice. On both occasions the Norwegian government has withdrawn the application after negative referendums in 1972 and 1994 respectively. The

[61] In 2002 subsidies amounted to a little more than NOK 77 million - under € 10 million. Statistics Norway website: http://www.ssb.no/english/subjects/10/05/nos_fiskeri_en/nos_d298_en/tab/54.html (accessed 26 January 2005)

issues of jurisdiction over fish resources and regional policy implications have played a considerable role in the political debates on the applications, most prominently in 1972.

The most important fish species for the Norwegian fisheries sector were in 2002 herring, mackerel and cod for the capture fisheries sub-sector, and salmon and trout for the aquaculture sub-sector. The export value of these five species amounted to around NOK 22 billion out of a total value of export of a little more than NOK 28.5 billion (around 80 percent) (see sections on capture fisheries and aquaculture).

5.5.1 Policy

The Norwegian fisheries policy has changed a great deal in the last decades. The practice of giving subsidies, which was a characteristic of Norwegian fisheries policy until the beginning of the nineties, has been almost completely abandoned (Ministry of Fisheries, 2003, p. 7). The management of the Norwegian fisheries has in the course of the last decades, furthermore, changed from basically 'free access fisheries' to a management regime involving (increasingly transferable) quotas and concessions.[62]

The management regime is a rather complicated mixture of systems specific to different fisheries and categories of vessels. The regime has evolved incrementally over the years in response to developments in the sector and the external conditions: *"The Ministry of Fisheries has been - and still is - more of a fire department than a Soviet planning bureau."* (Mikaelsen og Jentoft, 2003, p. 399). The 'cod crisis' in 1989, when the authorities decided on a drastic reduction in the TAC for cod because of on a critical situation for the stock, can be considered the turning point for Norwegian fisheries management. After 1990 individual quotas of various sorts have spread to almost all fisheries and vessels (Mikaelsen og Jentoft, 2003, p. 399).

Two legal acts regulate *inter alia* the basic features of Norwegian capture fisheries, namely the acts on respectively fishing in saltwater etc. (Lov om saltvannsfiske m.v.) and on the right to participate in the fisheries (Lov om retten til å delta i fiske og fangst (deltakerloven)).[63]

The Norwegian fisheries policy is based on four main objectives: 1) increasing the profitability of the fisheries sector; 2) protecting the resources, which implies a precautionary approach to harvesting; 3) securing employment in coastal communities; and 4) maintaining the settlements along the coast. It is from the two latter points easy to recognise an element - at least in words - of regional policy-objectives in the fisheries policy (Årland and Bjørndal, 2002, p. 309).

Another characteristic of the Norwegian fisheries management system is the (advisory) involvement of the fish processing sub-sector and the fishermen's organisations in the management through the Management Council[64]. This Council, which is part of a long (corporatist) tradition in Norwegian fisheries management, advices on the detailed allocation of quotas among the different fisheries and vessel categories but also on issues relating to gear, fishing periods and areas etc. The Management Council is relatively influential and its recommendations are most often followed by the Ministry of Fisheries. This has on several occasions been the case also when the advice of the council has been in opposition to the scientific recommendations. (Mikaelsen and Jentoft, 2003, p. 401ff)

The point of departure for the Norwegian fisheries policy is TACs, which are set for individual stocks based on scientific advice. The majority of the Norwegian capture fisheries are, although the majority of the catch is actually taken inside the Norwegian EEZ, based on stocks, which are shared with other countries. The shared nature of the stocks necessitates international agreements on TACs, which are based on ICES' advice. TACs are susceptible to political negotiations between the countries involved, notably Russia in the Barents Sea and the EU in the North Sea (Hoel, 2000 and Mikaelsen and Jentoft, 2003, p. 400f). The national regulations deal in general with distribution (through quotas) of the

[62] Ministry of Fisheries and Coastal Affairs website: http://odin.dep.no/fkd/norsk/tema/fiskeogfangst/bn.html (2 December 2004, in Norwegian).
[63] A full list of the legal acts (in Norwegian), which are administered by the Ministry of Fisheries and Coastal Affairs can be found by following this link: http://www.lovdata.no/cgi-wift/wiftldsok?base=nl&titt=&dato=&emne=&button=S%F8k&dep=fkd (18 January 2005).
[64] In Norwegian: 'Reguleringsrådet'.

internationally agreed Norwegian TAC in order to secure a rational pattern of fishing. In this process it is also taken into consideration that there is a need to reduce the capacity of the fishing fleet and that the distribution between fishermen is 'fair' (Hoel, 2000).

The national Norwegian fisheries management system is, as already indicated, rather complicated. It will in this context not be feasible to go into details with all the specific fisheries and vessels categories. Rather, we will in the following elaborate on the overall principles and main elements of the management system and the territorial implications of these.

Licenses and annual fishing permits are used to restrict access to most of the Norwegian fisheries. The three main segments of the fleet are: 1) purse seiners, which catch mostly pelagic species but also more than half of the TAC for cod; 2) trawlers, which catch mostly cod and saithe but also to lesser degree pelagic species; and 3) coastal vessels[65], which catch mainly herring and cod but also other species. Licenses are used in the purse seiner fleet and the trawler fleet. The licenses are in principle non-transferable and a transfer of a license on the grounds of sale of vessel must be approved by the authorities. Licensed vessels held on average 1.87 licenses in 2002; this figure has been increasing over the years, as the number of licensed vessels has declined from 996 in 1980 over 547 in 1990 to 388 vessels in 2002. Annual fishing permits are increasingly used to restrict access to the coastal fleet fisheries, which have traditionally been subject to open access (Årland and Bjørndal, 2002, p. 309f and Norwegian Fishermen's Association and the Norwegian Ministry of Fisheries, 2003, p. 6). All important coastal fisheries are from 2003 and onwards subject to access restrictions of some sort (Fiskeridepartementet, 2003, p. 29).

The Norwegian TACs for individual species, as agreed internationally (both in relation to demersal and pelagic species), are distributed between the three main segments of the Norwegian fleet as *group quotas*. These quotas set the limit as to how much each segment of the fleet is allowed to catch of certain species. However, the allocation of quotas, which are in general sub-divided into group quotas for smaller groups/fisheries within the different segments, is subject to different practices. The simplest practice, which is utilised in some smaller fisheries, is no sub-allocation of the group quota for the specific fishery. This naturally stimulates competitive, 'race for fish' behaviour among the qualified participants. Restrictive measures, which are more commonly used, include *non-transferable individual vessel quotas* (IVQ) and *maximum quotas*. (Årland and Bjørndal, 2002, p. 308ff)

The first type of catch restrictions, IVQs, entails that each vessel is awarded a quota, which sets the limit for the annual catch quantity. IVQs are used to a varying degree in the different fleet segments. IVQs are allocated in relation to all fish species targeted by the purse seiner fleet. The formula used to allocate the quotas among the purse seiners favours smaller vessels over bigger ones by giving them a larger IVQ relative to their capacity. The picture is more composed for the trawler fleet, which is subject to IVQs in the main fisheries but managed by means of maximum quotas in the others. The IVQs in the trawler fleet are allocated on the basis of size of vessels (tonnage or length) and the type of trawler license. In the allocation process it is furthermore possible to take into consideration if the vessel is a qualified participant in other fisheries and thereby has 'an alternative source' of income/employment. IVQs are generally not used in the coastal fleet with the exception of the cod fisheries by conventional vessels above 28 meters. (Årland and Bjørndal, 2002, p. 310f)

Connected to the main fisheries, which are managed by IVQs (purse seiner fleet, cod trawling fleet and Greenland shrimp trawling fleet), a unit quota system is (from 2002) in place to address the issue of overcapacity, which is also a problem in Norway, albeit not as acutely as in the EU. The unit quota system introduces some form of transferability into the IVQ system by allowing owners of more licensed vessels to acquire a unit quota (valid for a limited number of years) when permanently withdrawing a vessel and its licence(s) from the fleet. This unit quota can subsequently be harvested by another vessel owned by the unit quota holder and thereby give an economic incentive to reduce fishing capacity. There are some restrictions on the amount of quotas, which can be held by a single vessel owner, in order to prevent inexpedient concentration of quotas. The system of unit quotas is moreover designed to be more

[65] The coastal fleet consist of a diverse mix of vessels ranging from small open boats to smaller seiners and conventional vessels more than 28 meters long (Årland and Bjørndal, 2002, p. 308).

attractive for the southern fleet than for the northern fleet because of regional policy considerations. (Årland and Bjørndal, 2002, p. 311f)

In terms of economic efficiency IVQs are intuitively favourable because they - by guaranteeing a vessel to have access to catch a fixed amount of fish over the year - terminate the 'race for fish' and allow the vessels to plan their activity and aim at minimising operations costs. Nevertheless, the maximum resource rent (value of catch minus costs) is most probably not realised because IVQs are not only awarded to the most efficient vessels and because they cannot be traded on the market. The unit quota system goes, however, some way in the direction of increasing economic efficiency by enabling the vessel owners to take advantage of the benefits of economies of scale. (Årland and Bjørndal, 2002, p. 311f)

The second type of catch restrictions are maximum quotas, which entail that the vessels are allocated a maximum quota, which the vessel may catch during the year. The vessel owner cannot be sure whether he will be allowed to catch the entire quantity because the aggregated sum of the maximum quotas is higher than the total quota for the group of vessels. When the aggregated catch reaches the group's quota the fishery is closed.[66] This practice, which is used in order to ensure that the entire group quota is actually caught, is referred to as 'overregulation'. Maximum quotas are, as earlier mentioned, not used for the purse seiner fleet. In the coastal fleet fisheries management by maximum quotas dominates.

In terms of economic efficiency maximum quotas and overregulation maintain incentives for a 'race for fish' because of the risk of closure of the fishery in question. The vessel owners will consequently fish heavily in the beginning of the season instead of planning according to resource accessibility and optimal size, quality or price over the year. This problem has been mitigated by dividing the quotas into seasons and in general by minimising the overregulation, which do not, however, alter the dynamics of the maximum quota system (Årland and Bjørndal, 2002, p. 310ff). As of 1 January 2004 a flexible quota arrangement for vessels between 15 and 28 meters was introduced. The justification for the new arrangement is basically the same as for the unit quota system and it aims equally at capacity reduction through a regulated transferability of quotas in the restricted access coastal fisheries.[67] The impact of this new measure remains to be seen.

In conclusion, the Norwegian management measures for stock conservation consist *inter alia* of input restrictions in the shape of licensing schemes for most fisheries, output restrictions in the shape of quotas allocated to groups of fishermen and on individual vessel level, and, finally, of technical measures related to particular fisheries, for instance minimum mesh sizes, minimum landing sizes, gear type restrictions etc.

According to Årland and Bjørndal (2002, p. 312f) compliance is relatively high in the Norwegian fisheries even though the system does provide incentives for high-grading of quota species and discarding of non-quota species. The total annual landings are rarely more than marginally above the agreed TACs. Control is among other elements based on random controls at sea, sample controls of landings and increasingly paper-based.

The agreement with Norway is the European Union's most important third party agreement in the fisheries sector. The fisheries agreements between Norway and the EU concern:

- joint management/setting of TACs and subsequent sharing of seven main stocks straddling between the Norwegian and the EU part of the North Sea
- balanced exchange of other fish stocks in each other's waters

[66] Some smaller coastal vessels have a guaranteed quota, which can be harvested even after the overall quota is exhausted (Årland and Bjørndal, 2002, p. 311).
[67] Ministry of Fisheries and Coastal Affairs website:
http://odin.dep.no/odin/norsk/dok/regelverk/lover/2003/008041-200095/dok-bn.html (20 January 2005)

The fish stocks, which are managed jointly, are cod, haddock, saithe, whiting, plaice, mackerel and herring. The agreements are negotiated annually and in the agreement for 2004[68] the total TAC for the seven species was set at 889,031 tons of which Norway got 297,667 and the EU got 591,364. The TACs for 2005 resulted in an increase of the total TAC to 905,179 tons with 622,203 tons going to the EU.[69] The EU share benefits mainly Denmark, Germany, France, the Netherlands and the United Kingdom. The balanced exchange of stocks, which Norway and the EU member states can catch in each others waters, is in the magnitude of 230,000 to 240,000 tons of various species.

Norway and the EU have in recent years disagreed on a number of important issues (especially on the exploitation of pelagic stocks), which has created some tension between the two parties. Trade in fish and marine products is regulated through Protocol 9 of the EEA agreement, which gives preferential treatment of a number of products but imposes taxes on others.[70]

Norway has, as mentioned above, fisheries agreements with other neighbouring countries. Most important are the agreements on cod, capelin and haddock with Russia.[71] Norway is also contracting party to a number of RFOs, which manage resources outside the EEZs (Hoel, 2000).

Aquaculture is, as mentioned above, increasing in importance relative to capture fisheries. The basic legal acts, which regulate Norwegian aquaculture, are the acts on the farming of fish, crustaceans etc. (Lov om oppdrett av fisk, skalldyr m.v.) and on sea ranching (Lov om havbeite).[72] The acts provide that one must seek and acquire acceptance from the authorities before starting an aquaculture business and that the authorities may take regional policy objectives into consideration when deciding on a request.

5.5.2 The Territorial Implications of the Norwegian Fisheries Policy

The Norwegian fisheries sector is of most importance in the northern part of the country. Here fisheries form an important part of a strategy aiming at keeping viable settlements along the coast. Changes in the overall conditions of the fisheries sector will, consequently, be felt most significantly in the northern part of the country. This is e.g. the case as regards the changes in the behaviour of the Russian fleet, which traditionally has landed much of its catch for processing in the northern part of Norway.

When it comes to subsidies, which have arguably been decreasing, it seems - based on an example study on Norway presented elsewhere in this report - to be the case that a few NUTS3 regions receive the majority of the support and the territorial distribution of the fisheries policy measures in Norway are mainly determined by the regions ability for developing new structures in the sector. More information on territorial imbalances in the Norwegian economic support to fisheries can be found in the example study.

5.5.3 The Capture Fisheries Sub-Sector

Production

The Norwegian capture fisheries sub-sector is, as already indicated, very important in terms of contribution to GDP and especially income from export. Most of the catch is exported and the value of the export is substantial. Exports have been increasing from the beginning until the end of the 1990ies, after which time it has levelled out somewhat (Ministry of Fisheries, 2003, p. 5).

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[68] The 2004 negotiations proved difficult and the agreement was not finalised before 24 January 2004 – noticeably delayed, which resulted in a moratorium on fishing in each others waters from 1 January to 24 January. DG Fish website (press release): http://europa.eu.int/comm/fisheries/news_corner/press/inf04_03_en.htm (1 December 2004).

[69] DG Fish (press release 29.11.2004): http://europa.eu.int/comm/fisheries/news_corner/press/inf04_50_en.htm (3 December 2004).

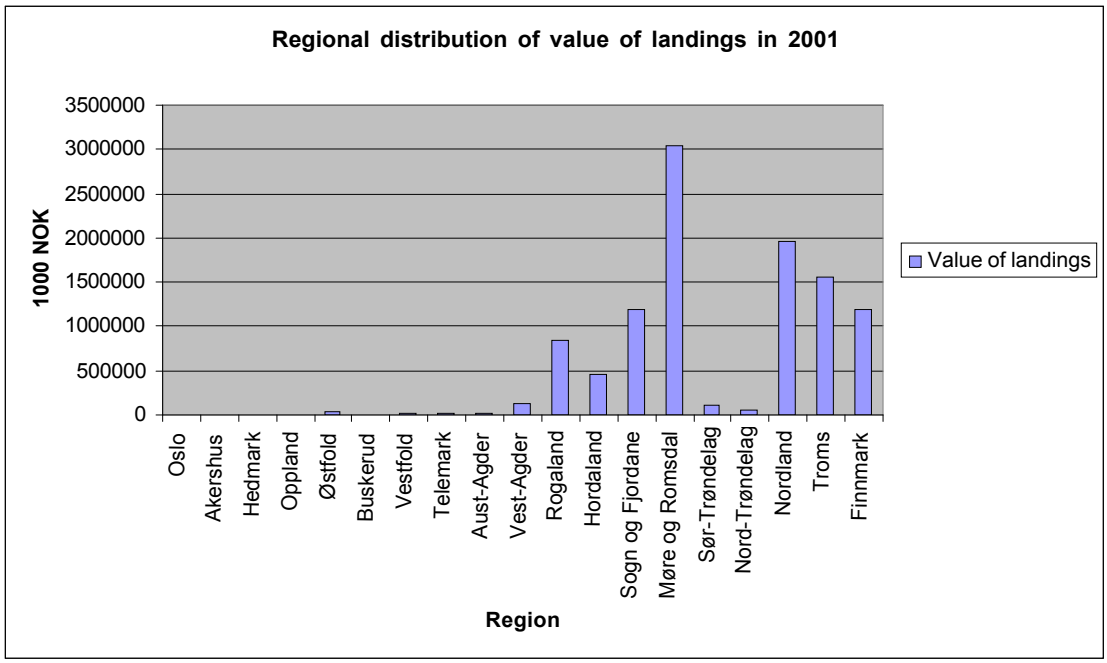
[70] DG Fish website: http://europa.eu.int/comm/fisheries/doc_et_publ/factsheets/facts/en/pcp4_2n07.htm (1 December 2004) and DG Trade website: http://europa.eu.int/comm/trade/issues/bilateral/countries/norway/index_en.htm (2 December 2004).

[71] Agreements with other countries include the Faeroe Islands, Iceland and Greenland.

[72] A full list of the legal acts (in Norwegian), which are administered by the Ministry of Fisheries and Coastal Affairs can be found by following this link: http://www.lovdata.no/cgi-wift/wiftldsok?base=nl&titt=&dato=&emne=&button=S%F8k&dep=fkd (18 January 2005).

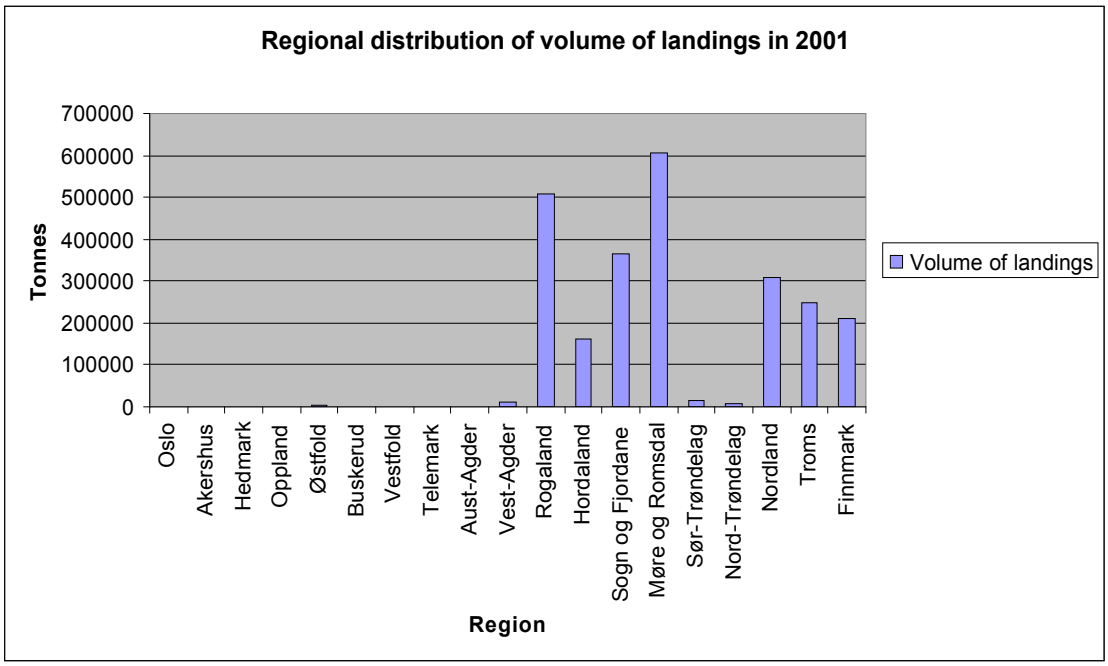
The most important species in terms of value are herring, mackerel, capelin, blue whiting (pelagic species), cod, saithe, haddock (demersal species) and prawns. Herring, mackerel and cod are the three most important species with an aggregated catch value of approximately NOK 6.25 billion (a little over € 760 million) in 2002. This is more than half of the total catch value of approximately NOK 11 billion (a little less than € 1.35 billion) (Ministry of Fisheries, 2003, p. 10, preliminary figures). The export value of these three species amounted in 2002 to around NOK 11 billion - or more than one third of the total value of the export of seafood products including aquaculture, which was a little more than NOK 28.5 billion (Norwegian Fishermen's Association and the Norwegian Ministry of Fisheries, 2003, p. 15 and 18).

Figure 5.19 Regional distribution of value of landings in 2001



Data compiled From Statistics Norway website, 11 March 2005.

Figure 5.20 Regional distribution of volume of landings in 2001



Data compiled From Statistics Norway website, 11 March 2005.

Employment and Fleet

The capture fisheries sub-sector is still an important provider of employment especially in the northern parts of Norway. Although, the overall number of fishermen has been continuously decreasing for several decades just below 14,000 persons had in 2002 fishing as their sole or main occupation and a little under 5,000 persons had it as their secondary occupation. The aggregated figure (main and secondary occupation) decreased from 23,653 to 18,648 (more than 20 percent) over the relatively short time span from 1995 to 2002 (Ministry of Fisheries, 2003, p. 10). The explanation cannot be found in declining (value of) catches but is most likely associated with technological change, that make it possible to catch the fish with a reduced input of manual labour (Norwegian Fishermen's Association and the Norwegian Ministry of Fisheries, 2003, p. 4).

The fleet can, as described above, basically be divided into three main segments, namely purse seiners, trawlers and the coastal fleet, which varies from small open boats to smaller seiners and vessels above 28 meters in length. The number of vessels in the Norwegian fleet has declined alongside with the number of people employed in the sector. The explanation for this is technological developments and the introduction of bigger more efficient vessels (Årland and Bjørndal, 2002, p. 308f). The total number of registered vessels in the Norwegian fleet was 10,651 in 2002. However, only a fraction of these were fulltime fishing vessels, namely 2206. 1127 of the full-time vessels were under 13 meters in length, 188 were 41 meters or more in length (Ministry of Fisheries, 2003, p. 12f).

The development of the Norwegian fleet is summed up in the table below, which shows the development from 1997 to 2003 in terms of number of vessels, gross tonnage (GT) and kilowatt (kw).

Table 5.12 The Norwegian fleet 1998 to 2003

Year	1997	1998	1999	2000	2001	2002	2003
Number	13,645	13,251	13,196	13,014	11,951	10,651	9,933
1000 GT	359	372	385	392	407	394	395
1000 kw[73]	1202	1238	1286	1321	1362	1351	1356

Source: Eurostat database website, 17 January 2005, and Directorate of Fisheries, Norway.

Even though these figures can only give an indication of the development in the Norwegian fleet because a large proportion of the registered vessels are only to a very limited extent active the fact remains that the decrease in the capacity of the fleet has been much more limited than indicated by the decrease in absolute number of vessels - it actually looks as if there has been an increase in the period from 1997 to 2002. On top of this technological creep has to be added to give a reasonable idea of the development in effective fishing capacity. However, programmes to reduce capacity were renewed in the summer of 2000 (Myrstad, 2000) and from the table it looks as if they have had some impact.

Perspectives for the Future

The development of the capture fisheries sub-sector depends to a large extent on the developments in the stocks of the most important Norwegian fish species: cod, saithe, herring, mackerel and prawns etc. Norwegian fish stocks are in varying conditions and a number of them are outside what is defined as safe biological limits. This is especially the case for a number of demersal fish stocks in the North Sea, which are, however, not the most important for the Norwegian fleet.

Moreover, Norwegian fisheries are based on exploitation of a relatively high number of different species and stocks, this secures to some extent that fluctuations (natural as well as those caused by the impact of fishing) in the abundance of some stocks do not have detrimental effect on the capture fisheries sub-sector in total although certain fleet segment would suffer. However, it remains a concern that the TACs for a number of stocks, which are exploited by the Norwegian fleet, have consistently been set above the recommendations from ICES during a number of years. This has for instance been the case for Arctic cod, which accounts for most Norwegian cod landings. The biomass of the stock has been increasing in recent

[73] Kilowatt not included because of unexplainable inconsistencies in the data reported to Eurostat regarding power. An explanation from the Directorate of Fisheries in Norway has been requested.

years but the fishing mortality was outside safe biological limits in 2002 (Havforskningsinstituttet, 2004, p. 31). This is one side of the challenges faced by the Norwegian capture fisheries sub-sector: making sure that the resources are not - at the very least - overexploited to an extent, where the catches in the longer term will decrease and in extreme cases lead to stock collapses. Ensuring that the regulatory measures are sufficient remains thus a major task in the future. Resources in Norwegian waters are on average in a better condition than many other places in the world - the challenge is to keep it that way.

Another problem is the continuing declining employment within the sub-sector. Although this development is definitely a real problem for the fishermen, who loose their jobs, it might be positive for the sector in general because it is an indication of a move towards increasing competitiveness and economic efficiency in the face of increased competition from other countries getting more efficient and from aquaculture. Even if the development of the stocks turns out to be positive in the future, this is no guarantee that jobs will be created. Technological developments are continuously increasing the efficiency of the vessels and vessel owners can be expected as far as possible to take advantage of economies of scale. Both tendencies tend to diminish the share of manual labour input as per unit caught. This will lead to fewer employees in the fleet even if catches remain stable or increase.

However, the demand for fish is increasing worldwide and the market situation for the products from the capture fisheries sub-sector seems relatively good. The farming of cod could have a negative effect on the segments of the fleet, which catch cod. The present undersupply of cod could also lead to a situation where consumers get accustomed to cheaper alternatives from other places in the world, for instance hoki etc. Anyway, it must be expected that the capture fisheries sub-sector will continue to be of major importance for Norway, which has access to some of the richest fishing grounds in the world with high quality fish - globalisation will not change this fact.

SWOT analysis of the Norwegian capture fisheries sub-sector			
Strengths	**W**eaknesses	**O**pportunities	**T**hreats
Large resource base of high quality	Restricted access to EU markets due to non-membership	Increasing demand for fish products, especially of high quality	Natural fluctuations in fish abundance
Broad spectrum of commercially important species	High wage costs	Utilisation of species not yet recognised as commercially valuable	Competing low price species from other places in the world
		Increasing transferability of quotas leading to higher efficiency	Smaller TACs in the longer term due to management failure (too high TACs)
			Climate changes

5.5.4 The Aquaculture Sub-Sector

Production and Employment

The Norwegian aquaculture sub-sector, which is almost exclusively situated in seawater, has become increasingly important during the last twenty years and products (processed to a varying degree) from aquaculture amount to around 30 to 40 percent of the export value (Ministry of Fisheries, 2003, p. 5).

The dominating specie is Atlantic salmon. The production of salmon has in later years amounted to between 400,000 and 450,000 tonnes per year until actually exceeding 500,000 tonnes in 2003. The farm gate value of the salmon produced was in 2002 a little more than one billion euro (Eurostat database website, 16 January 2005). Norway has also a considerable production of trout with a value of a little under € 180 million in 2002 (Eurostat database website, 16 January 2005). The main export markets are the EU, mostly France and Denmark, and Japan (Ministry of Fisheries, 2003, p. 19). Trout, which export value has increased by more than a factor six over the period from 1991 to 2002, is exported mainly to Japan (Ministry of Fisheries, 2003, p. 20). The export value of salmon and trout was in 2002 approximately NOK 11 billon. (Norwegian Fishermen's Association and the Norwegian Ministry of Fisheries, 2003, p. 18)

The economic contributions from other species are so far modest and include farmed cod, Arctic char, halibut, oysters, blue mussels, great scallop etc. Cod and blue mussels are currently the largest contributors besides salmon and trout. (Ministry of Fisheries, 2003, p. 24)

Aquaculture production is a growing source of employment in coastal areas in Norway. More than 4,500 persons are presently employed in the aquaculture sub-sector. Of this figure a little more than 800 persons are employed with aquaculture of other species than Atlantic salmon and trout. The aquaculture production is distributed all the way up the Norwegian west coast and the production in the northernmost county of Finnmark is the greatest in terms of volume per inhabitant. Aquaculture is consequently also very important in regional policy perspectives. (Ministry of Fisheries, 2003, p. 21 and 24)

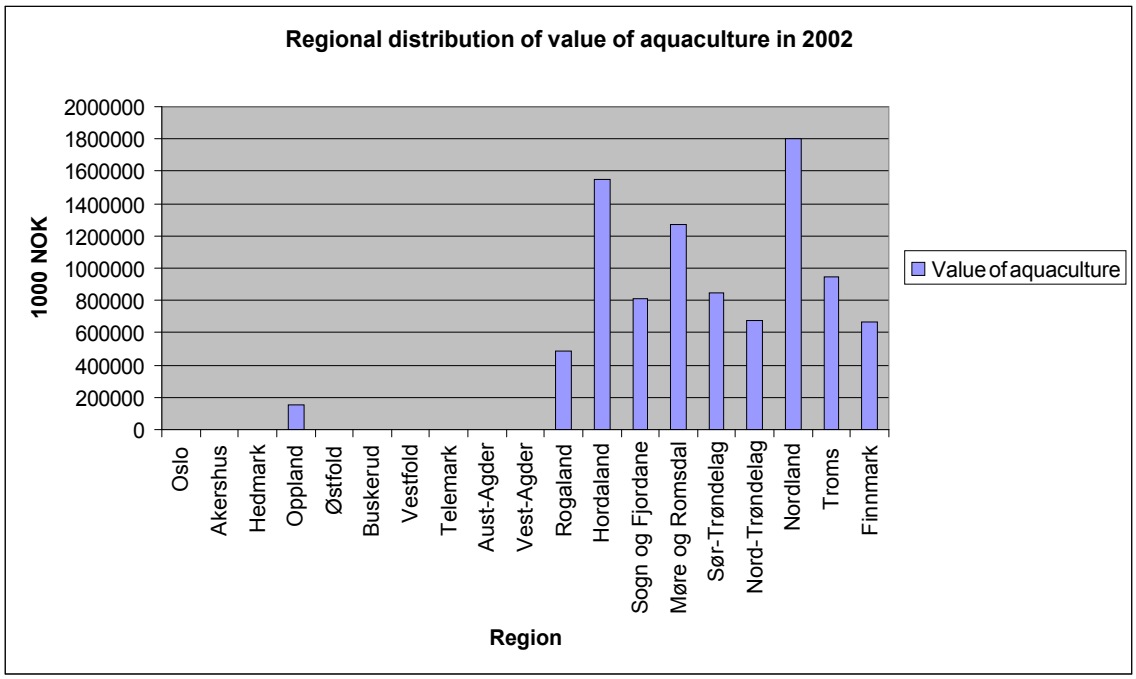
Table 5.13 Utilised fish farming concessions in 2002[74]

NUTS3 Code	Name	Salmon & trout	Other
NO011	Oslo		
NO012	Akershus		
NO021	Hedmark		
NO022	Oppland	47	8
NO031	Østfold		
NO032	Buskerud		
NO033	Vestfold		
NO034	Telemark		
NO041	Aust-Agder		
NO042	Vest-Agder		
NO043	Rogaland	75	29
NO051	Hordaland	195	68
NO052	Sogn og Fjordane	95	25
NO053	Møre og Romsdal	129	45
NO061	Sør-Trøndelag	92	8
NO062	Nord-Trøndelag	72	8
NO071	Nordland	157	109
NO072	Troms	87	13
NO073	Finnmark	75	9

Compiled from Statistics Norway website, 28 February 2005

[74] Including production of fish for food and hatcheries and/or fingerling production.

Figure 5.21 Regional distribution of value of aquaculture in 2002



Data compiled from Statistics Norway website, 28 February 2005[75]

Perspectives for the Future

The development in the EU, which is Norway's main trade partner, is important in relation to the perspectives for the Norwegian aquaculture sub-sector. The enlargement in 2004 was in this respect an important event as it included approximately 75 million persons into the European Union.

The enlargement of the European Union is expected to have adverse as well as positive effects on the Norwegian seafood export, including in relation to the aquaculture sub-sector most notably the export of salmon. On the positive side it can be expected that the enlargement will lead to (continued and perhaps accelerated) increasing GDP per capita in the new member states. This is especially important for the export of salmon, which is considered a 'luxury' food item. The potential here is significant, which is also indicated by the fact that the (so far comparatively small) export value of salmon to the candidate countries doubled from 2000 to 2002 (Næringsforum Nord, 2004, p. 11f).

However, Norway has so far had bilateral free trade agreements with the candidate countries; these agreements disappeared as of May 2004 after which trade with fish is subject to the agreements with the EU. This meant increasing taxes on export of salmon to the new member states (tax: 2 percent). This put Scottish producers of salmon in a better position *vis-à-vis* the Norwegian producers in relation to the new member states, something which must be expected to reduce the positive effects of the increasing demand resulting from increased GDP per capita (Næringsforum Nord, 2004, p. 14ff). Nevertheless, production of salmon and trout in Norway is forecasted to continue to increase to at least the double in 2020 (Brugère and Ridler, 2004, p. 18 and 21) or possibly already in 2010 (Foss, Matthiasson and Ulrichsen (eds.), 2003, p. 63) even though the market perspectives in the EU are ambiguous.

Cod is probably the specie, which is currently most interesting in relation to future growth in the aquaculture sub-sector in Norway. The production of fry for ongrowing indicates that the industry is expanding. However, the production of fry is still experiencing problems of diseases and deformities. Research is currently focussing on solving these problems. Farmed cod enjoy so far a good reputation and the perspectives for cod farming are positive (Institute of Marine Research, 2004a, p. 9-10). The success of cod as a farmed product is, however, to a large extent contingent on the development of the wild cod stocks, which are for instance in the EU subject to recovery measures. Projections for the increase in cod

[75] Sold unrefined fresh or frozen. Including value of fish further processed in own plants.

farming in Norway vary (up to 400,000 tonnes in 2020!) and the outcome is still to a certain degree dependent on how technical difficulties are overcome. However, considerable expansion can in any case be expected in the years to come (EuroFish, March/April 2003).

Besides the two species dealt with above, a number of other species are expected to contribute to growth in the aquaculture sub-sector in the future; the way forward for Norwegian aquaculture is partly considered to be diversification. Species, which are expected to contribute to the growth in the sector, include most notably (besides cod and salmon): lobsters, scallops, halibut, mussels, Arctic char and spotted ocean catfish (Institute of Marine Research, 2004a, p. 9-11 and Ministry of Fisheries, 2001).

All in all the perspectives for Norwegian aquaculture seem fairly bright. Norway is world leader in salmon farming and the export of trout has increased substantially in recent years. At the same time is the Norwegian aquaculture sub-sector working towards increasing diversification in order to create and supply new markets - the most promising example being cod aquaculture. Nothing suggests that the global market for seafood products is anything close to saturation. Rather, all projections predict that the demand for aquaculture products will increase over the coming years, as wild stocks are unlikely to provide an increased output Norway is physically well suited for aquaculture with for instance a low population density and comparatively small problems of resource use conflicts in coastal areas. On the other hand the globalisation of the market in food products increases worldwide competition, an example being the Chilean salmon producers, which have utilised the lower wages in the country to win market shares on an expanding global market.

SWOT analysis of the Norwegian aquaculture			
Strengths	**W**eaknesses	**O**pportunities	**T**hreats
Favourable conditions for farming of certain species, e.g. cod and salmon	Restricted access to EU markets due to non-membership	Introduction of new species, such as lobsters and halibut	Fish diseases
High technological level		Growth in cod aquaculture	
		Increasing EU demand for 'luxury' species, such as salmon	

5.5.5 The Processing Sub-Sector

The developments within different segments of the processing sub-sector have showed different tendencies over the last decades. The overall figures for employment in the processing sub-sector have, however, been relatively stable in the period from 1994 to 2001, although with a declining tendency in the second half of the period. The number of processing companies (excluding sole proprietors) has likewise been relatively stable. The aggregated figures were 11,774 employees in a total of 484 companies in 2001.[76]

The general trend has been fewer companies and employees in the processing industry connected to the whitefish sector. This sub-sector consists of approximately 22 larger filleting companies and 180 conventional (For instance salting and drying) companies, where most of the products are exported. There are various reasons for this development. The situation for the filleting companies are characterised by 1) increasing competition from other, cheaper whitefish species, which are now available because of globalisation ; 2) supply shortages due to decreasing landings of cod from Russian vessels, which are increasingly able to carry out some processing onboard and land the products elsewhere; and 3) more frozen raw material landed in Norway is exported for processing in other countries due to increased global competition for raw materials. These tendencies have made the favourable geographical localisation of the Norwegian processing sub-sector *vis-à-vis* the resources less important and the

[76] Statistics Norway website: http://www.ssb.no/english/subjects/10/05/nos_fiskeri_en/nos_d298_en/tab/40.html (18 January 2005).

problems of higher wages and transportation costs more important. The problems have, furthermore, been aggravated by the strong Norwegian currency (which have lately stabilised at a more normal level) and high level of interest, which have made high production costs even higher (Fiskeridepartementet, 2003, p. 31f).

Perspectives for the Future

The strength of the Norwegian processing sub-sector continues to be the relatively easy access to high quality raw material be it from capture fisheries or aquaculture. Other strengths include the good reputation enjoyed by Norwegian seafood products, the high hygiene standards etc. and the relatively short distance to the European market. Weaknesses of the Norwegian processing sub-sector include overcapacity and high wage costs. Possible opportunities for the fish processing sub-sector lie in further developing the processing technology to make the input of manual labour as small as possible. Another possibility is to concentrate on added value fresh fish products, since Norway is situated relatively close to major markets for these high-end products. However, a serious threat faces the Norwegian processing sub-sector: as transport gets cheaper and easier the competitive advantage of being close to the resources is undermined. Competing countries are increasingly able to take advantage of lower production costs; at the same time they are becoming technically more advanced, which makes it attractive to export raw material for processing outside of Norway. Moreover, as a consequence of the introduction of factory trawlers more processing will take place at sea. At the same time the Norwegian processing sub-sector is also very sensitive to the developments in the fish stocks, which are exploited by Norwegian vessels. This means that higher Norwegian TACs could ease the situation for the processing sub-sector to some extent.

In conclusion, the perspectives for the future of the Norwegian processing sub-sector are at best mixed. The one major competitive advantage, which the industry has enjoyed, namely easy access to high quality raw material, is being eroded by the globalisation of the fish market, which increasingly makes it profitable to export the raw material to processing in countries with lower labour and other costs. A way forward is perhaps diversification and reliance on niche products and traditional Norwegian products utilising the good reputation of Norwegian products. However, a feasible prediction for the future is fewer and more technically advanced plants. The result is in any case fewer employees - either because processing is outsourced or because labour is substituted with technology.

SWOT analysis of the (landbased) Norwegian processing sub-sector			
Strengths	**W**eaknesses	**O**pportunities	**T**hreats
Close proximity to raw material of the highest quality	Restricted access to the EU market due to non-membership	Development of competitive, modern, technology based processing plants	Increasing competition from cheaper alternatives (especially) on the frozen filet market
Vertical integration, which secures access to raw material	Low profitability for a number of businesses	Adding value to fresh fish products	Increasing international competition for raw material landed in Norway
	Characterised by geographically dispersed, small and medium sized enterprises		Declining foreign (especially) Russian landings because of onboard freezing and landings elsewhere
	Overcapacity		

5.5.6 In Sum

There is no doubt that the fisheries sector will continue to be of major importance in Norway in the future. However, globalisation will undoubtedly change the structure and relative importance of the various sub-sectors. Aquaculture will most probably be the driver of the main development in the fisheries sector in the future.

- The future of the capture fisheries sub-sector is relatively bright. The state of the resources is acceptable for many of the most important species, even though recommendations from ICES are not always followed, and policy-changes are increasingly making the fleet economically efficient. It cannot, however, be expected that this sub-sector will provide more jobs in the future. On the contrary, technological changes are leading to more and more efficient vessels, which need less manual labour. Anyway, the unknown factor is the development of the fish stocks, which also fluctuate naturally. There is, however, nothing which indicates that the Norwegian capture fisheries sub-sector as such is facing major problems. However, this sub-sector will not in the future be the great provide of jobs as it has been in the past.
- The aquaculture sub-sector is in good shape and the perspectives for the future are bright. Considerable expansion is expected in salmon aquaculture, and cod aquaculture is increasingly looking promising even though it has not taken off yet. New jobs can be expected to be created within this sub-sector in the years to come as it has also been the case in the past years. This is in line with the expected development worldwide; where it is projected that aquaculture will increase dramatically in importance relative to capture fisheries. This will of course increase competition but the global market for fish is growing and Norway is particularly well suited for aquaculture of cod, salmon and other species.
- The processing sub-sector is in a more difficult situation than the other two sub-sectors. This is due mainly to the effects of globalisation, which means that it is becoming increasingly profitable to process the raw material in countries with lower costs. Supply of resources from Russian vessels is also becoming less than in previous years due to the introduction of factory trawlers. Possible solutions are to take advantage of economies of scale and reduce the number of plants, which can then work at a higher technological level. This would to some extent be in contrast with the regional policy objectives in the fisheries policy and would in any case result in fewer jobs.

5.6 The Fisheries Sector in Iceland

The fisheries sector is tremendously important in Iceland, which is - despite its modest population of less than 300,000 - the eleventh largest seafood producing nation in the world measured in terms of volume of catch (Ministry of Fisheries, 2004, p. 2). From the mid-nineties to 2003 fishing and processing represented between approximately 10 and 13 percent of the Icelandic overall GDP - and the value of fisheries products constituted more than 60 percent of the value of exported goods and 40 percent of the value of exported goods and services. Approximately three quarters of the export value of fish products goes to other EAA countries - the biggest importer of Icelandic fish products is the UK (Ministry of Fisheries, 2004, p. 3 and 9). Thus, the state of the Icelandic fisheries sector strongly influences the overall state of the Icelandic economy.

Fisheries policy is, consequently, of national importance to a degree, which is not comparable to any of the 25 EU member states where the fisheries sectors in comparison seem insignificant – with the possible exceptions of the most fisheries dependent regions of the Union: *"Due to the size, scope and importance of fisheries in Iceland, policy formulation and decision-making on marine issues has far-reaching effect on the standard of living"* (Ministry of the Environment et al., 2004, p. 4).

Iceland has never applied for membership of the EU mostly due to unwillingness to accept the fisheries policy of the Union, which has been perceived as severely flawed. Sharing the responsibility for managing Icelandic fish stocks with the EU member states has therefore not been considered an attractive option. The Icelandic emphasis on national jurisdiction over resources has long roots and includes dramatic incidents like the so-called Cod War(s) with the UK.

5.6.1 Policy

Iceland has as a consequence of the fact that fisheries are not part of the EEA agreement (of which Iceland is part) its own fisheries policy, which on important points differs from that of the EU.

The Icelandic fisheries management system, of which the cornerstone is the Fisheries Management Act from 1990 (comparable to the basic regulation of the CFP), is based on an individual transferable quota system (ITQ), in which discarding is illegal - as opposed to the EU management system where discarding is in certain situations mandatory. Quotas cannot be sold out of Icelandic ownership (Intrafish, Feb. 2004, p. 10).

The current ITQ system, which has remained in essence the same since beginning of the nineties, evolved from an initial individual vessel quota (IVQ) system first agreed on in 1983 to take effect from 1984. The last fleet segment, small boats under 6 GRT, became part of the ITQ system in 2004, which means that all segments are now managed under the ITQ system. Some of the resource rent from the fisheries will from 2004/2005 be collected by means of a fishing fee, which equals 6 percent of the net catch value. This fee will increase by law over the coming years to a level of 9.5 percent in 2009. (Gudmundsson et al., 2004, p. 1-4)

The ITQ system is supported by a number of technical measures designed for conservation purposes in specific fisheries. These include nursery areas, which are permanently closed for fishing; spawning areas, which are closed for fishing at certain times; mesh size limitations and different gear restrictions - including in most areas a 12 nautical mile limit, inside which fishing with large trawlers is not allowed.[77]

The Icelandic ITQ system entails that the minister of fisheries sets a TAC for individual species after having received an advice from the Icelandic Marine Research Institute (MRI). The TAC for each species is subsequently divided among those holding rights to catch a percentage of the specie in question. The minister is not obliged to follow the advice from MRI besides on the setting of the TAC for cod, which is subject to a 'catch rule' and under normal circumstances based directly on estimates from MRI (Gudmundsson et al., 2004, p. 3-4). The catch rule for cod was introduced in 1996 following a series of years where the TAC for cod had been set higher than recommended. The same years witnessed a series of declining recommended catches, TACs and actual catches (Ministry of Fisheries, 2004, p. 5).

The individual quotas are divisible and to a wide extent freely tradable and transferable. However, there is an upper limitation on how much of the total quota an individual (or related individuals) or an individual company can hold: firstly, a vessel cannot hold more quotas than it can harvest; secondly, there is an upper limit (ranging form 12 to 35 percent) as to how big a share of a certain fishery's total quota an individual or a legal entity can own (directly or indirectly); and, finally, no individual can own more that 12 percent of the total TAC for all species measured in cod equivalents (Gudmundsson et al., 2004, p. 3). These restrictions aim at reducing or at least slowing down the tendency towards concentration of fishing rights in the hands of very big companies, which is a possibility in ITQ systems.

A major debate regarding ITQs has over the years been on whether the system would eventually result in a concentration of fishing rights, which seems to have been to a certain extent the case in Iceland (Pálsson and Helgason, 1996, p. 58 and Gudmundsson et al., 2004, p. 12). This concentration has, on one hand, to some extent increased the vulnerability of the local (fishing) communities, which rely on sufficient 'locally' owned quotas to stay viable. Locally owned quotas are important not only because they provide jobs to local fishermen but also because the landings from 'local' vessels have traditionally provided the raw material for local processing plants. This process of regional concentration of quotas has taken place even though there are provisions in the Fisheries Management Act (art. 11), which makes transfers of vessels with quotas between municipalities potentially subject to some restrictions. On the other hand, it seems to be a fact that the ITQ system has improved the economic efficiency of the Icelandic capture fisheries sub-sector (Eythorsson, 2000, p. 487).

The politically agreed TACs for the fishing year 2004/2005 in relation to Icelandic stocks corresponded in general very closely to the recommendations of the MRI. The recommendations were followed exactly in relation to 16 of the 20 quota-species, including cod, saithe, haddock and halibut,[78] which serves as an indication of the relatively strong political commitment to following the scientific advice in Iceland.

[77] Information Centre of the Icelandic Ministry of Fisheries website: http://www.fisheries.is/managem/legisl.htm (13 January 2005)
[78] Information Centre of the Icelandic Ministry of Fisheries website: http://www.fisheries.is/managem/tacs.htm (5 January 2005).

Transparency is according to Eythorsson (2000, p. 484) a defining characteristic of Icelandic fisheries. This is the case due to a relatively limited number of vessels (today under 2000) and ports (approximately 60) compared to the significance of the sector. This means that the sector is relatively manageable when it comes to control and reliability of catch statistics. Transparency (and reliability of catch statistics) is also strengthened by the ban on discarding. The basic conditions for fisheries management is consequently somewhat different in Iceland compared to within the European Union, where problems of reliability of statistics and control in general are prominent due to various characteristics of the EU fisheries sector, including its multi-national character.

Iceland has a relatively insignificant bilateral reciprocity agreement with the European Union on redfish for capelin.[79] Iceland is, furthermore, contracting party to a number of RFOs and Iceland has fisheries agreements with a number of countries besides the EU, including Norway.[80]

The following table contains a selection of the most important Icelandic fisheries policy-developments in the period from 1983 to 2004.

Table 5.14 Important Icelandic fisheries policy-developments 1983 - 2005

1984	A system of IVQs quotas is in function from the year 1984 (decided in 1983). The system is in the following years extended. An alternative, optional system of effort quotas (days-at-sea) exists from 1985.
1991	The catch quotas are made divisible and fully transferable as from 1 January 1991 (decided in 1990) - effectively introducing an ITQ system. Only boats under 10 GRT are still allowed to work under effort limitation.
1995	A catch rule for the Icelandic cod stock stating that the annual TAC shall be set at 25 percent of the fishable biomass is introduced. The setting of the TAC for the commercially most important fish specie in Iceland is, consequently, directly based on the scientific (biological) estimates.[81]
2004	A resource rent tax in the form of a fishing fee is introduced from the fall of 2004 (decided in 2002). The last segment of boats (under 6 GRT) is changed from optional effort management to the ITQ system.

Sources: Information Centre of the Icelandic Ministry of Fisheries website: http://www.fisheries.is/managem/legisl.htm (11 January 2005) and Gudmundsson et al., 2004, p. 1-4.

Legislation regarding aquaculture in Iceland is complicated and involves the Ministry for the Environment and the Ministry of Aquaculture, which have both the right to issue licenses through governmental agencies. A number of other institutions are also involved in relation to issues such as disease control and processing etc.

A number of legal acts, which secures a high standard of quality, safety, hygiene and identity are relevant for the Icelandic processing sub-sector. The main acts are Law No. 55/1998 on the handling, processing and distribution of seafood and Law No. 54/1992 on the processing of all catch onboard fishing vessels. Iceland has, if anything, adopted stricter rules in relation to these issues than the EU, so there is nothing that suggests that Iceland will have problems in this area if rules are tightened in the EU, which is Iceland's main trading partner. (Foss et al., 2003, p. 67f)

[79] DG Fish website: http://europa.eu.int/comm/fisheries/doc_et_publ/factsheets/facts/en/pcp4_2n04.htm (1 December 2004).
[80] Information Centre of the Icelandic Ministry of Fisheries website: http://www.fisheries.is/agreem/index.htm (2 December 2004).
[81] The catch rule for cod is in 2000 amended so that the total TAC should not vary more than 30,000 tons from one fishing year to the next. Information Centre of the Icelandic Ministry of Fisheries website: http://www.fisheries.is/managem/legisl.htm (11 January 2005).

5.6.2 The Territorial Implications of the Icelandic Fisheries Policy

The entire country of Iceland constitutes one NUTS3 region, which in the context of this study makes it impossible to analyse differences in fisheries policy impact in different regions on this level. Trends and developments must, consequently, be analysed on lower NUTS levels though examples.

However, a key question in relation to the territorial consequences of the Icelandic fisheries policy is whether the smaller, local fishing communities are worse off with the ITQ system than they would otherwise be.

A major issue for the local fishing communities and in the debate over the ITQ system in Iceland has been the transferability of the quotas, which means that quotas can be 'sold away' from local fishing communities, which then do not have access to the resources anymore with loss of fishermen's jobs and problems in the local processing sub-sector as a result. A result of the ITQ system has according to Eythorsson (2000, p. 488f) been marginalisation of some fishing communities. This has especially been the case for the smallest communities under 500 inhabitants. These small communities have lost to the larger communities in a competition for quotas.

The ITQ system has supposedly not only led to a consolidation in terms of larger companies but also a relative concentration of activity in larger fishing communities leaving the smaller communities without alternative sources of income as the processing plants loose their source of raw material.

Anyway, an open question is if external trends would have pushed for a similar development simply because of the increased global competition in the market for fish products, something which is increasingly giving rise to similar structural adaptations in other countries, where quotas are not transferable.

Furthermore, some of the coastal regions in Iceland have suffered a rapid depopulation since the beginning of 1990ies. This has been very clear in the Vestfjords, which has suffered the greatest depopulation of all regions in Iceland in this period. The overall population development for this region is around minus 20%, and every municipality but one has a negative development. (Sigursteinsdóttir and Ólafsson, 2004). Between 1990 and 2000 the cod quota for the region declined by 4,8%, which was by far the greatest decline by all regions (Sigursteinsdóttir, 2002). There are conflicting views on whether there exists a correlation between these two variables or not. While some argue that the quota would have gone anyway through mergers of companies, others (most significantly the Liberal Party) argue that the depopulation is due to the transfer of quota.

5.6.3 The Capture Fisheries Sub-Sector

Production

The Icelandic capture fisheries sub-sector is, as already indicated, very important. It is estimated to have accounted for approximately 7 percent of the overall GDP in 2003 (Ministry of Fisheries, 2004, p. 3). The value of the Icelandic catches has been increasing (in current prices) since 1997 from just under 60 billion Icelandic kronur, approximately € 725 million, to 77 billion Icelandic kronur in 2002, approximately € 930 million (up 28 percent) (Ministry of the Environment et al., 2004, p. 4 and Ministry of Fisheries, 2003, p. 4). However, the figures for 2003 show a decline from 2001 and 2002, although still higher than the period from 1998 to 2000 (Ministry of Fisheries, 2004, p. 4).

Demersal fish species (including cod, haddock, saithe, redfish and Greenland halibut), flatfish and shellfish constitute almost 80 percent of the value of catches even though almost 75 percent of the volume of the total catch is constituted by pelagic species (Ministry of Fisheries, 2004, p. 4). Cod, which is mainly caught in the Icelanders' own EEZ, is the economically most important fish specie.

Most of the Icelandic fish are caught in own waters but the share, which is caught outside own EEZ, has been increasing in recent years. In 2002 the catch from outside own zone constituted 24.3 percent of the total catch value (Ministry of the Environment et al., 2004, p. 24).

Employment and Fleet

The number of persons employed in the marine capture sub-sector has been gradually declining over the past years. Official estimates indicate that the number employed has dropped from approximately 7000 to 5500 in the period from 1992 to 2002 (Ministry of Fisheries, 2003, p. 4) - this on the background of increasing catches both in terms of value and volume. The trend continued in 2004 where the data indicate that a little more than 5000 persons were employed in the marine capture fisheries sub-sector (Ministry of Fisheries, 2004, p. 4).

The development of the Icelandic fleet is summed up in the table beneath, which shows the development from 1998 to 2003 in terms of number of vessels, gross tonnage (GT) and kilowatt (kw) engine power.

Table 5.15 The Icelandic fleet 1998 to 2003

Year	1998	1999	2000	2001	2002	2003
Number	1932	1970	1997	2015	1938	1876
1000 GT	187	181	180	191	191	184
1000 kw	503	514	529	555	548	538

Source: Eurostat database website, 12 January 2005.

The Icelandic fleet has according to the figures from Eurostat decreased in terms of numbers, kilowatt and gross tonnage from 2001 to 2003. The decrease in capacity is at least in part due to an attempt to make the capture fisheries sub-sector more economically efficient.[82]

Anyway, the tendency in the development of the overall fleet is not clear but in the trawler fleet, which catches more than half of Iceland's demersal catch by volume (Ministry of Fisheries, 2004, p. 5), there seems to be an ongoing development where the trawler fleet as such decreases the number of vessels used to catch their quotas - taking advantage of economies of scale - as an adjustment to the incentives in the ITQ management system (Gudmundsson et al., 2004, p. 12). This means higher efficiency but most probably also less persons employed.

Perspectives for the Future

The Icelandic policy on TACs is according to the minister of fisheries that these shall as far as possible reflect the recommendations put forward by the biologists in MRI (Intrafish, Feb. 2004, p. 10), which was also, as described above, in general the case for the fishing year 2004/2005. This commitment to science is especially true for the most important specie, cod, which is, as earlier described, subject to a special arrangement where the scientific estimate of the fishable biomass is calculated directly into a TAC. However, the scientists in MRI believe that the catch rule for cod is not restrictive enough and that it should optimally have been set at 22 percent instead of 25 percent. It is, nonetheless, predicted that the biomass for cod will increase *"in next several years"* (Marine Research Institute, 2004, p. 167), which is positive news for the capture fisheries sub-sector. The sub-sector relies heavily on cod, which constitutes almost 40 percent of the value of exports of fish products (Ministry of Fisheries, 2004, p. 10).

The Icelandic fisheries management scheme is rather restrictive in terms of conservation of resources (e.g. the catch rule for cod) and it must be expected that this in the long term will lead to a stable and positive development in relation to availability of resources providing that the Icelanders manage to 'get the science right', which is not uncomplicated. However, Icelandic scientists have better conditions than their EU counterparts due to the transparency of the fisheries sector. The capture fisheries sub-sector will, nevertheless, probably also experience ups and downs in the future due to natural fluctuations in the abundance of fish. This does not, however, change the relative positive outlook for the future.

Furthermore, the demand for fish in the EU, which is Iceland's main trading partner, is growing due to the increasing perception of fish as healthy food and increasing GDP (especially in the new member states) - and the EU is not in a position to increase its own landings considerably in the short or medium term due to the state of the stocks and will continue to import a significant share of fish products. Icelandic fish

[82] Information Centre of the Icelandic Ministry of Fisheries website: http://www.fisheries.is/ships/fleet.htm (12 January 2005).

products have, furthermore, a good reputation and are able to live up to EU standards, which give Iceland an advantage *vis-à-vis* to some of its competitors, which might otherwise be able to utilise lower wage costs.

The perspectives for the Icelandic capture fisheries sub-sector is, consequently, all in all positive. The sub-sector is highly competitive and in a process of further improving its economic efficiency as a result of the ITQ system, which should ideally make the Icelandic capture fisheries sub-sector more competitive *vis-à-vis* competing fleets. There is nothing in the evidence above, which suggests, that the Icelandic capture fisheries should be facing a crisis anytime soon. Also, the resource situation is better and more transparent than for many competitors. Nevertheless, it should be kept in mind that dealing with a natural marine resource involves uncertainties.

SWOT analysis of the Icelandic capture fisheries sub-sector			
Strengths	**W**eaknesses	**O**pportunities	**T**hreats
Strong management regime based on science	Restricted access to EU markets due to non-membership	Increasing economic efficiency due to incentives of the ITQs	Natural fluctuations in fish abundance
Efficient fleet	High wage costs	Increasing demand for fish products, especially of high quality	Competing low price species from other places in the world
Large resource base of high quality		Utilisation of species not yet recognised as commercially valuable	Cod aquaculture
Relatively little overcapacity			Climate changes

5.6.4 The Marine Aquaculture Sub-Sector

Production

Aquaculture production in Iceland started in the beginning of the eighties with high hopes from both investors and authorities (FAO, 1997). Looking back, the sub-sector has so far only turned out to be a modest success. Expansion is, however, feasible in the years to come.

Marine aquaculture (including coastal aquaculture taking place in brackish water) is of relatively modest importance in Iceland. This is especially the case if the magnitude of it is compared with that of capture fisheries. The value of the Icelandic marine and brackish water aquaculture production has been increasing over the years from € 11.7 million in 1990 to € 14.9 million in 2002 (up 27 percent, in current prices), peaking at € 17.4 million in 2001. (Eurostat database website, 6 January 2005)

Half of the production in 2002 took place in brackish water. The dominant specie mainly cultured in brackish water is arctic char (€ 7.8 million in 2002) and the dominant specie mainly cultured in sea water is salmon (€ 5,9 million in 2002). Aquaculture of cod and halibut amounts to a little under € 1.8 million (2002).[83] (Eurostat database website, 6 January 2005)

Perspectives for the Future

The future perspectives of Icelandic aquaculture are relatively good although some species are more promising than others. The government does not expect that there will be much growth in salmon aquaculture because the world market is close to or over saturation at the prices Iceland can produce at. However, Icelandic companies are important players on the world market for salmon aquaculture technology. (Intrafish, Feb. 2004, p. 10)

Cod farming has for some years been expected to take off commercially. This remains to be the case. The government expects a modest development of Icelandic cod farming to a level of 10,000 tons in 2013.

[83] The total of these three figures amounts to more than € 14,9 million, which was the total marine and brackish water aquaculture production in 2002. The explanation for this is that arctic char is also farmed in fresh water.

The government does not foresee a dramatic development; on one hand, because of the technical difficulties still experienced in cod farming and, on the other hand, because the relatively sound wild cod stock is expected to remain the most important Icelandic fish stock, wherefore extensive investments in cod farming would resemble competing with oneself (Intrafish, Feb. 2004, p. 10). The development of cod aquaculture is of course dependent on a number of other factors, including the development of the cod stocks currently subject to recovery plans in the waters of the EU, which is the main target of Icelandic export of fish products and more specifically cod.

Iceland has found a niche in farming of arctic char, for which Iceland is world market leader (Eurostat database website, 5 January 2005), and other species, which can be expected to be future candidates for aquaculture in Iceland, include halibut and abalone, which is both farmed commercially already, and turbot, spotted wolf fish and mussels. (Intrafish, Feb. 2004, p. 10-11 and Ministry of the Environment et al., 2004, p. 25)

All in all the perspectives for Icelandic aquaculture seem good. The Ministry of Fisheries has forecasted that the income from export of aquaculture products will increase from approximately € 12 million to approximately € 144 million in 2012 (Ministry of the Environment et al., 2004, p. 25). Anyway, the optimistic figure of € 144 million represents under 10 percent of the total value of exported fish products in 2002.

Compared to capture fisheries aquaculture will, in conclusion, continue to be of relatively minor importance. Nevertheless, this sub-sector is perhaps the most promising in terms of creation of new jobs in the fisheries sector.

SWOT analysis of the Icelandic aquaculture sub-sector

Strengths	Weaknesses	Opportunities	Threats
Favourable conditions for farming of certain species, e.g. cod	Competes with Icelandic capture fisheries	Introduction of new species such as turbot and mussels etc.	Increasing efficiency of competitors
High technological level	Unfavourable conditions for some species	Worldwide increasing demand for fish products, especially of high quality	More efficient producers producing at lower prices (e.g. salmon)
	Relatively high production costs for e.g. salmon	New technology adapted to Icelandic conditions	Fish diseases
	Restricted access to EU markets due to non-membership	Growth in cod aquaculture	

5.6.5 The Processing Sub-Sector

Production and Employment

Iceland has an important processing sub-sector, which in 2003 is estimated to have contributed with approximately 4 percent of the overall GDP and employed in the neighbourhood of 6500 persons - down from almost 10,000 at its highest in 1994 (Ministry of Fisheries, 2003, p. 4). The trend continued in 2003, where the data indicates less than 5500 employed in the processing sub-sector and a slightly smaller percentage of the overall GDP (Ministry of Fisheries, 2004, p. 4).

The overall number of licensed fish processing companies has in the period from 1999 to 2003 been declining (Ministry of Fisheries, 2004, p. 8). Their main products are the results of a mix of traditional (salted and cured) and modern (fresh or frozen) processing techniques.[84]

[84] Information Centre of the Icelandic Ministry of Fisheries website: http://www.fisheries.is/process/index.htm (12 January 2005).

A prominent development during the nineties has been that processing is increasingly carried out at sea, which means that for the local fishing communities important land-based processing is declining relative to at-sea processing. These changes are the result of changes in technology. Changes in the market for fish have also put traditional processing under pressure (Eythorsson, 2000, p. 489). Fresh fish, which involves much less processing than other categories of processed fish products, has increased its share of value of processing output markedly in the period from 1996 to 2003 (Ministry of Fisheries, 2004, p. 10). The development has consequently been negative especially for the land-based processing sub-sector, which is closely linked to the wellbeing of local fishing communities. However, this development has been reversed somewhat in the past two to three years, most notably one of the largest fishing companies recently sold one of their freezer trawlers and others have been landing fresh fish for processing on land.

Perspectives for the Future

The Icelandic processing sub-sector is to some extent protected by the fact that quotas cannot be sold out of Icelandic ownership, which would otherwise perhaps result in transfer of more catch to processing in other countries. It is, furthermore, a stated objective of the Icelandic government to work *"to retain as much as possible of added value within the country"* (Intrafish, Feb. 2004, p. 10). Nevertheless, the figures for number of persons employed and proportion of overall GDP (as well as the number of licensed fish processors) have been declining in recent years, which suggests that the processing sub-sector is adjusting to the increased competition from countries with for instance lower labour costs resulting from the globalisation of the market in fish products.

The development in the processing sub-sector in the period from 2001 to 2003 has in sum been fewer employees, fewer licensed fish processors and smaller percentage of overall GDP (estimate) (Ministry of Fisheries, 2004). It is an open question if this tendency can reasonably be changed upwards by political initiatives - and if this would in any case be preferable - given the increasing globalisation of the market in (raw) fish and the high wage costs in Iceland. The globalisation of the market in fish products tends to undermine the competitive advantage of being close to where the resources are harvested. The Icelandic processing sub-sector is to some extent protected by its own good reputation, which gives it an advantage over many competitors with less 'good names'. However, this might change in the future if competitors get better at what they do, which is a plausible prediction. While this happens it is necessary for the Icelandic processing sub-sector to find its niche, perhaps in adding value to ultra-fresh fish products, to which Icelanders have good access, or by upgrading the technology used to become more efficient. However, this will probably only be possible on bigger plants and will in any case mean fewer jobs.

In sum, there is no doubt that the Icelandic processing sector will increasingly be put under pressure from competitors with smaller processing costs. The most important reason for this is that the competitive advantage of easy access to resources is eroded as transport gets easier and cheaper.

SWOT analysis of the (landbased) Icelandic processing sub-sector

Strengths	**W**eaknesses	**O**pportunities	**T**hreats
Close proximity to raw materials of the highest quality	Restricted access to EU markets due to non-membership	Concentrate on high value-added products from fresh raw material using Modified Atmosphere Packaging (MAP) technology	Factory trawlers carrying out processing at sea and possibly landing for export
Good reputation for high quality and hygienic standards	Relatively large distances to main markets	Concentration in larger, more technology based units	Increasing competition from low cost countries as trade barriers disappear
Political clout and legal protection	Dispersed industry / small units	Worldwide increasing demand for fish products, especially of high quality	Increasing detachment between quota holders and local communities
	High labour costs		

5.6.6 In Sum

The prospects for the Icelandic fisheries sector are mixed - with variable outlooks for the different sub-sectors:

- The capture fisheries sub-sector is relatively economically healthy and the state of the resources is good compared to other places. Anyway, in terms of employment this sub-sector cannot be expected to provide more jobs in the future as technological developments continuously increase the efficiency of the fishing vessels, which leads to less and less input of manual labour to catch the quotas. This development is, furthermore, supported by the incentives provided by the Icelandic ITQ system, which in itself gives incentives to larger, more efficient vessels.
- The aquaculture sub-sector is in a position to generate new jobs in the future, especially if farming of cod takes off. Iceland is, together with Norway and the UK (Scotland), one of the few places where farming of cod is expected to be possible. The future development of aquaculture in Iceland is, furthermore, dependent on the development in wild fish resources, especially cod, and the outcome of experiments with other potential aquaculture species. The future of the aquaculture sector looks, all in all, positive, given that the global demand for fish products is expected to increase in the years to come.
- The perspectives for the processing sub-sector are, despite the support from the government, less positive. One reason for this is that more processing takes place onboard the vessels as a result of the introduction of factory trawlers. A second reason is the globalisation of the market in fish products, which makes it easier and increasingly cheaper to export raw material for processing in countries with lower costs. This development is probably reinforced by the Icelandic ITQ system, which must be expected gradually to remove the traditional links between local quota holders and vessel owners, local ports of landing and local processing plants. In other words, the processing sub-sector is facing great challenges and it is probably fair to assume that the development in the future will be negative, at least in terms of jobs.

5.7 TIA Experiences

Policy intervention

The IFM TIA experiences relate to ex-post evaluation of the EU *Pesca Initiative 1994 to 1999* in Denmark and to the mid-term evaluation of the EU *FIFG 2000-2006* in Denmark. The Pesca Initiative was introduced in addition to the FIFG to help the EU fisheries sector make a successful transition by diversifying fishermen's activities away from fishing and contributing to the diversification of coastal regions by developing new employment opportunities. Some of the *Pesca* measures are now available under the FIFG 2000-2006.[85]

Cause-effect

The intervention has created a positive development in target territories in indicators such as demography, income generation, unemployment and job creation. Fishery dependency decreased in these territories but this was accompanied by sector concentration. However, compared to non-target territories the development was less favourable on all indicators.

Scale of analysis

The analysis has taken place on municipality level (LAU level)

Reference to past and future

Recommendations on future interventions have been made based on observations/analysis.

Analysis

[85] From DG Fish website: http://europa.eu.int/comm/fisheries/pcp/faq3_en.htm (3 March 2005)

Analysis based on demographic data, labour market statistics, income statistics and special survey data.

Goals referred to

Economic and social cohesion

5.8 Conclusion / Revisiting the Hypotheses

The hypotheses outlined in the beginning of this chapter were related to different elements of the CFP (and fisheries politics in general): five hypotheses were related to conservation policy, two to market policy, two to structural policy, and one to external policy. On a general level the hypotheses have been supported by the analysis of the different policy areas. In the following discussion we will go through each hypothesis and sum up the main findings, mainly related to the CFP. However, the discussion and findings below apply in general also to the situation in Norway and Iceland, which are more or less subject to the same situation as the EU countries. However, the two countries are at present in a better situation in regards to the sustainability of stocks and the economic situation of the sector than the EU countries on average.

Conservation Policy Findings

Five hypotheses, which related to conservation policy, were outlined in the beginning of this chapter. The first hypothesis related to the intentional territorial impact of the CFP, which occurs from the allocation of fishing opportunities through quotas. Quotas are not allocated on the basis of need but following a principle of 'relative stability'. This creates territorial impacts across nations on a very general level. Some nations might be better at matching their allocations to the structure of their sector, which gives them (and their regions) an advantage over other countries. The second hypothesis was also supported by the analysis of the future direction of the CFP, which must be expected to move towards EAF. This will - at least in the short or medium term - lead to negative impacts because of lower (or at least not significantly higher) TACs, which are supposed to result in lower fishing pressure. The third hypothesis has mainly been dealt with in the section on Iceland. The analysis seems to support the assumption that ITQs in some instances lead to unintentional regional redistribution, as well as to the desired restructuring of the sector towards larger, more efficient units. Market based management systems have, however, not yet been applied on a European scale. The fourth hypothesis related to the fact that recovery plans might have unintentional consequences. As discussed, recovery plans are intended to 'punish' or at least restrict the fleets targeting endangered stocks. This might be considered the intentional impact; an unintentional - partly territorial - impact is that the different fleet segments are put in different situations. Larger vessels might be able to utilise resources far from where they have homeport, whereas this possibility does not exist for smaller coastal vessels. This is unfortunate as it is often not the smallest vessels, which constitute a problem for the resources or destroy habitats. Therefore it seems unfortunate that they have to carry the largest burden. The fifth hypothesis was general and related to the distribution of negative impacts of the conservation policy. The analysis has to a high degree supported the hypothesis that the most important factor in determining how the negative impacts will be distributed across regions is the state of the stocks the fleets utilise. This is hardly surprising but the most important information related to this is in fact also the varying unintentional impacts; for instance the different possibilities to change gear or sea area.

Structural Policy Findings

Two hypotheses were related to the impacts of the structural policy. The analysis supports the hypothesis that the policy has significant territorial impact; this is actually the whole idea of it. However, more interesting is the fact that some regions are able to get more funding from the EU based on considerations, which are wholly or partly unrelated to the situation of their fisheries sector. This puts unintentionally some regions in a better situation than other regions. Furthermore, the analysis has also shown how some countries and regions receive a very significant part of the total EU support, which in general puts their regions in a favourable situation *vis-à-vis* others. Galicia could be mentioned as one region, which gets a surprisingly large share of the total FIFG support. Finally, it is also interesting to see how the structural policy has - until recently - supported modernisation and renewal of the EU fleet in a situation, where overcapacity is considered one of the main problems facing the conservation policy. The second

hypothesis related to the fact that the EU structural policies are increasingly becoming less important because of increasing impacts of the surrounding environment, i.e. the global development. Although this might be true, the impact of the direct injections of money through the FIFG (whether these are viewed as positive or negative) should not be underestimated. It could be argued that the FIFG support is important exactly to tackle a situation where the local markets and fleets are increasingly becoming part of a world market. In the new member states this is happening simultaneously with a demanding transition towards market economy.

Market Policy Findings

The analysis of the market policy supported the assumption that this policy has serious territorial effects. The effects relate not so much to the direct financial transfers under the price support mechanism, which are relatively insignificant compared to those distributed under the FIFG. Rather, the varying territorial impacts are related to the different impacts of tariffs and external trade measures. An example provided in the preceding chapter was the decision to put an extra tax on (especially Norwegian) salmon. This was done in order to protect salmon producers in Scotland and Ireland but the safeguard measures had serious negative impact on salmon processors in Denmark, which depend heavily on Norwegian raw material. The analysis supports also the assumption that fish products will increasing be affected by other policies not directly stemming from the fisheries market policy. The policy on traceability is provided as one example of such.

External Policy Findings

The analysis clearly showed that the external policy has territorial impact, which varies across regions. This relates especially to fisheries agreements, which are of most importance for the southern EU member states. The transfer of money through the fisheries agreement could be seen as subsidies for the vessels engaged in these fisheries. However, also bilateral and international agreements or the failure to conclude these could have significant impact, as illustrated with the failure to get agreement with Norway over Atlanto-Scandian herring, which are of importance to a number of Danish ports.

In Sum

The analysis in this chapter has supported the outlined hypotheses and in this way also supported the underlying general hypothesis that the CFP (and fisheries policies in general) has significant territorial impacts – intentional as well as unintentional. It is, consequently, possible to conclude that these hypotheses provide a good basis for the analyses in the following chapters on territorial impacts and example studies related to this. The chapter has, furthermore, outlined a number of concrete examples of territorial impacts as well as provided a thorough introduction to the structure of the sector in the EU, Norway and Iceland.

6 Environmental impact and integrated coastal zone management (ICZM)

6.1 European fisheries and environmental impacts

According to EEA a chronic overexploitation of fishery resources is the greatest current environmental concern of the fishery policy in Europe. Protection of and access to fishery resources are therefore an important and may be the most difficult part of the CFP. The objective of the conservation policy is primarily to protect the fish stocks by limiting the amount of fish taken out of the sea each year and to ensure that this is respected. This is done through a system of TACs for each stock, which ICES gives scientific advise on, and national quotas, which are distributed between the member states on the basis of the core principle of 'relative stability'. One of the most important new elements in relation to the conservation policy is the obligation or possibility for the Council to adopt multi-annual recovery or management plans for certain fish stocks which are outside safe biological limits or within safe biological limits. .

European Environmental Agency (EEA) has developed an indicator based approach to assessing the environmental performance of European marine fisheries and aquaculture, based on statistics from ICES, GFCM, FAO, Eurostat, etc. We will primary make use of indicators developed and presented by EEA[86], such as percentage of stocks outside safe biological limits, catches by major species and areas, impacts on habitats and ecosystems, fishing fleet trends and aquaculture production. Some of these indicators will be supplemented with data and indicators from other sources. However, the majority of the environmental data is on national level or for ocean areas and it is a general problem with geographical breakdown. In addition, according to EEA data on small-scale fisheries for Mediterranean are often not registered or are very difficult to obtain. The available indicators are nevertheless important to highlight the changes and status for the environment, e.g. fishery and habitat resources.

It must not be forgotten that fishing habitats and ecosystems in the oceans and the coastal zone are subject to a heavy pressure also from not fishery dependent sources, like water pollution form agriculture, sewage, manufacturing in urban areas and increasing land use pressure on the shore. Sustainable and integrated development in form of clean water and viable ecosystems is a framework condition for further growth in aquaculture and other marine businesses and for the fishing industry in general.

In the Fact Sheets of EEAs web-page, information about data quality and methodology concerning the specific issues are given.[87] The EEA core set of indicators – Guide (http://reports.eea.eu.int/technical_report_2005_1/en) provides information on the quality of the 37 indicators in the EEA core set.

6.1.1 Fishing fleet trends

The size of the fishing fleet (number of vessels, tonnage and power) is an important factor in managing the fishing effort. Fishing capacity is defined in terms of tonnage and engine power, but there are many parameters that determine the fishing mortality exerted by the fleet. The development of engine power in

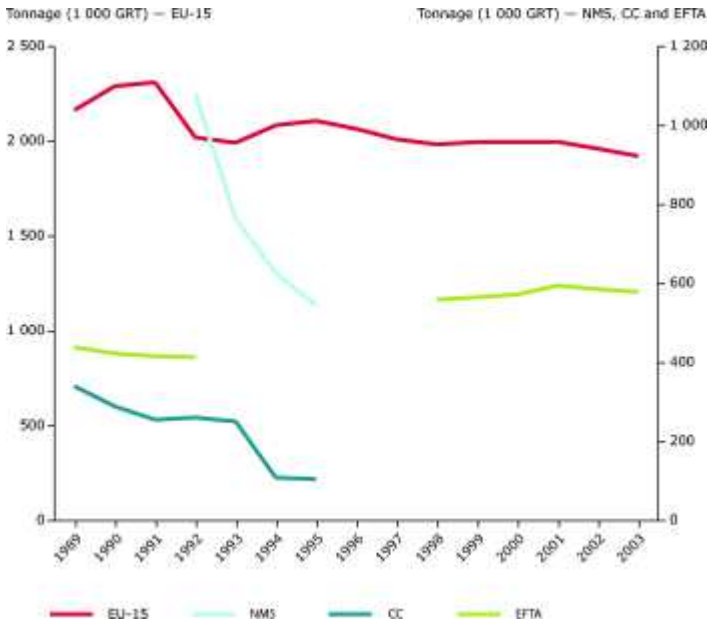
[86] See http://themes.eea.eu.int/Sectors_and_activities/fishery/indicators
[87] http://themes.eea.eu.int/indicators/all_factsheets_box

terms of kilowatt is generally considered the best indicator of the development of the actual fishing power of the fleet. It is currently believed that the fleet is too large. In simple terms excess capacity may lead to over fishing and increased environmental pressure. EU has aimed to the restructuring of the fleet and the reduction in its capacity. Currently efforts is focused on reduction of fishing effort defined as the product of the capacity of a fleet with the days spent at sea by scrapping vessels or keeping them in port. In the MAGP[88] IV has decided a cut of 30 % in the fishing effort for stocks in the verge of collapse and for 20 % for those that are over fished.

The fishing fleet is regarded as too big for the available resources. According to EEA, the kea message on this issue is rather positive because *the EU 15 fishing fleet (1989-2000) has decreased both in numbers of vessels (10 %), in tonnage (6 %) and power (12 %)*. On the negative side, the EFTA fishing fleet (Norway and Iceland) has in the same period dramatically increased in tonnage (31 %) and in power (6 %), despite that the fleet has decreased in number (27 %). However, during the last years the fleet is decreasing also in tonnage and power. For Norway and Iceland, the reduction of the fleet came in 2001 in terms of absolute number, and reduction in terms of tonnage and engine power came in 2002. From 2000 to 2005 the Norwegian fleet have a very sharp decrease, with 37.1 % in number and 45.6 % by engine power. By contrast the fleet of the other EEA country, Iceland changed relatively little over the same period (Eurostat 45/2005).

These reductions do not, however, take into account the so called technological creep.[89] However, advances in technology may well mean that new vessels exert more fishing pressure than older vessels of equivalent tonnage and power. And not only the quantity of fish taken from the sea is important, but also their species and sizes, and techniques used in catching them and the areas they are caught. Control must also be exerted on net mesh sizes, landing sizes, by- and incidental catches, use of selective gear and closes areas and seasons. The summary from EEA is after all that the CFP has succeeded in enforcing a decreasing trend tin the fisheries fleet. However, MAGPs have been proved not ambitious enough to address excess fleet capacity; they were not always enforced and were complex to administer.

Figure 6.1 European Fishing Fleet Capacity: Tonnage, 2003 (Ver. 1.00). Source: EEA (2005)



[88] Multi annual guidance programmes.
[89] Due to so-called technological creep the fishing power of a fleet will actually increase over time even if the engine power in terms of kilowatt is kept stable. This means that if the fishing power of a fleet should be kept stable, the engine power of the fleet should continuously be decreasing.

In annex 8 in IR2 we have shown the fishing fleet for in EU15, plus Slovenia, Malta, Iceland and Norway. These tables show that some countries have contributed more to the decrease than others. The Irish and French fleets increased their capacity from 1990 to 2003, while for instance Denmark, Greece and Spain decreased their capacity in the same period. From 2000 to 2004 the decrease in tonnage was most significant in the UK, Sweden, Finland, Greece and Denmark, recording an increase of over 10 % (Eurostat 45/2005).

Despite the overall drop in size and capacity (power and tonnage) experienced by the EU fleet in the past 15 years, according to EEA no visible improvement in the condition of the fish stocks has so far been observed. Conservation measures according to the CFP have persistently been undermined by fishing activities at levels well beyond the level of pressure that the available fish stocks could safely withstand. As new technology makes fishing vessels ever more efficient, the capacity of the fleet should be reduced to maintain a balance between fishing capacity and the quantities of fish that can safely be taken out of the sea by fishing.[90] EEA (2005) conclude that compared with the indicative policy objectives, only modest reductions in the capacity of the European fleet as a whole have been achieved over the past decades.

6.1.2 Development in catches

T*otal fish landings of all species in all European sea regions*[91] *have increased by 20 % (1.6 million tonnes) between 1990 and 2000,* see figure 6.2. This is largely due to an increase in landings by vessels of the EU 15 and EFTA countries, which account for an average of 93 % of total European landings by weight. Landings reached a peak in 1997 of over 12 million tonnes and declined to 11 million tonnes in 2000. *From 1995 to 2002 the total catches of the EU25 fleet has dropped from app. 8 million tonnes to app. 6.8 tonnes (in live weight).*

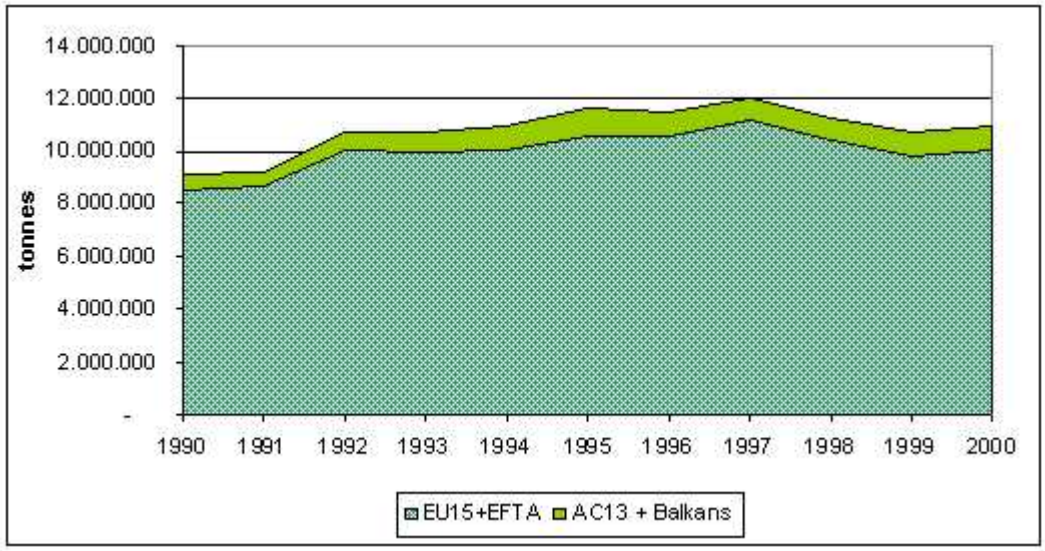
Landings of demersal marine fish, pelagic marine fish and shellfish account for an average of 95 % of all European landings. The landings of these major fish types have increased from 1990 to 2000. Landings of dermsal marine fish have increased by 2.4 % (99 786 tonnes) since 1990. Landings of pelagic marine fish have increased by 24.6 % (1.15 million tonnes) since 1990, while landings of shellfish have increased by 1.7 % (12 000 tonnes). Landings of cod and tuna rose significantly between 1992 and 1997, since when they have decreased. Landing of mackerel rose between 1990 and 1994, fell rapidly until 1997, but have since risen again.

In annex 5 on Landings and Catches in IR2, data on the volume of catches for each EU27 country in the period from 1990 to 2003 can be found. Using statistics over catches as an indicator for territorial impact is, however, not unproblematic because vessels can land in other countries than that of their homeport. Furthermore, the volume of catches includes species of very different value in the same categories. The most extreme example of this is species caught for industrial purposes versus those caught for human consumption.

[90] http://themes.eea.eu.int/IMS/IMS/ISpecs/ISpecification20041007132252/IAssessment1116524527114/view_content

[91] North East Atlantic Ocean (including the Baltic Sea), Mediterranean Sea, Black Sea and Arctic Ocean. The Caspian Sea and Aral Seas are not included, as these are considered to be “inland waters” by FAO.

Figure 6.2 Total landings by region (tonnes), 1990 - 2000



Source: *http://dataservice.eea.eu.int/atlas/viewdata/viewpub.asp?id=700*

Notes: All North East Atlantic Ocean (includes Baltic Sea), Mediterranean Sea & Black Sea (including the Azov Sea) and Arctic Ocean catches of all species.
Caspian Sea and Aral Sea not included, as these are considered to be "inland waters" by FAO.

The North East Atlantic is the most important fishing region for EU25, with 73 % of their catches being taken from this region in 2002. Since 1990 the EU25 catch in this region has fallen by 5.4 %. On the other hand, the combined catch of Iceland and Norway has risen by 57 % in the same period (fishery statistics 2004). However, in 1996 ICES indicated that there was a need for a 40 % reduction in the fishing fleet to avoid over-fishing and match available resources (EEA 2003). In the Mediterranean the EU25 accounted for 33 % of the total catch in 2002, 50 % by Italy. The EU25 total catch decreased by about 16 % in the period from 1990 to 2002. In the same period the total catches in the Mediterranean increased by 13 %. Turkey accounted for 34 % of the total catch in 2002 (ibid.).

Increases or decreases in landing do not, however, signal a healthy or unhealthy fishing industry or marine environment, as increases in fish landings may be driven by either increasing amounts of available fish or increasing fishing effort. Similarly, decreasing landings may be the result of a lack of available fish or a change in management measures of fishing patterns. FAO statistics do no not take into account those organisms that are caught but not landed (discards). Most discarded species, especially fish and marine mammals, do not survive. Landings statistics, therefore, underestimate the total catch of fishing vessels and, thus, the impact on the marine environment. Also illegal, unregulated and unreported fishing (IUU-Fising) still remains a huge problem.

The seas around Europe contribute the majority of landings by European countries, i.e. European countries are in general not heavily dependent on landings from distant waters. Since 1990, the dependence on landings from distant waters has declined from 21 % (2.5 million tonnes) to 8 % (0.9 million tonnes).

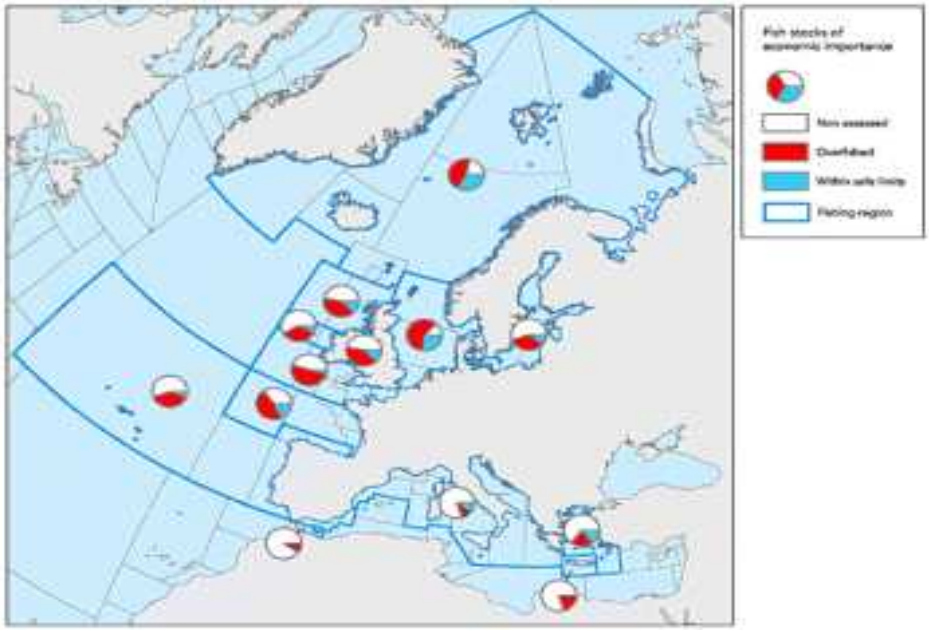
6.1.3 Percentage of stocks outside safe biological limits

One central indicator in the EEA list of environmental impact indicators in relation to CFP is commercial fish stocks outside safe biological limits (EEA Indicator Fact Sheet: FISH1a in 2002). This is defined as the point where the indicators of the state of a stock predict a low risk for transgressing certain so called 'limit reference point', for instance values of biomass or fishing mortality rate, which are to be avoided (Council Regulation (EC) no 2371/2002, art. 3(j) and (I)). In other words, stocks are characterises as being outside safe biological limits when mortality exceeds recruitment and growth. By comparing trends

over time in recruitment (the number of new fish produced each year by the mature part of the stock), spawning stock biomass, landings (estimate of the most likely removal from the stock, sometimes including discards) and fishing mortality, a fairly reliable picture of the stock development can, according to EEA, be derived. With the introduction of the precautionary principle, a biomass and a mortality precautionary approach reference points are in addition being made (not for the Mediterranean stocks).

Data for this indicator are only available for the North East Atlantic and the Baltic Sea, and many commercial fish stocks are not assessed (see figure 6.3). In the North East Atlantic, the percentage of non-assessed stocks of economic importance range from a minimum of 13 % (North Sea) and maximum 59 % (West Ireland). The Baltic Sea also has a high percentage of non-assessed stocks at 56 %. In Mediterranean fisheries data on small-scale fishery are not registered or are very difficult to obtain. For the Mediterranean Sea, stock assessments are based mainly on landings in the absence of complete or independent information on fishing intensity or fishing mortality. The percentage of non-assessed stocks of economic importance here is 80 %, and a range from 65 % (Aegean Sea) to 90 % (South Alboran Sea). Background data exist up to 2002.

Figure 6.3 Commercial fish stocks outside safe biological limits in the North East Atlantic and the Baltic Sea in 2002



Source: http://dataservice.eea.eu.int/atlas/viewdata/viewpub.asp?id=190

According to EEA, *most fish stocks of commercial importance in European waters appear to be outside safe biological limits* of the assessed stocks. Following the assessment of stocks 33-60 % of commercial stocks in the North East Atlantic were in 2002 outside safe biological limits. The Baltic and West Ireland are in a better shape (with 33 % of their stocks being outside safe biological limit) and West of Scotland area the worst (with 60 %). For the Mediterranean the percentage of stocks outside safe biological limits range from 10 to 20 %. In the OSPAR area, 40 of the 60 major commercial stocks were assessed outside safe biological limits in 1999 (EEA 2002).

In general, the situation for some central commercial stocks is:

- Herring stocks appear to have recovered since 2001
- Almost all round fish have declined and are currently not sustainable
- Hake stocks dramatic decline caused alarm leading to TAC cuts up to 50 % in 2001
- Deep-sea species show signs of over-exploitation
- Flatfish stocks are heavily exploited but are close to sustainable levels

- In the Mediterranean region, demersal stocks are outside safe biological limits.
- Cod stocks in the North Sea, Skagerrak, Irish Sea and waters west of Scotland are now so depleted that the chance of collapse must be seriously considered. ICES is recommending that all fisheries with the target fish cod should be closes in these areas, and have been subject of increasing management measures in EU waters in efforts to rebuild them to biological stable conditions.
- Pelagic species are in better condition but need to be subject to reduced fishing rates

The North Sea cod stock is outside safe biological limits, despite the measures that have been put in place by the Commission over the past years, the most drastic of which was the temporarily closure of selected nursery grounds in 2001. There are a number of biologically distinct stocks of cod of Atlantic cod in different areas, and most of them are considered to be outside safe biological limits.

Examining the 'safe' stocks in the North East Atlantic, their percentage ranges between 5 and 33 %, values that correspond to Celtic Sea/Western Channel and the Artic respectively. In the Mediterranean the range extends from 0 % (S. Alboran and Cretan Seas) to 15 % (Aegean Sea).

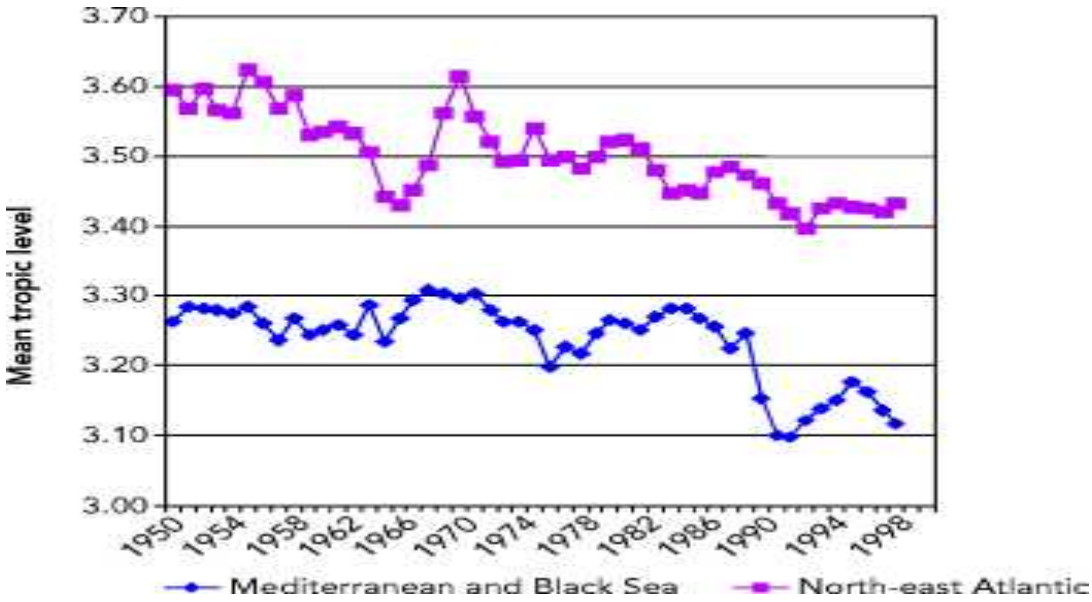
One of the main causes of the declining fish stocks is the continuing, significant imbalance between fishing capacity and available resources. According to EEA, the status of the stock indicates that a sustainable CFP still is some distance from its target to achieve sustainable fish resource management. A multi-annual cod recovery scheme was adopted by the Council in December 2002, in a long term effort to help the stocks recover.

6.1.4 Fisheries impact on habitats and ecosystems

Fishing gear is designed to maximise yields of target species and minimise cost of effort but they also trap non-target species and damage the marine environment and habitats. Non-target organisms affected include benthos, birds, marine mammals, marine reptiles (turtles), plants and non-target fish. Capture fisheries tend to target the more valuable larger fish that are at higher trophic levels such as species that eat other fish. However, as over fishing reduces the populations of these fish, the landings of fish lower down the food web such as those species that eat zooplankton make up a larger proportion of the overall catch. This means a change in the ecosystem composition from fish eating species to plankton eating species. This is generally indicative of a negative impact on the whole ecosystem caused by fishing and has been called 'fishing down marine food webs'. This can be seen on Figure 6.4, which shows that the mean trophic levels in both the north east Atlantic and Mediterranean and Black sea fishing areas have declined since 1950. An ecosystem-based approach for fisheries management has been highlighted to protect the vulnerable marine wildlife and habitats.

There is particular concern about the impact of fishing on marine mammals, turtles and birds. Cetaceans (whales, dolphins and porpoises) are accidentally caught in drift nets and are in competition with fishermen for small pelagic resources. Drift nets and pelagic long lines are the major threats to birds and marine turtles. Even though there are no comparable datasets to properly assess the extent of the problem across Europe, there has been some efforts nationally or regionally to monitor the by-catch of mammals, birds and turtles. Fishing seems to have a significant impact on cetacean, turtle and birds populations, but comparable datasets are not available to properly assess the extent of the problem.

Figure 6.4 Mean trophic level of fisheries landings for the north-east Atlantic Ocean, and the Mediterranean and Black Sea, 1950 to 1998.



Source: http://dataservice.eea.eu.int/atlas/viewdata/viewpub.asp?id=536

NB: Trophic level is the position in a food chain or web that an organism occupies and is a way of describing the feeding hierarchy. For example, primary producers such as marine phytoplankton are considered to occupy the lowest trophical level. Herbivorous zooplanktons are considered to occupy the next trophical level. Fish which eat zoo plankton occupy the next trophical level and so on. The assigning of trophical levels is, in fact, a complex process involving modelling the food web and examining the diet of each species.

6.2 Development of aquaculture and environmental impacts

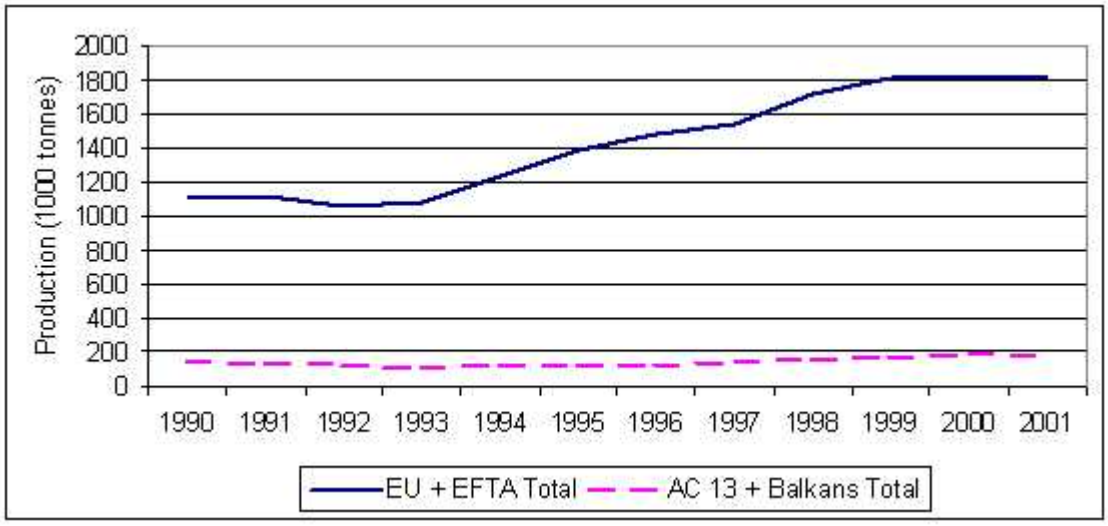
European aquaculture production has continued to increase rapidly during the last 10 – 15 years, due to expansion in the marine sector in the EU and EFTA countries (see Figure 6.5). In 2002, aquaculture represents 17 % of total fishery production in Europe. For EU15 the aquaculture production rose from 1995 to 2002 with 8.8 %. This increase represents, according to EEA,[92] a rise in pressure on adjacent water bodies and associated ecosystems in the coastal zone. Aquaculture typically takes place in water of high quality. The principle measurable environmental pressures of aquaculture production are increased local organic matter, nitrogen and phosphorus, which in turn may lead to locally increased eutrophication. Other pressures that may be experienced with some culture systems include escapes and increases in pathogen density which may negatively affect wild populations by genetic dilution and disease transfer. Chemotherapeutants also represent a pressure, some of which may have impacts even below detection level. Increased production also implies increased demand for fish inputs, stimulating increased pressure on industrial fisheries that supply fishmeal for aquaculture feed. App. 30 % of the fish landings from the North Sea are caught for reduction to fish meal and fish oil. Finally, the collection of "seed" from the wild, ranging from larvae, juveniles and even large individuals, may well have serious impacts on community structure dynamics and ecological equilibrium. However, the relationships between many of these pressures and possible impacts are often difficult to establish.

Any localised degradation will lead to production problems of the farms. This provides an additional incentive for producers to protect their adjacent environments. Strict food safety criteria will also encourage producers to maintain high environmental standards and limit their dependence on expensive and persistent chemical treatments. Although the environmental pressure from aquaculture will continue to grow as European aquaculture production expands, the rate of increase may be mitigated substantially by adoption of more sustainable management practices and production techniques.

[92] http://themes.eea.eu.int/Sectors_and_activities/fishery/indicators/FISH03%2C2004.05/tab_factsheets_ILR

The precise level of local impacts will vary according to production scale and techniques as well as the hydrodynamics and chemical characteristics of the region. Generally, significant improvements in the efficiency of feed and nutrient utilisation and improvements to environmental management generally have served to partially mitigate the associated increases in environmental pressure. This increase in both production and pressure has not been uniform across countries or across production systems. Only the marine mariculture sector has experienced a significant production increase, while brackish water production has increased at a much slower rate and levels of freshwater production have declined.

Figure 6.5 Annual aquaculture productions by major area, 1990 - 2001



Source: http://dataservice.eea.eu.int/atlas/viewdata/viewpub.asp?id=704

Note: The figure includes all environments i.e. marine, brackfish and freshwater aquaculture. Luxemburg, Liechtenstein and Bosnia-Herzegovina are not included due to either no aquaculture production or lack of data.

Europe's fish farms fall into two distinct groups: the fish farms in western Europe grow high-value species such as salmon and rainbow trout, frequently for export, whereas lower-value species such as carp are cultivated in central and eastern Europe, mainly for local consumption. Norway has the highest production by far with over 500 thousand tonnes in 2001, followed by Spain, France Italy and UK. These five countries account for 75.5 % of all aquaculture production from all European countries. Norway is dominant of Atlantic salmon production, while Spain is dominant by production of blue mussels. The major part of the increase in aquaculture production has been in marine salmon culture in Northwest Europe, and to lesser extent trout culture (throughout Western Europe and Turkey), sea bass and sea bream cage culture (mainly Greece and Turkey), and mussels and clam cultivation (throughout Western Europe); although the latter exhibits a downward trend since 1999. Inland aquaculture of carps has declined significantly throughout Eastern and Central Europe. The EU25 production increased by about 25 % from 1990 to 2002. In the same period the production in Norway (largely Atlantic salmon) increased by 268 % (fishery statistics 2004).

Marine aquaculture has also shown a large expansion in production in a number of Mediterranean countries over recent decades. This industry increased from 78 000 tonnes in 1984 to 248 500 tonnes in 1996 (freshwater aquaculture not considered). EEA (1999) consider the environmental impacts of the increased aquaculture in Mediterranean as limited, i.a. because the production units are relatively small.

In annex 3 in IR2, seawater, freshwater and brackish water aquaculture production for EU27+EFTA countries from 1990 to 2003 is shown (in tonnes live weight and in 1000 euro), based on Eurostat database. These data show that most countries have experienced an increase in value of aquaculture in the period.

Figure 6.6 Aquaculture productions total (in live weight) 1990, 1996 and 2002

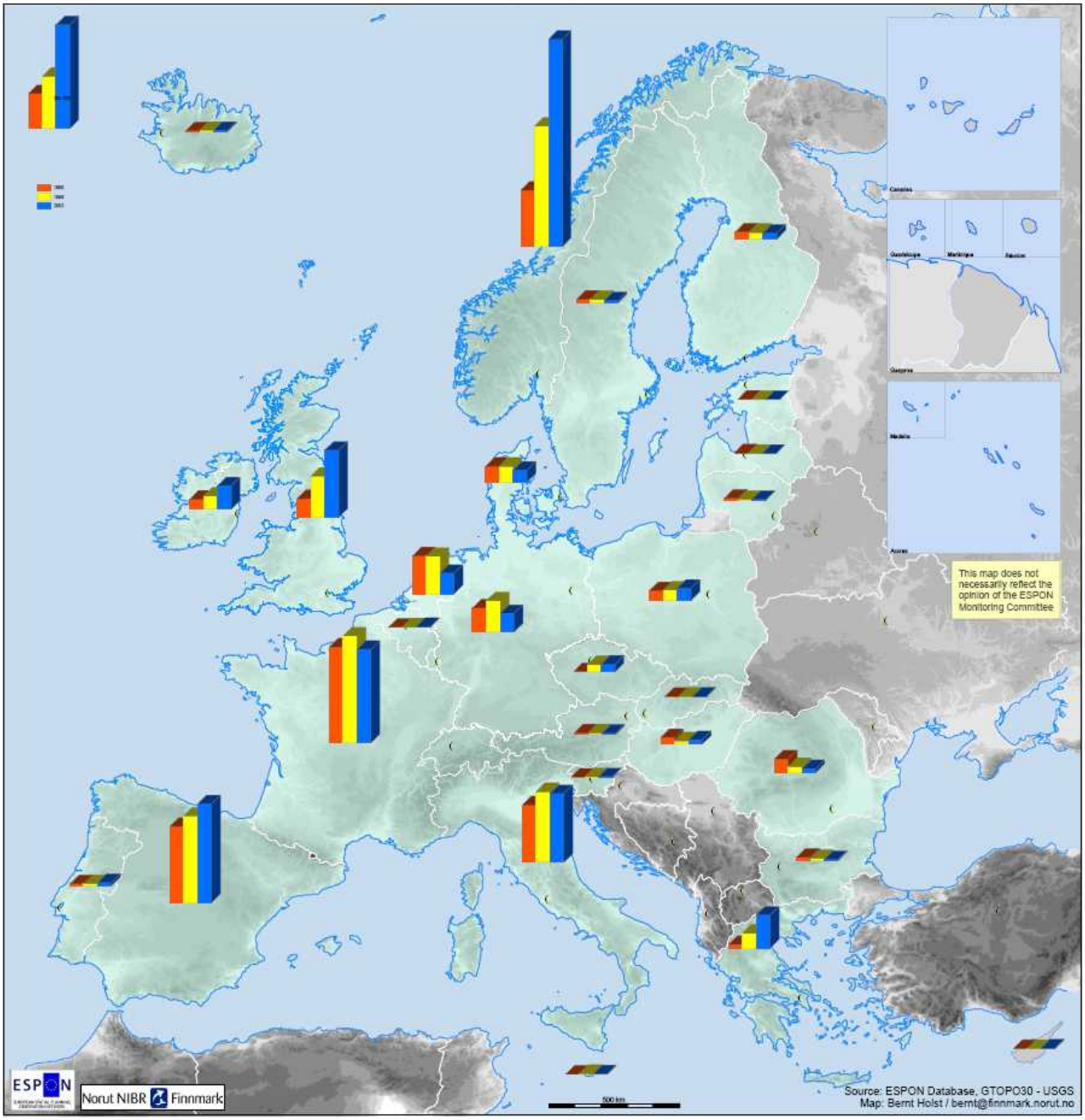


Figure 6.7 Seawater aquaculture productions (in live weight) 1990, 1996 and 2002

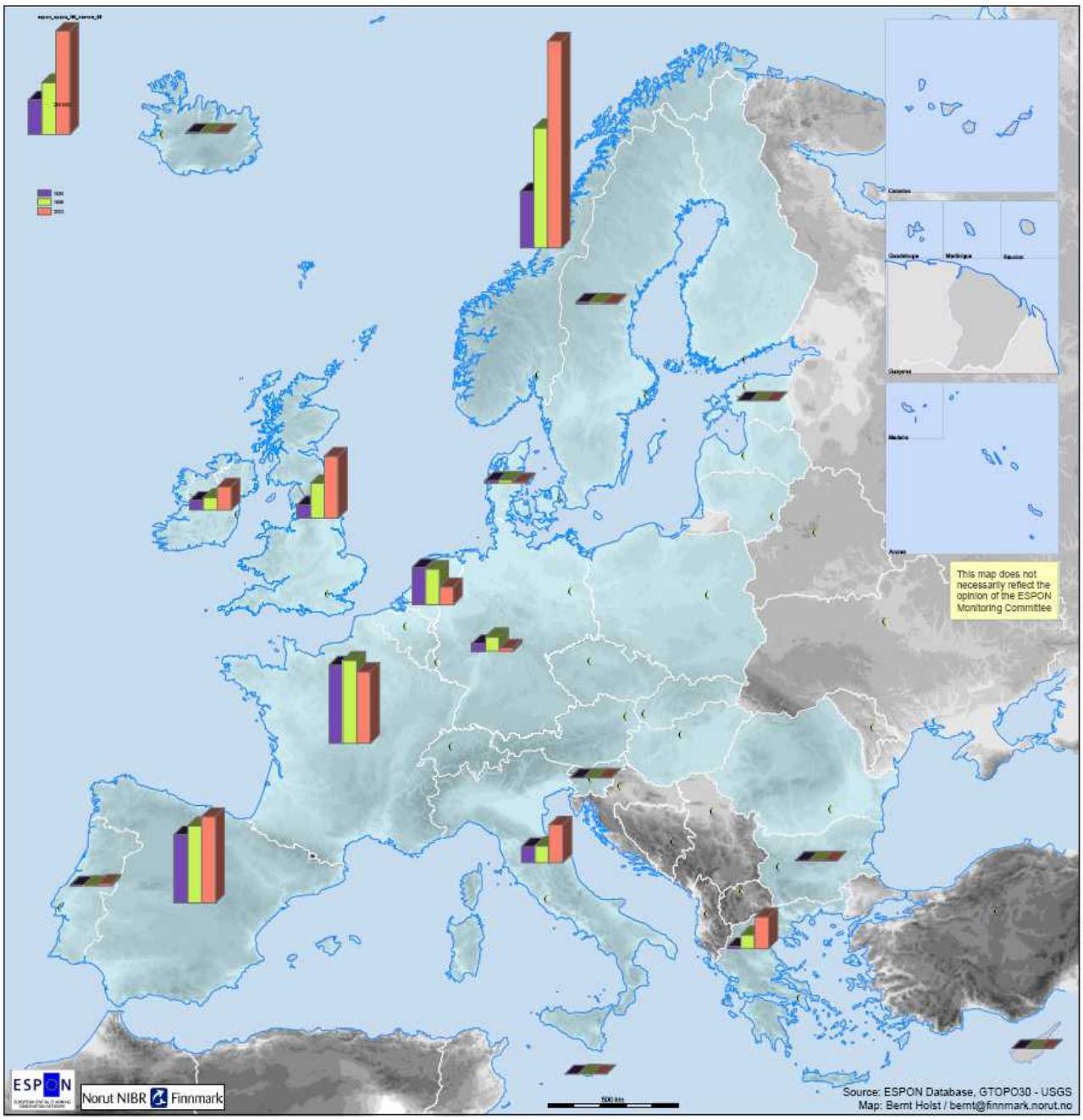
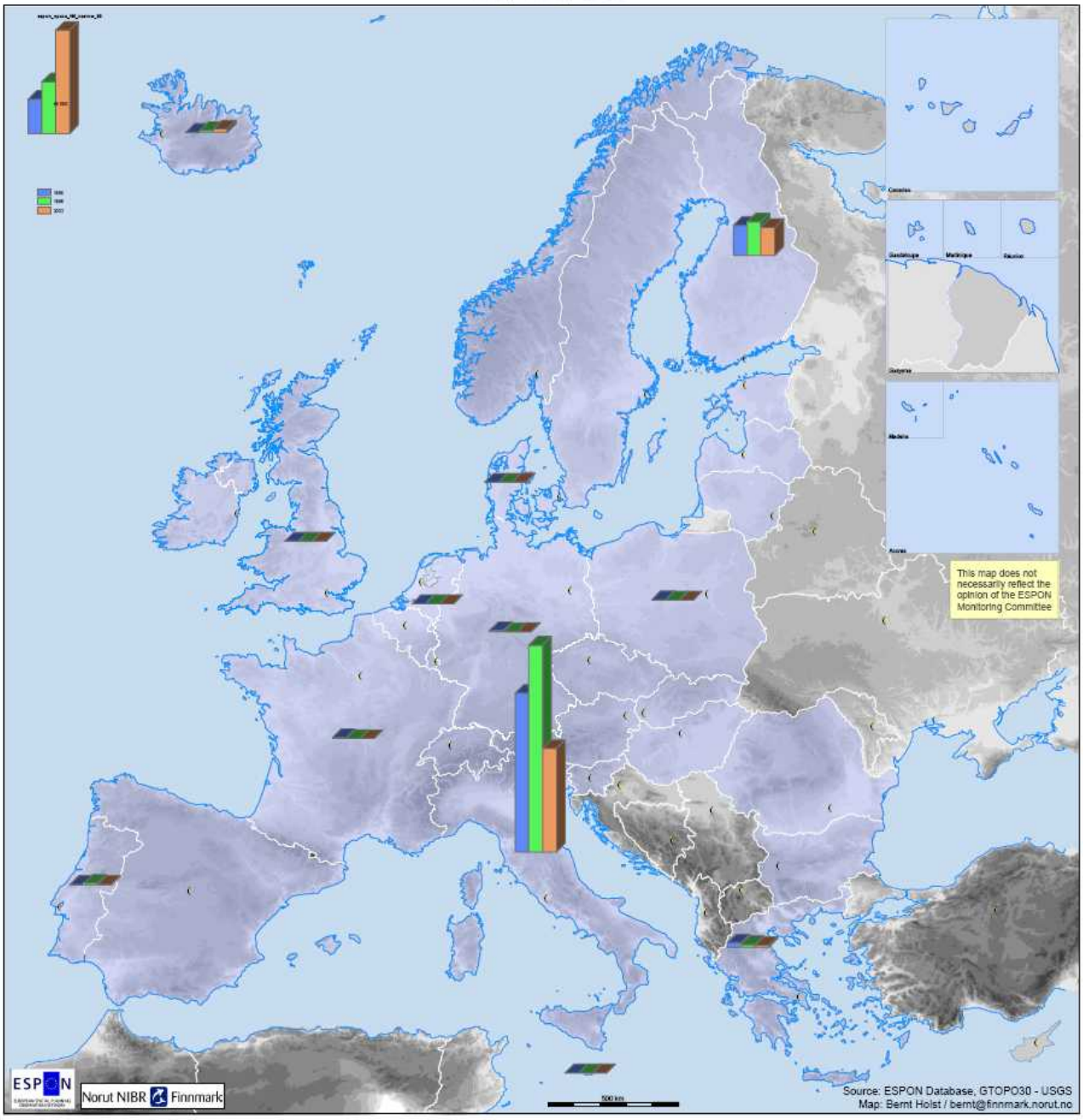


Figure 6.8 Brackish water aquaculture productions (in live weight) 1990, 1996 and 2002

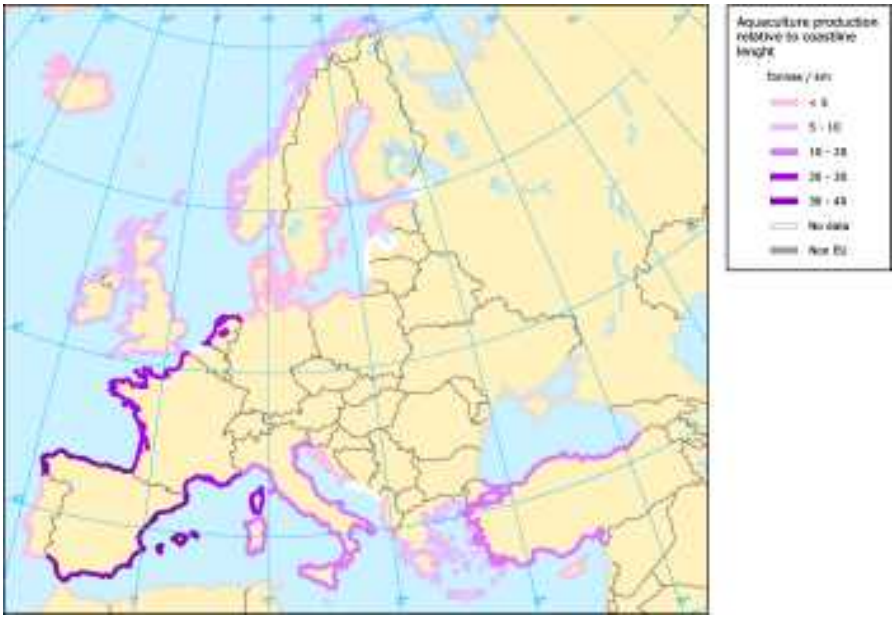


The map for aquaculture production in total for each country shows that Norway is the leading country on aquaculture in Europe, and have experiences an almost continuously growth since 1990. An annual growth of 10-15 % is expected in the coming years (MoE 2000). Also UK and Ireland with a significant share of finfish production have experienced a great growth in production (figure 6.6). It is seawater production of finfish that dominate in Norway, UK and Ireland (figure 6.7). In the other countries with high production, like Spain, the Netherlands and France, the production has been more stable during the last years. Italy has experienced a decline since 2001. Italy is the dominating country in brackish water aquaculture production (figure 6.8). Greece has experienced a significant growth since 1990, dominating with seawater production.

6.2.1 Aquaculture production relative to coastline length

Aquaculture production relative to coastline length is potentially a better indicator of pressure than a single production value (figure 6.9). It does it possible to determine a more comparable value of production density, but there are some difficulties with this indicator; it does not apply to freshwater production; it does not consider the area of coastline that is potentially suitable for production; and the determination of coastline length is problematic and relies upon uniform scale being used for each countries determination.

Figure 6.9 Marine aquaculture productions relative to coastline length, 2001. Source: EEA 2005.



Note: Only marine and brackish waters production. Average production density values for countries with a coastline and with coastline data available. Based on 2001 data, except for Bulgaria (2000), Estonia (1995) and Poland (1993).

The map shows that aquaculture production related to coastline length for each country is highest in the Netherlands, France and Spain. Other countries with high production, like Norway, UK and Ireland, have not the same intensive production related to coastline length because of long and archipelagic coast with many fjords, islands and reefs. The Norwegian coastline is as much as 57 000 km long, including the fjords and islands. The map shows also Turkey as an important country for aquaculture production, with a high production relative to coastline length.

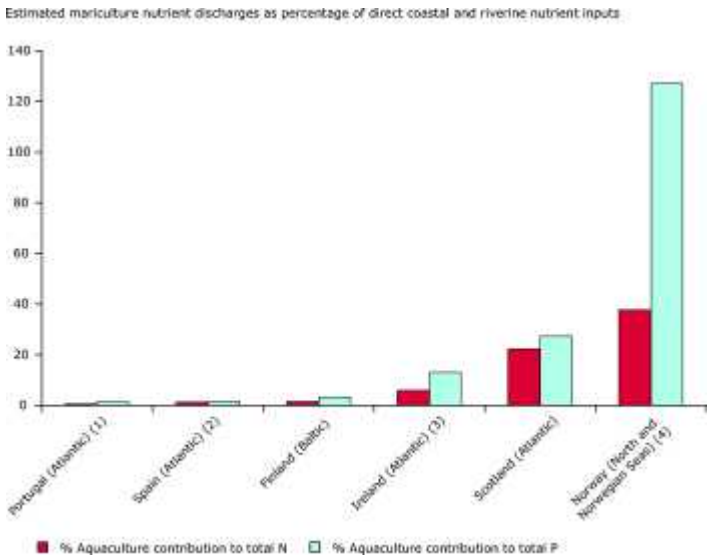
Aquaculture production intensity as measured per unit coastline has reached an average of around 8 tonnes per km of coastline in EU and EFTA countries, compared to 2 tonnes per km in AC 13 and Balkans region. In Spain the overwhelming mariculture production is of mussels. Shellfish production also predominates in France (ousters and mussels) and the Netherlands (mussels). The increasing trend observed during the past years appears to be stabilising. However, pressure is likely to continue to increase as production of new species such as cod, halibut and turbot becomes more reliable.

6.2.2 Environmental impacts

Overall production is, however, a simple available indicator on environmental pressure in its various dimensions. As a stand-alone indicator, its meaning and relevance is limited because of widely varying production practices and local conditions. In general, the pressure from nutrients from the intensive cultivation of marine and brackish water is becoming significant in the context of total nutrient loadings to coastal environments. Different types of aquaculture generate, however, very different pressures on the environment. Intensive finfish production in marine and freshwater generates the greatest environmental

pressures and it is this kind of production which has increases most rapidly in recent years. Marine finfish production (mainly Atlantic salmon) is making a significant contribution to nutrient loads in coastal waters in Ireland, Scotland and Norway (particular phosphorus and nitrogen, see figure 6.10). In Norway (particular the west and north coast were the production mainly take place), phosphorus discharges from aquaculture appear to exceeds the total from other sources (see figure 6.10). However, the published data on total nutrient loadings to coastal waters remains poor in quality and inconsistent in coverage. The data on this mater should therefore be treated with caution. Eutrophication is one of the major environmental problems across Europe, also in the coastal and marine areas, but diffuse losses of nutrients is from agricultural lands, other diffuse losses and point source discharges are the main contributors (EEA 2005).

Figure 6.10 Estimated mariculture nutrient as percentage of direct coastal and river nutrient inputs. Source: EEA 2005.



As mentioned, significant numbers of farmed fish escape from fish cages and may affect wild populations through competition, genetic change and disease transmission. The largest producer of Atlantic salmon, Norway, recorded 276 000 escapes in 2000. This should be seen in relation to the wild stocks numbering about one million wild salmon. In Scotland, total recorded escapes from cages varied between 67 000 in 1998 and 420 000 in 2000. These have been released into an area that probably supports about 60 000 wild salmon. Salmon farming could be contributing, along with other important pressures, to the current poor state of wild Atlantic salmon and sea trout stocks. Direct indicators of competition, genetic change or disease incidence in wild stocks are currently not available or reliable enough to illuminate these issues (EEA 2003). Despite for limited knowledge, escape from fish cages is regarded as one of the most significant environmental impacts of salmon farming in Norway. And it seems to be an increasing problem. In 2004 the escape of salmon and rainbow trout was 450 000, and for 2005 the number was until 24 November as much as 722 000 (the Norwegian Directorate of Fisheries web page[93]). One countermeasure that is been achieved according to this threat is establishment of temporary national salmon fjords important for wild salmon stocks (close to important rivers for wild salmon possibilities for spawning), where location of new salmon farms should be avoided. Another measure is introducing of adequate technical standards for aquaculture installations.

Another environmental impact of farmed Atlantic salmon is the increase of fish lice. These parasites may cause problems for wild fish stocks. Sea trout seem to be particularly heavily infected and this may be one reason for the observed decrease in population of sea trout and salmon in Norwegian waters (EEA 2003). But in general, significant improvements in the efficiency of feed and nutrient utilisation as well as environmental management have served to partially mitigate the associated increase in environmental pressure. A major concern is that the increase in the industry faces challenges to other users and interests

[93] http://www.fiskeridir.no/fiskeridir/aktuelt/fiskets_gang/havbruk/2005/1105/over_700_000_roemt_hittil_i_aar

in the coastal zone, such as recreation, tourism, nature conservation, etc. A major problem is that aquaculture is an activity that excludes other users close to the actual location. This issue will be further addressed in the example studies on ICZM.

6.3 Conclusion

Two of the hypotheses regarding environmental impacts of the fishery policy made in IR2 are:

- The changes in CFP from 2002 will contribute to a faster reduction and restructuring of the fishing fleet, both in absolute numbers, tonnage (GT) and engine power (kw).
- Changes in CFP will probably be directed towards improvements of the marine environment and marine resources. In the long run this may lead to higher and more stable fish stocks, but only if the fishing effort is sufficiently reduced.

CFP seem to be successful regarding reduction of the fishing fleet, which is a necessary precondition for a sustainable resource management. The size of the European fishing fleet decreased in the period from 1995 to 2003, both in terms of absolute numbers (15 %) and tonnage (4.3 %) as well as the most important indicator: engine power (13.2 %). However, it is to too early to see if the changes in CFP from 2002 have contributed to an even faster reduction in the fishing fleet. The reduction from 2002 to 2003 was approximately of the same quantity than the years before.

From 1995 to 2002 the total catches of the EU25 fleet has dropped from app. 8 million tonnes to app. 6.8 tonnes (in live weight), which seem to have a connection to the decrease in the fishing fleet. However, the total fish landings of all species in all European sea regions[94] have increased by 20 % (1.6 million tonnes) between 1990 and 2000, but with a small decrease from 1997 to 1999. The indicators on stocks outside biological limits indicate that the changes in CFP, i.a. reducing the fishing fleet capacity, are still not sufficiently for a sustainable marine development. It is still an imbalance between fishing capacity and available resources. However, for a sustainable resource management, EU is dependent on that also other countries outside EU reduce their fishing fleet capacity according to the available resources. In that respect, a major concern is the agreements between EU and other countries regarding fishing.

At the same time, there is a need for a greater emphasise on the whole marine environment and ecosystems, and not only assessments for single species. During the last years there has been a greater focus on ecosystem approach in marine (including fisheries) management. However, it is a challenge to implement these ideas in the management regime. One central element is to move away from the single-species approach characteristic of the existing CFP and to adopt a multi-species and ecosystem-based management approach as indicated in the 2001 Reykjavik Conference on Responsible Fisheries in the Marine Ecosystems.[95] Ecosystem-based management models are also needed to assess external impacts on fisheries such as accidental and operational discharges from oil exploitation and shipping activities toxic algae blooms, and runoff from land causing eutrophication and contamination (EEA 2002). An ecosystem approach should also be considered in a larger extent regarding development of indicators on this issue. The EU Water Framework Directive (2000/60/EC) draws up a more ecosystem based development of data and indicators, based on river basins, including coastal waters up to one nautical mile outside the basic line (see chapter x for information about the Directive). Also the EUs proposal Marine Strategy Directive is a step in that direction (European Commission 2005).

The increasing production in aquaculture is important for many countries and coastal regions. Aquaculture development is spread widely over Europe and often in rural zones or peripheral areas depending on fisheries, where alternative employment opportunities are lacking. In general, significant improvements in the efficiency of feed and nutrient utilisation as well as environmental management have served to partially mitigate the associated increase in environmental pressure in the coastal zone. Different types of aquaculture, however, generate very different pressures on the environment. Intensive

[94] North East Atlantic Ocean (including the Baltic Sea), Mediterranean Sea, Black Sea and Arctic Ocean. The Caspian Sea and Aral Seas are not included, as these are considered to be "inland waters" by FAO.
[95] ftp://ftp.fao.org/fi/DOCUMENT/reykjavik/Default.htm

finfish production generates the greatest environmental pressures and it is this kind of production which has increases most rapidly in recent years. The challenges in countries with high finfish production like Norway, UK and Ireland. The growth in aquaculture is also a challenge for the coastal zone management and planning, particular regard to adapt the locations to other coastal interests like tourism, recreation, nature and cultural heritage, coastal fishing, etc. Further expansion should be addressed through the concept of integrated coastal zone management (ICZM), which also the EU Strategy for the sustainable development of European aquaculture emphasise (see chapter 6.5).

TIA is mainly a methodology for territorial impacts on the terrestrial environment, and not the marine. The EEA has decided to directly address the issue of fisheries/aquaculture impact on the environment for possible inclusion in the development of a core set of indicators covering the whole driving forces – pressure – state – impact –response (DPSIR) assessment framework. The DPSIR-model does not fit so well to the TIA-model. DPSIR main focus is on the relation between human activities and environmental impacts, and responses to deal with the problems.

6.4 Policy Recommendation

There is a need for a greater emphasise on the whole marine environment and ecosystems, and not only assessments for single species in the fishery policy. The efforts according to this should be further stimulated, also in regard to the development of indicators for environmental impacts of fishery and aquaculture. Today most of the indicators focus on the development of single fish species with commercial interest.

6.5 Integrated coastal zone management (ICZM)

6.6 Introduction

Integrated coastal zone management (ICZM) is developed as a general tool to coordinate different and competing interests in the coastal zone. Being an integrated approach the ICZM has potential to offer a broader perspective to aquaculture and most of the fishery related activities. Through example studies we will highlight how ICZM is implemented and applied in different countries and regions in Europe. A particular attention will be drawn to local and regional coastal zone planning. We start with an overview of the EU initiated ICZM activities through the Demonstration Programme and relevant Interreg-projects. Further we highlight experiences with Norwegian and Danish coastal zone planning as a tool for ICZM. Our data sources are available web-pages, drafts and articles regarding research studies on ICZM processes for different coastal regions. In addition, we drawn on finished or ongoing research projects among the TPG-partners IFM (for Denmark) and NIBR (for Norway). In the end we highlight implications for ICZM by implementation of the EU Water Framework Directive.

In the examination of the example studies we have been looking at some common criteria for measuring ICZM. A particular attention has been drawn to management and administrative/ political issues regarded to coastal zone planning. ICZM is characterized as a complex management situation, demanding integration across geographical borders, different policy sectors and levels of government. There is, however, no authoritative definition of integrated coastal zone management, or agreement on one definition among scholars (Sanderson 1999). Most definitions stress that integrated costal zone management is about *institutional* design for *integrated* management, and the aim is to achieve a *sustainable development*. The goal of ICZM can be defined as "to improve the quality of life of human communities who depend on coastal resources while maintaining the biological diversity and productivity of coastal ecosystems" (GESAMP 1996, quoted by Sanderson 1999:3). In addition most scholars stress the dynamic and adaptive nature of integrated coastal zone management. It can be defined as "a *continuous, adaptive, day-to-day process* that consists of a set of tasks, typically carried out by several or many public and private entities" (Sanderson 1999:3).

Cinsin-Sain and Knect (1999) highlight that "Integrated coastal zone management can be defined as a continuous and dynamic process by which decisions are made for the sustainable use, development and protection of coastal and marine areas and resources. First and foremost, the process is designed to overcome the fragmentation inherent in both the sectoral management approach and the splits in jurisdiction among levels of government and the land-water inter-face. This is done by ensuring that the decisions of all sectors and all levels of government are harmonised and consistent with the coastal policies of the nation in question. A key part… is the design of institutional processes to accomplish this harmonisation in a politically acceptable manner (Cincin-Sain and Knecht 1999: 39).

An integrated management requires co-ordination along three, not mutual independent dimensions (Bennet 2001:23):

- *Space*, territorial integration, which includes both:
  - A co-ordination of the activities and development of both terrestrial and marine areas
  - A co-ordination of different territorial-administrative units
- *Cross-sector integration*, i.e. co-ordination of different sector interests at the same administrative level
- *Vertical integration*, i.e. co-ordination across levels of government

Integrated regional coastal zone management thus requires co-ordination across municipal borders, sector borders and levels of government.

These definitions of ICZM mentioned above will be taken into account in the example studies. We will particular look at the administrative organisation and integration between different levels of government and sector interests, integration across land and sea boundary and how ICZM is facing the declining of fishing activities and challenges regarding fishing dependent communities. At least, we will look at how the ICZM activities are able to balance between use and protection in the coastal zone, and in that connection also participation from relevant stakeholders. In the first part we give a brief overview and description of ICZM projects under the EU Demonstration Programme and in Interreg III.

6.6.1 EU initiative on ICZM

The EU ICZM Demonstration Programme

The Demonstration Programme, running from 1996 to 1999, is based upon 35 local and regional projects to demonstrate the application of ICZM. Six cross cutting thematic studies have also been achieved, based primarily on the demonstration projects. The results from these projects are compiled in the document "Towards a European Integrated Coastal Zone Management (ICZM) Strategy – General principles and Policy Options" (European Commission 1999[96]). In the executive summary of this report, the results "confirm the hypothesis that the continued degradation and mismanagement of many of Europe's coastal areas can be traced to problems related to:

- Insufficient or inappropriate information, both about the state of the coastal zones and also about the impact of human activities
- Insufficient coordination between different levels and sectors of administration, and their policies
- Insufficient participation and consultation of the relevant stakeholders"

As the areas of work where for the most part on a scale corresponding to local and regional competence, these were supplemented by Interreg IIC programmes. Each of the projects has studied the operation of integrated management and cooperation procedures. The projects follow the conventional pattern of description, analysis, planning and implementation.

[96] The document has been compiled by the Demonstration Programme's team of thematic experts, and it was intended to stimulate a broad debate.

Baltic Sea Region

This programme concerns 8 countries, some twenty regions, a population of 70 million and an area of around a million km2. It covers the coastal zones of the Baltic, as well as a number of large cities in the hinterland. The project for the *southern part of Finland*, the focus was to prepare for efficient land use plans for the 7 municipalities involved. One characteristic of the Finnish project was the promulgation of the law on nature conservation which requires land use plans for the coastal strip. Implementation of existing regional plan is also a part of the project, where environmental impacts assessment and broad participation should be a part of the planning practice. The project proposes that integrated planning should take place at the regional and local level. *The Latvian and Lithuanian coasts* in the project are primarily rural and forested. In both countries it has been taking time to establish and put into operation the new administrative structures to deal with ICZM. In Latvia the government decided in 1990 to establish a 600 metre-wide protection belt (300 m of land and 300 m offshore) to protect the natural and recreational resources, which has to be integrated into land use plan for the various levels (national, regional and local). One important issue in both countries was the contribution to the implementation of the Baltic Sea environmental programme to ensure the ecological restoration and the preservation of its ecological balance. In *Storsrøm County*, which is a part of the Southern Danish archipelago, the focus was on sustainable tourism. This is seen as the key to the regions future prosperity, helping to compensate for declining employment in fishing, agriculture, industry and – to some extent –shipping.

North Sea Region

The Interreg IIC programme for the North Sea region concerns of 6 countries, some 20 regions, a population of 36 million and land area of around 390 000 km2. One of the areas in the programme, *the Wadden Sea*, covers almost 10 000 km2 along the Danish, German and Dutch costs, corresponding to the regions of Ribe, Sønderjyllands, Schleswig-Holstein, Groningen, Friesland and Noord-Holland. It is the largest wetland of importance for nature conservation in the EU. The resident population is relatively low, but increases considerably in the high season with tourists, who make a substantial contribution to the regional economy. The national authorities of the 3 countries have been cooperating actively since 1978 on the protection. The project aimed to contribute to develop interregional cooperation and public involvement, and address the promotion of environmentally-friendly tourism to create jobs and generate local income. Also *Norcoast*, which had focus on good practice in ICZM and involved a coastal region in Norway, Denmark, Sweden, Germany, the Netherlands, England and Scotland respectively (see chapter x).

The Forth Estuary in UK is 100 km long and has a catchment of 4500 km2. It supports 5 bird populations of European importance for nature conservation. At the same, 1, 25 million people live around its perimeter and the area is heavily urbanised and industrialised. To encourage partnership management that takes as much account as possible of the different interests involved, the Forth Estuary Forum was established in 1993. One important focus for the project was assessment of the effectiveness for this non-statuary voluntary partnership approach in developing integrated management of a large estuarine area.

A pilot experiment for implementing coastal management plans was conducted in 18 municipalities on the *northern coast of Norway*. The aim for the project was to learn from the experience of local management, particularly as regards use and protection of the coastal and marine zones. As the project advanced, a disagreement between the authorities responsible for the environment and those responsible for fisheries and aquaculture caused many problems for the local planning processes. The problem would have, in their opinion, been considerably less serious if there had been prior agreement between the relevant authorities at national level. The experiment demonstrated the need for consultations between local, regional and national interests at an early stage of the planning process (see also the Norwegian example studies on local and regional coastal zone planning in chapter x).

North West Europe Metropolitan Region

The programme concerns 7 countries, some 40 regions, a population of 137 million and a land area of about 610 000 km2. The coasts of the English Channel and the southern North Sea are interesting for nature and recreation, industrial and port activities, and intense maritime, road and railway traffic. This transnational area faces the difficulty of preserving landscapes and natural environments. In *the Belgian*

coast is entirely situated in the Flemish region. Approx. 2/3 of this coast is erosive. The most important dune- and salt marsh-areas along the Flemish coast are formally designated in terms of nature conservation or scenic interests. The main pressures are general urbanisation, recreation, intensification of fishery and agriculture, etc. Action is being taken to overcome these pressures, as removing camping sites from sensitive dune areas, restricting further urban development, etc. An important effort made by the federal Belgian and regional Flemish environment administrations, together with the most important NGO´s, for the restoration and management of the remaining coastal natural habitats. *Côte d'Opale* in the Frensh coast have established an association of 243 municipaliteis and a lot of regional and national authorities. The area has 3 harbour towns, dense maritime traficc and highly valuable natural assets. The authorities of the project wish to repair the environmental damage of certain hasty sectoral developments carried out in the 1960-70s and before. One of the results anticipated was preperation of an ICZM plan for the area, reflecting the principles and criteria of sustainalbe development. In UK, the programme involved 3 projects about integrated management; 1) *the Kent coast*, 2) *Isle of Wight*, 3) *Dorset Coast.*

Atlantic Area

This programme concerns 4 countries and some 30 regions. *Irish Dunes* in the Northern Ireland involved a dozen coastal dunes sites in the Counties of Down (UK) and Donegal (IRL). In recent years, tourism and rural development have increased pressure on these sites. One of the tasks is to develop management plan for each site. For *the Bantry Bay* in Ireland the aim is to develop a consensus based integrated coastal zone management strategy. The bay is an area of outstanding scenic landscapes, housing Ireland's state oil transhipment terminal, one of the largest fishing ports in Ireland, the highest density of aquaculture units and one of our busiest tourist areas. The coast of *Devon and Cornwall* is the UK's major tourist destination, and is regarded as one of the finest coastlines in Europe. There are a number of plans and actions for this area, ant the task is to bring these together into a single coherent framework. There are 2 regions in France, *Bay of Brest* and *Arcachon*. In Portugal 3 projects are involved; *The Lima valley* in the north, *Aveiro* and the coast of *Algarve* in the south. Tourism is a major concern in these regions, particular Aveiro and Algarve.

The Mediterranean

The Mediterranean region consists of two programmes; The Mediterranean and the French and Italian Alps, and central and eastern Mediterranean. For the first, the web-page gives information about *La Costera-Canal* and *Barcelona* in Spain and *the Gulf of Naples* and the *Abruzzi Coast* in Italy. For the central and eastern Medtiterranean, Italy and Greece with together 10 regions are involved. In La Costera-Canal the project aims to face environmental problems due to intensive development of human activities in the coastal zone and secondly to demographic and economic desertification inland. These processes lead directly to the loss of ecosystems, reduction of natural species, surface and underground water pollution, forest fires and erosion. The project aims to solve these problems through comprehensive land use planning based on the principles of economic and social cohesion and sustainable development. The Gulf of Naples is an urban centre where all the activities and problems that can exist in coastal zones are concentrated: congestion, industrial decline, intensive tourism, pollution, abandonment and deterioration of the natural and cultural heritage, potential with jobs and wealth. The objective is to implement a "cohesion plan" for the Naples coast, as part of the "Territorial Coordination Plan (which is the most important planning document for the metropolitan area). The aim is to draw up the Plan following the procedure and regulations governing cooperation between public and private operators, with a view to harmonising the public bodies' territorial programmes and sectoral strategies, and at the same time encouraging all private projects to adopt policies of sustainable development.

For the central and eastern Mediterranean, *Palermo* and *Taranto* are the Italian regions, and *Attica, Ipiros, Cyclades, Magnesia, Strymonikos and Kavala* are the Greece regions. In the Attical region the project aims to establish a balance between the protection of the natural areas and archaeological sites and the introduction of moderate leisure activities or tourist activities. In the Cyclades archipelago, tourism is growing very fast and affecting both the natural and build-up environments. The project intends to promote cooperation between the various island communities on matters of immediate concern, as water resources, energy, waste management, regional and environmental planning, conservation of nature and the countryside. For the Prefecture of Magnesia, the coastal zone is subject to pressure from tourism,

urbanisation, agriculture and transport. The aim of this project is a consist approach to physical planning economic development projects. In the Stymonikos Gulf, which is rich in natural resources, landscapes and cultural features, the pressures is from tourism, fisheries, aquaculture, forestry and mining. Pollution and environmental damage have increased in recent years and tourism is expected to grow. Authorities are therefore aware of the need for forward planning and implementation of sustainable principles.

General experiences and recommendations from the programme

The general recommendations from the programme were adopted by Council and Parliament on 30 May 2002. The programme was aimed at applying the principles of subsidiarity and integration, which underlie European environment and regional planning activities. Seven key principles were identified by the programme in order to improve the status for European coastal zones (European Commission 1999):[97]

- Take a wide-ranging perspective (both thematic and geographic, i.e. an ecosystem approach and include both the seaward and landward portions of the coastal zone)
- Building on an understanding of specific conditions in the area of interest (which implies a need for collection of appropriate data, production of relevant information and indicators and good flows of information)
- Work with natural processes, and not against them
- Ensure that decisions taken today do not foreclose options for the future (which must be secured by sufficiently flexible management, and at the same time take the precautionary principle into account)
- Use participatory planning to develop consensus (the idea is that early involvement builds commitment and shared responsibility, hardenesses local knowledge, helps to ensure identification of real issues and tends to lead to more implementable solutions. Further, it may reduce conflicts and develop consensus).
- Ensure the support and involvement of all relevant administrative bodies (almost all of the Demonstration Programme projects leaders have affirmed that coastal zone management is not effective if it is not supported by all levels of administration, as well as by all the relevant sectoral branches of administration concerned with the target coastal area).
- Use a combination of instruments (including a mix of law, economic instruments, voluntary agreements, information provision, technological solutions, research and education).

The Demonstration Programme point out that the regional level of government, where it exist, has a kea role to play in integrated planning and management of the coastal zone. This level of government is still closely aware of the specific context on the ground, but has a broad enough remit to take a strategic outlook.[98] From the early 1990s there has been an increasing focus on the regional level concerning management and planning for the public sector, and EU has been a pusher in that direction (Albrechts et al. 2003)[99]. However, still it is a lot of differences among the European countries concerning the strength on regional management and planning (European Commission 1997)[100]. The fishery policy is on the other side highly centralised with a low degree of regional control over fisheries management. According to European Commission (2000), the EU fisheries policy is one of the EU policies that are least adaptable to regional needs, but there is a pressure for a greater regionalisation also within this sector. One of the suggestions in Lessons from the Demonstration Programme is to integrate the FIFG allocations with other structural policies with a socio-economic cohesion perspective.

[97] European Commission (1999): Towards a European Integrated Coastal Zone Management (ICZM) Strategy: General Principles and Policy Options.
[98] http://europa.eu.int/comm/environment/iczm/comm2000.htm, page 10 in the English version.
[99] Albrechts, Healey and Kunzman (2003): Strategic Spatial Planning and Regional Governance in Europe. American Journal of Planning Association vol. 69, no 2.
[100] The EU compendium of Spatial Planning Systems and policies.

ICZM projects in Interreg III

It the Second Interim report we listed the most relevant ICZM projects in Interreg III. These projects is not complete before the end of 2006, and therefore it is too early to conclude regarding to experiences and recommendations.

Forum Skagerak II[101]

The aim is to widen the knowledge of and deliver concrete actions for a cleaner and more attractive sea and coasts. The project work involves governmental and regional organisations as well as other interested parties. The project includes work in six areas: 1) Eutrophication, 2) Hazardous substances, marine litter and oil spills, 3) Fish and shellfish issues, 4) Integrated coastal zone management and planning, 5) Coordinated environmental monitoring and 6) Mapping for increased knowledge on sensitive deep sea beds. The work the area of integrated coastal zone management and planning intends to:

- create "marine plans" for a well structured spatial development of the sea areas
- downsize the outcome from the Norcoast project and implement best practice guidelines to Skagerrak and its coastal zone
- Describe and suggest concrete improvements in the "Common rights to access" in the coastal zone
- Participate actively from the regional level in the ongoing international and national work to identify marine protected areas in the Skagerrak
- Spreading knowledge about the high and unique values of the sea and the coastal zone to management, planning actors and the public

Integrated Coastal Zone Development in the Baltic Sea Region – BALTCOAST[102]

The project includes both off-shore and land-side coastal areas; deals with all types of coastal areas, e.g. intensive tourism areas, urban expansion areas, infrastructure development etc. The project is divided into five work packages: 1) Coordinated economic use of water areas through extensions of spatial planning to off-shore regions, 2) Conflict management between economic activities and nature protection in lagoon and wetland areas, 3) Conflict management between urban expansion and nature protection, 4) Preparation of measures for regional development in wider coastal areas and 5) Common recommendations for ICZM.

After more than two years of project implementation, the Interreg III B BaltCoast project has reached such a stage that it was possible to start with the development of common recommendations for the following two major project components: "Expansion of Spatial Planning into offshore water areas" and "The role of Spatial Planning within ICZM". The recommendations at a glance are formulated in the following way:[103]

A. Use the strengths of spatial planning for cross-sector co-ordination in offshore development

A.1 Prepare spatial plans for offshore areas

The aim: More effective and transparent co-ordination of different use interests; no transfer of unsolved onshore problems to offshore; sea area reservation for unknown future needs.

A.2 Base new offshore projects - their location, dimension, technical character - on a systematic cross-sector impact assessment

The aim: Comprehensive balancing of interests with sufficiently detailed consideration of all relevant impacts - environmental, social and economical.

B. Introduce adequate tools and methods for spatial use coordination in offshore areas

[101] http://www.forumskagerrak.com/
[102] http://www.baltcoast.org/
[103] http://www.baltcoast.org/Main/News/Recommendations_BaltCoat/recommendations_baltcoat.html

B.1 Improve the availability and accessibility of mapped information

The aim: A GIS-based fact-bank on offshore uses with secured updating routines and easy access across borders.

B.2 Define basic national policies for offshore development which are coordinated cross-sectorally

The aim: Strategic offshore development guidelines and prioritisation rules for use conflicts.

B.3 Improve the effectiveness of cross-border consultation for offshore development plans and projects

The aim: Effective cross-border consultation with clear contact points and consultation procedures and complete, reliable, easy-to-obtain information across borders.

B.4 Prepare indicative guidelines for content and procedures of offshore spatial planning

The aim: A tool box for countries wishing to introduce spatial planning for offshore areas; harmonised standards for spatial plans which facilitate cross-border concertation.

B.5 Apply ICZM principles in the offshore planning

The aim: Observance of ICZM principles in the offshore spatial planning process.

B.6 Ensure wide involvement of stakeholders in planning for offshore development

The aim: Adequate involvement of offshore and onshore stakeholders at all stages of spatial planning. Complete, reliable, easy-to-obtain information across borders

C. Maintain the transnational discussion and development process

C.1 Continued dialogue with international bodies (Helcom, Baltic 21, VASAB and EU Commission) on principles for offshore spatial planning

The aim: Coherent offshore development principles; accelerated implementation of recommendations A to C.

C.2 Consultation with the EU EU regarding recommendation on ICZM, EIA and SEA Directive

The aim: a high degree of synchronisation of different organistions' approaches in overlapping themes.

C.3 Develop transnationally concerted plans for offshore infrastructure corridors

The aim: Coherent vision of transnational corridors for international shipping and utility networks (pipelines, cables)

C.4 Promote transnational research and pilot projects

The aim: Enhanced knowledge on present and future use demands and their potential impacts.

C.5 Promote experience exchange with other regions

The aim: Broad knowledge exchange.

Integrated Coastal zone management: towards an Atlantic Vision[104]

The transnational Atlantic Area is made up of regions (mainly NUTS 2) in Span, France, Ireland, Portugal and the UK. The project aims to stimulate the sustainable development of the coastal zone of the Atlantic Area form an environmental, social and economic point of view, by encouraging integrated regional development implementation and management. Given the fact that there is not a homogenous perception of this territory, the project intends to make recommendations to create a common vision based on ICZM. The partners will test together the implementation of ICZM, particularly in the context of spatial planning and achieving sustainable development. The results from the project will contribute towards the development of National Strategies on ICZM. A range of transnational challenges are addressed: a) Coastal access, b) Cultural heritage, c) Natural and environmental heritage, d) Inter-dependency between rural and urban environments, e) GIS and f) Stakeholder involvement. In particular, the expected results of the project are:

- Better knowledge and awareness of the problems affecting the Atlantic Coast and the development of spatial planning and management tools available at different levels
- Better knowledge and awareness of the elements that constitute the natural, environmental and cultural heritage of the Atlantic Area, the relationship between them and acknowledgement of this heritage at the local and wider regional and EU level
- More sustainable spatial planning and delivery of access to different coastal locations
- Improving the environmental conditions of certain areas
- Enhancing coordination between the different stakeholders and among the different administrative levels
- Better understanding of the dynamics of rural communities and urban developments on the coast
- Identification of potential of coastal resources and development of sustainable uses

Integrated Coastal Zone Management in the southern North Sea[105]

The aim of the project is to encourage greater participation in joint policy formulation and harmonising informational resources, in order to improve common understanding and provide more effective tools for decision-makers. The project embodies the concept of trans-nationality by bringing together all the relevant regional authorities to find innovative solutions to common maritime problems, recognising the fact that the sustainability of coastlines in the lower North Sea depends on coordinated approaches between all parties directly concerned.

The partnership was formed to help manage the issues affecting the coastlines and communities bordering the Southern North Sea Area. The partnership has representatives from the regions Essex, Kent, Nord-Pas de Calais, West Flanders and Zeeland, and has developed a series of local projects that form an ICZM approach to the issues that impact across the regions. The Final Report of stage one of the project concluded that there were a number of structural, administrative, procedural and informational deficits which together contribute to the polarisation of relatively deprived coastal communities vis-a-vis the prosperous hinterland, and to the continuing degradation of the natural environment in the coastal zone bordering the Southern North Sea. The visions for the project are:

A place where we work with nature rather than against it, where natural and cultural diversity is enhanced and celebrated and where residents and visitors alike can enjoy clean beaches and unpolluted waters, outstanding recreational opportunities and vibrant, prosperous coastal communities.

- Beaches and bathing waters free from human effluent, litter and oil
- A prosperous inshore fishing industry which does not threaten the viability of fish and shellfish populations
- A dynamic and sustainable maritime economy based on local resources

[104] http://www.coastatlantic.org/
[105] http://www.sailcoast.org

- Degraded coastal and marine habitats restored and new ones created
- Access for all to a wide range of recreational opportunities
- 'best of class' facilities for holiday makers and tourists
- efficient transport networks which give priority to pedestrians, cyclists and public transport

Water management in the coastal zone (CYCLEAU)[106]

The project has partners from Ireland, France and UK. Their aim is to develop a common, transferable and integrated approach to planning and management of natural water resources in the coastal zone by looking at the whole catchment area. The project partners will carry out a number of pilot test actions and small investments at demonstration sites to explore new ways of managing and planning, ranging from implementing new techniques for water de-contamination, dredging and dealing with sedimentation, to securing the participation of farmers in addressing diffuse pollution, and developing a technical resource centre.

The Cycleau project aims to:

- Develop models of best practice for the environmental management of coastal/ estuary catchments in selected areas of England, Ireland and France.
- Provide transferable and adaptable ways of dealing with common yet complex coastal environmental problems.
- Provide demonstration sites of monitored catchment management for adoption elsewhere
- Compare, develop and implement different techniques for raising public awareness and involvement· Contribute to territorial planning of regional development.
- Eradicate or reduce diffuse pollution problems in river basins.

AquaReg

The only ICZM-related project in Interreg IIIC is AquaReg[107] (Aquaculture and other coastal economic activities: towards the consensus and the agreement in coastal zone management). AquaReg is a co-operation between the regions of Galicia in Spain respresented by the CETMAR Foundation, Border, Midland and Western (BMW) in Ireland represented by The Marine Institute and Trøndelag in Norway represented by joint forces of the South Trøndelag and North Trøndelag counties. The overall objective of AquaReg is to provide opportunities and design strategies for sustainable development of peripheral coastal communities by promotion of interregional co-operation in aquaculture and fisheries.

The rationale behind AquaReg is to make more efficient use of the experience and knowledge of aquaculturists, fishermen and scientists, across regional and national borders. All three regions have strong marine research environments, which reflect the regional resource base and industrial traditions. The AquaReg approach and ambition is concrete co-operation at operational level, involving marine industries, marine researchers, marine schools and coastal zone planners in RFO-internal projects. These groups have also been involved in goal definition in regional RFO-partnerships. Target groups are local and regional coastal zone planners, aquaculture/fishing management authorities, researchers, and representatives from the aquaculture and fishing industries.

AquaReg aims at improving the quality of life in the coastal communities by: 1) Contribute to a coherent and sustainable development in aquaculture and fisheries in the regions.

2) Promote innovative actions and business development in the relevant marine industries

3) Increase employment in the marine sector. The interregional partnership has outlined three strategies for achieving the objectives of AquaReg:

[106] http://www.cycleau.com
[107] http://www.aquareg.com/AquaReg/AquaWeb.nsf/Firstpage?OpenForm&L=E

- **AquaLink:** Linking aquaculture/fisheries business and research.
- **AquaEd:** Education and training.
- **AquaPlan:** Coastal zone planning and management.

AquaPlan comprises exchange of experience and best practice between planning authorities at local and regional level, to achieve positive interactions amongst coastline users. Exchange of experiences and best practice between groups who have put in place plans to enhance the local fishery resources, such as bay closures, stock enhancements and integrate local developments of fishery and aquaculture activities, assigning the specific aquaculture activities to the best available locations, are critical to the maintenance of coastal communities in the future. There is a strong need for knowledge about nutrition, wave measurement, temperature, salinity, algae production, pollution etc. AquaReg will also focus on restocking and recovery of marine species. The development of aquaculture and fisheries must take other interests into consideration; the environment, traditional fisheries, other industry, tourism and recreation. It is a main objective of AquaPlan to create a basis for a biological and commercially sustainable industry. Possible AquaPlan activities are:

1. Delimiting of zones that are adequate for carrying out the different activities and the identification of compatible uses and activities. Determination of areas suitable for developing aquaculture and polyculture
2. Development of methodology and exchange of best practise regarding restocking and recovery of marine species.
3. The application of norms in coastal areas, with special reference to those regulating aquaculture.
4. Exchange of information for establishing databases on the coastal zones and establishing database maps of coastal areas. Including computerised decision tools on the basis of data based maps, numerical simulations and measurements of waves, current, temperature, salinity, algae, pollution, and optimise use of areas for sustainable aquaculture development.

6.6.2 Example studies regarding ICZM

Regional coastal zone planning in the North Sea Area (Norcoast)

This chapter summarise experiences with regional coastal zone planning in the North Sea Area, drawn from the Norcoast project (1998 – 2000) under Interreg IIC (Norcoast 1999; Norcoast 2001). The aim of the project was to investigate and promote good practice in ICZM in the North Sea region and to support transnational regional cooperation on coastal spatial planning. The project was based on the experience and knowledge of practitioners in coastal planning and management with particular focus on the regional level of governance.

There were partners from seven regional authorities from England, Scotland, Germany, Norway, Sweden, the Netherlands and Denmark (project secretariat). The regions of Highland in Scotland and Hordaland in Norway represent the most undeveloped coasts in the project, where the management of fishing and aquaculture are main issues. The regions of North Holland, Lower Saxony in Germany and Suffolk in England are more urbanised, but also with important nature areas as lowland landscapes, heath, marshes and mudflats. However, in Lower Saxony almost the whole coastal area is characterised as a rural area with a lack of economic activities and problems of employment, partly caused by it peripheral location away from the economic centres in Germany. The coast of the Danish region, Nord Jylland, consists primarily of beaches and dunes, while the Swedish region, Västra Götaland, is mostly characterised as an archipelago coast. In Nord Jylland and Västra Götaland, parts of the coast are highly urbanised. The physical character of the coastal zone varies considerably. The problem of depopulation due to i.a. decline in local fishing and development and control of aquaculture and inshore fisheries is common challenges in many of the regions. In Hordaland and Highlands a key question for coastal planning are how the to get the appropriate balance between different types of aquaculture development and other interests around the coast, and how to minimise the environmental 'footprints' of the aquaculture industry.

Responsibilities concerning many aspects in ICZM are usually placed at the regional level in the involving countries. The national level normally acts through guidelines and legal acts. The only country in the project where the central government produces a national statutory plan is the Netherlands. In most

cases the regional level are responsible for strategic planning concerning landscape, nature and development. Nevertheless, the county role ranges widely from strict statutory planning in Denmark, the Netherlands and Germany to more regional guidelines in England, Scotland, Sweden and Norway. Sectoral planning and management arrangements are in most cases more centralised than the spatial planning system in all the involved countries, and the aim of ensuring integration of sectoral interests is often stated in the laws for spatial planning. However, the general experience is that the sectoral policy in marine areas is somewhat separated from spatial planning, and co-operation between them is not yet well developed.

The Norcoast documents highlight Norway and Sweden with long tradition in integration between land and water interests in the coastal zone. In England, Scotland and Denmark the formal spatial planning system stops at the shoreline – in England and Scotland at the Low Water Mark. Local and regional planning in Germany stop at the High Water Mark, while the federal state planning covers the marine area out to the 12 nautical miles boundary, presently only used for federal waterways and for the protected Wadden Sea. In the Netherlands (regional level), Norway (regional and local level) and Sweden (local level) the spatial planning system reaches some distances into the sea (see the figure below).

Table 6.1 Statutory spatial planning in the coastal zone

Country:	Shoreline		State boundary, 12 nm
England / Scotland:	Regional plans and local plans		
Germany:	Federal state plan		
Norway:	Regional and	local plans	(outmost skerries)
Sweden:	Local	plans	
The Netherlands:	Regional	plans	(1 km)
Denmark:	Regional and local plans		

England, Scotland and partly the Netherlands have a range of experience in working with voluntary partnership approaches primarily for management plans on designated areas, as the coastal zone. Highland has developed advisory non-statuary frameworks plans for aquaculture along sections of its coastline which have proved fairly cost effective in areas of coastal waters which have come into pressure for this type of development. The overall experience with this planning approach is great successfulness as a sectoral CZM initiative, but it needs to be embraced within a wider strategic context.

Norcoast (2001) recommend combining the best elements of the statutory spatial planning system with the best elements of the voluntary partnership approach. The voluntary partnership approach provides, according to Norcoast, not only cooperation and transference of knowledge between sectors, but also encourages interest groups to take a wider view of their activities. At the same time the compromises required may lead to rather generalised policy statements, which require little real commitment, if not combined with statutory responsibilities. Coastal partnerships may put lesser degree on commitment, as they primarily exist to facilitate better communication between interests in the coastal zone and to stimulate debate on how the coastal zone should be managed.

In most of the involving regions the statutory planning system does not cover many of the most important sectoral interests, especially in the sea area, such as exploitation of marine resources (fishery, raw

materials, oil and gas), use of marine area (shipping routes, pipelines, wind power installations), pollution and coastal defence. These sectoral interests should be included in the planning process in the development of real integrated planning.

In light of the experiences with ICZM through spatial planning and voluntary partnership approaches, the general recommendations in the NORCOAST project are regarded to i) process, ii) regulatory framework and iii) planning techniques:

i) Process:

- Aim for an integrated approach to reduce conflicts and build synergy
- Involve all relevant stakeholders and politicians
- Make the process transparent, accountable, open and consultative in all phases of the process
- Identify a lead agency to initiate and facilitate the ICZM process
- Develop a clear vision for the coastal zone at both national and regional level. The vision should describe the resources and qualities that should be protected or enhanced and the resources which should be developed or sustainable exploited.
- Establish a coastal fora or partnership to develop a shared sense stewardship, which should be integrated with the statuary planning system

ii) Regulatory framework:

- Legislate for a clear statutory responsibility for spatial for land and sea areas
- Appoint authorities as lead agencies to initiate ICZM (with adequate resources). Norcoast recommend that the regional level in many cases will be the most appropriate level to lead ICZM-processes.
- Define a national framework for ICZM, which can stimulate policy at national level and allocate responsibilities to the appropriate level
- EU should provide practical support for the development of ICZM

iii) Planning techniques for coastal issues:

- Describe possible consequences of the plan
- Consider different scenarios to find the right balance of interests
- Accept that the coastal area is an open system by using the “catchment area” or “coastal cell” approach as far as possible and define the boundaries of plans accordingly, but with an open view to external influences
- Aim for flexible planning

Regarding the aim for flexible planning, Norcoast recommend that planning methods should allow a reasonable degree of flexibility for changing circumstances and new types of development. The rapid development of aquaculture in Norway and Scotland in the 1980s is regarded as a good example of technological and market changes moving to fast for the conventional planning system to keep up. The planning system in the coastal zone therefore has to be flexible, responsive and innovative to deal with the quick changes that may occur. This is a challenge for the prevailing planning practice, with long intervals between revisions of the plans and they are poorly equipped to deal with new issues as quickly as is sometimes necessary when dealing with pressures in the coastal zone, e.g. the impact of new technologies in aquaculture. In that connection, procedures for how to deal with unexpected development or un-planned results should also be included in the plan.

The issue-specific recommendations regarding the decline in traditional fishing culture and/or seaside resorts are: 1) Create local development strategies based on local natural and cultural values and resources – involving local people and other stakeholders. 2) Secure income from tourism to develop the local economy, community and facilities, e.g. by the tax system. In many areas in the North Sea tourism is now provides the economic base, but it should be tuned more closely to what the local community and environment can comfortably absorb.

The recommendations regarding inshore fisheries management and aquaculture are:

1. Introduce licensing systems for fishing and for mariculture installations into the coastal zone which are regulated by the regional authorities,
2. Encourage community-based management of semi-enclosed inshore waters (e.g. fjords, estuaries, island groups via the formation of local coastal partnerships,
3. Identify areas favoured for mariculture activities in regional and local plans,
4. Environmental Impact Assessments should be an integrated part of the licensing procedure for each mariculture project, and should be matched against the strategies and development criteria of the regional plans,
5. Strategies for mariculture development should be prepared at the regional and/or national level to guide investments in support infrastructure to the appropriate areas, to divert pressure for mariculture away from sensitive areas, and to encourage better integration with the other fisheries sectors,
6. European funding should be used to enable local authorities from the main mariculture areas to develop best planning and regulatory practices in this field.

There is, according to Norcoast, a need to define and promote sustainable fishing and aquaculture practices, which lead to effective management, and to harmonise with policies for development and conservation. There is an overall need to integrate aquaculture and commercial fishing better into the spatial planning system, which includes among its concerns the local economy, protection of natural and built heritage, and water quality.

Another issue is the ability of local plans and management initiatives to deal with coastal issues where the impacts often transcend municipal boundaries. Here a regional or even national planning overview is needed to ensure effective coastal management with cooperation between the different stakeholders. Norcoast recommend that the regional level in many cases will be the most appropriate level to lead ICZM-processes, because it has the necessary overview of processes and interests in the coastal zone, a ready awareness of their national and international dimensions. The regional level of government is further assessed as well equipped to translate the claims from different sectors, national plans and policy frameworks, and local level initiatives into regional spatial planning. Regional plans are used in many areas around the North Sea as statuary means to obtain a broad view of processes and interactions at work in the coastal zone. The regional authorise are, however, not always strong enough (in resources and statuary power) to fulfil these responsibilities. In such cases the tasks should, according to Norcoast, be allocated to a higher level of government or the necessary powers should be given to the regional authority.

6.6.3 Coastal zone planning in Norway

Local coastal zone planning

Local coastal zone planning in accordance to the Planning and Building Act (PBA) is regarded as the most important tool for ICZM in Norway (i.e. Bennett 2001). The municipalities are given responsibility to coordinate the land use, and also the use and protection of sea areas. However, the municipalities are not given responsibility for the coordination of resource extraction, which is responsibility under different state sectors. The possibility to make legally binding plans in the sea is limited to the baseline, which is defined as the straight line between the outer islets and reefs. The PBA is designed to provide the basis for decisions regarding balancing use and conservation. Many coastal municipalities responded rather quickly to the revision to the PBA in 1989, giving them the opportunity (but not an obligation) to produce spatial plans for the coastal areas and the sea. Coastal zone planning is discretionary, and as far as necessary the plans shall indicate: "Areas for special use or conservation at sea and rivers, including areas for *traffic*,*fishing*, *aquaculture*, *nature* and *recreation*, either separately or in combination with one or several of the use categories mentioned" (PBA § 20-4). By the end of 2003, 192 of Norway's 283 coastal

municipalities had such plans. In addition 20 municipalities had started the planning process (Directorate of Fisheries web page[108]).

An increasing pressure on, and competition for space and resources have led to an increasing demand for the planning activity. This is mainly caused by the development within three industries or activities:

1. The recent development in aquaculture (fish and shell farming) and the further expected growth in this industry in the near future
2. The development in the tourist industry
3. A long lasting tendency of building new and extending old second homes (recreational houses) by the coast line (shore) (MoE 2000).

There are, however, major regional variations. In the eastern and southern part of the country the pressure for building on or near the shore is the most crucial question, while further west and north the aquaculture industry demand for more space is dominating the agenda in the planning processes. In the north part it is particularly conflicts between aquaculture and coastal fisheries because of an increasing growth in fish farming the recent years, and coastal fishing activity is still relatively high. A registration of conflicts in the Norwegian coastal zone by the Ministry of fishery and coastal affairs pointed out that the conflicts between aquaculture and coastal fishery will continue to in the near future, e.g. with new forms of mariculture as for example sea ranching (Røsvik, O. & J.H. Sandberg 2002).

The general experiences with local coastal zone planning as tool for ICZM are ambiguous (Hovik & Stokke in prep). Much has been achieved regarding coordination of different local user interests *within* many coast municipalities, also regarding the coordination of sea areas and land areas. One important success factor is active stakeholder participation in the local planning processes (e.g. local fishermen, aquaculture organisations, nature and recreational organisations, etc.) and involvement of the general public, even though it is significant variations between the municipalities regarding this issue. On the other hand, there are great weaknesses regarding coordination across municipal borders, across different public (state) sectors and across levels of government (Bennett 2001). There seems to be a strong agreement that the main problem of coastal zone management in Norway is lack of co-ordination mainly between different public government bodies, and especially between different State sectors with responsible for sea activities (with special legislation) and different levels of governments (Bennett 2001; Sandersen 1999).

A study of local coastal zone planning related to the aquaculture industry by NIBR in 2003 shows a tendency to a more flexible planning practice (Arnesen & Stokke 2003; Stokke & Arnesen 2004). The change toward a more flexible planning regarded to the aquaculture industry has been a result after pressure from the fishery authorities (the regional branch of the Directorate of Fisheries) in the local planning processes. Many of the earliest plans gave specifically allocated localities for aquaculture, and aquaculture could not take place outside those specific areas without dispensation from the plans. The new planning practise focus in a greater extent on areas where aquaculture not can find place out of consideration of other coastal interests as coastal fisheries, recreation, conservation, etc., instead of lay out smaller areas for aquaculture in their plans. The intension is that such strategy shall give the aquaculture industry more space and predictability, and secure sufficient flexibility for further expansion, and thereby secure employment and income to rural coastal communities. Aquaculture is seen as the main way to compensate for the decline in the local employment in many fishery dependent communities. The lack of knowledge about good locations for aquaculture in many municipalities is also an explanation for this shift in planning practice. The National evaluation of suitability of the Norwegian coast and river systems for aquaculture (LENKA) from the 1980s is now in a great extent outdated.

The inverted planning practice in the marine areas seems to have to contribute to reduce the level of conflicts among the different state sectors, and become an accepted practice. The regional authorities have made fewer objections in the municipal planning processes (Arnesen & Stokke 2003; Stokke & Arnesen 2004). The study outlines three conditions for the establishment of a sustainable coastal zone management through the inverted planning principles:

[108] http://www.fiskeridir.no/fiskeridir/aktuelt/fiskets_gang/kystsone/2005/0605/best_i_nord

1. There is a need for increasing knowledge of marine biological diversity, marine resources etc, in the municipal planning processes
2. The precautionary principle must be made concrete and applicable to the municipal planning process
3. The marine municipal planning process has to be more inclusive and participatory, involving all relevant stakeholders and giving them real influence

However, in Hordaland, the leading aquaculture county in Norway, many municipalities find it necessary with plans that steer the location of aquaculture in a more detailed way because of the lack of available space and because of the many conflict between aquaculture and other interests as nature conservation, recreation etc.

Everybody needs a licence from the authorities to start fish and shellfish farming in Norway. To get a licence, the applicant must ensure that the establishment will not pollute or disseminate fish diseases and that installations are not in conflict with local interests. It is the Directorate of Fisheries with their seven regions offices which gives licences/reject applications. This is coordinated with other governmental bodies, i.e. veterinary authority, environmental, harbour and port authority. In that connection, the local plans have an important role as a decision framework.

The local coastal zone plans have also become a more important tool in protecting vital areas for coastal fisheries, such as land-seines (*kastevåger),* areas for spawning and good places for live holdings (*låssettingsplasser*). The increasing pressure from other activities in the coastal zone has led to a bigger need for local fishermen and their organisations in involvement in local coastal zone processes, to secure their land use interests. Their local knowledge is also valuable inputs in the local planning processes.

In Norway planning and management of terrestrial coastal areas has for many years been supported by detailed knowledge and extensive data on habitats and their associated species. In contrast, for undersea areas little focus has so far been drawn to identification and mapping of marine biological resources and the distribution of marine habitats in the coastal zone. However, new electronic topographic maps showing depths, biological resources and marine habitats would be an important tool for the coastal zone planning and management.

Regional coastal zone planning – lessons from three counties in Norway

This illustration is based on the research project "Regional coastal zone planning - a tool for integrated coastal zone management?" The main research question in this project is to study if and how regional coastal zone planning can contribute to ICZM. Further, we have been interested in under which conditions do the planning processes lead to a successful integration. We are both interested in how different co-ordination problems and different institutional settings, i.e. traditional planning or planning through network governance, affect the possibility for an ICZM. The analysis is limited to the questions regarding use of the coast line (shore), the fish and shell farming industry and the coastal fisheries, leaving other topics for coastal zone planning. The text is mainly from an article from Hovik & Stokke in prep, with the title "Network Governance and Policy Integration – the Case of Regional Coastal Zone Planning in Norway".

Regional coastal zone planning in Norway was in the mid 90s introduced to deal with problems municipal coastal zone management so far had not solved: Co-ordination across municipal borders (surprisingly few municipalities cooperate with their neighbours on planning matters, despite the fact that they plan the use of the same fjord systems), across public sector borders and levels of government. The aim of a county plan is to "co-ordinate the state, the county municipal, and the main parts of the municipal physical, economical, social and cultural activities" (Planning and Building Act §19-6). The Cabinet lays emphasis on extensive co-operation between the county municipality, the County Governor's Office (state representative in the county), - particularly the environmental agency, the regional branch of the Directorate of Fisheries, municipalities and private actors. Through open and democratic planning processes, the aim is to achieve a good balance between land and sea use, production, resource extraction and protection in the coastal zone. The county municipality has, however, no authority to command or order other actors, neither state regional actors nor municipalities, to comply with a regional coastal zone plan, except to raise objections to municipal plans. A county plan is not legally binding for state or

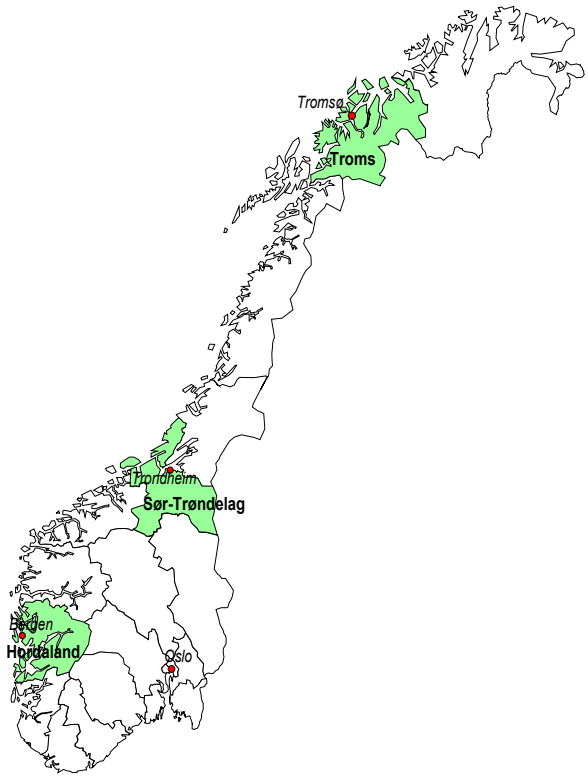
municipal government, it only give guidelines for their activity. Due to limited formal authority given to the county municipalities as planning authority, integration must be accomplished through voluntary co-operation and negotiation among different public and private actors. Integration must then be accomplished through creating arenas and building or engaging networks for conflict resolution and co-operation. Regional coastal zone planning can then be interpreted as multi-level governance.

In the research project we study the processes of formulating and implementing the regional coastal zone plans in three counties (and NUTS III regions), Hordaland, Sør Trøndelag and Troms. The counties are placed in different regions of Norway. Hordaland is located at the western coast, Sør Trøndelag in the middle, and Troms in the northern part of the country (see figure 6.8). They can all be characterised as fisheries regions. Troms is specialised in harvesting, while Sør-Trøndelag in processing (defined as over the national average, see chapter 7). Hordaland and Sør-Trøndelag is specialised in aquaculture, with Hordaland as the leading aquaculture region in Norway (mainly production of salmon and trout).

Table 6.2 Hallmarks for the three counties

Hordaland	Sør-Trøndelag	Troms
15 634 km2	18 832 km2	25 848 km2
438 312 inhabitants	264 856 inhabitants	151 637 inhabitants
33 municipalities, Bergen administrative capital	25 municipalities, Trondheim administrative capital	25 municipalities, Tromsø administrative capital

Figure 6.11 The counties of Hordaland, Sør-Trøndelag and Troms



An experience from these three cases is that an open and inclusive decision process does not alone increase the integration capacity of the regional planning. The results rather support the opposite argument of a trade off between the number of actors participating in the decision process and the ability to agree on and implement a joint action which effectively will deal with the problem. Coastal zone management is described as a complex management situation, with numerous actors, with different

interests, world views, values and goals. In addition, there are asymmetric division of power and dependencies between the different actors. In Hordaland they chose to open the network only for the most central regional state agencies (the county governor's environmental agency, the fishery authorities, the veterinary authorities, the coastal authority and the military). These public stakeholders are, as holders of important resources and authority, necessary contributors to an integrated coastal zone management. By reducing the number of actors, the perceived transaction costs of negotiating compromises can be limited. To limit the number of actors actually participating in the consensus seeking discussions and negotiations, as was done in Hordaland, might have been an effective strategy. To continue the co-operation through formalized networks engaged in the implementation of the plan does also seem to be an effective strategy.

Another experience from these cases is that the integration potential of network governance seems to rest on actors believing they will gain from co-operation. To gather different actors together to discuss and propose a costal zone plan might contribute to more positive and close relations between these actors, and as such make co-operation easier when they in the future find it in their interest to do so. It does not in itself contribute to an integrated plan or a formal network engaged to accomplish integration in the implementation phase. The integration capacity of the planning process is greater were the context creates stronger interdependencies probably influencing the actors interest in co-operation. It does also help with some pressure from central government.

A possible lesson to be drawn from this study is the importance of a balance of independency and interdependency between different actors in network governance. Some central actors, mainly regional state sector agencies, might perceive greater pay off by following the strategies of their own sector policy, than by co-operating with other actors, and at the same time be sufficiently independent of other regional actors to be able to follow such strategy. They are neither interested in, nor forced to involve themselves in negotiating compromises with other actors. Added to this picture is possible constraints given by central state ministries or directorates, forcing them to maximise the policy goals of their own sector. They might not have the necessary independence from central government to involve themselves in negotiations at regional level.

Integration through voluntary co-operation is dependent of all actors perceiving some positive pay offs, i.e. some sort of win - win situation. Powerful actors, neither forced nor interested in co-operation can set conditions other actors can not accept. Symmetry among actors regarding the distribution of independency and interdependency might be an important precondition for voluntary integration and successful governance, in addition to a plus sum game. It were the lack of will among central actors to commit themselves to a co-operative process, rather than the openness of the process and the number of participants, that resulted in less integration capacity in Sør Trøndelag and Troms compared to Hordaland. Whether Hordaland could have increased their integration capacity through a more open process is impossible for us to conclude on. However, the involvement of actors holding important resources and power seems to be crucial. Coastal zone management is facing a situation with a variety of actors with asymmetric distribution of powers and dependencies and with potentially conflicting interests. It is a challenging task to achieve integration through voluntary co-operation in such a situation. For regional and local actors to meet this challenge there is a need for a change in central government policy in the direction of stimulating and facilitating local co-operation.

The conclusion in the paper is that integration through regional coastal zone planning and voluntary co-operation is possible, but also difficult to achieve. One important obstacle towards achieving the goal of integrated coastal zone planning and management is the fact that important public actors perceive a greater pay off from promoting their own goals and values through policy instruments controlled by the authority themselves, than from involving themselves in regional co-operation around an integrated strategy. In regions where the pressure on the areas and the conflicts between different user-interests are more visible, different actors have joined together in networks established to promote integrated coastal zone management. More emphasis on this matter from central government would probably also help. Due to great regional differences, central government rather than to decide a national integrated policy, should lay stronger pressure on regional and local state and municipal authorities to co-operate in processes of integrated planning and policy making at regional level. Even in Hordaland where the interdependency between the actors is greatest, the relations are fragile because of asymmetric division of power and dependency between actors. There is a significant amount of leeway in terms of how the regional state

can relate to the regional coastal zone planning as an integration arena. In such situation there is a need for central government taking action to facilitate regional integration through voluntary co-operation. Clear guidelines with regard to how regional state agencies should participate, as well as an institutional framework facilitating such co-operation is needed. Rewarding actors with a will to co-operate and sanction actors that avoid taking part in co-operation might be necessary to secure an integrated coastal zone management.

6.6.4 Coastal zone management and planning in Denmark

The article summarises the findings of a research project on ICZM in Denmark, in form of case studies in the counties of North Jutland and Viborg. In addition, two cross-county case studies concerning the Limfjord area and the southern Danish Archipelago where included. There were also three separate sub-projects from the Netherlands, Sri Lanka, USA and the trilateral Wadden Sea Co-operation (Anker, Nellemann and Sverdrup-Jensen 2004).

Many interests are at stake in the Danish coastal zone. The majority of the population is resident in urban zones in the coastal areas, and the greater part of the summer cottages and other holiday and recreation facilities are situated here. At the same time, the near-shore waters and the interface between land and sea are the basis for fishing, marine aquaculture, extraction of raw materials, land and sea transport, harbour activities, agriculture, etc. In recent years, the coastal zone, probably more than any other part of society has been exposed to pressure and processes of change. Among these changes are urbanisation and new infrastructure, exploitation for recreation and tourism, acute nature and environmental problems, retreat of coastal occupations, reorganisation of freight traffic between land and sea and changed functional demands and working conditions for harbours.

The legal and regulatory framework for the Danish coastal zone is scattered across a number of different regulatory systems. The most characteristic feature is the fairly split in powers regarding management on land and sea. The land-based activities is characterises by powers vested in the regional and local authorities and by a comprehensive planning system embedded in the Planning Act. The regulatory system that governs sea areas is characterises by a sectoral approach and by powers vested in national State authorities embedded in the State Supremacy over the sea.

The research project identifies several weak points in the legal and regulatory framework and in management practice. One major problem is the regulatory split between land and the sea. This is reflected in the legal framework, in the distribution of powers and in management practices. Because of the lacking land – sea integration, management of fishing, sea transport, raw material extraction, etc. is, by and large, not integrated with the management of other activities in the coastal zone, e.g. recreation and tourism. On the other hand, the Danish Planning Act and the informal cooperation procedures established in Denmark form the basis of a high degree of integration between the authorities dealing with land-based coastal activities. The voluntary collaboration approach between different public authorities and the citizens on urban/regional planning and management has demonstrated that ICZM has a lot of potential, where the fisheries management plan for the Limfjord and the development plan for the southern Danish Archipelago are good examples.

The studies from the other countries show a development in coastal zone management from an initial rather narrow focus, typically on coast protection, toward a situation characterised by a more holistic approach to management with an understanding of the interdependencies between the many problems in the coastal zone. Even though most cases point out that important coastal zone activities such as fishing and oil extraction are only rarely included in the integrated plans. The authors in this article claim that the tradition for protecting coastal areas may have led to a neglect of the ideas of ICZM as such.

6.6.5 The EU Water Framework Directive (WFD) – impacts for ICZM

Main principles and goals

The EU Water Framework Directive (2000/60/EC) (WFD) draws up a new legal framework for integrated management of the water resources. A basic principle in the WFD is that planning and

management of all waters should consider water basins as comprehensive units, ranging from the very source of the watercourses to their outfall into the sea, including transitional waters and coastal waters up to one nautical mile outside the basic line. Primarily through the development and implementation of River Basin Management Plans (RBMP), the WFD requires Member States to take whatever measures may be necessary to achieve the environmental objective of "good status" for all EU waters by 2015. The RMBP will be based on a characterisation of the water bodies within river basin districts, comprising an analysis of the ecological status, an assessment of pressures (user interests, impacts), and an economic analysis of the water uses. Finally, the RMBP will set out the actions required within each river basin and its adjoining coastal area to achieve the goal, and which will be reviewed on a six yearly basis.

The WFD's ambitious goal of achieving "good status" implies that the chemical, biological and hydro-morphological conditions in the water bodies shall not deviate significantly from the natural state, referring to a pre-industrial situation before the watersheds were affected by human activities. Exceptions can be made for water-bodies classified as "heavily modified", i.e. water bodies that are influenced by past physical alterations due to major water uses such as industrial development, navigation, and flood control, and where it will be too difficult or costly to bring them back to their natural state. In such cases, the overall goal may be reduced from "good status" to "good ecological potential", which is the best possible status that can be obtained without removing or terminating the existing activities.

Table 6.3 Connection between ecological status class and goal in the EU Water Framework Directive.

Ecological status classification	Achievement of WFD goal
• High status. • Good status.	WFD goal is achieved.
• Moderate status. • Poor status. • Bad status.	WFD goal not achieved. Actions for improvement will be formulated through River Basin Management Plans.

Implications for ICZM

The WFD can be regarded a significant policy instrument in facilitating ICZM and for coordination of river basin and coastal zone management. The concept of river basin management has been included by the EU Recommendation on the Integrated Coastal Zone Management (ICZM) from 2002 to provide the key for the integrated development of the natural, economic and cultural environment within river basins and coastal areas. There are, however, also significant differences between the two systems. For example, the legal form of the WFD is binding, while the EU Recommendation on Integrated Coastal Zone Management (ICZM) is considered optional. Both the WFD and the ICZM provides for the implementation of integrated management plans pertinent for the coastal areas and resources, but the WFD focuses mainly on the environmental quality in the aquatic ecosystems as a basis for promoting sustainable development, whereas ICZM addresses a broader spectrum of issues aiming at a coordinating and balancing the different user-interests and for prevention of conflicts i.e. between resource utilisation and conservation. ICZM also seeks to integrate terrestrial issues in the "land-ocean nexus" to a larger extent and is more oriented towards spatial (land-use) planning compared to the WFD.

One noticeable implication of the WFD in relation to ICZM is that it will have far-reaching implications for the way in which coastal monitoring is carried out at the regional and national levels. Firstly, the WFD requires evaluation of the ecological characteristics of water bodies as being of prime importance in the assessment of their overall quality. Reporting has to be carried out in a consistent and comparable way. Secondly, the monitoring is more complicated than previous systems; it takes on a more "risk based" approach and it has to be demonstrably statistically robust and must consider the "most sensitive elements" for any given pressure.

A network of monitoring sites need to be established using a combination of surveillance, operational and investigative monitoring of prescribed quality elements to satisfy the information needs. The WFD utilises a complex set of quality elements with strong emphasis on biological communities as long-term

indicators of the health of the water bodies at ecosystem level. This will be a particular challenge in transitional and coastal waters due to the complexity in typology and regional and local ecological variability.

Likely, the WFD will contribute to a significant upgrading of the knowledge-base for ICZM and may ensure better coverage and harmonisation of data across national borders. It is, however, important that the monitoring is comprehensive and is designed to cover both the information requirements of the WFD and the ICZM in order to serve their combined purposes and to avoid unnecessary overlaps. In table xx the various quality elements required in the WFD monitoring are listed. It may be observed that composition and abundance of fish fauna as quality element/indicator in the WFD is only applicable for transitional waters and not included for coastal waters.

Table 6.4 Monitoring – prescribed quality elements. Reference: WFD Annex V 1.1.3 Transitional waters and Annex V 1.1.4 Coastal waters.

TRANSITIONAL WATERS	COASTAL WATERS
Biological elements:	
• Composition, abundance and biomass of phytoplankton. • Composition and abundance of other aquatic flora. • Composition and abundance of benthic invertebrate fauna. • Composition and abundance of fish fauna.	• Composition, abundance and biomass of phytoplankton; composition and abundance of other aquatic flora. • Composition and abundance of benthic invertebrate fauna.
Hydro-morphological elements supporting the biological elements:	
• Morphological conditions: depth variation; quantity, structure and substrate of the bed; structure of the inter-tidal zone. • Tidal regime: freshwater flow; wave exposure.	• Morphological conditions: depth variation; quantity, structure and substrate of the bed; structure of the inter-tidal zone. • Tidal regime: direction of dominant currents; wave exposure.
Chemical and physio-chemical elements supporting the biological elements:	
• General: transparency; thermal conditions; salinity; oxygenation conditions; nutrient conditions. • Specific pollutants: pollution by all priority substances identified as being discharged into the body of water; pollution of other substances identified as being discharged in significant quantities into the body of water.	• General: transparency; thermal conditions; salinity; oxygenation conditions; nutrient conditions. • Specific pollutants: pollution by all priority substances identified as being discharged into the body of water; pollution of other substances identified as being discharged in significant quantities into the body of water.

Another main feature of the WFD is that utilisation of water shall be based on the precautionary principle and be sustainable in the long run. Mapping and characteriasation of the different user interests is therfore an important requirement in the WFD. An assessment of pressures on every water body will be carried out as part of the characterisation, and will inform monitoring networks. Assessment of pressures in relation to fisheries and aquaculture in coastal and transitional waters require information on i.e. nutrients, hazardous substances, organic enrichment, morphology, commercial fishing, and alien species, and additionally for transitional waters; water abstraction, industrial intakes and discharges. This information will enable a rational discussion on the cost-effectiveness of the various possible measures that might be required for achieving "good status". It is also necessary for the calculation of environmental costs for the operationalisation of the "polluter pays" principle and in order to estimate full cost recovery of water services. According to the WFD, water pricing shall provide for incentives for the optimal use of the water resources and for the achievement of the ecological goal.

The final point of particular significance to be mentioned is the WFDs strong focus on democratic, participative processes during the entire process of its implementation – to ensure transparency and enforceability and in keeping the process open to the scrutiny of those who will be affected. The WFD Article 14 requires Member States to encourage the active involvement of all interested parties in the implementation of the directive, in particular the production, review and updating of the RBMPs. Key documents shall be published made publically available for comments and background documents provided on request. This is further emphasised in preamble 14, which states that the success of the WFD relies on close cooperation and coherent action at Community, Member State and local level, as well as on information, consultation and involvement of the public, including the users.

Public participation and involvement is also an essential ingredient of ICZM. The ICZM principles both point on the statutory rights on access to information as well as open and transparent planning processes with broad stakeholder involvement and local participation. Thus, there is resemblance between the two systems, but adequate coordination is required to prevent parallell processes.

Pilot projects in implementation of the WFD in Norway

Two pilot projects in implementation of the WFD were carried out in selected river basins in Norway covering different characteristics and issues; the Vansjø-Hobøl River Basin in the Eastern part of Norway and the River Suldalslågen with adjoining fjord area on the Western coast. The last project focused primarily on gaining experiences on alternative organisation models at regional level (for river basin districts) and on assessing the availability of data compatible with the WFD requirements (Berge et al 2003). A typology was initially established for the river basin/fjord area and preliminary characterisation of the water bodies was carried out. The coastal part included three types of areas: a fjord area influenced by river regulation (hydro-power); an area with high density of marine aquaculture (arctic salmon); and an area dominated by harbour development and sea transport.

As for the organisation, the WFD requires set-up of administrative units with responsibility for coordination in each river basin district. The results from the pilot project show that the existing administrative structure is not in direct coherence with the WFD and that adaptation to the new requirements are needed. In Norway, water resources management comes under a number of statutory acts, and responsibilities are shared between many institutions as well as different levels of administration. In general, the municipalities are responsible for coordination and integration. The municipalities have the authority to endorse legally binding master plans (the land-use part) anchored in the Planning and Building Act, including river basin and coastal zoning plans. Planning in cross-boundary river basins (across municipal borders) are mostly facilitated by the County Governors (state administrative unit at regional level) and based on inter-municipal collaboration, however actual implementation in most cases requires incorporation of decisions in the municipal plans.

The Ministry of Environment have been selected as the leady ministry in the implementation of the WFD, while the County Governors (state representatives at regional level) will have the responsibility for coordination of the work in the river basin districts. The experiences from the pilot project emphasises the need for active stakeholder involvement and collaborative approaches during all stages of the planning process, with special attention to the role of the municipalities, as well as the need for efficient information sharing. Establishment of regional "River Basin Committees" and working groups (i.e. involving NGOs, civil society and public institutions) based on previously acknowledged models and best practices in river basin management is recommended. For proper attendance of coastal issues, key institutions such as the (district branches of) the Directorate of Fisheries, the Coastal Administration, and the Norwegian Water Resources and Energy Directorate should be invited to play an active role.

With regard to data availability, the study uncovered significant gaps. Data for describing the defined quality elements in the WFD, i.e. on pollution, water biology and water uses, are not consistent and quality varies considerably. These gaps have to be gradually filled through stepping up monitoring activities and/or through modelling and interpolation.

Only part of the existing information, especially data for small, local recipients are stored electronically. The report published from the project presents a detailed overview of the WFD tasks, the related data requirements and the various available data-sources.

6.6.6 Conclusion

ICZM is a demanding task, which i.a. should have a broad "holistic" and long run perspective, integrating all relevant interests and sectors in the coastal zone. Activities in the coastal zone have traditionally been carried out by different sectoral bodies, and rigid bureaucratic systems. Sectoral policy in marine areas is somewhat separated from spatial planning, and co-operation between them is not yet well developed. ICZM imply a new style of governance, a style that involves and is in partnership with all relevant interest. As the European Commission (2000) emphasise, integrated solutions to concrete problems can only be found and implemented at the local and regional level. Related to integration between fisheries and spatial planning it is a challenge that the EU Fisheries policy is one of the EU policies that are least adaptable to regional needs.

Norcoast (2001) recommend combining the best elements of the statutory spatial planning system with the best elements of the voluntary partnership approach in order to achieve integrated solutions. An experience from Norwegian regional coastal zone planning is that an open and inclusive decision process does not alone increase the integration capacity of the regional planning. The results rather support the opposite argument of a trade off between the number of actors participating in the decision process and the ability to agree on and implement a joint action which effectively will deal with the problem. Another general experience is that integration at regional level is only possible if the higher levels of administration provide an integrated legal and institutional context.

One lesson from the EU Demonstration programmes is that the spatial planning system alone has some limitations to secure the idea of ICZM. The first is the necessity that the spatial planning system covers both the terrestrial parts and the marine part of the coastal zone. Only few countries have such integration today. The EU Water Framework Directive could secure this element because also coastal waters up to one nautical mile outside the basic line should be included in the river basin management plans. Another limitation is that the spatial planning system often focusing narrowly on development control rather than a broader ICZM focus. In that respect, it could be necessary to combine economic instruments to the planning system. The tradition for protecting coastal areas may also have led to a neglect of the ideas of ICZM as such, where a main purpose is to balance protection and development in coastal communities. ICZM strategies in fishery dependence areas should for instance also focus on new forms for development, such as aquaculture, tourism, etc.

The hypothesis regarding aquaculture in IR2 is that this industry will increase the pressure on the coastal zone, but a management bases on ICZM could contribute to a further sustainable growth. The Norwegian experiences with local coastal zone planning indicate that this could be a suitable instrument to balance the increase of aquaculture with other interests. A central challenge is to find a balance between the need for long-term steering and predictability on the one side, and the need for flexibility on the other side. A precondition is broad participation from the relevant local interests and stakeholders, and the relevant sectoral administrative bodies to find an acceptable balance between growth in aquaculture and other interests as protection, recreation, coastal fisheries, etc. It is, however, a need for a regional approach across the municipalities regarding the development of the industry. Regional coastal zone planning and planning in accordance to the Water Framework Directive can contribute to more integration across municipalities and a more ecosystem-based management, also in the case of aquaculture.

6.6.7 Policy recommendations

According to the ICZM example studies, primarily regarding the aquaculture industry, we point out the following policy recommendations:

a) It seems to be necessary to further develop the integration of the terrestrial and marine environment in coastal planning and other ICZM activities.

b) It seems to be an effective strategy to combine the best elements of the statutory spatial planning system with the best elements of the voluntary partnership approach in order to achieve integrated solutions.

c) To find acceptable balances between further growth in aquaculture and protection and other interests in the coastal zone, it is a precondition with a broad participation from relevant local interests and stakeholders in the planning processes, together with relevant sectoral administrative bodies. Environmental Impact Assessment (EIA) and Strategic Environmental Assessment (SEA) could be useful instruments in the process to find the right balance between protection and use.

d) The aquaculture industry is in a continuously technological change, i.e. with new species and in being more offshore based. It is therefore necessary with flexible planning approaches in order to be able to deal with the quick changes that may occur. It is, however, a need to find suitable combination between the need for long-term steering and predictability on the one side, and the need for flexibility on the other side. The specific choice in this regard will be dependent on the specific context on the ground.

e) It is a need for a regional approach across the municipalities and other administrative borders regarding the development of the industry. The implementation of the Water Framework Directive can contribute in that direction.

7 Social Cohesion Impacts

7.1 Introduction

The second interim report (IR 2, chap. 6.4) demonstrates the considerable volume of EU-fisheries. Some key figures are over 88 thousand vessels, over 500 thousand employed persons, 6 millions tonnes of catches and over 1 million tonnes of aquaculture production. Viewed against this background the position of the European fisheries policies is of importance for the European development, and as was established in the first interim report (IR1), the European fisheries policy is regarded as one of the sector policies with great territorial implications (TI), in terms of:

- Impacts on socio-economic development (fisheries employment) inside the European regions (De facto coast regions, fisheries regions of different types, fisheries specialised regions).
- Impacts on the position of the coastal/fisheries regions in the European territorial system and of specific countries (growing - and declining processes compared with other types of regions)
- Impacts on the territorial policies system of EU (the position of the fisheries regions in the policy system)

The social cohesion analysis will:

- Explain the challenges for organising socio-economic data of relevance for territorial analyses, de facto an investigation and an assessment of socio-economic fisheries data (available and not available data).
- Discuss impacts by using statistical data as well as example studies.
- Specify types of fisheries regions, and the fisheries policies involved in these regions.
- Reveal the territorial distribution of the EU fisheries policies.
- Analyse direct impacts of CFP on fisheries inside specific regions.
- Discuss how CFP interplays with population changes and the income situation of the specific regions.
- Discuss possible impacts of CFP on the territorial system in Europe.
- Discuss impacts on the Territorial Impacts Assessment system from analysing CFP.

7.2 Hypothesis on social cohesion

The first interim report specified several hypotheses on social cohesion impacts of CFP:

1. The position of fisheries, fisheries policies and fisheries regions vary between the European nations and among the regions inside the countries.
2. While the principal objective of CFP is to develop the fisheries and protect the fisheries resources, the CFP can have side effects such as declining fisheries employment, increasing unemployment, decreasing average incomes, population decrease and altered age composition due to increased out migrations and decreased immigrations.
3. The fisheries specialised regions, mainly in remote areas, have more negative development in population, employment and income than the average European regions.

4. The incidence of the CFP on regional level is not consistent with the social and economic cohesion objectives of EU.

We will return to the hypotheses in the final section of the chapter.

7.3 Data on fisheries socio-economics and social cohesion

Due to the huge lack of data, the cohesion working package will have a role as a recipe-maker on how to undertake an impact analysis rather than present a fulfilled analysis. By using available data the WP3 has tried to find a way to implement Territorial Impact Analyses in European fisheries and the package propose several actions that have to be fulfilled in order to carry out territorial impacts analyses in fisheries.

7.3.1 Data needed to undertake the analyses

In order to undertake a socio-economic study and analyses, WP3 needs data on developments of population, total employment, fisheries employment, income (household, disposable) and distribution of FIFG. Due to the lack of a standard mode of collecting data, WP3 has not explicitly split between employment in fisheries and aquaculture. It has not been possible to obtain data from the same time series in each country, which means that the data are not consistently comparable from year to year. Nevertheless, the data are used to indicate trends.

7.3.2 A look on Espon databases: Obtaining data and reliability

Some of the data WP3 needs could be obtained from the Espon database, mainly data related to employment. The database is not specific with respect to fisheries, which are included in the primary sectors.

The Espon database is incomplete, and to a certain extent unreliable. Apparently, there has been a lack of quality control, and/or a lack of alert when entering the data in the database. As an example: **Espon table 032_Employed_Persons_by_Sectors** is erroneous and incomplete. For the year 1997, the figures are too deviant from the other years to be reliable, and there has obviously not been a quality check of the data before entering them. This is valid for all regions. Furthermore, there are no data for 1999 in either region. Some regions are worse than others, for example Germany, where there are sudden holes for certain regions for certain years. This makes it difficult to undertake any analysis with respect to employment for Germany. In order to be able to do that, WP3 used approximate figures, based on information from other years.

Furthermore, there is disharmony between different Espon-tables, which at the outset should contain the same information. According to **Espon table 022_Pop-change_95-99_p114_N2**, Estonia has had a population decline of one per cent from 1995 to 1999. According to Espon tables **021_Population_age_groups 1995-1999_p31_N2**, a calculation shows that there has been a three per cent decline for the same period. This means that we have had to make a choice of which of the files in the Espon database to rely.

Another example relating to population figures: According to Espon table **021_Population_age-groups_1995_P31_N2: Tabell**, the population in Cyprus is 841000 (1995). According the same table the following year, **021_Population_age-groups_1996_P31_N2: Tabell**, the Cypriot population has dropped to 755500 (1996). Unless there has been a massive exodus, there is an error in the database.

7.3.3 Collecting data from National sources

All involved partners in project 2.1.5 have assisted in providing data to WP3's analysis, whith the following division of labour:

Table 7.1 Division of labour of data collection.

Organisation	Collected data from
Norut, Norway	Finland, Sweden, Norway
UARI, Iceland	Iceland
EMI, Estonia	Estonia, Latvia, Lithuania, Poland, Romania, Bulgaria
IREPA, Italy	Italy, Greece, Slovenia, Malta, Cyprus
IFM, Denmark	Denmark, Germany, UK, Ireland
IDEGA, Spain	Belgium, Netherlands, France, Spain
CEDRU, Portugal	Portugal

Most of the partners have spent significant effort in collecting data. This has been a challenging and time-consuming undertaking, and the results have been varying. For some of the countries there are relatively rich data, from others they are meagre or absent. The indicators that have been the most accessible relate fisheries employment data, and to a varying extent aquaculture and fishing industry, on Nuts 2 level. For Denmark and Norway there are data on Nuts 3 level, and for Iceland on Nuts 4 level. Denmark is defined as Nuts 2, so that Nuts 3 is important in order to be able to show internal differences. Norway consists of seven Nuts 2 regions and 19 Nuts 3 regions; using Nuts 2 regions in Norway displays differences between regions.

The following matrixes provide details over what kind data WP3 sought from different countries. The ":" indicates that data was not available within the conditions of the 2.1.5 project. Towards the final report, WP3 will work on filling in some of these holes.

Table 7.2 Matrix of data obtained for Belgium, Bulgaria, Cyprus, Denmark, Estonia, Finland, France, Germany and Greece.

Indicator	Belgium	Bulgaria	Cyprus	Denmark *	Estonia	Finland	France	Germany **	Greece
Fishery employment	Nuts 1 1996-1997, 1997-2000	Nuts 1 1991-2003	:	Nuts 1 Nuts 3 2000-2003	Nuts 2 1993-1998 1998-2000	Nuts 1 1980-2004	Nuts 1 1996/97 2001, 2002	Nuts 2 1996, 1997	Nuts 1 1990-2003
Age structure in fisheries employment	:	:	:	Nuts 1 1993-2004 Nuts 3 1993-2004 (both fisheries + aquacult)	:	:	:	:	:
Aquaculture employment	Nuts 1 1996-1997	:	Nuts 1 1992-2003	Nuts 3 2000-2003	Nuts 2 1992-1998 2001-2003	:	Nuts 1 1996/97	:	Nuts 1 1993-2003
Age structure in aquaculture employment	:	:	:	Nuts 3 1993-2004 (both fisheries + aquacult)	:	:	:	:	:
Fishery + aquaculture employment	Nuts 1 1996-1997	Nuts 1 1991-2003	Nuts 1 1990-2003	Nuts 2 1993-2004	Nuts 2 1990, 1995	:	Nuts 1 1996/97	:	Nuts 1
Fishery industry employment	Nuts 1 (2000) Source: Pesca report	:	:	Nuts 3 2000-2003	:	Nuts 1 2000	Nuts 1 1996/97	:	:
Age structure in fishery industry employment	:	:	:	:	:	:	:	:	:
Unemployment in fisheries	:	:	:	:	:	:	:	:	:
Unemployment in aquaculture	:	:	:	:	:	:	:	:	:
Unemployment	:	:	.	:	:	:	:	:	:

in fishery and aquaculture									
Unemployment in fishery industry	:	:	:	:	:	:	:	:	:
Disposable household income	:	:	:	Nuts 3 1996-2001		:	:	:	Nuts 2 1995-2002
Distribution of income	:	Nuts 1 2000-2002	Nuts 1 1997, 2001, 2003	Nuts 3 2003	Nuts 2 2000-2002	:	:	:	Nuts 2 1995-2002
Annual household consumption	:	:	:	:	Nuts 3 1996-2004	:	:	:	Nuts 2 1990-2004

* Denmark: Data on age structure in the fishery industry can be obtained from Statistics Denmark, but for a fee. There is no information on unemployment in fisheries, aquaculture, or the fishery industry; the data can possibly be created through different registers but only rough estimates and for a fee.

Data on distribution of income (median, upper and lower quartiles) exists on Nuts3 level. Longer time series, with upper and lower 20 per cent, can be provided by Statistics Denmark, but for a fee.

Data on household consumption cannot be obtained on Nuts3 level in Denmark. The sample used to estimate consumption is not big enough to break down to regional level.

** Germany: According to the contact person in Regionalstatistiken im Statistischen Bundesamt (e-mail on 25th of November 2005), more data *may* be available, however, the contact person is waiting for response from other institutions, such as the Bundesforschungsanstalt für Fischerei in Hamburg. Otherwise, fisheries related data in Germany is often merged with data on agriculture, since the fisheries comprise a relatively modest activity in Germany. Some data are published in reports in the form of time-series; in order to get access to these time-series, we have to buy a collection of publications, and then search for relevant information here within. This is both too costly and too time-consuming within the frames of project 2.1.5.

Table 7.3 Matrix of data obtained for Iceland, Ireland, Italy, Latvia, Lithuania, Malta, Netherlands, Norway and Poland.

Indicator	**Iceland**	**Ireland** ***	**Italy**	**Latvia**	**Lithuania**	**Malta**	**Netherlands**	**Norway** ****	**Poland**
Fishery employment	Nuts 3/4 1990-2004	:	Nuts 3 199-2003 incomplete	Nuts 2 1991-1994 1999-2003	Nuts 2 1991,1993, 2001	Nuts 2 1990-2000, 2002	Nuts 1 1997-2002	Nuts 1/2/3 1987-2003	Nuts 1 1993-1998
Age structure in fisheries employment	:	:	:	:	:		:	Nuts 1 2002-2003	:
Aquaculture employment	:	:	Nuts 3 2001	Nuts 2 1999-2003	Nuts 2 2001	Nuts 2 1995-2000, 2002	Nuts 1 1996/97	Nuts 1 1997-2004 Nuts 3	:
Age structure in aquaculture employment	:	:	:	:	:	:	:	:	:
Fishery + aquaculture employment	:	:	Nuts 3 1995-2002	Nuts 2 1991,1993, 2001	Nuts 2 1990-1998 2001	:	Nuts 1 1996/97	Nuts 1/3	Nuts 1 1990-2000
Fishery industry employment	Nuts 3 1990-2004	:	Nuts 3 1991, 1996, 2001	:	:	:	Nuts 1 1996/97	Nuts 1/3	:
Age structure in fishery industry employment	:	:	:	:	:	:	:	:	:
Unemployment in fisheries	Nuts 3 2000-2004	:	:	:	:	:	:	Nuts 3 1999-2005	:
Unemployment in aquaculture	:	:	:	:	:	:	:	Nuts 3 1999-2005	:
Unemployment in fishery and aquaculture	:	:	:	:	:	:	:	Nuts 3 1999-2005	:
Unemployment in fishery industry	Nuts 3 2000-2004	:	:	:	:	:	:	Nuts 3 1999-2005	:

Disposable household income	Nuts 3 1998-2003	:	Nuts 3 1995-2002	Nuts 2 1995-2002	Nuts 2 1995-2002	:	:	Nuts 2 1998-2002	Nuts 2 1998-2001
Distribution of income	Nuts 3 1994-2004	:	Nuts 3 1995-2002	Nuts 1/2 2000,2002	Nuts 1/2 2000-2002	Nuts 2 2000-2002	:	Nuts 1 1990-2002	Nuts 1 2000-2002
Annual household consumption	Nuts 3 2002-2003	:	Nuts 3 1991-2002	:	:	:	:	Nuts 2 1997-2003	:

*** Ireland: For Ireland, it is possible to get regionalised statistics on aquculture employment. We are waiting for data, and will elaborate on Ireland for the final report of project 2.1.5.

**** Norway: The institution "Garantikassen for fiskere" has been approached several times, as they have data on unemployment in the fisheries. The institution confirms that it can generate the data, and that it will do it, but has failed to do so. WP3 assumes that the data needed for unemployment purposes have been provided by Arbeidsmarkedsetaten.

Table 7.4 Matrix of data obtained from Portugal, Romania, Slovenia, Spain, Sweden and Scotland.

Indicator	**Portugal**	**Romania**	**Slovenia**	**Spain**	**Sweden *******	**UK (Scotland) ********
Fishery employment	:	Nuts 1 1991-2000	:	:	Nuts 1 1970-2000	Nuts 2 2002-2004
Age structure in fisheries employment	:	:	:	:	Nuts 1 1999-2004	:
Aquaculture employment	:	Nuts 1 1996-2000	:	:	:	:
Age structure in aquaculture employment	:	:	:	:	:	:
Fishery + aquaculture employment	Nuts 2 1991, 2001	Nuts 1 1992-1998 2000-2003	:	Nuts 2 1995-2002	:	:
Fishery industry employment	Nuts 2 2001	:	:	:	Nuts 1 1998-2000	:
Age structure in fishery industry employment	:	:	:	:	:	:
Unemployment in fisheries	:	:	:	:	:	:
Unemployment in aquaculture	:	:	:	:	:	:
Unemployment in fishery and aquaculture	Nuts 2 1991, 2001	:	:	:	:	:
Unemployment in fishery industry	Nuts 2 1991, 2001	:	:	:	:	:
Disposable household income	Nuts 2 1991-2001	:	:	Nuts 2 1995-2002	:	:
Distribution of income	:	Nuts 1 2000-2002	:	:	:	:
Annual household consumption	:	:	:	Nuts 2 1995-2002	:	:

***** Sweden: After repetitively being in contact with Fiskeriverket in Sweden, the message is that apparently, there is no data on Nuts 2 level (e-mail 16th of November 2005).

****** UK: There is fisheries employment data for England and Wales at Nuts 1 level for 2004. According to the contact person in the Marine Fisheries Agency in London (e-mail on 7th of December 2005), the figures can be broken down into finer levels, however, accuracy will then be compromised. this is due to the data being compiled form the results of a stratified sampling survey. This will take some time, and can hopefully be done in the final 2.1.5 report.

7.4 The territorial context: How to identify European fisheries regions?

7.4.1 The problem of level

Previous studies have identified fisheries dependence mainly on municipal/Nuts 5 level. Data available in the Espon framework is however collected and organised mainly on Nuts 2 level. The development of the TIA for the fisheries can take one of two directions: Either to collect data on very low level in order to get detailed information on regional fisheries, or to develop the pictures of the fisheries position in regions on higher level. Probably the latter is the most feasible and realistic to develop.

7.4.2 The disappearance of the territorial fisheries

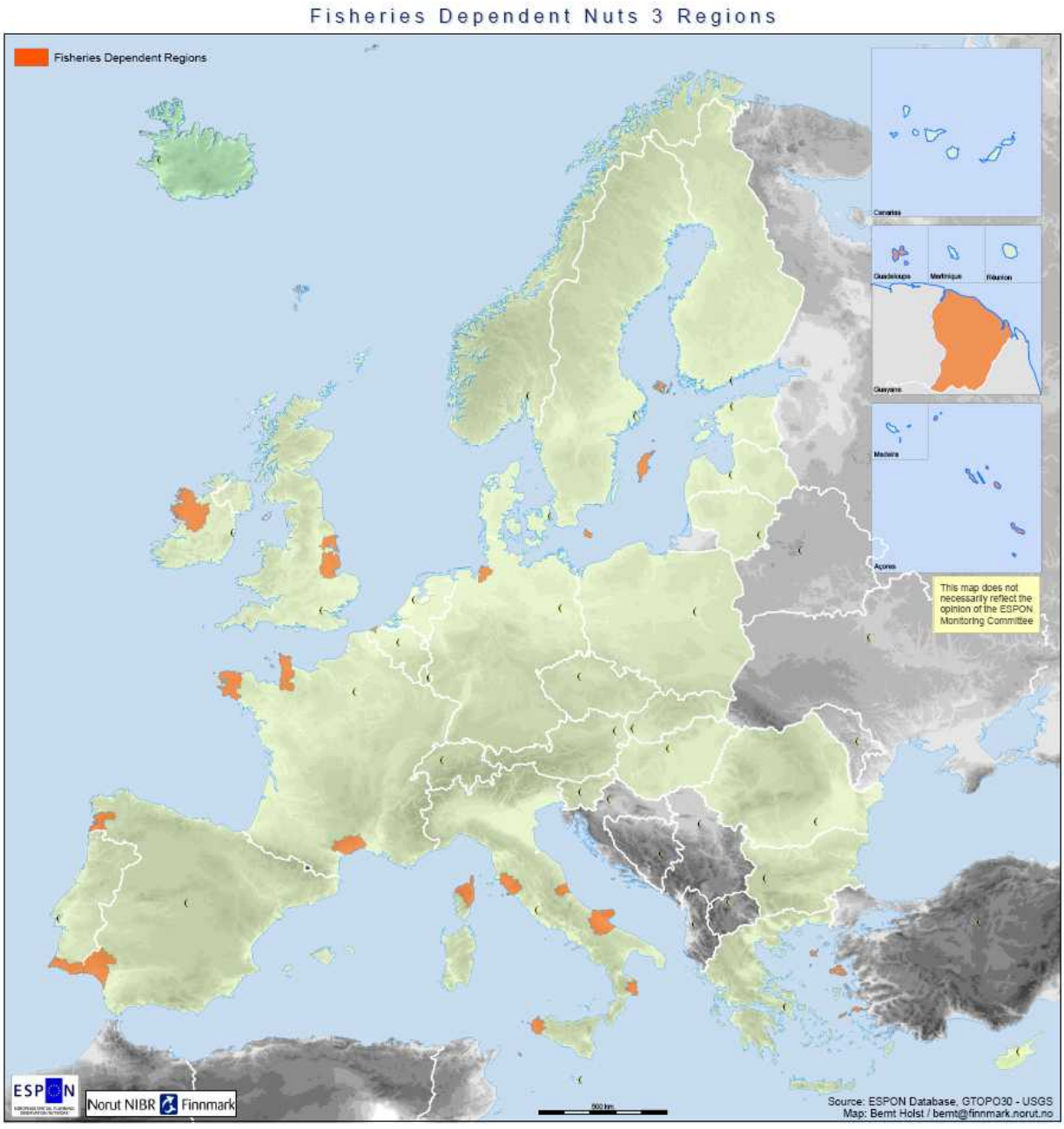
One of the side effects of analysing territorial fisheries on low regional levels (nuts 3/4/5) on European space is the big difference between very high dependence in some regions and the European and also the national average level. This problem is demonstrated by the Megapesca study. Goulding et al. (2000) selected the most fisheries dependent NUTS 3 regions in EU 15 in the 1990s, cf. table 7.5 and map 7.1. The major criteria for the identification of the regions were economic dependency on fisheries activity, defined as part of the value adding of the area, and the dominance of fisheries employment in the regional economy. Comparing the actual levels of 343 Nuts 3 areas with some employment in fisheries, only 12 regions fulfilled the criteria for both economic and employment dependency, and additional nine regions were classified as fisheries dependent regions having either economic or employment dependency.

Table 7.5 The 25 fishery dependent regions at NUTS 3 levels, according to MegaPesca (Goulding et al. 2000).

Nuts 3	Most fisheries dependent NUTS3 region	Share of fisheries activity in the value added of the area (Ratio 1)	Share of fisheries employment in total regional employment (Ratio 2)
BE255	Oostende	X	X
DK007	Bornholm		X
DE932	Cuxhaven	X	X
GR411	Lesvos		X
GR412	Samos	X	
ES114	Pontevedra	X	X
ES615	Huelva		X
FR252	Manche	X	X
FR522	Finistère	X	X
FR813	Herault		X
FR832	Haute Corse	X	
FR91	Guadeloupe	X	
FR93	Guyane		X
IE013	West	X	X
IT51A	Grosseto	X	
IT712	Teramo	X	
IT911	Foggia		X
IT932	Crotone		X
ITA01	Trapani	X	X
PT15	Algarve	X	X
PT2	Azores	X	X
FI2	Åland – Ahvenanmaa	X	X
SE094	Gotland		X

UKE12	East Riding	X	X
UKF3	Lincolnshire	X	X

Figure 7.1 Map 1: Fisheries dependent regions using Megapesca indicators (mapping the 25 NUTS 3 regions)



According to the Megapesca study, the 12 most fisheries dependent NUTS 3 regions within EU 15 are distributed between nine European countries:

-Belgium (Ostende region)
-Germany (Cuxhaven, part of the Lüneburg Nuts 2 region)
-Spain (Pontevedra, part of Galicia Nuts 2 region)
-France (Manche and Finistère regions)
-Ireland (West)
-Italy (Trapani, part of Sicilia Nuts 2 region)
-Portugal (Algarve and dos Acores, part of the same Nuts 2 regions)

-Finland (Åland)
-United Kingdom (East Riding and Lincolnshire).

Moreover, five regions are fisheries dependent according to economic importance of the fisheries (but not employment dominance). That is Samos in Greece (part of Voreio Agio, Nuts 2 region), France (Haute Corse and Guadeloupe) and Italy (Grosetto part of Toscana Nuts 2 region and Teramo part of Abruzzo). Seven more are dependent according to employment dominance in fisheries. Those are in Denmark (Bornholm), Greece (Lesvos, as Samos part of the Voreio Agio Nuts 2 region), Italy (Foggia and Crotone), Spain (Huelva part of Andalucia Nuts 2 region), France (Herault and Guyane) and Sweden (Gotland).

The Megapesca study identified the European regions that are most dependent on fisheries, before the enlargement. However, the regions included give an image of a very marginal territorial sector, where the sector policies only will be of importance for small parts of the European space. Of 387 Nuts 3 regions with a coastline, the fisheries dependent regions only constitute 6.5 percent according to the above criteria. In view of the considerable volume of the European fisheries (conf IR 2), one objective of an assessment of the territorial impacts of CFP is to enlarge the picture of the territorial importance of European fisheries. We will do this by classifying fisheries regions according to national averages.

7.4.3 Fisheries specialisation in national economies

The starting point for estimating fisheries specialised regions according to the national averages is a comparison of the proportion of employment in each of the regions and the national average of the fisheries employment. This will enable an identification of fisheries specialised regions in a national context. As the implementation of CFP to the specific regions is embedded in national level, the characteristics of the fisheries in the regions can explain aspects with the distribution. By this method, we identify fisheries specialized regions in nine European countries: Denmark, Germany, Greece, Iceland, Italy, Norway, Portugal, Spain, and Scotland (UK). These were the countries where data were accessible within the financial limits of the 2.1.5 project. Regrettably, we lack data from Finland, France, Sweden, and the UK (except Scotland) on Nuts 2 level, as well as from other regions. The extent of data collected varies, for example, for Germany; we lack data from two of the five Nuts 2 regions with a coastline.

The identification of fisheries specialised regions is done by following process:

(i) Estimating the national fisheries employment averages.
(ii) Identifying Nuts 2 regions (Denmark Nuts 3, Iceland Nuts 4) with coastline.
(iii) Estimating the fisheries employment averages in each of the coastal regions.
(iv) Estimating specialisation indexes for each of the regions based on the relations between (iii) and (i).
(v) In fisheries specialised regions the employment in fisheries is higher than the national average.

7.4.4 National fisheries employment averages

According to the above, we estimated the following fisheries employment share of total national employment, as illustrated in table 7.6. The years differ, as described earlier.

Table 7.6 Fisheries employment as percentage of total employment.

Country, year	Fisheries employment as percentage of total employment
Denmark 1996	0.25 %
Denmark 2001	0.2 %
Germany 1996	0.013 %
Germany 1997	0.008 %
Greece 1995	0.77 %
Greece 2000	0.6 %
Iceland 1997	9.7 %
Iceland 2003	7.5 %
Italy 1995	0.19 %
Italy 2001	0.17 %
Norway 1999	0.94 %
Norway 2001	0.83 %
Portugal 1996	0.53 %
Portugal 2001	0.32 %
Spain 1995	0.52 %
Spain 2001	0.36 %
UK 2002	0.24 %
UK 2004	0.22 %

All countries have had a decrease in fisheries employment's share of total employment. Germany and Italy have the lowest shares of employed in fisheries, while Iceland and Norway have the highest shares. Iceland is by far the most fisheries dependent regions, in 2003, 7.5 per cent of the workforce was employed in the fisheries, while the corresponding figures for the other countries were below one per cent.

7.4.5 Coastal regions included in the social cohesion analysis

In the nine countries, there are a total of 82 coastal regions that are included in the social cohesion analyses. Table 7.7 lists the number of coastal regions used for this analysis.

Table 7.7 Regions with coastlines

Country	Number of regions with coastline		
	Nuts 2	Nuts 3	Nuts 4
Denmark		14	
Germany	5		
Greece	13		
Iceland			8
Italy	15		
Norway	6		
Portugal	7		

Spain	10		
UK	4		

7.4.6 Regional fisheries specialisation indexes

Fisheries specialisation indexes are calculated on Nuts 2 level, except for Denmark (Nuts 3 level) and Iceland (Nuts 4 level). The procedures of the calculations are as follows:

1) Estimate the fisheries' share of total employment in the country for one or more years and set the country average to 100.
2) Estimate the fisheries' share of total employment in each region for the same years.
3) Estimate the level of each country's lower level region compared to the country's 100.
4) The regions with an index above 100 are defined as regions with specialisation in fisheries.
5) The results are entered into maps. The costal regions are plotted with different colours according to their degree of specialisation.

7.4.7 Fisheries specialised regions

According to the above description of fisheries specialisation indexes, the following tables demonstrate the different countries' fisheries specialisation indexes. The fisheries specialised regions are marked with bold.

Denmark, Nuts 3:

		2001
DK001	København og Frederiksberg kommuner	2,5
DK002	Københavns amt	4,2
DK003	Frederiksborg amt	52
DK004	Roskilde amt	23
DK005	Vestsjællands amt	73
DK006	**Storstrøms amt**	**139**
DK007	**Bornholms regionskommune**	**754**
DK008	Fyns amt	61
DK009	Sønderjyllands amt	43
DK00A	**Ribe amt**	**263**
DK00B	Vejle amt	52
DK00C	**Ringkøbing amt**	**409**
DK00D	Århus amt	36
DK00E	**Viborg amt**	**196**
DK00F	**Nordjyllands amt**	**232**

Denmark has six Nuts 3 regions with different levels of fisheries specialisation: DK006 Storstrøms amt, DK007 Bornholm regionskommune, DK00A Ribe amt, DK00C Ringkøbing amt, DK00E Viborg amt, and DK00F Nordyllands amt. Bornholm regionskommune is the most fisheries specialised Nuts 3 regions.

Germany, Nuts 2:

		1996
DE5	**Bremen**	**374**
DE8	**Mecklenburg-Vorpommern**	**2222**
DE93	Lüneburg	:
DE94	Weser-Ems	:
DEF	**Schleswig-Holstein**	**923**

The data from Germany is sparse, and displays three Nuts 2 regions with fisheries specialisation, of which Mecklenburg-Vorpommern clearly is the most fisheries specialised.

Greece, Nuts 2:

		1995	2000
GR11	Anatoliki Makedonia, Thraki	96	97
GR12	Kentriki Makedonia	71	67
GR13	Dytiki Makedonia	13	36
GR14	Thessalia	46	26
GR21	**Ipeiros**	99	**116**
GR22	**Ionia Nisia**	**206**	**310**
GR23	**Dytiki Ellada**	**125**	78
GR24	**Sterea Ellada**	**282**	**296**
GR25	**Peloponnisos**	**202**	**223**
GR3	Attiki	33	30
GR41	**Voreio Aigaio**	**812**	**637**
GR42	**Notio Aigaio**	**569**	**650**
GR43	**Kriti**	31	**123**

For Greece, we are able to compare fisheries specialisation from two years, 1995 and 2000. In 1995 there were six of 13 fisheries specialised Nuts 2 regions, while in 2000 it had increased to seven. GR21 Ipeiros had changed from being a non-specialised region to a fisheries specialised region (from index 99 to 116), while the opposite happened for GR23 Dytiki Ellada, which went from being a fisheries specialised region to a non-specialised region (from 125 to 78). GR43 Kriti went from the low index of 31 to being a fisheries specialised region with index of 123. This may indicate that Kriti had a large influx of fishers, however, it may also indicate that the data collection method varied between these two years, which we are not able to verify within the frame of project 2.1.5.

Italy, Nuts 2:

		1995	2001
IT13	Liguria	35	48
IT32	Veneto	72	71
IT33	**Friuli-Venezia Giulia**	**337**	**259**
IT4	**Emilia-Romagna**	97	**102**
IT51	Toscana	64	60
IT53	**Marche**	**128**	**135**
IT6	Lazio	29	35
IT71	**Abruzzo**	**230**	**173**
IT72	Molise	0	52
IT8	Campania	77	65
IT91	**Puglia**	**225**	**244**
IT92	Basilicata	30	0
IT93	**Calabria**	**194**	**176**
ITA	**Sicilia**	**431**	**459**
ITB	**Sardegna**	**254**	**231**

For Italy, the years 1995 and 2001 are compared. In 1995, seven of 15 Nuts 2 regions were fisheries specialised, while in 2001, the number of fisheries specialised regions had increased to eight. IT4 Emilia-Romagna had gone from being a non-specialised to a fisheries specialised region. However, both years, Emilia-Romagna was close to the average index of 100 (97 and 102 respectively).

Portugal, Nuts 2:

		2001
PT11	Norte	67
PT12	Centro	74
PT13	Lisboa e Vale do Tejo	77
PT14	Alentejo	81
PT15	**Algarve**	**593**
PT2	**Região Autónoma dos Açores**	**431**
PT3	**Região Autónoma da Madeira**	**215**

In Portugal, three out of seven Nuts 2 regions were fisheries specialised: PT15 Algarve, PT2 Região Autónoma dos Açores and PT3 Região Autónoma da Madeira, of which the latter two are remote islands.

Spain, Nuts 2:

		1995	2001
ES11	**Galicia**	**586**	**781**
ES12	**Principado de Asturias**	**112**	**137**
ES13	**Cantabria**	**333**	**269**
ES21	**Pais Vasco**	**115**	95
ES51	Cataluña	49	32
ES52	Comunidad de Valenciana	68	63
ES53	Illes Ealears	74	60
ES61	Andalucia	98	93
ES62	Región de Murcia	71	56
ES7	**Canarias**	**199**	**161**

For Spain, the years 1995 and 2001 are compared. In 1995, five out of ten Nuts 2 regions were fisheries specialised, while in 2001, the number of fisheries specialised regions had decreased to four. ES21 País Vasco went from being a fisheries specialised to a non-specialised region (from an index of 115 to 95). Galicia and Principado de Asturias both show an increase in the fisheries specialisation indexes, from 586 to 781, and from 112 to 137 respectively.

UK (Scotland), Nuts 2:

		2002	2004
UKM1	**North Eastern Scotland**	**324**	**281**
UKM2	Eastern Scotland	17	18
UKM3	South Western Scotland	25	33
UKM4	**Highlands and Islands**	**606**	**649**

For Scotland (UK), 2002 and 2004 are compared. Two of four Nuts 2 regions are fisheries specialised.

Norway, Nuts 2:

		1999	2001
NO01	Oslo og Akershus	2	2
NO02	Hedmark og Oppland	:	:
NO03	Sør-Østlandet	13	13
NO04	Agder og Rogaland	55	59
NO05	**Vestlandet**	**197**	**204**
NO06	Trøndelag	66	61
NO07	**Nord-Norge**	**496**	**487**

For Norway, 1999 and 2001 are compared. Two out of seven Nuts 2 regions are fisheries specialised. The fisheries specialisation index for NO05 Vestlandet (from 197 to 204) while it has decreased for NO07 Nord-Norge (from 496 to 487).

Iceland, Nuts 4:

	1997	2003
Capital region	34	26
South peninsula (Reykjanes area)	**251**	**211**
West region	**211**	**223**
Westfjords	**362**	**402**
North-west regions	**185**	**177**
North-east regions	**209**	**191**
East region	**298**	**347**
South region	**145**	**142**

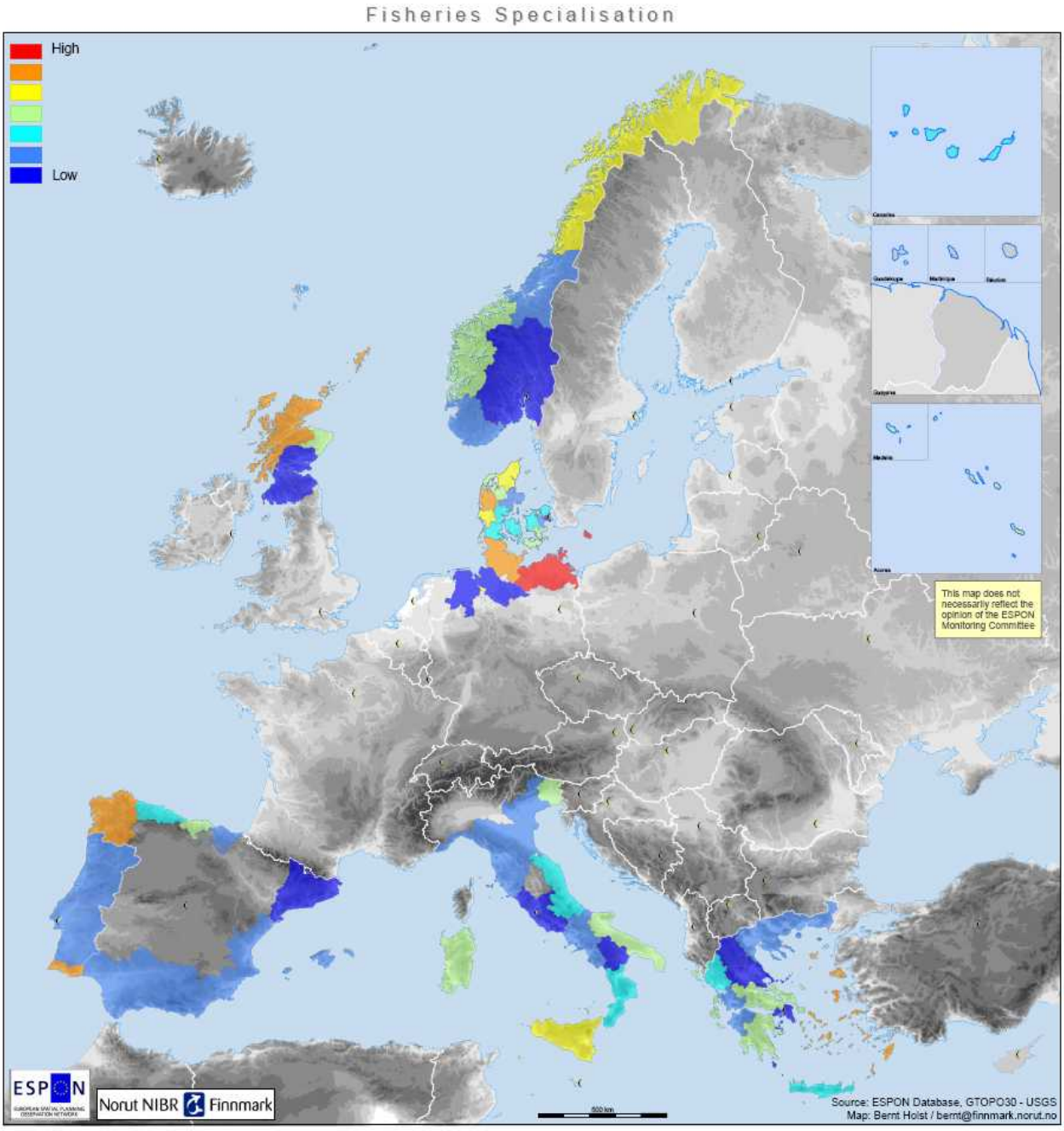
Out of Iceland's eight Nuts 4 regions, all but the Capital region are fisheries specialised. As demonstrated earlier, 7.5 per cent of the Icelandic employees work in the fisheries (2003).

In sum, based on the data WP3 has been able to collect for this section, coastal regions with higher specialisation in fisheries than the national average are:

- Denmark, 40 per cent (six of 15) Nuts 3 regions is fisheries specialised.
- Germany, three fisheries specialised Nuts 2 regions were identified, of five coastal Nuts 2 regions.
- Greece 46 per cent (six of 13) of the Nuts 2 regions was identified as fisheries specialised in 1995, and 54 per cent (seven of 13) in 2000.
- Italy 47 percent (seven of 15) in 1995, 53 per cent (eight of 15) of the Nuts 2 regions was fisheries specialised in 2001.
- Portugal 47 per cent (3 of 7) fisheries specialised Nuts 2 regions was identified.
- Spain 50 per cent in 1995, and 40 per cent (4 of 10) of the Nuts 2 regions were identified in 2001 as fisheries specialised.
- Norway 33 per cent (2 of 6) of the Nuts 2 regions was identified as fisheries specialised.
- Iceland 87.5 per cent (7 of 8) of the Nuts 4 regions was identified as fisheries specialised.
- Scotland 50 per cent (2 of 4) of the Nuts 2 regions was identified as fisheries specialised.

In conclusion, the bulk of the countries have a fisheries specialisation of 40-50 per cent, while the fisheries nation Iceland stands out with 87.5 per cent.

Figure 7.2 Map 7. 2: Fisheries specialisation regions.



7.4.8 The fisheries specialised regions and the territorial fisheries system

In the following, there is an outline of the position of the fisheries specialised regions in the respective countries, see also map 7.2.

Norway has two fisheries specialised regions: NO05 Vestlandet and NO07 Nord-Norge. The fisheries of Vestlandet is characterised by pelagic, offshore fisheries, the fleet fishing operates in the North Sea and the Barents Sea (dominated by trawl and purse seine fleet). There are large private fishing enterprises, and the region benefits from an expanding economy, except for the county Sogn og Fjordane. The largest aquaculture farms in Norway are located in Vestlandet, which is the home of the aquaculture pioneers. The main species of the Nord-Norge fisheries is the cod, and the bulk of the fleet is small-scale and inshore, operating in the Barents Sea and in Lofoten. The gear used is predominantly gill net, long line,

hand line. The region has a history of significant state interventions after 1945, also in ownership of fishing companies. The past decades the region has experienced a declining economy.

*Denmar*k: According to the MegaPesca study, Bornholm is the only fisheries dependent region in Denmark. While Bornholm by far remains the most fisheries specialised region in Denmark according to WP3's fisheries specialisation indexes, five additional Nuts 3 regions are fisheries specialised. The island of Bornholm has 43445 inhabitants (2005). In 1996, there were approximately 400 fishers, while there were about 1000 in the mid-1980s. In 2003, 251 persons were registered as full-time fishers. In other words, there has been a significant decline in opportunities to make a living from the fisheries. The fishery takes place in the Baltic Sea, and is dependent on cod, herring, sprat and salmon. Cod is by far the most important, and the development of the fisheries sector depends on the development of the catch and landings of cod. The other fisheries specialised regions in Denmark are on the west coast of Jutland, from Esbjerg and northwards, and the fleet operates mainly in the North Sea and the Skagerrak sea.

Greece: According to the Megapesca study, there are two fisheries dependent regions: Lexvos and Samos, which together with the island of Chios are part of the Voreio Aigaio region. This is the most fisheries specialised region in Greece. The second most fisheries specialised region in Greece is also in the Eastern Aegean Sea (Notio Aigaio). The rest of the fisheries specialised regions are in the west, probably based on fishing in the

Mediterranean Sea.

Italy: Fisheries specialisation in Italy has a North-East (Adriatic Sea) and South (Mediterranean sea) profile. The most fisheries dependent regions is the island of Sicilia (Nuts 2 region ITA).

Portugal: The most fisheries specialised regions of Portugal include the South coast of Algarve (Nuts 2 region PT15) and the Atlantic islands of the Azores and Madeira. The other Nuts 2 regions in Portugal have specialisation indexes way below the average.

Spain: The most fisheries specialised regions of Spain are found in the North, namely Galicia, Cantabria, Principado de Asturias, and País Vasco. The fisheries are mainly offshore/global. Furthermore, the Canary Islands are fisheries specialised. For the final report for project 2.1.5, we will examine the characteristics of fisheries on the Canary Island.

Iceland: Iceland is the most fisheries specialised country in Europe. Seven of eight regions are fisheries specialised, the South peninsula and the West region most so.

Scotland: The northernmost Nuts 2 region of the Highlands and Islands (Orkney islands and Shetland islands) is the most fisheries dependent region.

7.5 The fisheries policies: The territorial distribution of CFP

7.5.1 The territorial distribution of economic policies measures of CFP (FIFG)

The data on FIFG is from 1995 to 1999, but is now available also for 2000-2004. These data will be analysed in the final report.

The starting point for estimating the territorial distribution of economic policies measures of the CFP (FIFG) at regional level according to the national averages is a comparison of the proportion of economic policies measures in each of the regions and the national average. As with the fisheries specialisation indexes, this solution will enable an identification of regions with low and high indexes in a national context.

We have been able to relate data on FIFG for lower level regions in Germany, Greece, Italy, Norway, Portugal, and Spain. The figures demonstrating the implementation on Nuts 2 regions for FIFG 1994-1999 are presented in IR 2 (Annex 4). The absolute figures demonstrate that particularly the North-Iberia fisheries system is the most important single target territory for the FIFG. In order to clarify the "real"

importance of FIFG we have developed territorial indexes taking into count the position of the fisheries in the respective regions.

7.5.2 FIFG Territorial distribution indexes

FIFG Territorial distribution indexes are calculated on Nuts 2 level. The procedures of the calculations are as follows:

1) Calculation of EURO per year per employee in the fisheries, 1995, country level.
2) Calculation of EURO per year per employee in the fisheries in the regions.
3) Calculate the level of each country's lower level region compared to the country's 100.
4) The regions with an index above 100 are defined as regions with FIFG distribution above the country average.
5) The results are entered into maps. The costal regions are plotted with colours according to the index indicating their share of the FIFG.

7.5.3 FIFG Territorial distribution indexes per regions

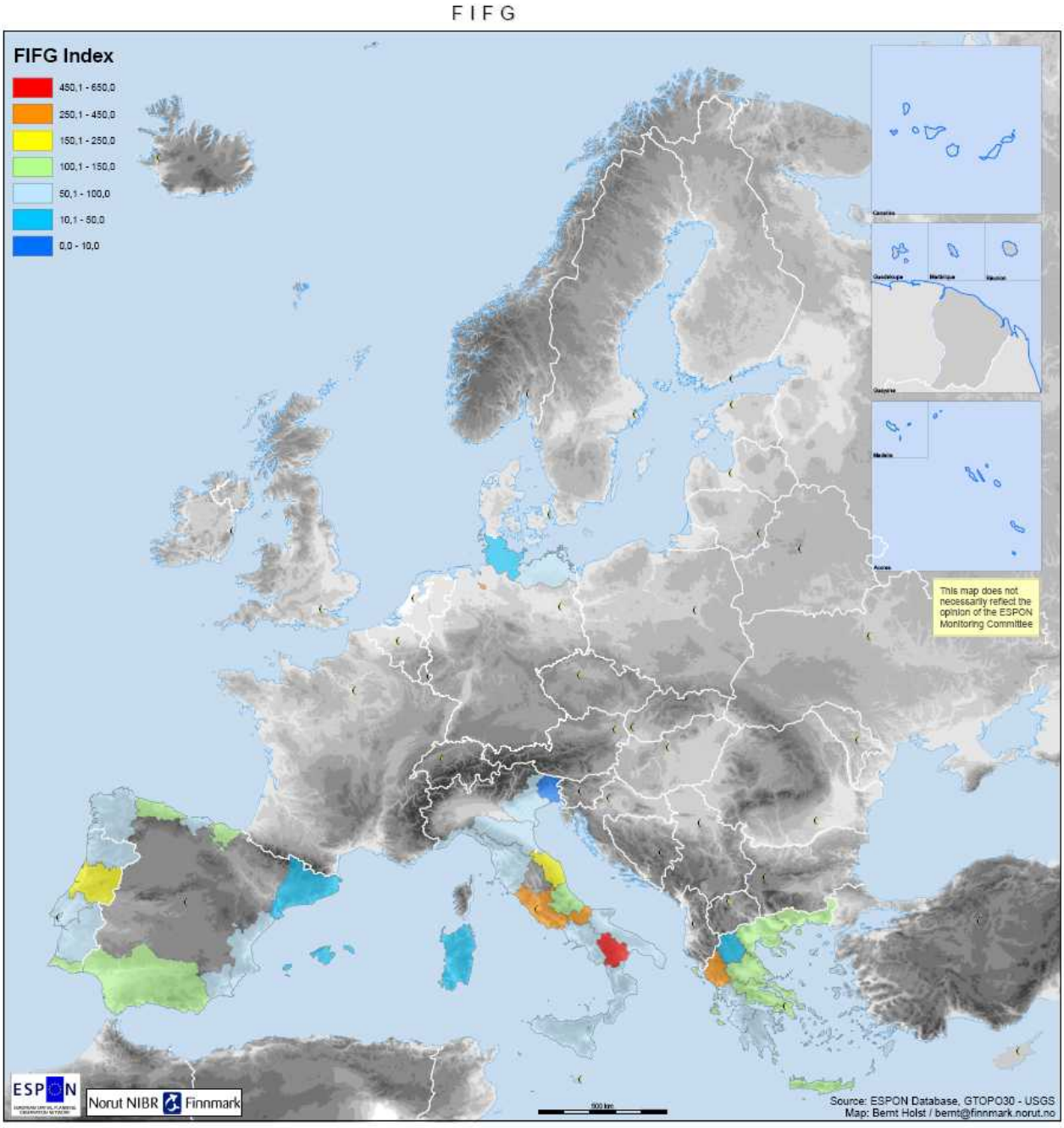
According to the above description, table 7.8 and map 7.3 demonstrates indexes of different regions' territorial distribution. While the FIFG-figures are from 1995-1999, we are forced to relate them to different years for employment, due to the methodological problems described earlier. The year of employment is indicated for each country.

Table 7.8 Indexes of FIFG territorial distribution Nuts 2 level for Germany, Greece, Italy, Portugal, and Spain.

Germany	**1996-1997 average**
DE5 Bremen	340
DE8 Mecklenburg-Vorpommern	94
DEF Schleswig-Holstein	35
Greece	**1996-1997 average**
GR11 Anatoliki Makedonia, Thraki	122
GR12 Kentriki Makedonia	113
GR13 Dytiki Makedonia	12
GR14 Thessalia	126
GR21 Ipeiros	275
GR22 Ionia Nisia	122
GR23 Dytiki Ellada	65
GR24 Sterea Ellada	130
GR25 Peloponnisos	53
GR3 Attiki	107
GR41 Voreio Aigaio	51
GR42 Notio Aigaio	66
GR43 Kriti	119
Italia	**1996-1997 average**
IT13 Liguria	96
IT32 Veneto	77
IT33 Friuli-Venezia Giulia	9
IT4 Emilia-Romagna	56
IT51 Toscana	65
IT53 Marche	173
IT6 Lazio	321
IT71 Abruzzo	149

IT72 Molise	429
IT8 Campania	96
IT91 Puglia	80
IT92 Basilicata	636
IT93 Calabria	54
ITA Sicilia	72
ITB Sardegna	34
Portugal	**2001**
PT11 Norte	73
PT12 Centro	197
PT13 Lisboa e Vale do Tejo	93
PT14 Alentejo	55
PT15 Algarve	116
PT3 Madeira	135
PT2 Azores	:
Spain	**1995**
ES11 Galicia	90
ES12 Principado de Asturias	132
ES13 Cantabria	86
ES21 Pais Vasco	118
ES51 Cataluña	31
ES52 Comunidad de Valenciana	75
ES53 Islas Baleares	28
ES61 Andalucia	126
ES62 Región de Murcia	71
ES7 Canarias	77

Figure 7.3 Map 7. 3: Territorial distribution of FIFG 1995-1999 on national level / Nuts 2 level.



In the final report we endeavour to map the territorial distribution of FIFG 2000-2004.

7.5.4 FIFG and the territorial fisheries systems

In Norway, the indexes demonstrate that NO05 Vestlandet is favoured in terms of economic measures, and NO07 Nord-Norge is discriminated. This is especially evident when held against the fisheries specialisation indexes, which were 204 for NO05 Vestlandet and 487 for NO07 Nord-Norge in 2001.

For Denmark, there is no data available on distribution of FIFG measures on Nuts 3 level.

For Greece, according to the estimated indexes, there is no favouring of the fisheries specialised regions. The east regions Voreio Aigaio and Notio Aigaio receive only 51 and 66 per cent of national average per

capita level, while the fisheries specialisation indexes for the same regions for 1995 were 812 and 569 respectively. The major trend seems to be favouring of not fisheries specialised regions.

For Italy, as for Greece, there is no favouring of fisheries specialised regions. Sicilia 72 (compared to its fisheries specialisation index of 435 in 1995), Friuli-Veneziz Giulia 9 (fisheries specialisation index 337 for 1995), Sardegna 34 (fisheries specialisation index of 254 in 1995), Puglia 80 (fisheries specialisation index of 225 in 1995) of the national per capita average. There is a clear pattern of favouring the central, not fisheries specialised regions as Lazio (320) which has a fisheries specialisation index of only 77 in 1995, and Molise (429), with a fisheries specialisation index of 0 in 1995.

For Portugal, there is favouring of the fisheries specialised islands (the Azores 135, and Madeira 116). However the most important target region is the Centro region (196), which is not a fisheries specialised region.

For Spain, we do not detect a specific pattern. Two of the northern regions are favoured: Principado de Asturias with an index of 132 and a fisheries specialisation index of 112 in 1995, and Pais Vasco with a 118 and a fisheries specialisation index of 115 in 1995. The other two regions are not favoured; Galicia has an index of 80, held against its fisheries specialisation index of 586 in 1995, and Cantabria with an index of 86, and a fisheries specialisation index of 333. The Canary Islands and its type of fishing is definitively not favoured. As opposed to Italy and Portugal, there is not favouring of central areas.

In conclusion, most of the fisheries specialised regions are discriminated, or at least not favoured, in the distribution of the FIFG. And vice versa: Central areas are favoured, which is probably a result of the national implementation processes. In other words, the CFP demonstrates a higher of level of support per employed in economies where labour has higher alternative value than in the fisheries specialised regions.

7.5.5 The territorial dimension of the fisheries conservation policies of CFP

As one of the two major parts of CFP the territorial distribution of variables as fish quotas, harvesting, landings and capacities to put into catching is a central part of a territorial impact analysis of CFP. IR 2 demonstrated however the lack of data on regional levels on these topics. The mapping in IR3 organised under WP 2 is also based on distribution between Nuts O regions (the respective countries). The impression is however that these types of data are available for Nuts 2 regions in some very few countries. We have received data only from Italy and Greece. These data demonstrate, among other things, that some regions in a very dramatic way are targeted by the declining harvesting opportunities; and how specific regions are targeted vary very much. The infrastructure for carrying out these types of analyses has to be developed as part of TIA, but will no be completed through this project.

7.6 Direct impacts on social cohesion: Changes in fisheries employment after 1995

Table 7.9 and map 7.4 show the changes in fisheries employment in same ESPON-countries since 1995.

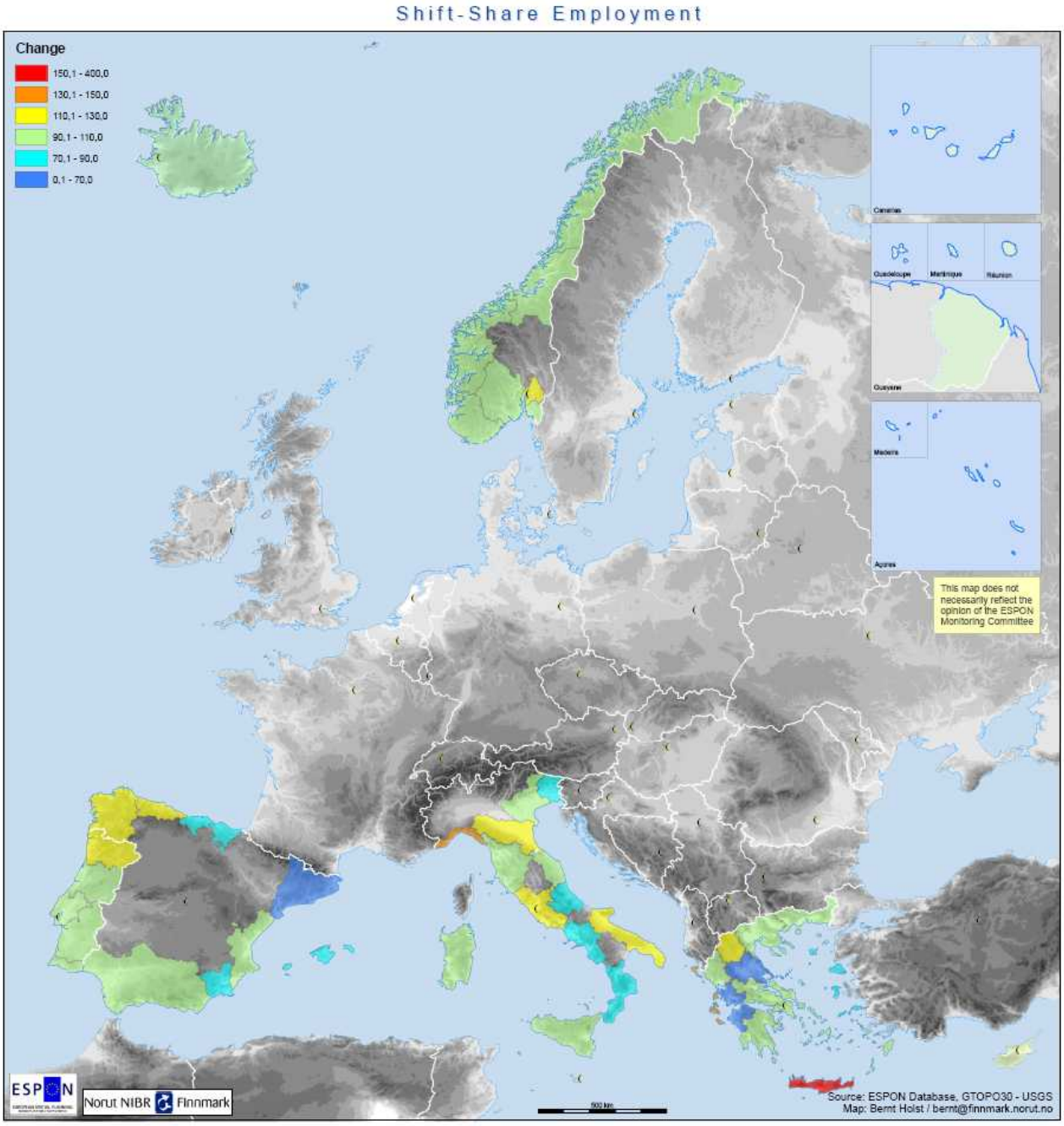
Table 7.9 Employment change in absolute figures for Greece, Italy, Norway, Portugal and Spain.

Country and Nuts 2 levels	**Years**		
Greece	**1995**	**2000**	**Absolute change**
GR11 Anatoliki Makedonia, Thraki	1700	1300	-400
GR12 Kentriki Makedonia	3700	2700	-1000
GR13 Dytiki Makedonia	100	200	100
GR14 Thessalia	900	400	-500
GR21 Ipeiros	800	700	-100
GR22 Ionia Nisia	1200	1400	200

GR23 Dytiki Ellada	2100	1100	-1000
GR24 Sterea Ellada	3600	2800	-800
GR25 Peloponnisos	3400	2700	-700
GR3 Attiki	3600	2800	-800
GR41 Voreio Aigaio	3400	2100	-1300
GR42 Notio Aigaio	4300	3800	-500
GR43 Kriti	500	1600	1100
Italy	**1995**	**2002**	**Absolute change**
IT13 Liguria	400	500	100
IT32 Veneto	2500	2200	-300
IT33 Friuli-Venezia Giulia	3000	2200	-800
IT4 Emilia-Romagna	3100	3300	200
IT51 Toscana	1700	1600	-100
IT53 Marche	1400	1400	0
IT6 Lazio	1000	1100	100
IT71 Abruzzo	2000	1300	-700
IT72 Molise	0	0	0
IT8 Campania	2200	1800	-100
IT91 Puglia	5000	5200	200
IT92 Basilicata	100	0	-100
IT93 Calabria	2100	1600	-500
ITA Sicilia	10900	10400	-500
ITB Sardegna	2400	2000	-400
Norway	**1997**	**2001**	**Absolute change**
NO01 Oslo og Akershus	93	99	6
NO02 Hedmark og Oppland	:	:	
NO03 Sør-Østlandet	524	461	-63
NO04 Agder og Rogaland	1703	1523	-180
NO05 Vestlandet	7868	6661	-1206
NO06 Trøndelag	1268	976	-292
NO07 Nord-Norge	11459	9178	-2281
Portugal	**1991**	**2001**	**Absolute change**
PT11 Norte	5993	3946	-2047
PT12 Centro	4063	2289	-1774
PT13 Lisboa e Vale do Tejo	7017	3967	-3050
PT14 Alentejo	982	575	-407
PT15 Algarve	5223	3060	-2163
PT3 Madeira	1425	819	-606
PT2 Azores	2137	1392	-745
Spain	**1995**	**2002**	**Absolute change**
ES11 Galicia	27900	29400	1500
ES12 Principado de Asturias	1800	1800	0
ES13 Cantabria	2700	2100	-600
ES21 Pais Vasco	4000	2700	-1300
ES51 Cataluña	5400	3400	-2000
ES52 Comunidad de Valenciana	4400	3800	-600

ES53 Islas Baleares	1000	700	-300
ES61 Andalucia	8900	7900	-1000
ES62 Región de Murcia	1200	900	-300
ES7 Canarias	4900	3400	-1500

Figure 7.4 Map 7. 4: Shift-share fisheries employment; changes according to national average changes in fisheries (Nuts 2 level)



Fisheries employment changes in the coastal regions in more detail:

Greece: 13 coastal Nuts 2 regions, six of them were fisheries specialised in 1995. Three regions have increased their fisheries employment in absolute figures: GR13 Dytiki Makedonia, GR22 Ionia Nisia, and GR43 Kriti, only Ionia Nisia was fisheries specialised in 1995. In Kriti and Dytiki Makedonia the fisheries had a very modest position in 1995 (index of 31 and 13, respectively). The growth in Kriti fisheries is so strong that the region became a specialised fisheries region in 2000 (index of 123). Both of the growth regions are favoured in the distribution of the FIFG 1995-1999. The most fisheries dependent region of Greece (GR410Voreio Aigaio) has a strong drop in fisheries employment (from 3400 in 1995 to 211 in 2000), and in 2000 GR42 Notio Aigaio has become the most fisheries specialised region.

Italy: 15 coastal Nuts 2 regions, seven of them were fisheries specialised in 1995. Four regions have an absolute increase in fisheries employment from 1995 to 2002 (IT13 Liguria, IT4 Emilia-Romagna, IT6 Laxio and IT91 Puglia), and seven regions have an increase compared with the national average; the four already mentioned, and IT51 Toscana, IT53 Marche, and ITA Sicilia. Only one of the fisheries specialised regions has increased the fisheries employment (the south region Puglia). The most dramatic increasing is in Liguria in the north, which has a very low specialisation in fisheries (index 35 in 1995). The most fisheries specialised region (Sicilia with an index of 431 in 1995) has modest absolute decreasing, but a better development than the national average. Lazio is favoured in the FIFG-distribution and is a winner in the growth processes. However it has still a very low representation of fisheries (35 in 2002, 29 in 1995)

Norway: Six coastal Nuts 2 regions, of which two are fisheries specialised. All regions but NO01 Oslo og Akershus have had an absolute decline of fisheries employment; NO01 Oslo og Akershus has had an increase from 93 to 99 from 1997 to 2001. NO07 Nord-Norge has had a decline of 2281 fishers employed, while NO05 has had a decrease of 1206. However, when looking at the indexes, the picture is different, then Vestlandet has had a growth compared to the decrease on national level (index 102). Vestlandet is also the winner region in the economic support distribution.

Portugal: Seven coastal regions, three of them are fisheries specialised in 2001, of which two have a high fisheries specialisation(Algarve and Azores with 2001 indexes of 593 and 431, respectively). Portugal has an enormous decrease in the fisheries employment after 1995 (40%). Thus all regions have an employment decline, but relative to the national average two regions (Norte and the Azores) have an employment increase. Azores (and Centro) is also favoured in FIFG-distribution.

Spain: Ten coastal Nuts 2 regions, of which five were fisheries specialised in 1995. One of the regions has increased the fisheries employment (Galicia). Galicia and Principado de Asturias are the only two regions with increasing indexes compared to the national average. Both of them are part of the northern fisheries system of Spain. The rest of the regions have a strong employment decline, this development also include the fisheries on the Canary Islands. Principado de Asturias is also the "winner" in Spain for the FIFG.

From our data material, it can be concluded that:

- It looks like the level FIFG targeted the respective regions are more important for the employment development in the regions than level of fisheries specialisation.
- Therefore positive employment development is more frequent in regions that are not fisheries specialised than in regions with high representation of fisheries.
- The importance of separating between factors as fisheries structures in the respective regions, position in the FIFG-distribution and level of decreasing of fish quotas and landings.

7.7 Impacts on fisheries regions' position in the European territorial system

7.7.1 Population changes in fisheries specialised regions (1995), coastal regions and all regions (Nuts 2), ESPON space (e.g. total number of population)

Table 7.10 Population changes in coastal regions, in per cent.

Germany Nuts 2 1995-1999		
DE5	Bremen	-2,10
DE8	Mecklenburg-Vorpommern	-1,80
DE93	Lüneburg	3,90
DE94	Weser-Ems	2,80
DEF	Schleswig-Holstein	2,10

Denmark population change total 1995-1999		**1,80**
Denmark Nuts 3 (source 022_Pop-change_Natural-Migrat_96-99) 1996-1999		
DK001	København og Frederiksberg kommuner	1,02
DK002	Københavns amt	0,29
DK003	Frederiksborg amt	0,91
DK004	Roskilde amt	0,70
DK005	Vestsjællands amt	0,50
DK006	Storstrøms amt	0,21
DK007	Bornholms regionskommune	-0,45
DK008	Fyns amt	0,17
DK009	Sønderjyllands amt	0,09
DK00A	Ribe amt	0,20
DK00B	Vejle amt	0,66
DK00C	Ringkøbing amt	0,17
DK00D	Århus amt	0,60
DK00E	Viborg amt	0,22
DK00F	Nordjyllands amt	0,24
Estonia population change total 1995-1999		
EE	Eesti	-1,00
Greece population change total 1995-1999		
Greece Nuts 2 1995-1999		
GR11	Anatoliki Makedonia, Thraki	0,20
GR12	Kentriki Makedonia	2,10
GR13	Dytiki Makedonia	0,30
GR14	Thessalia	0,10
GR21	Ipeiros	2,70
GR22	Ionia Nisia	2,50
GR23	Dytiki Ellada	1,40
GR24	Sterea Ellada	1,40
GR25	Peloponnisos	1,20
GR3	Attiki	-0,40
GR41	Voreio Aigaio	-1,10
GR42	Notio Aigaio	3,00
GR43	Kriti	1,80
Italy Nuts 2 1995-1999		
IT13	Liguria	-1,90
IT32	Veneto	1,60
IT33	Friuli-Venezia Giulia	-0,50
IT4	Emilia-Romagna	1,20
IT51	Toscana	0,20
IT53	Marche	1,10
IT6	Lazio	1,20
IT71	Abruzzo	0,70
IT72	Molise	-0,90
IT8	Campania	0,60
IT91	Puglia	0,20
IT92	Basilicata	-0,30

IT93	Calabria	-0,90
ITA	Sicilia	0,10
ITB	Sardegna	-0,40

Norway Nuts 2 1995-1999

NO01	Oslo og Akershus	5,50
NO03	Sør-Østlandet	2,90
NO04	Agder og Rogaland	3,30
NO05	Vestlandet	1,60
NO06	Trøndelag	1,00
NO07	Nord-Norge	-1,60

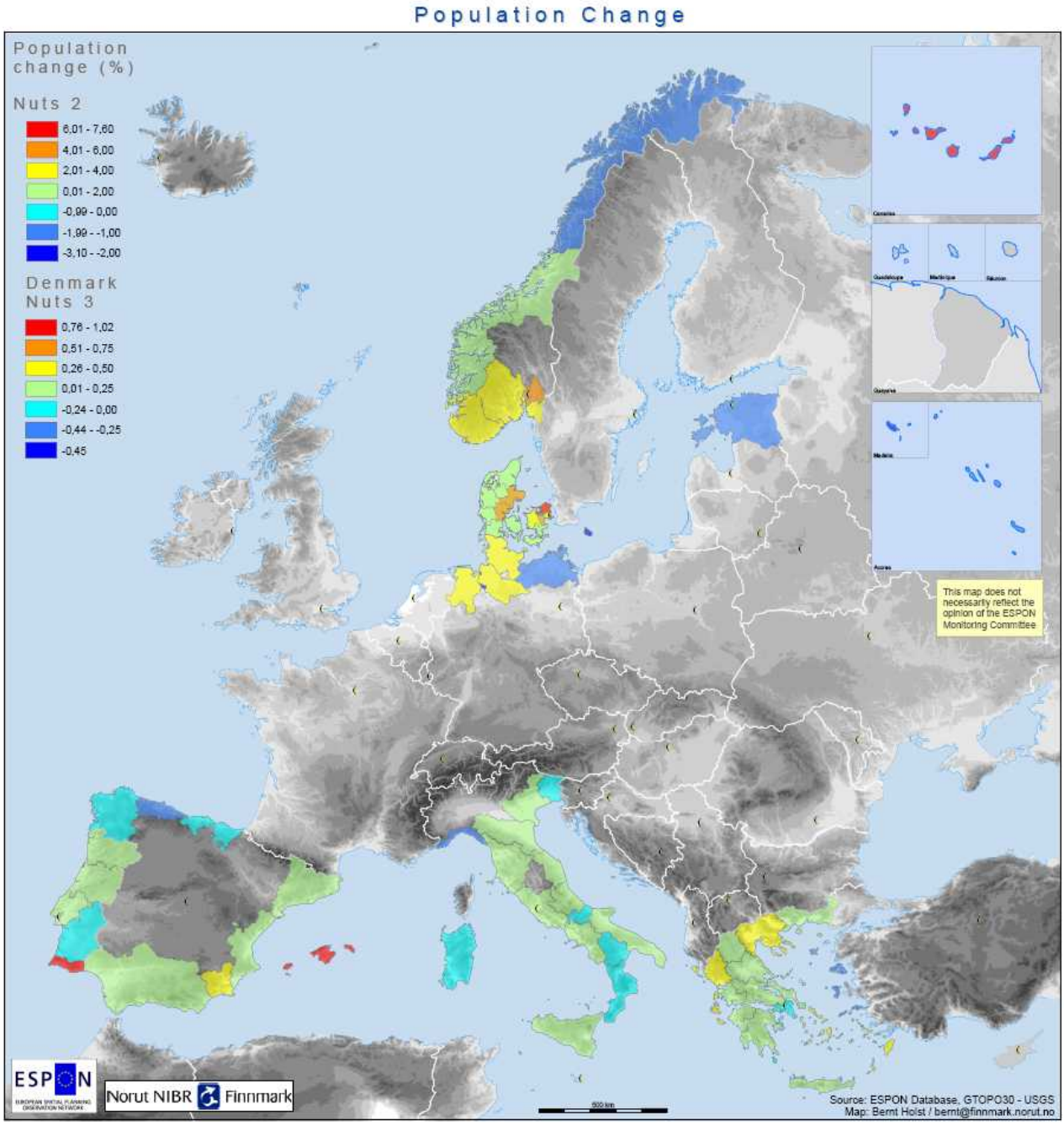
Portugal Nuts 2 1995-1999

PT11	Norte	1,30
PT12	Centro	1,90
PT13	Lisboa e Vale do Tejo	1,10
PT14	Alentejo	-0,40
PT15	Algarve	7,60
PT2	Região Autónoma dos Açores	-1,20
PT3	Região Autónoma da Madeira	-3,10

Spain Nuts 2 1995-1999

ES11	Galicia	-0,70
ES12	Principado de Asturias	-1,90
ES13	Cantabria	0,00
ES21	Pais Vasco	-0,70
ES51	Cataluña	0,90
ES52	Comunidad de Valenciana	2,00
ES53	Illes Ealears	6,10
ES61	Andalucia	1,40
ES62	Región de Murcia	3,10
ES7	Canarias	6,10

Figure 7.5 Map7. 5: Population changes in selected countries with different degrees of fisheries specialised regions.



Denmark: From 1995 to 1999, Denmark had a population growth of 1.80, and in the period 1996-1999 the coastal regions experienced a population change in the range from –0.45 to 1.02 per cent. Bornholm as the most fisheries specialised region with an index of 754 in 2001, had a population decrease of 0.45 per cent. The rest of fisheries specialised regions have an increase of about 0,20. Six of the coastal regions have a much higher increase, only one has a lower.

Conclusion: Danish fisheries specialised regions have a more negative population development than most of the other coastal regions.

Greece: There is a marked difference in population change among the regions, and also among fisheries specialised regions. The data material shows that the average population development in the fisheries specialised regions are more positive than in the other coastal regions.

Italy: As many as six coastal Nuts 2 regions in Italy experienced a population decrease from 1995 to 1999, and four of them are fisheries specialised. Thus it can look like the fisheries specialised regions are more vulnerable for population declining processes than the other coast regions.

Norway has a very uneven population development among the regions (from a 5.50 per cent increase in Oslo/Akershus to -1.60 in Nord Norge). Vestlandet has a population growth of 1.60, which is far below the other coast regions in the south.

Portugal: A very strange situation where the differences between particularly the fisheries specialised regions are significant. While the population growth in the Algarve regions is over seven per cent, the population decrease in Madeira is more than three per cent. The third fisheries specialised region (Azores) has also population decline. All of the others (except for Alentejo) have population growth. If we suppose that the growth in Algarve is generated by the tourism, the conclusion is that the population decreasing in Portugal is in fisheries dependent regions.

Spain: It looks like the picture is very clear: The only regions with population declining is the fisheries specialised regions in the north.

Conclusions:

- The fisheries specialised regions have more frequent than other coastal regions population declining processes.
- Therefore these regions have less favourable positions in the national territorial systems since 1995 (measured by population changes which is a "good" indicator in the north of Europe, but we are not sure in the south).

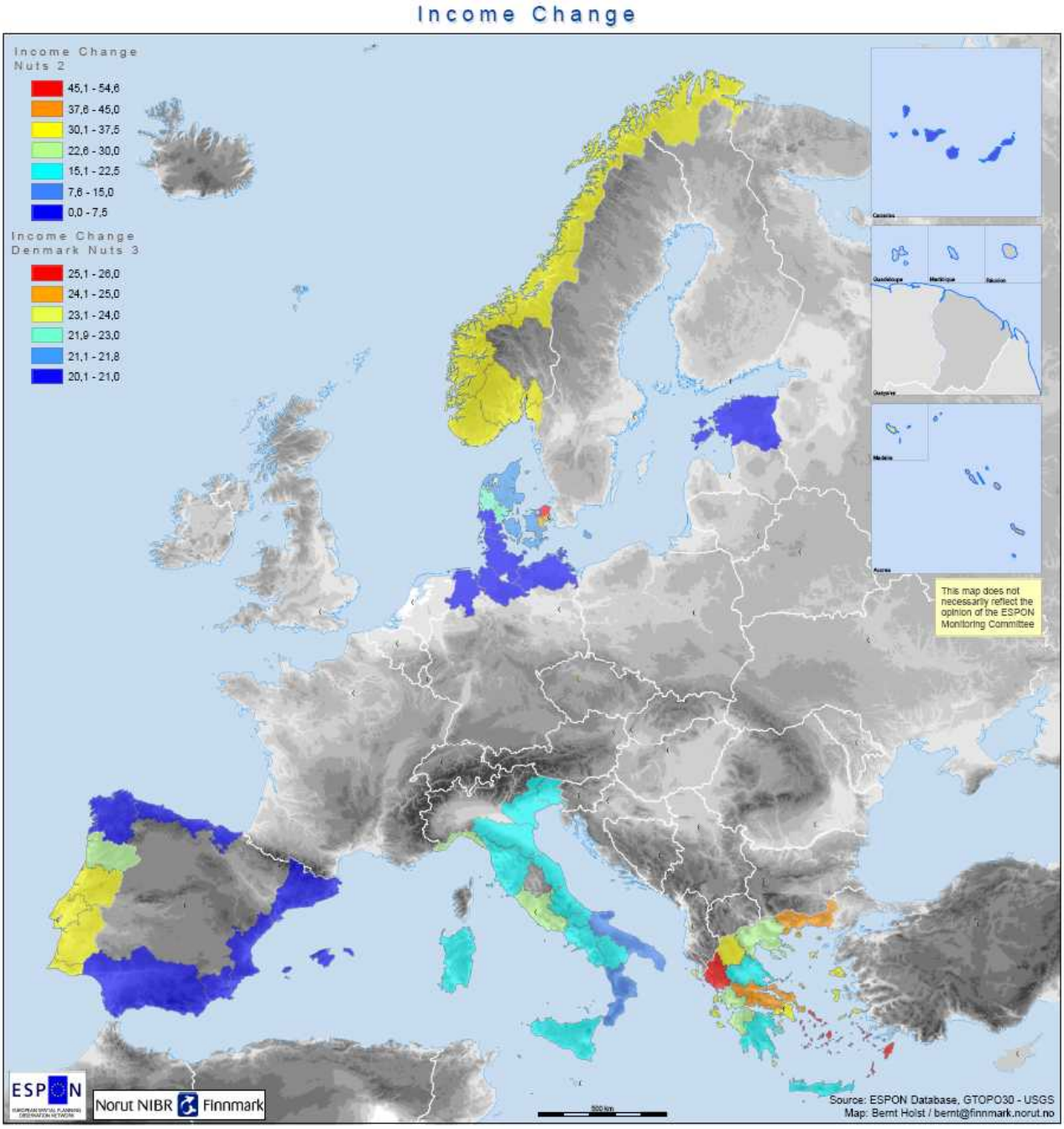
7.8 Changes in average incomes, Fisheries regions, coastal regions, and other regions

Table 7.11 Income changes, per cent, for Denmark (Nuts 3), Greece, Italy, Norway and Portual

Denmark	**1996-200**
DK001 København og Fredriksberg kommune	25
DK002 Københavns amt	25
DK003 Frederiksborg amt	26
DK004 Roskilde	25
DK005 Vestsjællands amt	21
DK006 Storstrøms amt	22
DK007 Bornholms regionskommune	21
DK008 Fyns amt	22
DK009 Sønderjyllands amt	20
DK00A Ribe amt	21
DK00B Vejle amt	23
DK00C Ringkøbing amt	23
DK00D Århus amt	22
DK00E Viborg amt	21
DK00F Nordjyllands amt	21
Greece	**1995-1999**
GR11 Anatoliki Makedonia, Thraki	43
GR12 Kentriki Makedonia	24
GR13 Dytiki Makedonia	34
GR14 Thessalia	21
GR21 Ipeiros	55

GR22 Ionia Nisia	35
GR23 Dytiki Ellada	26
GR24 Sterea Ellada	44
GR25 Peloponnisos	20
GR3 Attiki	33
GR41 Voreio Aigaio	30
GR42 Notio Aigaio	54
GR43 Kriti	20
Italia	**1995-1999**
IT13 Liguria	23
IT32 Veneto	20
IT33 Friuli-Venezia Giulia	16
IT4 Emilia-Romagna	22
IT51 Toscana	17
IT53 Marche	19
IT6 Lazio	26
IT71 Abruzzo	18
IT72 Molise	17
IT8 Campania	21
IT91 Puglia	14
IT92 Basilicata	18
IT93 Calabria	13
ITA Sicilia	17
ITB Sardegna	22
Norway	**1998-2002**
NO01 Oslo og Akershus	33
NO03 Sør-Østlandet	36
NO04 Agder og Rogaland	33
NO05 Vestlandet	34
NO06 Trøndelag	33
NO07 Nord-Norge	32
Portugal	**1995-2001**
PT11 Norte	25
PT12 Centro	32
PT13 Lisboa e Vale do Tejo	37
PT14 Alentejo	32
PT15 Algarve	35
PT3 Madeira	43
PT2 Azores	30

Figure 7.6 Map 7. 6: Income changes.



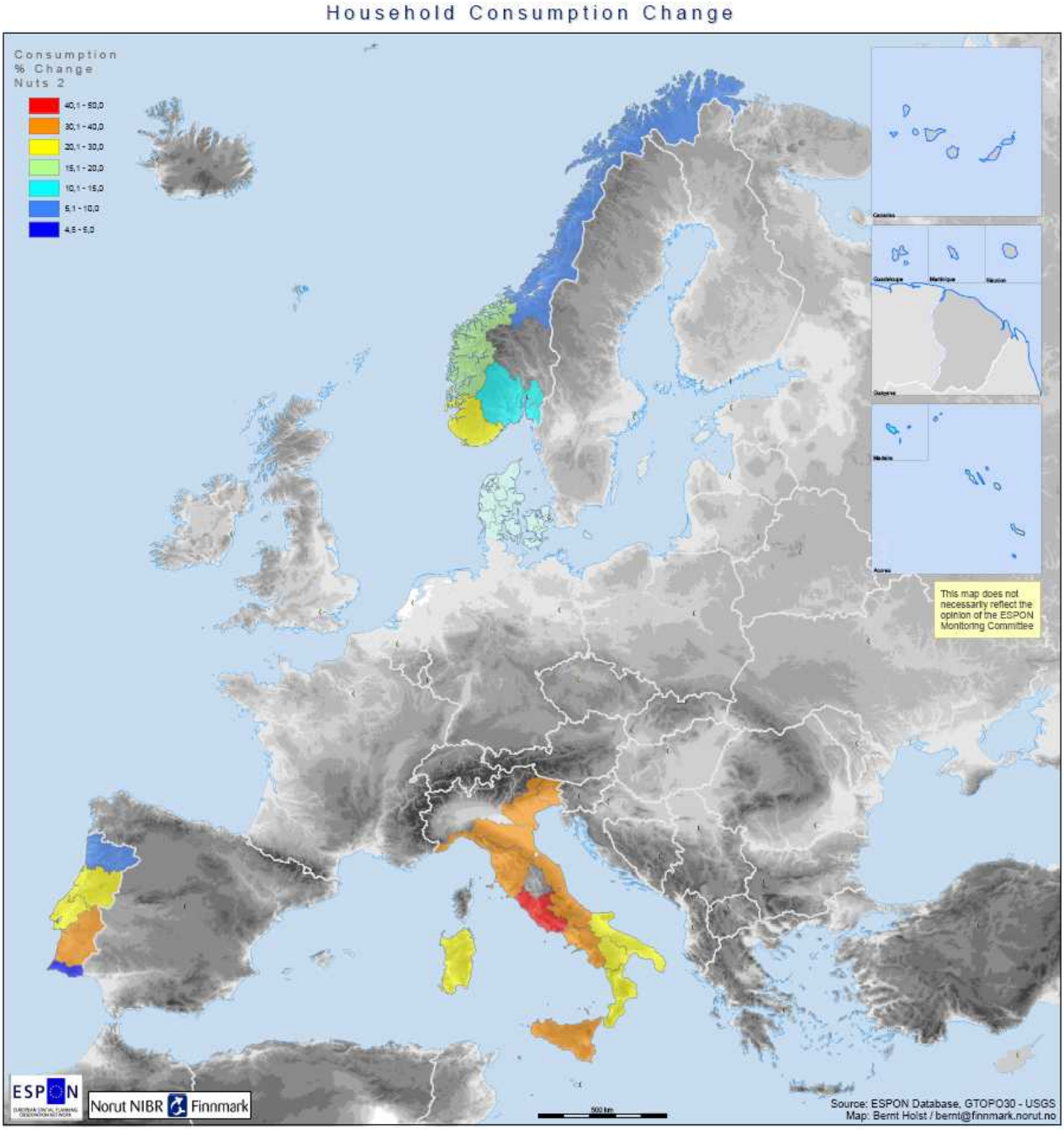
Greece: Very strong differences in income growth between the coastal regions, from 19 % on Kriti to over 54 % in Ipeirios and Notio Aigio. This is also the situation among the fisheries specialised regions, very strong differences between the two most fisheries specialised regions (Voreio Aigaio +30 % and Notio Aigaio + 54%).

Italy: The incomes development differences among the regions are very small. The impression is however that the income growth in the fisheries specialised regions (except for Sardegna) are lower than in most of the coastal regions.

Norway: As in Italy there are small income development differences among the coastal regions. But Northern Norway has the lowest incomes growth.

Household consumption

Figure 7.7 Map 7. 7: Household consumption



Italy: Lowest level of growth in the fisheries specialised regions of the south (Puglia, Calabria and Sardegna)

Norway: Very strong development differences, with a minor change in Northern Norway compared with the southern regions.

Portugal: As in Norway very strong differences among the regions, but systematic according to the positions of the fisheries specialised regions.

Conclusion:

- It is not clarified if income development analyses are of big importance for territorial impact analyses of CFP.

7.9 Changes of the territorial system of fisheries?

Data are only available for Greece (2000). Italy (2001), Norway (2001) and Spain 2001

Greece: 7 fisheries specialised regions in 2001, 6 in 1995 – 2 are newcomers (Ipeiros and Kriti), Dytiki Ellada is removed. The newcomers received a high level of FIFG 1995-1999 (indexes of 275 and 119), Dytiki Ellada only 65 (of the nation average level)

Italy: 8 fisheries specialised regions in 2001, 7 in 1995. One new, Emilia Romagna.

Norway: No changes, Nord-Norge and Vestlandet are the fisheries specialised regions in 2001, and the indexes have no dramatic changes.

Spain: 4 fisheries specialised regions in 2001, 5 in 1995. One removed (Pais Vasco). The most important development in Spain is the strengthening of the position of Galicia (from an index of 586 in 1995 to 781 in 2001). Thereby Galicia is, according to our indexes, the most fisheries specialised Nuts 2 region of Europe.

7.10 Revisiting the cohesion hypotheses

As mentioned in the beginning of the analysis, IR 1 specified several hypotheses on social cohesion impacts of CFP. Below we discuss how the analysis can contribute to developing of these hypotheses.

1) The position of fisheries, fisheries policies and fisheries regions vary between the European nations and among the regions inside the countries.

The typologies of fisheries regions confirms the variations of the position of the fisheries in the European regions as the specialisation indexes varies from 2 to over 800 (compared with national average of 100). The figures also demonstrate the differences regarding the position of the fisheries in the European countries, and identify national and transnational fisheries specialised regions with wide extension. Most important are East regions in the Aegean and Mediterranean, north of the Iberia peninsula, North of Europe (Denmark, UK) and the Northern areas. These areas ought to be central in territorial analyses of CFP and European fisheries.

2) While the principal objective of the CFP is to develop the fisheries and protect the fisheries resources, the CFP can have side effects as declining fisheries employment, increasing unemployment, decreasing average incomes, population decreasing due to increasing out migrations and decreasing immigrations, altered age composition.

The hypotheses are probably confirmed in the very restricted analyses we have, due to lack of data, been able to carry out. We can confirm declining direct impacts of CFP (on fisheries employment), and the population figures are more negative in fisheries regions than in other coastal regions. The average incomes in all regions have increased much, but more in not fisheries specialised regions than in others. Analyses of migration pattern and age composition in fisheries have not been possible to carry out due to the data situation.

3) The fisheries specialised regions, mainly in remote areas, have more negative development in population, employment and income than the average European regions.

In order to carry out such analyses we need to include fisheries data and typologies into typologies covering the EU territorial system, mainly the polycentric system. Unfortunately it has not been possible to do this work in IR 3. This could be done in our framework by using Nuts 2 data, however in order to carry out valid analyses data on lower level is needed and this will need more effort in collecting news data.

4) The incidence of the CFP on regional level is not consistent with the social and economic cohesion objectives of EU.

This hypothesis is confirmed by analyses of FIFG data 1994-1999, in the final report we will also include analyses by 2000-2004. The biggest analyses and also political challenge is however to include fisheries harvesting (quotas, landings) in these types of evaluations, these will need a big building data recording infrastructure.

7.11 Territorial Impact Assessment (TIA) and the assessment of CFP

Due to lack of relevant data we have carried this TIA as an "experiment" which major result is to make inputs to a recipe for how to use TIA as a tool in CFP assessment. Thereby the main objective will be to specify the preconditions that have to be available for assessing impacts on CFP for the European territorial system. In spite of the most of the preconditions is not available in most of the European countries today, we will present the results of the analyses in order to elucidate what types of knowledge an impact analysis can bring.

General experiences

1) CFP is a small and "narrow" policy area probably having *significant impacts on a very low territorial level*. The example studies as the Norwegian analyses demonstrate that the fisheries policies are only present in only five per cent of the coast municipalities.

2) There is a dramatic *lack of data* on territorial differentiation in the policy implementation. This experience includes data on the territorial distribution of the fisheries policies measures and socio-economic data of relevance in the regions. The previous consists of key data sources as employment status in the fisheries and its sectors, and relevant time serial data. We therefore experience enormous challenges at the moment in order to be able to realise the TIA in a traditional "unorganised" policy area as the fisheries.

General experiences from using fisheries data on Nuts 2 level from specific European countries

1) In developing TIA for the CFP and the fisheries it is important to develop fisheries regions typologies that not marginalise the territorial importance of the European fisheries. We have demonstrated that identifying typologies by taking the nation level as a reference can be a possibility. In any case it is important to extend the "fisheries dependence perspective" which often cover the wider territorial position of European fisheries.

2) Our examples, using the national level as a reference, demonstrate that the fisheries have a relative important position in about 30-50 per cent of European regions with coast lines. That can be one path leading to the regions that can be focused in TIA of CFP.

3) TIA of CFP should also show attention to that the European fisheries probably can be divided into several different territorial fisheries systems including also transnational area, and that TIA should be aware of including all of them. We can identify at least: (i) An East Aegean and East Mediterranean (probably small scale), embedded on the Greek and Italian islands; (ii) The global North Iberian fisheries; (iii) The North Sea/Atlantic fisheries of Denmark and Scotland and (iv) The Barents Sea fisheries of mainly Northern Norway.

4) The regions related with the fisheries in 3) have a stable position as fisheries regions in the European territorial system, but the development inside the regions vary.

5) In general the socio-economic development in the fisheries specialised regions are more negative than the changes in most of the other European coastal regions.

6) The fisheries regions were not favoured in the distribution of economic support in the fisheries before 2000. In the final report we will be able to confirm if the distribution follows the same

pattern after 2000. In contrast growth regions, often surrounding the capitals, became the relative winners.

7) And finally: In order to build a systematic data registration system for TIA for CFP is will be of extremely importance to:

- Be able to register harvesting figures in different fisheries (quotas, landings) and relate them with the specific territorial fisheries systems.
- Be able to register the territorial distribution for FIFG on lower level than nuts 2.
- Be able to register changes in the socio-economic systems of the fisheries in more detail than today.
- Be able to correlate the socio-economic development in the fisheries regions in a systematic way to the development of the other territorial systems in Europe. One tool, that probably can be fulfilled today, is to correlate data on fisheries, polycentrism (availability) and economic modernisation (the emergence of the knowledge economy).

Specific experiences from CFP in Nuts 2 regions

Scoping

1) The importance of *specifying the policy interventions*. In the CFP they are of two major and very different types. One is the *economic incentives* (FIFG) and their impacts (giving *growth* in fisheries, in the regional economy etc …); another is the effort regulation or the *conservation policies* (giving *declining* processes). The experiences here are that information about the territorial distribution of the interventions are insufficient, the target areas are very different according to geographical areas and their extent and the possible impacts can be of very different types.

2) Hypothesis on the *cause-effect-relations* – In analysing policies targeting traditional outlying regions we are used to look at how they compensate for or turn around declining processes. In the case of analysing coast regions this starting point may need a revision. Probably the fisheries policies rather go into growth processes than declining processes, but may be not in the most fisheries specialised regions A challenge is to put this experience into the TIA design.

3) The *spatial level of observation and analysis* – The major experience so far is the possible mismatch between the extent and the dimensions of the of the fisheries and fisheries policies and the regional level of observations. From our point of view it is an overwhelming danger that the policies interventions will "disappear" in most of the coast regions.

4) Reference to past and future – So far our experience is that past analyses in fisheries can contribute to future predictions. One of the results of our analyses is the stable positions of the fisheries specialised regions in the respective nations as well as in the European space.

Analysing

1) Interventions and effects measures – Data on demography, employment specific data on fisheries, socio-economic indicators, relation area/population, either time series or for one year only. It looks like there is no system specifying when to register data an how to do it.

2) The data referring to NUTS 2 and 3-levels are useful. However, in the ESPON database there is a shortage of such data, also on Nuts 2 level. The database has been expanded and supplemented as part of IR 3, but still probably a minor of the European countries have a system for collecting relevant data.

3) Quantitative / qualitative appraisals – Most of the indicators are of quantitative character. Qualitative appraisals are more easily undertaken by example studies, but there is still need for developing relevant design for example studies in CFP assessment.

4) Technique of analysis – The analysis so far is performed in terms of compiling data from different databases, enlisting the data in tables and analysing them according to the TOR / hypotheses.

Assessing

1) *Polycentric spatial development*:
- A danger in the analyses is that the CFP is too marginal, and have no meaning according to the changing of the polycentric spatial development on European, transnational and national level.
- The mapping of fisheries specialised regions on higher level (Nuts 2) demonstrates the importance of analysing huge dominating territorial fisheries system in Europe as transnational systems.
- There is a general need for correlating fisheries region typologies and polycentric typologies.

2) *Cohesion:*
- It looks like the TIA on fisheries mainly will give results on economic and social cohesion.
- According to social cohesion (the subject of wp 3) it looks like the fisheries and CFP contribute to enlarge territorial social cohesion.

3) *Applied meaning of "spatial/territorial"*
- Fisheries and CFP are included in general and quite strong cohesion processes in coast areas, and therefore may by contribute to increasing differences between coast regions and between fisheries coast regions more central territories
- Significant socio-economic impacts of CFP are found on very low territorial levels.

7.12 Summary

The work package 3 has carried out 2 types of analyses in the frame of IR 3. One is the substantial analysis related with hypothesis on social impacts developed in IR 1 and 2. Another is the investigation of the opportunities, mainly caused by the availability for obtaining data, for carrying out territorial impact analyses.

The more specific content of the chapter is:

- An examination of the availability of relevant data in the ESPON-databases as well as in national sources. For the moment bases on both of these levels lack a lot of data and we have not identified data registering systems which for the moment will make such data available.
- An attempt on revising and building new ideas of the territorial dimensions of European fisheries which can substitute or complete the traditional fisheries dependency perspective.
- An attempt to analyse the territorial distribution of the CFP policies measures (FIFG and the fisheries resource regulations)
- An analysis of the direct impacts on fisheries from CFP, analysed by using data on fisheries employment.
- Analysis of socioeconomic changes in European fisheries specialised regions compared with the development in other European coast regions. In these analyses we have used three variables: Population changes, income changes and household consumption changes.

All analyses are based on mapping indexes developed in the analyses. The chapter is discussing the experiences from the analyses regarding using TIA in CFP-analyses, giving three types of policies recommendations based on the conclusions from the mapping as well as the example studies.

7.13 Conclusion

The chapter is written as an examination of the opportunity to carry out social cohesion impacts analyses of the Common fisheries policy in the framework of territorial impact analysis. The most important part

of the examination has been concerned about building analytical bridges between: the territorial dimensions and systems of European fisheries; the two major types of CFP (the specific economic measures (FIFG) and the "conservation" policies); the direct impacts of the CFP on the socio-economic systems of the fisheries; and the impacts on the position of the fisheries regions in the general European territorial systems. The main conclusion is that the attempt presented in the work package is a way that is possible to use in order to carry out relevant territorial impact studies of CFP. However there are several conditions that are not established yet, most of them related with building of valid systems for data registration, collecting and analyses. Moreover there are also other more analytical challenges as:

- The need for building a valid idea about the territorial dimension of the European fisheries. From our point of view there is contraction between the enormous dimension of European fisheries and its minor territorial impacts when measuring those by using traditional fisheries dependencies indicators. We have tried out a solution by using Nuts 2 regions, and from our point of view we have identified relevant territorial fisheries systems by these analyses. However we think that that establishing of more permanent analytical systems of TIA in CFP should be able to use data on Nuts 3 level.
- The need for establishing a system for territorial distribution analyses of FIFG as well as the regulation policies which integrate these dimensions to the territorial systems of the fisheries.
- The need for integrating analyses on fisheries regions and territories into the general analyses of European territorial development and changes. Here are at least two challenges: The first is to establish typologies that integrate fisheries regions characteristics with other ESPON typologies as information about polycentrism, functional/urban and variables registering the emergence of new types of economics. The other is to build valid indicators for comparing of territorial development. In the examination we have used indicators on population changes, income changes and consumption changes. We are not sure that these indicators are the most valid for analysing all types of European regions. The finding in the chapter is that it looks like the fisheries specialised regions have experienced more negative trends than the average European regions in the period around 2000 is an argument for establishing indicators for territorial comparisons for ESPON space.
- gdgd

7.14 Policy recommendation

- There should be a better co-coordination of the implementation of the economic measures in CFP (the FIFG) and the fish resource regulation policy. At this point we lack statistics for safe conclusions, but the impression is that there is no co-ordination between the two, and that FIFG in some countries rather targeting new types fisheries models than the specialised regions. Thereby the structure in the latter regions is in danger of being conserved (becoming rawfish satellites) and territorial differential processes are increased.
- The interplay between fisheries policies implemented on national and European level should be better integrated. The national level has a central role in the implementation of the part of CFP focusing of economic support for the fisheries. The distribution analyses as well as the example studies demonstrate that the national implementation processes probably in many occasions vary between the nations, and that these variations can have territorial as well as social cohesion impacts in the respective countries as well as in the European space.
- European sector policies of the fisheries should be adjusted in accordance with the European territorial policies on reduction of social cohesion differences on the European territory. Despite the restriction of the actual data, the conclusion can be that these two types of policies do not pull the European territorial development in the area of social cohesion in the same direction.

8 Economic cohesion impact

8.1 Introduction

Fisheries and aquaculture play a varying role in the economy of the different European countries and regions. If on one hand there are few *countries* in Europe – Iceland, the Faeroes and north Norway – where fishing and related activities account for a significant share of total employment, on the other there are a lot of European *regions* where the fishing industry plays an important role in an otherwise underdeveloped rural economy. The importance of the sector becomes clearer when analysed at lower regional level or at the local level. In these cases, indeed, dependency rates are higher at greater level of regional disaggregation.

All around Europe (both in EU and EFTA countries) the fishery sector has been involved in significant structural changes in the past decades and it is expected to undergo a number of changes also in the next future. Undoubtedly the fisheries policies have important territorial impacts in the European regions, where fishing and related activities takes place – usually coastal regions and often areas where there is little prospect of growth in alternative economic sectors. This makes the CFP and the fishery policy of country like Norway and Iceland important for coastal regions throughout Europe. "*The situation is most outspoken in the areas most dependent on fisheries and related activities. Such areas can – depending on the level of disaggregation - be identified in many European countries"*. Furthermore, the territorial impact of the fishery policy varies among the regions, as not all of them are equally dependent on fisheries or are suited to face the processes of restructuring, reduction and expansion. This means that some regions might benefit from the measures agreed while others might not.

8.2 CFP measures and impacts in the light of WP4[109]

As stated in the First Interim Report, the planned reference period for ESPON Project 2.1.5 is 1990 – 2003/2004. However, changes in CFP did not take place before late 2002 and many measures have just been implemented or are about to be implemented. It would thus be difficult to carry out an impact assessment analysis based on the future changes of the CFP. It should be taken into account that structural changes have already taken place in the fisheries and aquaculture, and policy measures have been carried out within the fishery policy during the past years in many European countries.

It would be thus appropriate to analyse the impact of past policy measures similar to those hypothesised to follow from CFP. For instance, fleet reduction and quotas have been instruments of the past CFP. On the other hand the most important elements of the future resource policy are the multi-annual recovery or management plans for certain fish stocks which are *"outside safe biological limits"*[110] or *"at/or within safe biological limits.* They are structured so to include both input (fleet reduction, effort quota) and output (quotas, TACs) measures. A catch/landing quota-system for the most depleted stocks will be accompanied by effort measures (effort quotas) and further capacity adjustment measures. Having

[109] Most of the paragraph referring to the CFP can be considered valid also for the Norwegian and Icelandic fishery policies.

[110] 'Safe biological limits' is defined as the point where the indicators of the state of a stock predict a low risk of transgressing certain 'limit reference points', for instance values of biomass or fishing mortality rate, which are to be avoided (Council Regulation (EC) No. 2371/2002, art. 3(j) and (l)).

considered this, it can be stated that the most important changes that will have an impact on the economy of coastal regions will concern:

- consistency of fishing fleets (number of vessels and fishermen);
- production in weight and value of fish catching activities;
- share of the fishery sector on total GDP (value added);
- employment in fish catching activities and in fish related activities (processing, marketing, etc…).

It is also expected that recovery plans with the consequent measures will be applied for those fishing fleets exploiting the most depleted stocks such as most cod stocks, some sole and Nephrops stocks and hake of the North Sea. This can have important territorial consequences, as fleets from different regions traditionally exploit different stocks. Vessels from those regions, which exploit the most threatened stocks, can consequently expect to be worse off than vessels from the regions which traditionally exploit the less threatened ones.

8.3 Hypothesis to be tested in WP4

An initial set of hypotheses on the territorial impact of the European Fisheries Policies was presented in Project 2.1.5's IR1. The second meeting in February 2005 was spent trying to group the hypotheses and to charge each team and its related WP with its own hypothesis to be tested. In fact, some hypotheses are more general whereas others are more specific. Furthermore, some hypotheses overlap among WPs, especially those related to social and economic matters. As a result, all of them have been categorised into four groups:

1. General (to be tested within WP3, WP4 and WP5);
2. Social and economic (to be tested within WP3 and WP4);
3. ICZM/environment (to be tested in WP5);
4. Fishery hypothesis (to be tested in WP2).

Before presenting the hypotheses to be tested within the present WP4, it should be noted that, within the context of this study, there is more than one level of policy objectives against which the territorial impact of the European Fisheries Policies can be assessed.

In particular, these policies may be shown to be either consistent or inconsistent with the "high- level" or strategic EU objectives of social and economic cohesion and environmental sustainability in the regions.

Under these high-level/strategic EU objectives, one may identify the European Fisheries Policies specific objectives such as:

- a more sustainable balance between fisheries resources and their exploitation,
- an improvement of the fishery sector competitiveness,
- a reduction of the fish stocks overexploitation and the revitalisation of the fisheries dependent areas.

It is important to bear in mind that also interventions in other fields are likely to produce effects in fisheries and aquaculture. An example is the environmental field where a treatment plant that would stop direct discharges of human waste in coastal waters will contribute to the quality of beaches and therefore facilitate efforts to push the local economy towards tourism. It may also contribute to the diversification of economic activities by allowing the development of aquaculture (mussel farms, etc.). Finally, another example could be an intervention in the transport and infrastructure sectors, as the construction of a new road link to the national motorway system. This could have an impact on the transport costs of local firms which process locally landed fish, or improve tourist access to a previously poorly connected region.

However, there is usually room to argue that the specific CFP objectives and/or the effect of intervention in other fields may or may not be consistent with the high-level/ strategic EU objectives (social and economic cohesion) and/or among them.

In WP4 the following hypothesis will be tested:

General impact hypotheses:

- Hp.1: The CFP will have different impacts between coastal regions, and within regions. Processes on restructuring, reduction and expansion will occur side by side and in various combinations. Impacts of the CFP will be more significant the lower the geographical levels.
- Hp.2: Economic, social and demographic impacts of the CFP will vary between urban and remote areas. Socio-economic effects related to employment, migration, age structure of the labour force etc., may be less devastating in urban regions than in fisheries dependent regions and areas.
- Hp.3: Territorial impacts of the CFP will vary with the different structures of the fishing and aquaculture industries of the regions. Impacts will differ in accordance with the extent the regions are dominated by coastal fishing and small vessels, fishing in distant waters with greater vessels, landings, fishing processes or aquaculture.
- Hp.4: Territorial impacts of the CFP may contradict with the aims of cohesion, territorial balanced development and polycentrism. The CFP may favour the prosperous regions and disfavour the most remote ones, i.e. favour regions which are not particularly fisheries dependent at the cost of regions which are strongly dependent on fisheries.

Social and economic impact hypotheses:

- Hp.5: The CFP has unintended side effects in coastal regions or fishery dependent regions. Significant territorial impacts may be:
- Economic effects such as increasing unemployment;
- Decreasing regional economic productions (GDP);
- Population decreasing due to out-migration particularly in fishing regions;
- Altered age composition in fisheries dependent regions, with an increasing share of elderly population. Indication of gender and age biases in fishing dependent regions;
- Change in population density in fishing regions.
- Hp.6: As the restrictions on harvesting activities mainly target the fishing fleet these measures have strongest negative impacts in remote, coastal regions, while the more urban regions involved in fish processing still are able to source raw fish through e.g. import from 3rd countries.
- Hp.7: It follows from hypothesis 6 and 16 that the incidence of the CFP on the regional level is not consistent with the social and economic cohesion objectives of the EU due to the unintended territorial effects of the CFP. More favourable regions are able to take greater advantage of the measures included in the FIFG due to closer access to products and markets.

As said above, the beforementioned hypotheses include both social and economic issues as well as general impacts subjects. Thus a more detailed description of the hypotheses related to economic issues, will follow in the description of the methodology.

8.4 Impact assessment methodology

The choice of methods and techniques for the assessments of the impact of policy measures depends on a number of factors. The most important ones are:

- The type of the socio-economic intervention;
- The evaluation purpose - accountability, improving management, explaining what works and so on;

- The stage in the programme/policy cycle - prospective analysis (ex-ante)/retrospective analysis (ex-post);
- The stage in the evaluation process - designing/structuring, obtaining data, analysing data, making judgements/conclusions.

The main objective of this study is the evaluation or the assessment of the territorial impact of the European fishery policies. In relation to the stage in the programme/policy cycle, the analysis of the present study can assume two different forms, depending on the time reference period. If made on the past CFP it will be a mere retrospective analysis or mid term /ex-post evaluation of fishery policy measures. If made on what is planned to be the follow up of the CFP, according to the reform proposals, then the analysis will assume the form of an ex-ante or prospective assessment.

In relation to the stage in the evaluation process the analysis to be carried out in the present study can consist in both *analysing data* or in *providing judgements/conclusions*. Following the scheme of the European NEW GUIDE to evaluating socio economic development and associated resource materials[111], the main assessment methods can be subdivided by the stage of evaluation process that they most frequently inform.

The main evaluation methods in analysing data are Input/Output analysis (I/O), econometric models, regression analysis, experimental and quasi experimental techniques, Delphi survey and SWOT analysis.

On the other hand, methods usually applied for providing judgements or conclusions in relation to policy interventions are Cost Benefit Analysis (CBA), benchmarking, Cost Effectiveness Analysis (CEA), Economic Impact Assessment (EIA), gender impact assessment, Environmental Impact Assessment, Strategic Environmental Assessment, Multi-criteria analysis and Expert panels.

Most of these techniques can be and are usually applied both in prospective than in retrospective evaluation. Some exceptions are the regression analysis, the experimental and quasi experimental techniques and the benchmarking which are usually not applied in ex-ante evaluation of policy programme and the Delphi survey or the Strategic Environmental Assessment usually not applied in mid-term or ex-post evaluation of policy interventions.

The choice of the more appropriate assessment methods to be used in the present study, and in particular for WP4, will strongly depend on data availability and on the needed and available time to obtain the necessary information.

8.4.1 Methodology for an ex-ante evaluation of the territorial impacts of European fishery policies

As already stressed in paragraph 2, changes in CFP did not take place before late 2002 and many measures have just been implemented or about to be implemented. It thus could be difficult to carry out an impact assessment analysis based on the future changes of the CFP, given the impossibility to obtain the necessary data for the overall European space. In the light of the constraints on data availability (both in terms of areas, especially at NUTS3 level - and time periods coverage), what we can do, if relating to the future CFP is:

1. the simulation of changes in policy interventions by the use of models and assessment techniques developed in previous researches and based on example studies;
2. a judgement evaluation, based on a SWOT analysis, or other qualitative techniques, of what has been planned to be the financial support to the European enlarged fishery sector for the period 2007-2013, by mean of the new financial instrument, the European Fishery Fund (EFF).

[111] The GUIDE has been developed for the European Commission with a view to developing evaluation capacity in the enlarged EU, particularly in the context of the expenditure of Structural Funds, which aim to support economic and social cohesion in the Union.

A CGE model for the fishery sector of European regions

Among the above listed techniques, the I/O matrices are the most common methods used in scenario analysis and simulation, where they serve to verify policy scenarios, based on the technological structure of the economy of the country and on the state of final demand. They can also be used in forecasting. In an evaluation they can be used with or without policy interventions. There are numerous applications of input-output matrices to the evaluation of development programmes, including estimating impacts differentiated according to the different branches of an economy. I/O matrices have also been developed by Eurostat to estimate the economic impact of Objective 1 interventions for the period 2000-2006.[112] Anyway, the I/O approach is generally used at the national level, as this is the level at which statistical data are usually collected for the construction of matrices.

Taking that into account, for the present WP4 it is believed to be appropriate the use of the model developed within the PECHDEV project, an EU funded project that was carried out in the period 2001-2005[113]. Its main aim has been the development and the application of a computable model of general equilibrium (CGEM) in order to analyse the contribution of halieutic activities to regional development, as well as the evaluation of the interrelationship of these activities with the components of other economic sectors within the region considered. The model has also taken into account the influence of the ecosystem, considered as an ensemble of ecological and biological factors.

The usual models for the measurement of the economic effects of halieutic activities on the other economic sectors of a region essentially consist of scaled-down versions of the I/O matrices constructed on a national scale[114]. The I/O approach currently prevailing in the analysis of the contribution made by fishing and aquaculture to regional development[115] is the heritage of the inter-branch table developed by Leontief in the 1930s. The advantage of this method of evaluation of effects resides in its highly transparent mechanical procedure, making it reproducible once a certain amount of basic data is available. Used on several occasions in the context of studies at European level (in particular the socio-economic studies relating to regions which depend on fishing of 1992 and 1999), these models have shown their advantages, mainly consisting in the transparency and internal coherence of the model, its flexibility of utilisation (selection of the number of branches), and the facility with which the results can be read. On the other hand I/O models have shown their disadvantages, essentially being their limitations with respect to their potential to reproduce an image of the economic quality of life of a region dependent on fishing.

For all this and especially to abandon the hypotheses of fixed technical coefficients and unlimited supply of production factors available on the market, the computable general equilibrium model (CGEM) was created[116] and has been applied since the start of the 1990s to a good number of situations. It allows, for example, a study of allocations and the distribution of the effects of economic policies as well as the implications of economic shocks (Harrigan *et al.*; 1992). The works by Venables and Gasiorek (1999) clearly show the potentialities for the utilisation of such a tool to determine the regional impacts linked with the cohesion fund; just as those of the OECD with the GREEN and CTEM models demonstrate the plasticity of the models in gathering environmental data[117] and consider the effects of ecological feedback (Burniaux *et al.*, 1991).

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[112] The European Commission, Regional policy, Inforegio, Studies website

[113] PECHDEV, *Development and application of a computable model of general equilibrium to analyse the contribution of halieutic activities to regional development*, EU Contract Q5RS-2001-02277 carried out by IREPA (IT) in collaboration with CEMARE (UK), UCL (UK), ENSAR (FR), LEN-CORRAIL (FR), IEP (SP) and IME/SDU (DK).

[114] There are other models, such as those constructed on the basis of base theory and its expansion (these concern essentially employment indicators and multipliers) (Vollet and Daucé, 1996).

[115] See the socio-economic studies on employment and on the level of dependency of the coastal regions (among which Irepa, 1999) and attempts to develop the application of the I/O model to the measurement of the effects of fishing developed by COWI in 1997 for DGXIV.

[116] Principally on the basis of the applied works by Johansen (1960), of Stone (1966) relating to the construction of a social accountability matrix (SAM), and the theoretical ones of Scarf (1973).

[117] Just like the works concerning the effects of tourism on the regional economy and on natural resources which are increasingly using CGEMs (Alavalapati and Adamowicz, 2000; Adams, 1995) or economy-environment interactions (Bergman, 1995).

In this sense, the CGEM is the model now offering the greatest potential for application to the domains of regional economy. Its utilisation in the fields of energy, pollution and of natural resources suggests its use with fisheries resources very appropriate, taking into account the variability of the resource and of marine environmental changes. In addition it can take on the dynamic dimension, which is necessary to any public policy forecast. The first application of the CGEM is by Bernard, 2003.

A CGE model is usually based on a Social Accounting Matrix (SAM) database, which is an extension of the I/O tables. A SAM is a general macroeconomic accounting framework, which describes, in a systematic way, economic activities in a given geographical area. Once a SAM is constructed for a particular year (or an average of years), it provides a snapshot of the economic structure of the considered area. The geographical area for a SAM can be the international economy, a nation, a region or even smaller areas as, theoretically, there are no constraints in setting up a SAM for more circumscribed economic realities (Taylor and Adelman, 1996; Madsen *et al*., 1991; Malvarosa and Placenti, 2004). A sub-national and, where possible, regional or more local SAM are desirable because they can represent a good tool, for policy makers, to simulate the impacts of different economic policies and to assess their temporal effects (Carbonaro *et al*., 2001).[118] Within the PECHDEV project the CGE model has been developed, calibrated and applied to 5 European regions (NUTS3 level), i.e. Salerno (IT), Cornwall (UK), Bornholm (DK), Pontevedra (S) and Finistére (FR).

The regional model developed within the PECHDEV project has two components: an economic part, which represents the behaviour of economic agents, and a biological model, which is a representation of biological process affecting fisheries productivity. The economic part of CGE model employs standard assumptions. The model assumes that producers maximize profits subject to production functions, while households maximize utility subject to budget constraints. Production and consumption behaviour are modelled using the constant elasticity of substitution (CES) family of functions, which includes Leontief[119], Cobb-Douglas and constant elasticity of transformation (CET) functions. Hence, substitution between regional supply and exports is given by CET, while firms smoothly substitute over primary factors through CES functions. Factors are mobile across activities, available in fixed supplies, and demanded by producers at market-clearing prices. The model satisfies Walras' law in that the set of commodity market equilibrium conditions is functionally dependent, while the model is homogeneous of degree of zero in prices. Furthermore products are differentiated according to region and Armington assumption, so that imports and exports are different from domestically produced goods. Thus the model represents, by means of its multidisciplinary approach, a new conception of the measurement of the effects of fishing and of aquaculture in the development of the regions as well as the effects generated towards other economic sectors. It integrates some broader considerations than those traditionally included in the context of I/O models. In particular, the model attempts to encompass the entirety of the effects by also taking into account ecological and biological factors. The result is that it adheres more closely to the reality of the regions which depend on halieutic resources.

Once it has been developed for a selected area, the CGEM gives the possibility to evaluate the effects of any external shock, from biological or ecological changes to economic ones. The model thus represents a very useful tool, for policy makers and evaluators, in impact assessment analyses. Given the constraints on time availability - as it would take a lot of time to build a CGEM for each NUTS3 of the European space - the CGE models developed for five European regions within the PECHDEV project could be used to make an evaluation of the effects of the future European policy measures, in accordance with the hypotheses made by the project team.

In the description of the CFP reform it emerged that the most important elements of the future CFP are the multi-annual recovery or management plans (MAMP) for certain fish stocks which are o*utside*

[118] The main difficulties in constructing a sub-national SAM are, substantially, related to the reference unit. The region (that can be more or less wide) a) does not have, really, precise and controlled boundaries, with subsequent difficulties in monitoring income and goods interregional flows; b) does not have a sufficient statistic coverage in the sample surveys, which are generally conducted at national level and c) presents methodological problems for the estimation of some particular economic aggregates, such as those connected to the multi-unit enterprises and to the Central Government (Carbonaro et al., 2001).

[119] For all sectors, we assume Leontief technology, that is, that a fixed input quantity is needed per unit of output.

biological limits. The MAMP are structured so as to include both input (fleet reduction, effort quota) and output (quotas, TACs) measures. As a result, the most important changes that will have an impact on the economy of coastal regions will as stated be related to:

- consistency of fishing fleets (number of vessels and fishermen);
- production in weight and value of fish catching activities;
- share of the fishery sector on total GDP (value added);
- employment in fish catching activities and in fish related activities (processing, marketing, etc…).

For instance, if one wants to evaluate the impact of a reduction of the consistency of the fishing fleets, this can be made by simulating, trough the CGEM, what happens by changing the capital or the labour factors share in the production functions of the model. It must be stressed that the above list contains only some of the potential and direct effects on the economy of the region (WP4 is, in fact, concerned in the evaluation of impacts on the regional economic strength); anyway, it's clear that a measure like a quota has a large impact also on the consistency of the fish stocks of the species interested by the quota. The CGEM model can be used also to make this type of assessment, given the correct specification of the biological production functions in the model.

Even if the model has been developed and applied only to 5 European NUTS3, it must be stressed that the NUTS3 level selected as case-studies within the PECHDEV project are representatives of the different form that the fishery sector assumes all around the European space. They, in fact, represent very different realities both in geographical terms (they are based in the Mediterranean, Atlantic and Baltic seas) and in relation to the structure of the fishery sector they host.

A qualitative assessment of the future allocation of financial supports to the European fishery sector

If an ex-ante evaluation of the planned allocation of the fishery structural funds is needed, it will be possible only on a qualitative basis, given the high constraints on data availability.

On July 2004 the European Commission presented the proposal for the new European Fisheries Fund (EFF) covering the period 2007-13. It provides financial assistance for implementation of the latest reform of the common fisheries policy (CFP) and to support the restructuring demanded by developments in the sector. The EFF will succeed the present Financial Instrument for Fisheries Guidance 2000-06 (FIFG). In view of the developments in the sector and the recent enlargement of the Union, the EFF will help to ensure sustainable fisheries and diversify economic activities in fishing areas.

To implement the CFP, the EFF may grant financial support in meeting the economic, environmental and social goals in order to:

- ensure the long-term future of fishing activities and the sustainable exploitation of fishery resources;
- reduce pressure on stocks by matching Community fleet capacity to available fishery resources;
- strengthen the development of economically viable enterprises in the fisheries sector and make operating structures more competitive;
- foster the protection of the environment and fishery resources;
- encourage sustainable development and the improvement of the quality of life in marine, lake and coastal areas affected by fishing and aquaculture activities;
- promote the development of human resources and equality between women and men active in the fisheries sector.

The EFF provides for five priorities:

- **Measures to adjust the Community's fishing fleet**: Financial assistance will be available to fishermen and fishing vessel owners affected by the measures taken to combat overfishing. In particular, this will include aid for the temporary or permanent laying up of fishing vessels and for training, reskilling and early retirement of fishermen;

- **Aquaculture, processing and marketing**: The EFF will promote the acquisition and use of gear and methods that reduce the impact of fishing on the environment. The aid will be concentrated on small and micro enterprises;
- **Collective action**: The following projects will be eligible for the aid: those which contribute to the sustainable development or conservation of resources, the strengthening of markets in fishery products or the promotion of partnerships between scientists and operators in the fisheries sector;
- **Sustainable development of coastal fishing areas**: The EFF will support measures and initiatives aimed at diversifying and strengthening economic development in areas affected by the decline in fishing activities.
- **Technical assistance**: The Fund may finance action relating to preparation, monitoring, administrative and technical support, evaluation, audit and control necessary for implementing the proposed Regulation.

Whereas in the framework of the financial planning for the period 2000-2006, the fishery sector was included in a number of expenditure items, under the new proposal of the Commission it is intended to bring financial assistance for fisheries under a new heading entitled "Sustainable management and conservation of natural resources", together with the assistance destined to agriculture, rural development and the environment.

Under the proposal, EUR 4, 96 billion will be allocated to the EFF for the 2007-13 programming period for the enlarged Europe. This amount corresponds, more or less, to financial assistance planned for the EU at 15 Member states for the period 2000-2006 (EUR 3,7 billion).

In table 2 the allocation, for each year of the period 2007-2013 of the funds destined to the “Sustainable management and conservation of natural resources” and to the fishery sector is reported.

Table 8.1 Planned allocation of the EFF, 2007-2013

	2007	2008	2009	2010	2011	2012	2013	Total
	billion EUR							
Sustainable management and conservation of natural resources	57,18	57,90	58,12	57,98	57,85	57,83	57,81	404,66
Fisheries (including international agreement)	1,03	1,05	1,08	1,10	1,10	1,13	1,13	7,60
of which EFF	0,66	0,68	0,70	0,71	0,73	0,74	0,75	4,96

Source: Working document No. 10 on the Fishery policy. Financial perspective 2007-2013. DT\549341IT.doc.

It is estimated that approximately three quarters of the overall financial allocation under the Fund will be earmarked for the least-favoured regions in the new Member States, i.e. those covered by the new Convergence Objective. For the other regions, the amounts will be divided between the Member States according to the size of the fisheries sector, the number of people working in the sector and the adjustments considered necessary for fisheries and the continuity of measures in hand.

Budgetary proposals for the period 2007–2013 thus anticipate a 30% increase to support its cohesion policies for the new member states and the eventual accession of Bulgaria and Romania, both with large agricultural sectors and low per capita income. On the down side, the share of funding allocated to the management of 'natural resources' (agriculture, rural development and fisheries) is expected to fall from 46.4% of committed expenditure in the final year of the current programme to 36.5% at the end of the 2007–2013 period.

Anyway, it should be said that, as envisaged by Symes (2005)[120] enlargement threatens the achievement of cohesion goals for disadvantaged regions within the EU 15. "Although regional disparities have narrowed, they still persist especially in peripheral Europe. Several less developed regions are certain to fall outside any new thresholds for defining problem regions in the enlarged EU, including a number of fisheries dependent areas".

If compared with the last generation of financial support measures and at a first glance, the aim of EFF 2007–2013 seems to put more emphasis on the "economic and social well-being of coastal areas but without the assumption that fishing will provide the mainstay of the economy". Geographically, funding is expected to be concentrated even more on the problem regions or Objective 1 regions generally defined as areas where per capita GDP falls below 75% of the EU average or which are severely disadvantaged by location including remote island groups and the more northerly regions of Finland and Sweden. Moreover, EFF will be much less concerned with providing direct support to the harvesting sector and more explicit in the way financial support underpins policies for resource management.

A more detailed analysis and evaluation of the EFF allocation could be carried out if it will be possible to collect much more data, maybe at NUTS0 level and by single policy measures.

[120] D. Symes, *Altering course: future directions for Europe's fisheries policy*, Fisheries Research 71 (2005), 259-265.

Methodology for a mid-term or ex-post assessment of the territorial impacts of European fishery policies

As said above, the main objective of this study is the evaluation or the assessment of the territorial impact of the European fisheries policy. In relation to the stage in the programme/policy cycle, the analysis of the present study can assume two different forms, depending on the time reference period. If made on the past CFP it will be a mere retrospective analysis or mid term /ex-post evaluation of fishery policy measures.

Most of the above listed techniques of impact assessment can be used for ex-post evaluation of the effects of policy interventions. Retrospective evaluation can take the form of qualitative assessment, like the SWOT analysis, that can be particularly useful in mid-term evaluations as it can provide clues about the intermediate objectives of the programme (as the ability to exploit the opportunities and to avoid the threats). But a number of quantitative analysis can be used in order to evaluate the impact of policy actions. The choice strongly depends on data availability. Among the most common quantitative techniques there are econometric models and regression analyses.

Econometric models are used to replicate and simulate the main mechanisms of a regional, national or international economic system. They are generally defined by the use that data play in informing the model structure, namely to calculate the model's coefficients through a variety of possible estimation methods. In most models that use the label "econometric" there is usually a mixture of those coefficients estimated freely by the data, and those which are fixed, assumed or restricted, due to some limitations on data quantity or quality. These restrictions or assumptions can often be made according to economic theory, or sometimes use results from other datasets where the economic mechanisms are expected to perform in similar ways.

Within the context of an evaluation, the model will aid an understanding of how the mechanisms involved in transmitting the effects of a policy fit together. The model provides a structure around which the policies effects can be assessed and integrated, and in this way should make the quantification of these effects more transparent. Using econometric models for policy evaluation always involves the construction of a scenario, i.e. with and without the policy, to quantify the overall effect in terms of key model outputs. The complexity with which this scenario is constructed depends on how the policy effects feed into the model, i.e. whether they only affect a small set of exogenous variables or whether they might have an effect on some behavioural relations. Amongst the most common econometric models developed to evaluate policy impacts, HERMIN, QUEST and E3ME are examples of currently supported econometric models of different types that are notable for their wide range of uses in simulating monetary, convergence and Structural Funds policy impacts in the European Union. The REMI Policy Insight model has been extensively applied in the US but has only recently been modified for Europe. In particular, the REMI model has been used to assess the regional economic effects of structural funds investments in the Objective 1 portion of Southern Italy. The outcome of the study included returns (in the form of GDP and employment multipliers) to various types of investment (equipment, training, infrastructure) and subsidies are reported for a time horizon over 2000-24.

Another quantitative method useful for policy effects evaluation is the regression analysis. It is the statistical technique that identifies the relationship between two or more quantitative variables: a dependent variable, whose value is to be predicted, and an independent or explanatory variable (or variables), about which knowledge is available. The technique is used to find the equation that represents the relationship between the variables. A simple regression analysis can show that the relation between an independent variable X and a dependent variable Y is linear. Multiple regressions will provide an equation that predicts one variable from two or more independent variables. This statistical technique is most commonly used in programme evaluation to estimate effects. The net effects of a policy programme under evaluation can be assessed using regression analysis, by attributing part of the changes observed to explanatory variables, while the remaining effects are attributed to the programme. For this reason, regression analysis is useful in ex-post evaluation, to determine the net impact of the programme. However, this technique can also be applied in forecasting and ex-ante evaluation. In the case of panel data analysis, a large number of quantitative observations is required, ideally between 2,000 and 15,000 units (for example, trainees, businesses, farms etc ...), to use regression analysis. Data must be available on each unit, for all the variables of the explanatory model. This represents one of the main limits in

applying regression analysis as implementing the data collection can be time-consuming and expensive. For time series data much less is needed, for example 50-100 observations.

In order to estimate the impact of the past CFP measures, it has been decided, within WP4 to use, wherever possible, impact assessment methods based on regression and correlation techniques. The reason of this choice lies mainly within data availability and in the lack of time needed to develop and apply more sophisticated techniques, such as econometric models. With this scope in mind, the impact of the CFP is considered through what has been the incidence, at territorial level, of the financial interventions in the fishery and aquaculture sectors via the expenditures of the main financial instrument for the fishery sector, the Financial Instruments for Fisheries Guidance (FIFG), introduced in 1993.

The rationale for Structural Fund interventions in the area of fisheries (in other words, its specific objectives) is based on:

- The need for a more sustainable balance between fisheries resources and their exploitation
- Increasing the competitiveness of the fisheries sector
- Creating viable enterprises in the sector
- Strengthening the sector, which is going through a prolonged period of restructuring resulting from the increasing need to reduce over-fishing of limited natural stocks
- Revitalising those areas that are dependent of fisheries and related activity.

The FIFG was conceived with the aim of bringing together all fisheries oriented structural measures, in particular those concerning the promotion and marketing of fisheries and aquaculture products. Interventions in this field have been directed towards:

- Financial support for fleet renewal
- Adjustment of fishing capacity and protection of marine resources
- Socio-economic measures
- Processing and development of new market outlets.

Data on the allocation of the FIFG within the European territory are not available at NUTS3 level. The database concerning this indicator is composed as follows:

- FIFG allocations in total 1994-1999 on NUTS2 divided on targeted area of assistance (e.g. demolition) (EU15)
- Projected FIFG allocations in total 2000-2006 on NUTS0 divided on targeted area of assistance (EU15)
- Projected FIFG allocations (EU share) in total 2004-2006 on NUTS0 (10 new member states)

The evaluation of the FIFG allocation for the period 2000-2006, whose findings could be very interesting considering that the data coverage involves also the new Member states, could be carried out by mean of qualitative techniques, such as SWOT analysis, or simply by doing a judgment evaluation on the type of allocation, i.e. if following the past guidelines or if promoting a new type of policy. The reason mainly lies in data availability at NUTS 3 level, especially for the new member states. For the evaluation of the projected allocation of the new structural fund for the fishery sector, namely the EFF, see paragraph 4.1.2.

Giving this data availability, an impact analysis able to give some findings on the territorial impacts, at regional level of the FIFG allocation could, thus, be carried out only by the use of the first block of data, i.e. FIFG allocations in the period 1994-1999 available at NUTS2 level. If an apportionment method, to estimate data from NUTS 2 to NUTS 3 level can be found, it would be much more difficult and time consuming starting from NUTS0 level. Anyway, for some countries (i.e. Italy) data of FIFG allocation by measures and by NUTS 3 regions are available (see Annex II).

It's sure that the apportionment of FIFG past data allocation from NUTS2 to NUTS3 regions highly depends on the availability of structural data on the fishery sector of the European regions (NUTS3).

It must be taken into account, actually, that the FIFG is divided into target area (e.g. demolition). If, for instance, an apportionment of the FIFG expenditures for demolition wants to be made form NUTS2 to NUTS3, data on the consistency of the fleet at NUTS3 regions is needed. In the same way, if an apportionment of the FIFG expenditures for the aquaculture farms is pursued, thus, the number of aquaculture farms or of the number of employees in aquaculture activities is needed for each NUTS3 regions.

Unfortunately, official data (i.e. from Eurostat) on the structure of the fishery and aquaculture sector do not exist. In our knowledge, the only available data on the consistency of the fleet, on the number of employees and, in some cases, on the landings and value added at NUTS3 level come from the database of the EU-wide study of fisheries dependency at regional level supported by the European Commission Directorate General for Fisheries and implemented by consultants and research institutions in all member states. However it should be taken into account that this database, available on the DG-fish web-pages, is not completely homogeneous among the countries involved and, for some of them, it provides data only for a limited number of coastal NUTS3.

Bearing this in mind and taking also advantage of previous ESPON projects experiences (especially from TPG 2.1.3) a methodology for the testing of the hypotheses, illustrated in paragraph 3 is proposed. However, as already outlined, rather than a territorial impact analysis of the CFP the methodology will consist in an evaluation of the territorial distribution of FIFG allocations. In the following paragraph data at NUTS 3 level for Italy have been used. In particular, data come from national database (e.g. FIFG funds allocation, fleet structure and fishery dependency indicators) and from ESPON database (e.g. GDP, population and accessibility indicators).

A quantitative assessment of the territorial distribution of FIFG funds

The first hypothesis to be tested within WP4 is that the CFP will have different impacts between coastal regions, and also within the regions themselves – Hp.1.

Processes on restructuring, reduction and expansion will occur side by side and in various combinations. In particular, the team hypothesised that the impacts of CFP will be more significant at lower geographical levels. If, on one hand there are very few countries in Europe – except Iceland, the Faeroes and north Norway – where fishing and related activities account for a significant share of total employment, on the other there are a lot of European regions where the fishing industry plays an important role in an otherwise underdeveloped rural economy. The importance of the sector, and especially the area dependency from fishery, becomes clearer when the analyses focuses at lower regional level or at the local level.

In order to provide some background data for this hypothesis, the distribution of CFP support between different types of regions in Europe will be analysed. The first task concerns the choice of the regional typology to be used. It could be the typology based on the combination of the share of population of the NUTS territories living within FUAs with the population size of the FUAs. Another typology that could be used is the one based on the population density (see Annex II, table 3). Various statistical analyses could help in the specification of the considered relationship, i.e. cross tabulations, correlation and regression analysis. For instance, it could be possible to carry out a correlation analysis between the qualitative and ordered variable represented by the coastal typology (NUTS3 regions, classified into different coastal typologies, can be grouped so to represent different levels of an ordered variable) and the quantitative and continuous variable of the FIFG allocations, represented by, for instance, the amount of FIFG funds destined to demolition (Annex II, table 1.a and 1.b) weighted by the number of vessels for each NUTS3 region (Annex II, table 2).

Among the hypotheses made, there is one that concerns the relation between the territorial impacts of CFP and the different structures of the fishing and aquaculture industries of the regions, namely that **impacts will differ in accordance with the extent the regions are dominated by coast fishing and small vessels, fishing in distant waters with greater vessels, landings, fishing processes or aquaculture – Hp. 3.**

In order to test this hypothesis, the most appropriate typology to be used is the one based on the number of workers in the fishery sector. If the number of employees is available by the three main sectors, i.e.

harvesting, aquaculture and processing, it could be useful to see how the structure of the sector influences the use of the FIFG funds.

Depending on data availability it could be tested also if the structure of the harvesting sector has an influence on the FIFG allocations. The predominance of small or large vessels in the regional fleets can be used as a proxy of the structure of the fish harvesting sector In other words, if, for instance, in the regional fleets small vessels overcome a predefined threshold (e.g. 65%) the fishing sector of that region is assumed to be characterised by coastal fishing and so on. A correlation analysis between qualitative and quantitative variables could be also carried out in this case.

Bearing in mind the "high-level" EU objectives, the hypothesis that the territorial impacts of the CFP may contradict with the aims of cohesion, territorial balanced development and polycentrism – Hp. 4, will be tested.

In particular, what we want to test in WP4 is if the CFP favour the prosperous regions and disfavour the most remote regions that are supposed to be highly dependent on fisheries.

The test of this hypothesis could be made by regressing the level of FIFG support at NUTS 3 level (Annex II, table 4.a and 4.b) against the GDP per inhabitant (Annex II, table 5). A correlation analysis could give the same type of results.

In the same way, to test the consistency of the CFP with the aim of social cohesion, it could be possible to regress the same variable related to FIFG support against the population change (Annex II, table 6).

Another hypothesis that is planning to be tested is related to the unintended effects of the CFP in coastal regions or fishery dependent regions. In particular, **if the restructuring processes deriving form the CFP measures in the last decades led to a decrease of regional economic productions (GDP) – Hp5..**

In other words, the aim is to test if and how the European fishery policy has contributed to the economic development of the fishery sector in fishery dependent areas as there is evidence, in some country, of higher negative impacts of the restructuring processes on the dimension of the sector, especially in highly fishery dependent areas.

In order to test this hypothesis, a linear regression can be estimated. The two variables involved in the regression will be a dummy or an ordered variable representing the European regions classified by mean of the fishery dependency typology (coastal regions can be grouped between fishery dependent and not-dependent regions – dummy variables – or in different level of fishery dependence, according to the value of the ratio – ordered variables, Annex II table 7) and the rate of change in the regional GDP (Annex II, table 8). The reference period could be the beginning and the end of the first FIFG programme, i.e. 1994 and 1999.

It is strongly believed that, among the unintended territorial effects of the CFP one is concerned with the circumstance that more favourable regions are able to take greater advantage of the measures included in the FIFG due to closer access to products and markets – Hp. 7.

In order to test this hypothesis it could be useful to estimate correlation coefficients between the level of FIFG support at NUTS 3 level (Annex II, table 4.a and 4.b) and the classification of NUTS3 regions by mean of accessibility indicators (Annex II, tables 9 and 10). In order to do so it could be appropriate to use typologies developed by other ESPON TPGs. In particular, accessibility indicators were used to build specific typology within ESPON project 2.1.1 and 1.1.1. Three different typologies were created, referring to three different geographical level of analysis: macro, meso and micro. Major details are shown in table 1.

As it was made in ESPON Project 2.1.3 and others, we could use three territorial scales of accessibility: the macro or EU-wide level, the meso level and micro or local level.

Table 8.2 Scale, source and description of indicators used for the accessibility typologies.

Scale	Source	Description
Macro	*Espon Database Version 2. 3 (2.1.1_Timetomarket_Accessibility_by _rail_road_N3)*	Accessibility time to market by rail and road, half-life (1000 minutes), weighted by GDP (1997)
Meso	*Espon Database Version 2. 3 (2.1.1_Timetomarket_Accessibility_by _rail_road_N3)*	Accessibility time to market by rail and road, half-life (25 minutes) weighted by GDP (1997)
Micro	Espon project 1.2.1. Mcrit. *(ICON_access_transport_terminals_20 01)*	Accessibility by road to transport terminals offering a minimum service

Source: Espon Project 2.1.3, Final report

In each case above, the lower the value of the indicator, the greater the accessibility of the region.

As made in ESPON Project 2.1.3, an alternative peripherality indicator, developed for the European Commission by Schurmann and Talaat (2000), could be used. While focused like the macro indicator at the EU level, this indicator is based purely on road accessibility to EU15 centre as opposed to market potential. In this case, the lower the value of the indicator, the more peripheral is the region, and *vice versa*.

To comply with the Tender, some of the economic indicators concerning the regional economic strength have been collected for the main fishery dependent regions, as defined in the Megapesca report (Goulding *et al*., 2000). The NUTS 3 considered are those which are defined as dependent on fishing basing on the level of three different ratio:

1. The share of fisheries activity on the total value added of the area (Ratio 1)
2. The share of fisheries employment on the total regional employment (Ratio 2)
3. The share of catches subject to CFP quota management measures as a proportion of total catches (Ratio 3)

The NUTS 3 considered are 40, covering almost all the European space – Annex II, table 11. There are no regions for the new Member states as the socio-economic studies on fishery dependence were carried out before the accession.

The main economic indicators have been extracted from the ESPON database and concern:

- Gross Domestic Product (GDP) per inhabitant in Purchasing Power Standards (PPS) – Annex II, table 12.
- Evolution of GDP per inhabitant – Annex II, table 13.
- GDP/Active person[121] - Annex II, table 14.

As far as employment indicators (i.e. unemployment rate and evolution of unemployment rate) they fall in WP3 tasks. As far as fisheries and aquaculture share of regional/national GDP no data are available. The WP4 team will try, if possible, to gather the necessary data for IR3.

[121] The original indicator promised in the Tender was GDP/Occupied person. Taking into account constraint on data availability the number of total active people per region (from ESPON database)b has been used instead of the number of occupied people.

8.5 A methodology for the assessment of polycentricity

As stressed in the Tender, some of the key questions for the ESPON Project 2.1.5 to investigate are:

- How will the changes in the European fisheries policies and ongoing processes affect European countries and their regions? What are the territorial impacts on these changes in view of the aim of cohesion, territorial balanced and sustainable development and polycentrism?
- How will effects of fisheries policies influence spatial development in coastal regions and a polycentric development?

A potential methodology to evaluate the existence/absence of differences, in spatial terms, among the fishery sector of the European regions is that developed by IREPA and based on the use of concentration, specialisation and dissimilarity indexes (

This methodology consists in the analysis of the structure of the fishing fleet. The analysis is based on the construction of three indexes, aimed to determine the level of:

1. dissimilarity (IDS);
2. specialisation (ISP);
3. concentration (ICO)[122]

of the fleet.

Recently the analysis has been applied by IREPA at NUTS 3 level where the three indexes have been calculated by each enrolment offices (Malvarosa, 2003; Malvarosa and Placenti, 2003). The aim of the analysis was, indeed, to draw conclusion on the dissimilarity of the vessels registered in each of the enrolement offices in respect to the overall provincial fleet[123]. In this case the meaning of the three indexes is the following:

- IDS gives information on similarity/dissimilarity on how fishing gears distribute in each enrolment office in comparison with the way in which they distribute on the total enrolment offices of the Salerno province, considered as a whole. IDS can vary between zero and one (0<IDS<1). It is equal to zero when the enrolment office has the same composition by fishing gears of the whole set of offices. It is equal to one when the enrolment office has a composition by fishing gears totally different from the whole set of offices. Even if IDS has the property to synthesise the way in which vessels of each enrolment office distribute by fishing gears, it is not able to give information what is the most used fishing gear in each office.
- The ISP informs us about the intensity of existence of each fishing gear within each enrolment office. ISP vary between minus one and plus one (-1<ISP<1); ISP equal to “minus one” indicates inexistence of the correspondent fishing gear; ISP equal to “zero” indicates no specialisation while ISP equal to “plus one” indicates maximum specialisation. As a consequence, only values of ISP>0,5 have significance in terms of specialisation of the enrolment office in a certain fishing gear.
- On the other hand, ICO tells us about the enrolment office where a certain fishing license is delivered most frequently. Also ICO vary between minus one to plus one (-1<ICO<1); ICO equal to “minus one” indicates inexistence, in a certain office, of the license for a certain fishing gear; ICO equal to “zero”indicates no concentration while ICO equal to “plus one” indicates maximum concentration. Even in this latter case, only values of ICO>0, 5 have significance in terms of concentration the fishing gear in a certain enrolment office.

The three indexes have been calculated on the basis of the holding, by the vessel, of the license for the use of fishing gears. The dissimilarity, specialisation and concentration analysis could be a good tool for the assessment of differences/similarities among the regions of the European space in terms of fishing fleet

[122] For the detailed construction of the three indexes see Annex I.
[123] The analysis was carried out within the PECHDEV project and implemented for the case-study of Salerno (IT).

structure. A higher or lower level of dissimilarity can give a measure of, respectively, a low policentricity and *vice versa.*

Depending on the scale of the analysis (the three indexes can, indeed, be calculated making reference to a local, regional, national or European area) a micro, meso and macro policentricity could be assessed.

8.6 List of key indicators for WP4

- FIFG funds allocations by NUTS 3 regions, Italy, 1994-99 (Ministry for Agriculture and Forestry Policies, General Direction Fishery and Aquaculture, Italy)
- Fleet structure by NUTS 3 regions, Italy, 1997 (Irepa database)
- Fishery dependency indicators by NUTS 3 regions, 1997 (Regional Socio-Economic Studies on Employment and the level of Dependency on Fishing, 1999)
- GDP per inhabitant and total by NUTS 3 regions, 1995-2000 (ESPON database)
- Population density (1995-99) and average population (1995-00) by NUTS 3 regions (ESPON database)
- Potential accessibility by road by NUTS 3, 2001 and accessibility indicators of population to market by car by NUTS 3, 1999 and 2000 (ESPON database)
- GVA (Gross value added) by industry, preferably on NUTS3 level for countries in which these data are available

8.7 Comments on TIA application

At this stage of the project is very difficult to draw conclusions on the application of the TIA. As often outlined in previous paragraphs, the major constraint in the application of TIA (and of any type of impact assessment at regional level) is the lack of data. A congruent analysis of the regional impact of fisheries policies should, in our opinion, be carried out at NUTS 3 level, at least. The reason, as said above, is due to the fact that even if a country do not depend on fishery, many of its regions could highly depends on fishery activities. Unfortunately, most of the needed data, in particular for WP4, are not available at NUTS 3 level if referring to the European space. An impact assessment of fishery policies on the economic strength of a region implies data availability on the fishery sector, in terms of fleet structure, employment and GDP in the different activities (harvesting sector, aquaculture, processing and marketing), etc.

Thus, at this stage, we have found a lot of difficulties to carry out a TIA for all the ESPON space. The result is a preliminary impact assessment at regional level for Italy.

9 Conclusions and policy recommendations

9.1 Conclusions

9.1.1 NUTS territories as territorial units for analysis, classification and typologisation

Typologisation and analysis based on NUTS territories is a challenge due to the heterogeneity of the NUTS units. One of the consequences of basing analysis on heterogeneous geographical units is the loss of differentiation between units found when more homogenous geographical units are the analytical geographical units. NUTS territories will in comparison bring results that can be viewed as average scores for the homogenous territories within each NUTS territory (average in the meaning that it is the aggregate of statistics for smaller territories that is not available for the analysis). The typologisation effort has therefore included information on the heterogeneity of the territories by using a criterion for functional regions in the main typology. This does not change the basic limitations of heterogeneous territories as territories for regional comparison.

Due to the heterogeneity of the NUTS regions, and as the regions highly dependent on the fisheries will generally be smaller regions located *within* NUTS 3 territories, there is a need for impact analysis (example studies) on LAU levels in the project. This is also necessary to be able to look into for example tendencies for concentration of activity within fishing to urban centres (even though in many cases seafood industries are still located in areas outside commuting distance to cities and with few alternative income sources). In some parts of Europe, the fishing industry still plays an important role in an otherwise underdeveloped rural economy. Many of our hypotheses require example studies. These example studies can be conducted in a way that takes into consideration the ESPON requirements of an analysis and policy recommendations on the macro, meso and micro scales.

The macro, meso and micro scales

The macro, meso and micro scale will be integrated in the project by supplementing the mapping for the entire ESPON space with a set of example studies. We will:

- use information from evaluations of Interreg IIIB projects
- use relevant research projects already completed
- make an analysis based on statistics from countries with relevant data on lower geographical levels

While the mapping involves the macro scale, the use of Interreg projects and to some extent of relevant research projects already completed involves the meso scale. Other research projects already completed and analysis based on statistics from countries with relevant data on lower geographical levels will be studies covering the micro level.

Indicators

There has, as we have also seen in other ESPON projects been difficulties concerning the availability and the regional level of the data and indicators for the impact study. One result of this situation will be that we will have to make a differentiation of analysis between countries according to the availability of

statistics. To some extent this will just imply a reduction in the number of countries in specific parts of the analysis, while in other instances an example study will be carried out instead.

Methodology for the impact analysis

So far, the different WPs of the project have developed in different directions, the methodological work being quite different. As our analysis of territorial impacts of changes in CFP have been grouped in WP 3; Impacts on employment, social cohesion and demography that looks at social cohesion and WP 4; Impacts on regional economic strength, that looks at economic cohesion, there is a need for a stronger grip concerning some common methodology for these WPs than what we have achieved in IR2. Even though analysis of different subjects to some extent will need different methodologies, there should be enough similarities for making final conclusions and policy recommendations that have to some extent a common basis.

9.1.2 Conclusion chapter 5 - Diagnosis of the Fishery Sector

The hypotheses outlined in the beginning of this chapter were related to different elements of the CFP (and fisheries politics in general): five hypotheses were related to conservation policy, two to market policy, two to structural policy, and one to external policy. On a general level the hypotheses have been supported by the analysis of the different policy areas. In the following discussion we will go through each hypothesis and sum up the main findings, mainly related to the CFP. However, the discussion and findings below apply in general also to the situation in Norway and Iceland, which are more or less subject to the same situation as the EU countries. However, the two countries are at present in a better situation in regards to the sustainability of stocks and the economic situation of the sector than the EU countries on average.

Conservation Policy Findings

Five hypotheses, which related to conservation policy, were outlined in the beginning of this chapter. The first hypothesis related to the intentional territorial impact of the CFP, which occurs from the allocation of fishing opportunities through quotas. Quotas are not allocated on the basis of need but following a principle of 'relative stability'. This creates territorial impacts across nations on a very general level. Some nations might be better at matching their allocations to the structure of their sector, which gives them (and their regions) an advantage over other countries. The second hypothesis was also supported by the analysis of the future direction of the CFP, which must be expected to move towards EAF. This will - at least in the short or medium term - lead to negative impacts because of lower (or at least not significantly higher) TACs, which are supposed to result in lower fishing pressure. The third hypothesis has mainly been dealt with in the section on Iceland. The analysis seems to support the assumption that ITQs in some instances lead to unintentional regional redistribution, as well as to the desired restructuring of the sector towards larger, more efficient units. Market based management systems have, however, not yet been applied on a European scale. The fourth hypothesis related to the fact that recovery plans might have unintentional consequences. As discussed, recovery plans are intended to 'punish' or at least restrict the fleets targeting endangered stocks. This might be considered the intentional impact; an unintentional - partly territorial - impact is that the different fleet segments are put in different situations. Larger vessels might be able to utilise resources far from where they have homeport, whereas this possibility does not exist for smaller coastal vessels. This is unfortunate as it is often not the smallest vessels, which constitute a problem for the resources or destroy habitats. Therefore it seems unfortunate that they have to carry the largest burden. The fifth hypothesis was general and related to the distribution of negative impacts of the conservation policy. The analysis has to a high degree supported the hypothesis that the most important factor in determining how the negative impacts will be distributed across regions is the state of the stocks the fleets utilise. This is hardly surprising but the most important information related to this is in fact also the varying unintentional impacts; for instance the different possibilities to change gear or sea area.

Structural Policy Findings

Two hypotheses were related to the impacts of the structural policy. The analysis supports the hypothesis that the policy has significant territorial impact; this is actually the whole idea of it. However, more interesting is the fact that some regions are able to get more funding from the EU based on considerations,

which are wholly or partly unrelated to the situation of their fisheries sector. This puts unintentionally some regions in a better situation than other regions. Furthermore, the analysis has also shown how some countries and regions receive a very significant part of the total EU support, which in general puts their regions in a favourable situation *vis-à-vis* others. Galicia could be mentioned as one region, which gets a surprisingly large share of the total FIFG support. Finally, it is also interesting to see how the structural policy has - until recently - supported modernisation and renewal of the EU fleet in a situation, where overcapacity is considered one of the main problems facing the conservation policy. The second hypothesis related to the fact that the EU structural policies are increasingly becoming less important because of increasing impacts of the surrounding environment, i.e. the global development. Although this might be true, the impact of the direct injections of money through the FIFG (whether these are viewed as positive or negative) should not be underestimated. It could be argued that the FIFG support is important exactly to tackle a situation where the local markets and fleets are increasingly becoming part of a world market. In the new member states this is happening simultaneously with a demanding transition towards market economy.

Market Policy Findings

The analysis of the market policy supported the assumption that this policy has serious territorial effects. The effects relate not so much to the direct financial transfers under the price support mechanism, which are relatively insignificant compared to those distributed under the FIFG. Rather, the varying territorial impacts are related to the different impacts of tariffs and external trade measures. An example provided in the preceding chapter was the decision to put an extra tax on (especially Norwegian) salmon. This was done in order to protect salmon producers in Scotland and Ireland but the safeguard measures had serious negative impact on salmon processors in Denmark, which depend heavily on Norwegian raw material. The analysis supports also the assumption that fish products will increasing be affected by other policies not directly stemming from the fisheries market policy. The policy on traceability is provided as one example of such.

External Policy Findings

The analysis clearly showed that the external policy has territorial impact, which varies across regions. This relates especially to fisheries agreements, which are of most importance for the southern EU member states. The transfer of money through the fisheries agreement could be seen as subsidies for the vessels engaged in these fisheries. However, also bilateral and international agreements or the failure to conclude these could have significant impact, as illustrated with the failure to get agreement with Norway over Atlanto-Scandian herring, which are of importance to a number of Danish ports.

In Sum

The analysis in this chapter has supported the outlined hypotheses and in this way also supported the underlying general hypothesis that the CFP (and fisheries policies in general) has significant territorial impacts – intentional as well as unintentional. It is, consequently, possible to conclude that these hypotheses provide a good basis for the analyses in the following chapters on territorial impacts and example studies related to this. The chapter has, furthermore, outlined a number of concrete examples of territorial impacts as well as provided a thorough introduction to the structure of the sector in the EU, Norway and Iceland.

9.1.3 Conclusion chapter 6 - Environmental impacts and ICZM

Environmental impacts

Two of the hypotheses regarding environmental impacts of the fishery policy made in IR2 are:

- The changes in CFP from 2002 will contribute to a faster reduction and restructuring of the fishing fleet, both in absolute numbers, tonnage (GT) and engine power (kw).
- Changes in CFP will probably be directed towards improvements of the marine environment and marine resources. In the long run this may lead to higher and more stable fish stocks, but only if the fishing effort is sufficiently reduced.

CFP seem to be successful regarding reduction of the fishing fleet, which is a necessary precondition for a sustainable resource management. However, it is to too early to see if the changes in CFP from 2002 have contributed to an even faster reduction in the fishing fleet. The reduction from 2002 to 2003 was approximately of the same quantity than the years before.

From 1995 to 2002 the total catches of the EU25 fleet has dropped from app. 8 million tonnes to app. 6.8 tonnes (in live weight), which seem to have a connection to the decrease in the fishing fleet. However, the total fish landings of all species in all European sea regions[124] have increased by 20 % (1.6 million tonnes) between 1990 and 2000, but with a small decrease from 1997 to 1999. The indicators on stocks outside biological limits indicate that the changes in CFP, i.a. reducing the fishing fleet capacity, are still not sufficiently for a sustainable marine development. It is still an imbalance between fishing capacity and available resources. However, for a sustainable resource management, EU is dependent on that also other countries outside EU reduce their fishing fleet capacity according to the available resources. In that respect, a major concern is the agreements between EU and other countries regarding fishing.

At the same time, there is a need for a greater emphasise on the whole marine environment and ecosystems, and not only assessments for single species. During the last years there has been a greater focus on ecosystem approach in marine (including fisheries) management. However, it is a challenge to implement these ideas in the management regime. One central element is to move away from the single-species approach characteristic of the existing CFP and to adopt a multi-species and ecosystem-based management approach as indicated in the 2001 Reykjavik Conference on Responsible Fisheries in the Marine Ecosystems.[125] Ecosystem-based management models are also needed to assess external impacts on fisheries such as accidental and operational discharges from oil exploitation and shipping activities toxic algae blooms, and runoff from land causing eutrophication and contamination (EEA 2002). An ecosystem approach should also be considered in a larger extent regarding development of indicators on this issue. The EU Water Framework Directive (2000/60/EC) draws up a more ecosystem based development of data and indicators, based on river basins, including coastal waters up to one nautical mile outside the basic line. Also the EUs proposal Marine Strategy Directive is a step in that direction (European Commission 2005).

The increasing production in aquaculture is important for many countries and coastal regions. Aquaculture development is spread widely over Europe and often in rural zones or peripheral areas depending on fisheries, where alternative employment opportunities are lacking. In general, significant improvements in the efficiency of feed and nutrient utilisation as well as environmental management have served to partially mitigate the associated increase in environmental pressure in the coastal zone. Different types of aquaculture, however, generate very different pressures on the environment. Intensive finfish production generates the greatest environmental pressures and it is this kind of production which has increases most rapidly in recent years. The challenges in countries with high finfish production like Norway, UK and Ireland. The growth in aquaculture is also a challenge for the coastal zone management and planning, particular regard to adapt the locations to other coastal interests like tourism, recreation, nature and cultural heritage, coastal fishing, etc. Further expansion should be addressed through the concept of integrated coastal zone management (ICZM), which also the EU Strategy for the sustainable development of European aquaculture emphasise.

Integrated coastal zone management (ICZM)

ICZM is a demanding task, which should have a broad "holistic" and long run perspective, integrating all relevant interests and sectors in the coastal zone. Activities in the coastal zone have traditionally been carried out by different sectoral bodies, and rigid bureaucratic systems. Sectoral policy in marine areas is somewhat separated from spatial planning, and co-operation between them is not yet well developed. ICZM imply a new style of governance, a style that involves and is in partnership with all relevant interest. As the European Commission (2000) emphasise, integrated solutions to concrete problems can only be found and implemented at the local and regional level. Related to integration between fisheries

[124] North East Atlantic Ocean (including the Baltic Sea), Mediterranean Sea, Black Sea and Arctic Ocean. The Caspian Sea and Aral Seas are not included, as these are considered to be "inland waters" by FAO.
[125] ftp://ftp.fao.org/fi/DOCUMENT/reykjavik/Default.htm

and spatial planning it is a challenge that the EU Fisheries policy is one of the EU policies that are least adaptable to regional needs.

Norcoast (2001) recommend combining the best elements of the statutory spatial planning system with the best elements of the voluntary partnership approach in order to achieve integrated solutions. An experience from Norwegian regional coastal zone planning is that an open and inclusive decision process does not alone increase the integration capacity of the regional planning. The results rather support the opposite argument of a trade off between the number of actors participating in the decision process and the ability to agree on and implement a joint action which effectively will deal with the problem. Another general experience is that integration at regional level is only possible if the higher levels of administration provide an integrated legal and institutional context.

One lesson from the EU Demonstration programmes is that the spatial planning system alone has some limitations to secure the idea of ICZM. The first is the necessity that the spatial planning system covers both the terrestrial parts and the marine part of the coastal zone. Only few countries have such integration today. The EU Water Framework Directive could secure this element because also coastal waters up to one nautical mile outside the basic line should be included in the river basin management plans. Another limitation is that the spatial planning system often focusing narrowly on development control rather than a broader ICZM focus. In that respect, it could be necessary to combine economic instruments to the planning system. The tradition for protecting coastal areas may also have led to a neglect of the ideas of ICZM as such, where a main purpose is to balance protection and development in coastal communities. ICZM strategies in fishery dependence areas should for instance also focus on new forms for development, such as aquaculture, tourism, etc.

The hypothesis regarding aquaculture in IR2 is that this industry will increase the pressure on the coastal zone, but a management bases on ICZM could contribute to a further sustainable growth. The Norwegian experiences with local coastal zone planning indicate that this could be a suitable instrument to balance the increase of aquaculture with other interests. A central challenge is to find a balance between the need for long-term steering and predictability on the one side, and the need for flexibility on the other side. A precondition is broad participation from the relevant local interests and stakeholders, and the relevant sectoral administrative bodies to find an acceptable balance between growth in aquaculture and other interests as protection, recreation, coastal fisheries, etc. It is, however, a need for a regional approach across the municipalities regarding the development of the industry. Regional coastal zone planning and planning in accordance with the Water Framework Directive can contribute to more integration across municipalities and a more ecosystem-based management, also in the case of aquaculture.

9.1.4 Conclusion chapter 7 - Social cohesion

The chapter is written as an examination of the opportunity to carry out social cohesion impacts analyses of the Common fisheries policy in the framework of territorial impact analysis. The most important part of the examination has been concerned about building analytical bridges between: the territorial dimensions and systems of European fisheries; the two major types of CFP (the specific economic measures (FIFG) and the "conservation" policies); the direct impacts of the CFP on the socio-economic systems of the fisheries; and the impacts on the position of the fisheries regions in the general European territorial systems. The main conclusion is that the attempt presented in the work package is a way that is possible to use in order to carry out relevant territorial impact studies of CFP. However there are several conditions that are not established yet, most of them related with building of valid systems for data registration, collecting and analyses. Moreover there are also other more analytical challenges as:

- The need for building a valid idea about the territorial dimension of the European fisheries. From our point of view there is contraction between the enormous dimension of European fisheries and its minor territorial impacts when measuring those by using traditional fisheries dependencies indicators. We have tried out a solution by using Nuts 2 regions, and from our point of view we have identified relevant territorial fisheries systems by these analyses. However we think that that establishing of more permanent analytical systems of TIA in CFP should be able to use data on Nuts 3 level.

- The need for establishing a system for territorial distribution analyses of FIFG as well as the regulation policies which integrate these dimensions to the territorial systems of the fisheries.
- The need for integrating analyses on fisheries regions and territories into the general analyses of European territorial development and changes. Here are at least two challenges: The first is to establish typologies that integrate fisheries regions characteristics with other ESPON typologies as information about polycentrism, functional/urban and variables registering the emergence of new types of economics. The other is to build valid indicators for comparing of territorial development. In the examination we have used indicators on population changes, income changes and consumption changes. We are not sure that these indicators are the most valid for analysing all types of European regions. The finding in the chapter is that it looks like the fisheries specialised regions have experienced more negative trends than the average European regions in the period around 2000 is an argument for establishing indicators for territorial comparisons for ESPON space.

9.2 Preliminary policy recommendations

We have based the preliminary recommendations on our set of hypotheses, as these are our point of departure for the impact studies.

9.2.1 General policy recommendations

- As the CFP is likely to have different impacts in different regions, and in different types of regions, the policy should be directed towards (possibly by use of best practises) social, economic and territorial cohesion. Special care should be taken to counteract negative development in lagging regions.
- As the CFP is likely to have unintended side effects in coastal/fishery dependent regions, there is a need to develop policies that can counterbalance the non-fishery aspects of these side effects (as listed in hypothesis 5). The same is the situation if impacts of the CFP should be shown to contradict aims of cohesion, territorially balanced development and polycentrism.
- The development in urban-rural relations in the fisheries should be governed by thoughts about polycentric development, and the assumption that such a development is especially advantageous in countries and territories with lower population densities (which is the situation in many fisheries dependent regions)
- The relation between territorial impacts and the structure of the fishing and aquaculture industries of different regions should be a basis for policy recommendations

9.2.2 Policy recommendations related to environmental impacts and ICZM

There is a need for a greater emphasis on the whole marine environment and ecosystems, and not only assessments for single species in the fishery policy. The efforts according to this should be further stimulated, also in regard to the development of indicators for environmental impacts of fishery and aquaculture. Today most of the indicators focus on the development of single fish species with commercial interest.

According to the ICZM example studies, primarily regarding the aquaculture industry, we point out the following policy recommendations:

1. The integration of the terrestrial and marine environment in coastal planning and other ICZM activities should be further developed.
2. The best elements of the statutory spatial planning system should be combined with the best elements of the voluntary partnership approach in order to achieve integrated solutions.
3. To find acceptable balances between further growth in aquaculture and protection and other interests in the coastal zone, it is a precondition with a broad participation from relevant local interests and stakeholders in the planning processes, together with relevant sectoral administrative bodies.

Environmental Impact Assessment (EIA) and Strategic Environmental Assessment (SEA) could be useful instruments in the process to find the right balance between protection and use.

4. The aquaculture industry is in a continuously technological change, i.e. introducing new species and in being more offshore based. It is therefore necessary with flexible planning approaches in order to be able to deal with the quick changes. It is, however, necessary to find a suitable combination between the need for long-term steering and predictability on the one side, and the need for flexibility on the other side. The specific choice in this regard will be dependent on the specific planning context.
5. It is a need for a regional approach across the municipalities and other administrative borders regarding the development of the industry. The implementation of the Water Framework Directive can contribute in that direction.

9.2.3 Policy recommendations related to social cohesion

1. There should be a better co-coordination of the implementation of the economic measures in CFP (the FIFG) and the fish resource regulation policy. At this point we lack statistics for safe conclusions, but the impression is that there is no co-ordination between the two, and that FIFG in some countries rather targeting new types fisheries models than the specialised regions. Thereby the structure in the latter regions is in danger of being conserved (becoming rawfish satellites) and territorial differential processes are increased.
2. The interplay between fisheries policies implemented on national and European level should be better integrated. The national level has a central role in the implementation of the part of CFP focusing of economic support for the fisheries. The distribution analyses as well as the example studies demonstrate that the national implementation processes probably in many occasions vary between the nations, and that these variations can have territorial as well as social cohesion impacts in the respective countries as well as in the European space.
3. European sector policies of the fisheries should be adjusted in accordance with the European territorial policies on reduction of social cohesion differences on the European territory. Despite the restriction of the actual data, the conclusion can be that these two types of policies do not pull the European territorial development in the area of social cohesion in the same direction.

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Third Interim Report, December 2005

Part III Results of the project - Example studies

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1 Introduction

This part of the third interim report presents the example studies in the ESPON Action 2.1.5: Territorial Impacts of European Fisheries Policy.

The example studies have from the start of the project been planned as a way of getting to grips with the micro level in the project. Originally we looked at the micro level as a geographical level where we could analyse processes that could not be studied properly on the NUTS levels. They where in other words looked at as studies on LAU levels.

As the project has matured, it has appeared that the micro level should be regarded also as a perspective, where the micro level become the level for analysing ESPON results from a national standpoint. This means that the micro level example studies have primarily become the part of the fisheries project for analysis of *national implementation* of the CFP. The example studies have thus become more important for the project than originally conceived, and will therefore have to be further developed for the final report and then also stronger linked to hypotheses. When it comes to implementation, a distinction will have to be made between EU member countries and non members, where the micro level to a greater extent shows the impact of a country's national policy. To a large extent, also the impacts in the new member states will be related to older impacts from national politics.

From the start of the project, we needed to conduct example studies to make distinctions according to an urban-rural dimension, as locational aspects for this dimension cannot be properly analysed on any NUTS level. The example studies therefore become very central for the impacts hypotheses on urban-rural aspect of CFP since only example studies makes it possible to analyse impacts on LAU levels.

The LAU levels are also vital for the delimitation of fisheries dependent territories within selected nations, as only LAU areas can be called fishery dependent in the true sense of the word in most ESPON nations. Only by using LAU areas can a comparison on dependency between countries be achieved. This has to do with the problem of differing size for the NUTS 3 territories, which means, as stated in the final report of MegaPesca on employment and dependency in fishing (Commission of the European Communities 200?) "… the area and population size of the NUTS 3 areas can vary considerably between member states which can significantly affect the ratio." We do in other words need a finer geographical sub division for some geographical areas to be able to make more accurate comparisons. Information on such levels is, however, only available for selected countries, which means that it will be impossible to cover ESPON Space. It is therefore important to see the territorial impacts of the policies in a perspective where we can make distinctions according to level of fisheries dependency. Examples have been selected from a number of countries covering important nations within ESPON Space in fisheries terms, and geographical areas that are important fishing communities in these countries.

There are three different possible sources for the example studies on the fisheries in the selected geographical territories:

- Information from evaluations of Interreg projects
- Relevant research projects already completed
- Statistics on LAU levels

As the example studies consider national implementation, the relevance of typologisations based on ESPON Space has changed. Some of them are quite simply not relevant for studies on national implementation, as the nationally important regional patterns behind the implementation are not visible on a European scale. To some extent, selected national classifications should supplement ESPON territorial typologies to clarify the national context.

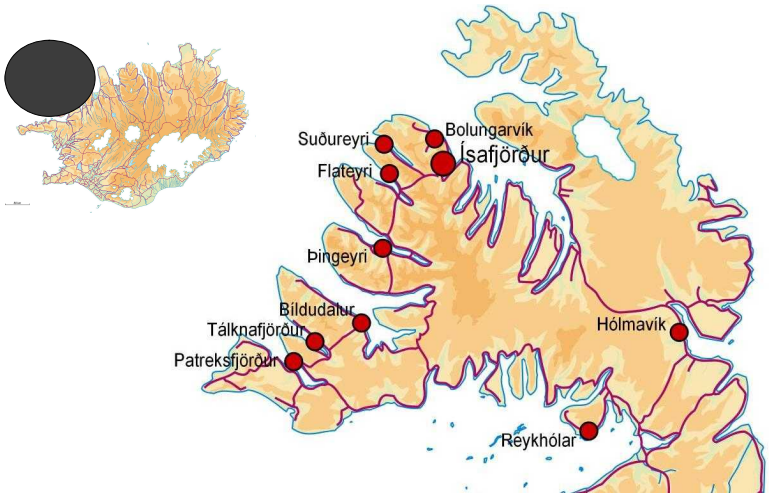
The example studies are worked out by the different national TGP partners in the project since they have first hand knowledge of the national development in their own countries. There are two studies from Norway. NIBR has produced the one presented in chapter 3 *Territorial variations in fisheries and fish farming in Norway*, whereas NORUT Group has produced the one in chapter 4 *Forcing territorial differentiation: The Norwegian Example - Fisheries policies based on market models*.

2 Example study: The Westfjords region in Iceland

2.1 The region

The Westfjords region is a remote and mountainous peninsula of 9.200 km^2 located close to some of Iceland's richest fishing grounds. Traditionally the Westfjords has been one of Iceland's main fishing regions. However, during the past few decades the region's strong position has been eroding in times where the general development has been towards larger companies with large and diverse fishing ships. These companies have a particularly strong position in the northeast and in the capital region. The development of the Westfjords in recent years is in the political debate sometimes linked to the individual transferable quota system based on the Fisheries Management Act from 1990.

Figure 2.1 The Westfjords region

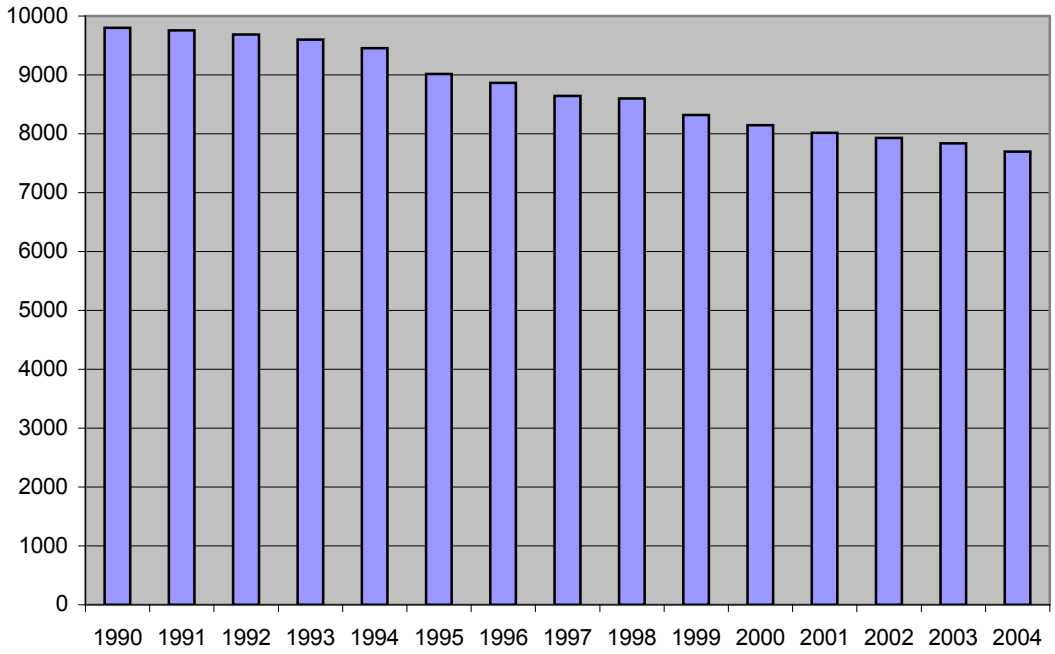


2.2 Population development

The Westfjords region is one of the most sparsely populated regions in Iceland with only 0,83 persons per km^2. It experienced much decline in population during the last century and the process is still going on. In 1901 there lived 12.481 in the region but in 2004 there were only 7. 698 persons, a decline of 38%. During the same period the Icelandic population grew from 79.000 to 294.000 and 63% of the population lives in the capital

region. In the capital region and an area within 45 minutes driving distance, there live some 75% of the Icelandic population! There has been heavy out-migration from the Westfjords as is the case with many other regions, to the capital region. In 1997, of those persons born in the Westfjords region, no less than 46,3% lived in the capital region!

Figure 2.2 Population development in the Westfjords region 1990-2004



Source: Statistics Iceland (2005)

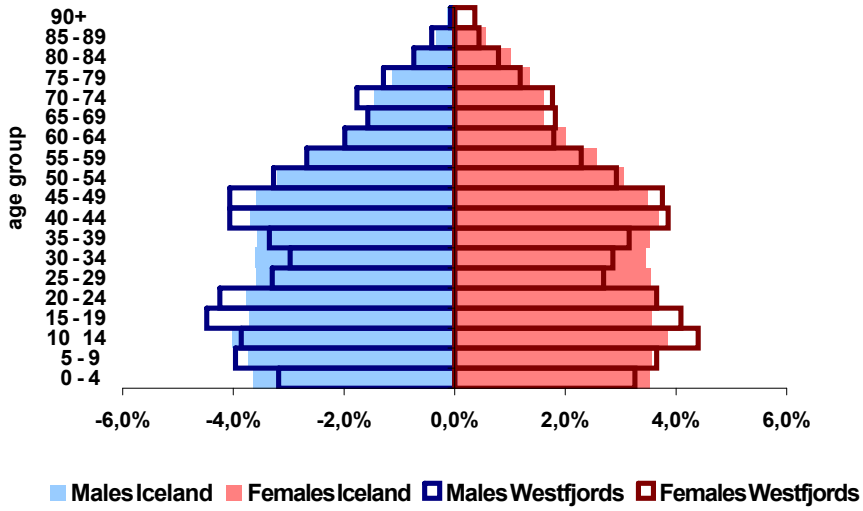
The out migration is still an important fact in the demographic development of the region. According to a survey carried out by the Icelandic Institute of Regional Research some 27% of the inhabitants state that it is likely or rather likely that they will migrate out of the region during the next 2-3 years (Hjördís Sigursteinsdóttir and Kjartan Ólafsson, 2004). According to data on unemployment, a lack of jobs in general is not the main reason for this trend. According to a large research on migration in Iceland carried out in 1997 factors associated with modern urban lifestyle is a very important factor. Examples of these factors influencing migration decisions are varied jobs in the tertiary sector and a wide variety of services only found in larger urban settings (Stefán Ólafsson, 1997).

Other general explanations to increasing depopulation of the rural areas are believed to be: first, occupation within the agricultural sector has reduced due to less need for manpower, caused by rationalization and increased technology. Second, trawlers can now transport the caught fish longer distances still keeping it fresh, and at the same time many of the functions of the filet fabrics are now done on board. This of course has threatened the jobs ashore and therefore the existence of the fishing villages around the country. Thirdly, the share and importance of knowledge in the fish production has increased, which has led to an allover rationalization in the filet factories. The new knowledge-based jobs in the fishing industry have mostly been established in the capital region and to much less extent in the remote regions. Fourth, change of values, especially the young people, could be a driving force in this development. Increased importance of education, mass media and traveling are reasons why the young people have chosen a future in the capital

region instead of the periphery which has much less supply of these opportunities. A fifth factor in this is believed to be the municipal structure. (Bjarki Jóhannesson 2001, Hovgaard, Eythórsson, Fellman 2004).

The sex and age structure of the Icelandic Westfjords shows the signs of out migration. Young adults are relatively fewer in the region than in Iceland in general. Young people generally migrate out of the region for work and/or studies in the capital area or abroad. In many cases return migration does not take place, e.g. due to a lack of various opportunities. In certain age groups, especially among young adults and middle aged, there live relatively more men than females in the region which in another sign of the out migration.

Figure 2.3 The Westfjords region, sex and age structure 1 December 2004



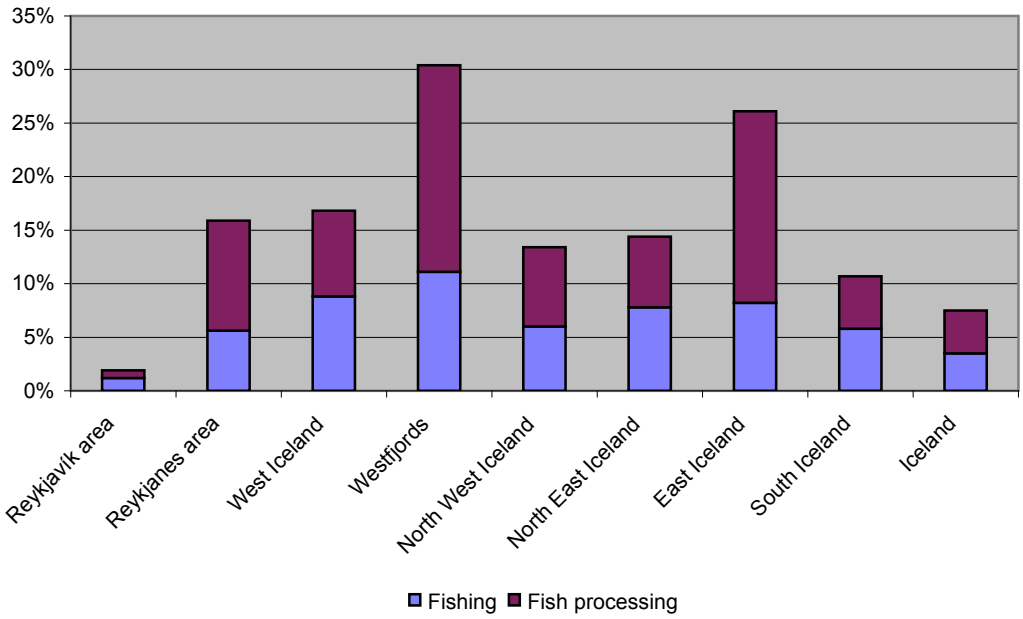
Source: Statistics Iceland (2005)

People of foreign background have to a certain degree migrated to the Westfjords region and e.g. work in the fisheries sector. The ratio of inhabitants born outside Iceland is 3,6% in Iceland in general compared with 5,2% in the Westfjords region (Statistics Iceland).

2.3 Employment structure and income

The Westfjords region has traditionally been dependent on fisheries and this is one of the reasons for the decline as the number of persons working in the fisheries sector has been shrinking. In the regions outside the capital region the number of persons working in fishing and fish processing has shrunk by 33% and 30% respectively since 1991. In 2003 fishing accounted for 11,1% of the work force in the Westfjords region and fish processing 19,3%. The national average was 3,5% and 4,0% respectively. This indicates the dependency of the region on the fisheries sector.

Figure 2.4 Iceland, share of employed persons by regions and primary occupation 2003

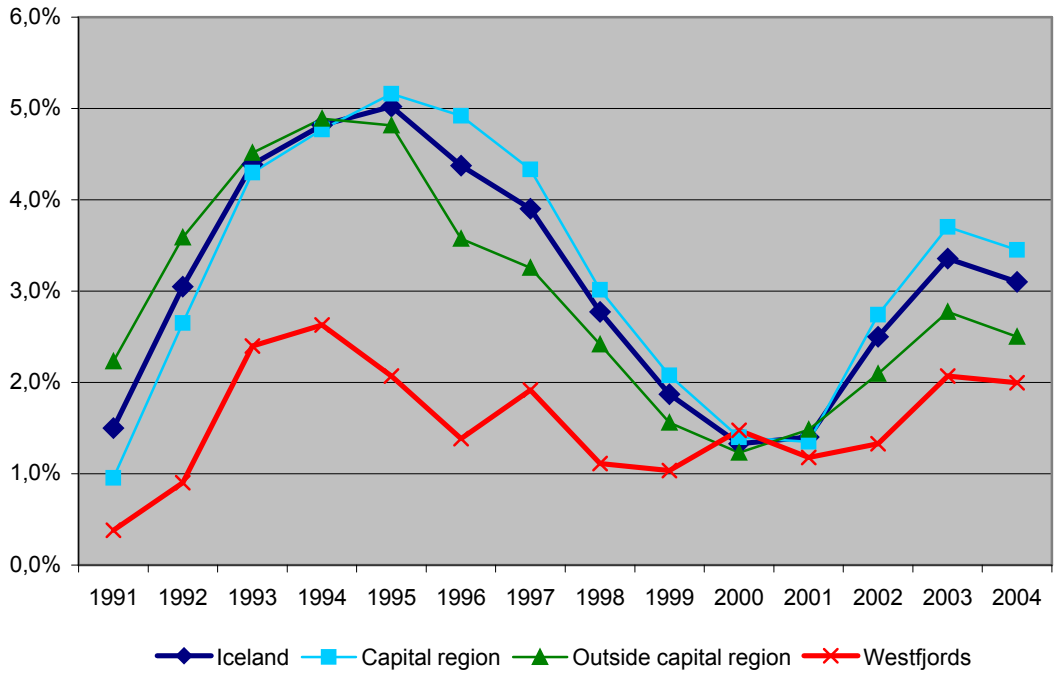


Source: Statistics Iceland (2005)

The wage level in the Westfjords region has furthermore been declining relatively during the past years. Traditionally wages in fisheries were relatively. In 1998 the average income in the Westfjords was close to the national average but in 2004 the income level was around 10 percentage points below the average. The income level is highest in the capital region (Director of Internal Revenue, 2005).

In spite of (or because) out migration from the region there has not been much unemployment in the Westfjords region compared with other regions in Iceland. The picture below shows this clearly.

Figure 2.5 Unemployment ratio by regions

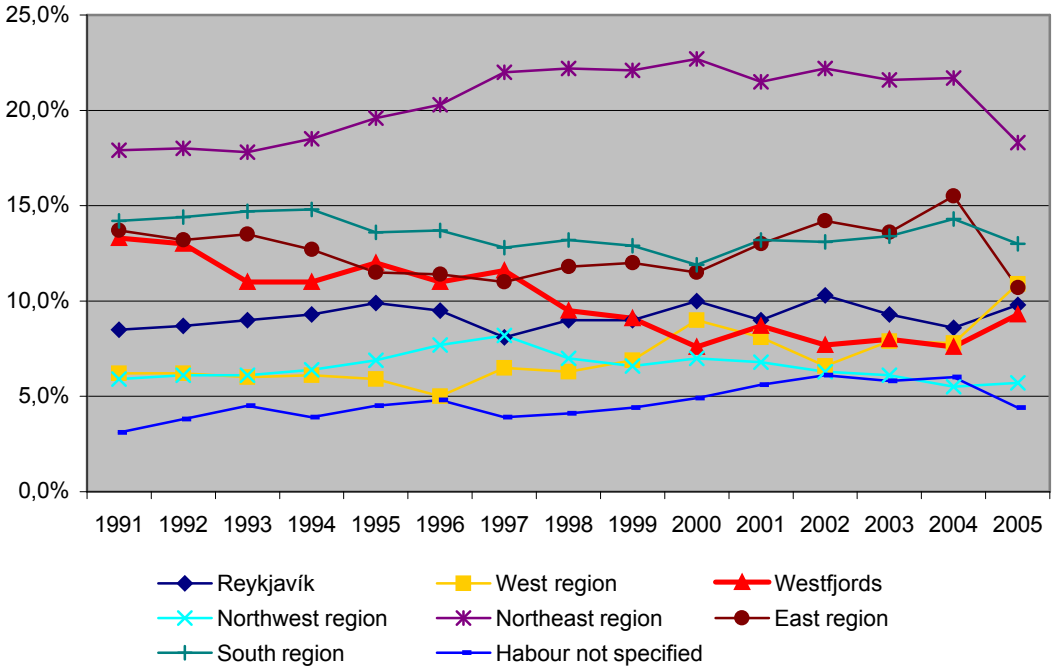


Source: Directorate of Labor (2005)

2.4 Quota and its relative development in the Icelandic regions

The eight Icelandic regions have experienced different development since the transferable quota system was introduced as the figure below clearly shows. The quota is registered to ships so that the location of quota is the homeport of the particular vessel. During the period 1991-2005 the Westfjords experienced a relative decline in their share of the total allowable catch, especially during the first half of the period (see the figure below). How well other regions have been doing in this sense is rather different. During the first half of the period the Northeast region was clearly a winner and during most of the latter half it was the East region. This however seems to be rapidly changing. At the end of the period there is a clear gain by regions in the western part of the country, including the Westfjords at the cost of regions in the eastern part of the country. If this is a short term development or a beginning of a new era is not clear. However, there are indications that a long term development could be occurring due to e.g. recent purchases of large companies in the northern and eastern part of the countries by companies in the western part.

Figure 2.6 The relative quota by harbors and regions 1991-2005 by homeport of vessels (cod equivalences)



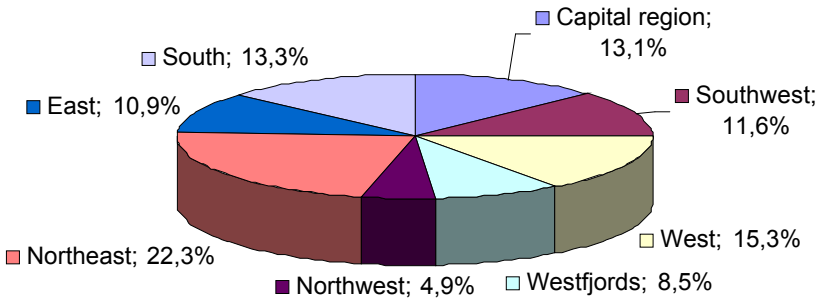
Source: Directorate of Fisheries (2005)

This geographical division of quota does only to a certain degree reflect the relevance of fisheries or the size of the business in the respective regions. In spite of a ship being registered in a particular harbor it may unship the catch in a different harbor. This is indeed often the case in Iceland. This applies e.g. to large vessels with freezing capacity which often unship the product in locations close to export harbors. Most of the export harbors are located in the Reykjavík region. This type of fishery is much practiced among fishing companies in North Iceland. Even for the small boat fisheries, landings in their homeport do not necessarily result in job creation in fish processing in that particular location. The fish is often transported to other locations for processing or sold on fish markets.

2.5 Catch and catch value

Measured by catch value, the Westfjords region had the second lowest catch value in 2004 as seen in the pie chart below. This is in line with the picture above showing the relative quota in 1991-2004.

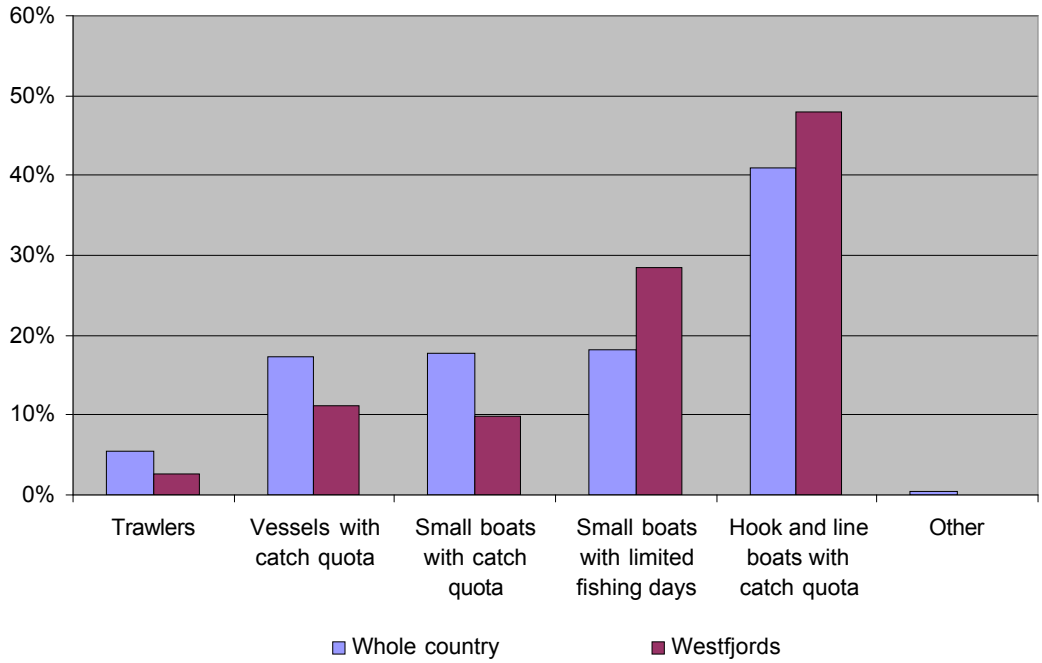
Figure 2.7 Catch value by home port of vessels in 2004 (source: Statistics Iceland)



Source: Statistics Iceland

It appears that the structure of the fishing fleet is changing in the Westfjords region. The emphasis on smaller vessels has been increasing in the region which seems rational bearing in mind the region's location close to rich fishing grounds. The number of vessels can be seen in the figure below.

Figure 2.8 The structure of the fishing fleet, number in 2004 (source: Statistics Iceland)

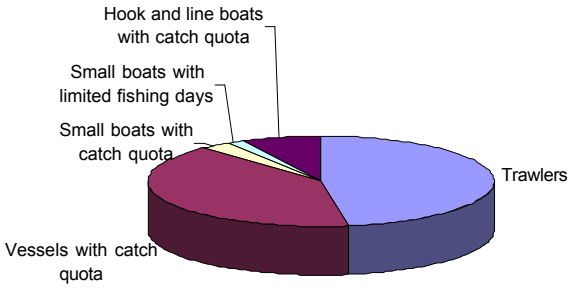


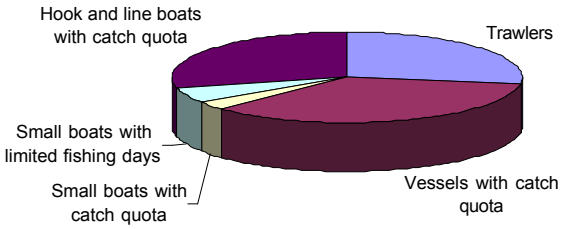
Source: Statistics Iceland (2005)

There has been much development in the design of smaller fishing vessels, resulting in a much faster and better equipped fleet having more fishing power, often with engines of 250-350 hp. and a top speed of 30 nm. (The Federation of Icelandic Fishing Vessel Owners, 2006). Therefore the number of boats does not necessarily reflect their fishing

power. This development may to some degree have compensated for loss of quota from the region.

Figure 2.9 The value of catch by type of fishing vessel and home port in 2004, the whole country (left) versus the Westfjords (source: Statistics Iceland)





Source: Statistics Iceland (2005)

2.6 Regional development and infrastructure

Due to the development of the region, there have been carried out numerous regional development plans for the Westfjords. As early as 1965, there was emphasis on growth centre policy in the region, with an emphasis on its regional centre; the town Ísafjörður (Efnahagsstofnunin, 1969). However, not much was implemented and this strategy was mostly abandoned by Icelandic governments in the 1970's and 1980's. A change of course took place in the 1990's and this growth centre strategy was again adopted by the Icelandic government. In 2005 there was signed a growth agreement for the Westfjords region. The main task of the growth agreement is to support the formation and development of clusters in the following sectors: fisheries and food production (e.g. aquaculture and research on fishing gear), education and research and culture and tourism (Verkefnisstjórn um byggðaáætlun fyrir Vestfirði, 2005).

The infrastructure, especially the road system has been one of the region's major shortcomings. Due to topography, developing a modern road system is very costly. To interconnect the region with a better road system has always been in the forefront of regional plans for the Westfjords. Still today there is a lot to do in that field and the regional centre Ísafjörður is not accessible for some 17% of the total population of the southern part of the region during extended periods of the winter time (Hjalti Jóhannesson and Jón Thorvaldur Heidarsson, 2005). For some inhabitants, during the wintertime,

Reykjavík has at times been more accessible by air transportation than is the regional capital.

2.7 Future prospects

Even if the development of the region can to a great extent be traced to its heavy dependency on fisheries, its remoteness and lack of road infrastructure is a major shortcoming of the region.

The Westfjords share with other remote regions in Iceland the development that for the younger generation, the region does not seem to provide enough opportunities e.g. jobs demanding a university degree, leisure opportunities, diverse services and those varied amenities generally only found in urban centers or their immediate vicinity.

It is clear that since the introduction of the individual transferable quota system, the region has lost a large share of quota. At the same time the region has lost people. However regions that have suffered depopulation to a similar degree seem not to have lost as much quota at the same time. It is difficult to state that the quota transfer system is the only reason for the massive depopulation in the Westfjords region since the early 1990's. According to a report carried out for the Icelandic Institution of Regional Development the regional development in Iceland can be linked to the individual transferable quota system causing movement of quota between regions (Haraldur L. Haraldsson, 2001). The authors however suggest that further research is needed to study this relationship.

3 Territorial variations in fisheries and fish farming in Norway

Using data from Statistics Norway's Business Register, we can make an overview of employees in both fisheries and aquaculture, on different geographical levels. In this analysis we concentrate on NUTS 3 (the Norwegian counties) and a LAU level (the Norwegian municipal level). The main purpose is to show the territorial variations in fisheries and fish farming employment, and particular to give an illustration on the differences on NUTS 3 and the municipality level, and the territorial variations within NUTS 3 regions. Using FUA classification in Norway we are also able to indicate urban-rural dimensions in aquaculture and fisheries.

The Business Register covers all enterprises and local kind of activity units (local KAU) in private and public sector in Norway. For geographical analyses, local KAU is used, since they are unambiguous, both geographically and by industry. Industry is given by NACE-code.

In this analysis, we mainly use relative numbers, as share or per cent, due to the great variation in size of our geographical units. Using relative numbers means that we can easily compare units with different sizes, but means also that changes in employments can alter the shares of employees in fisheries or aquaculture. If a relatively big enterprise in an area disappears, then the share of employees working in other industries will "artificial" increase. A broader discussion of relative versus absolute numbers, together with a more in-depth analysis of the findings, will be covered in the final report.

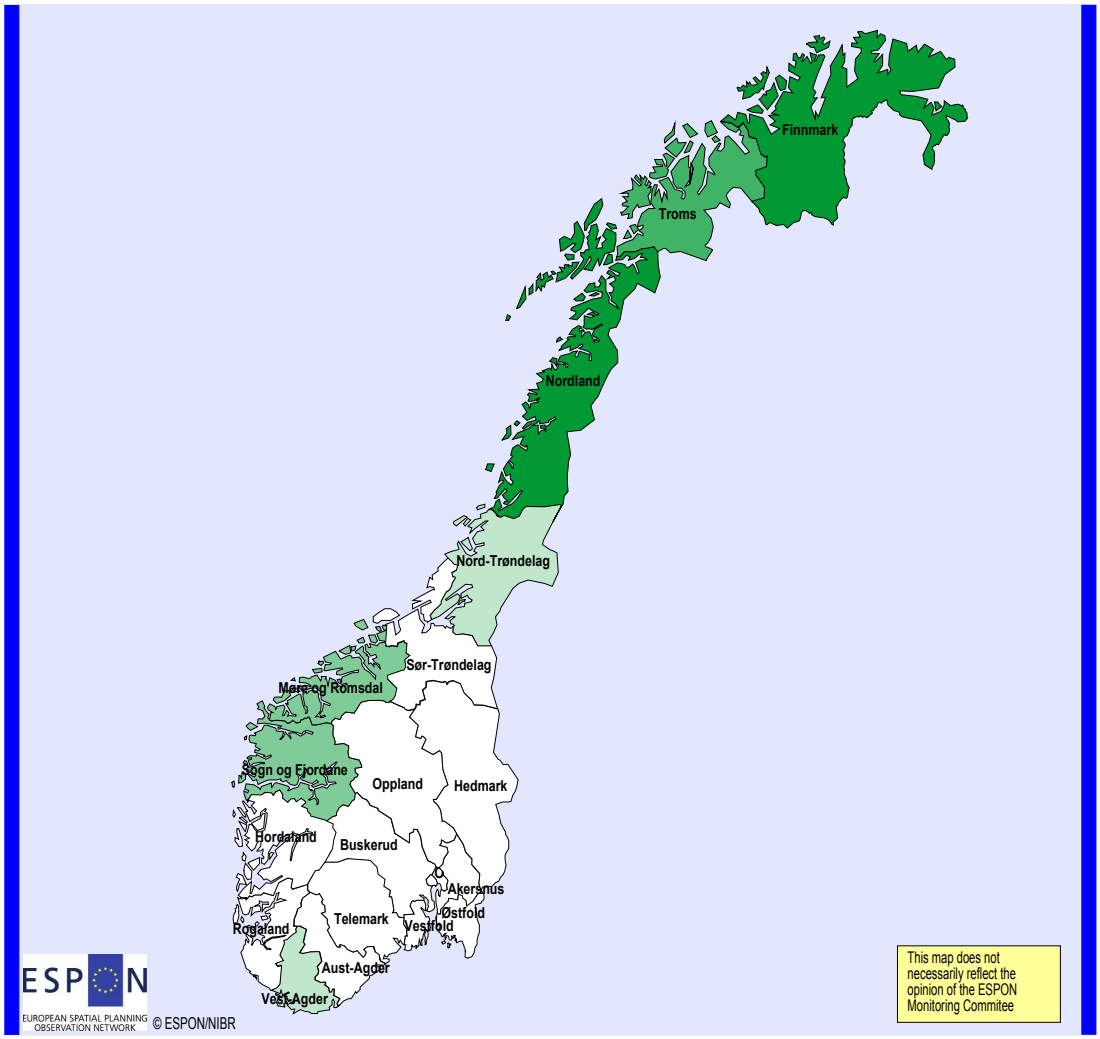
The numbers of employments are estimates based on size-classes in the Business Register. This means that people working as fishermen, without register as an enterprise, will not be covered by the register. At the same time, lots of enterprises or local KAUs have none employees in the register, because self-employment without an employment-contract is not registered. NIBR has done some estimations for these lacking employees, but still the absolute numbers is somewhat low. For comparison of geographical units, and development over time, it is, however, of minor significance. When new national statistics are published, we will consider new method for estimation, hopefully before the final report. For the final report, data for January 2006 will be included.

3.1 Employment in Fisheries – NUTS3 analysis

Starting on NUTS3 (counties) with fisheries, we can see that fisheries today are geographical uneven spread in Norway (map 3.1). On this level, the share of employees working in fisheries is not too high. Only the county Finnmark has a share over 2 per cent inisheries. The share of employees working in fisheries is highest in northern Norway and two counties in the western Norway (Sogn og Fjordane and Møre og Romsdal). These are

the counties that historically have been most dependent on fisheries with some long traditions to relay on.

Figure 3.1 Map 3.1 Share of employees in fisheries. NUTS3. 2005



Looking back seven years, the picture is not too different (map 3.2). The same counties have the highest shares, but in general the shares are a bit higher in more counties. Only three counties, however, is changing their colour in the map. Looking more specific on the differences between 1998 and 2005, we can see that those counties with the highest shares in 1998, even though they also are on the top in 2005, have lost relatively most of the employees in fisheries during the period, namely Finnmark and Nordland (map 3.3).

Figure 3.2 Map 3.2 Share of employees in fisheries. NUTS3. 1998

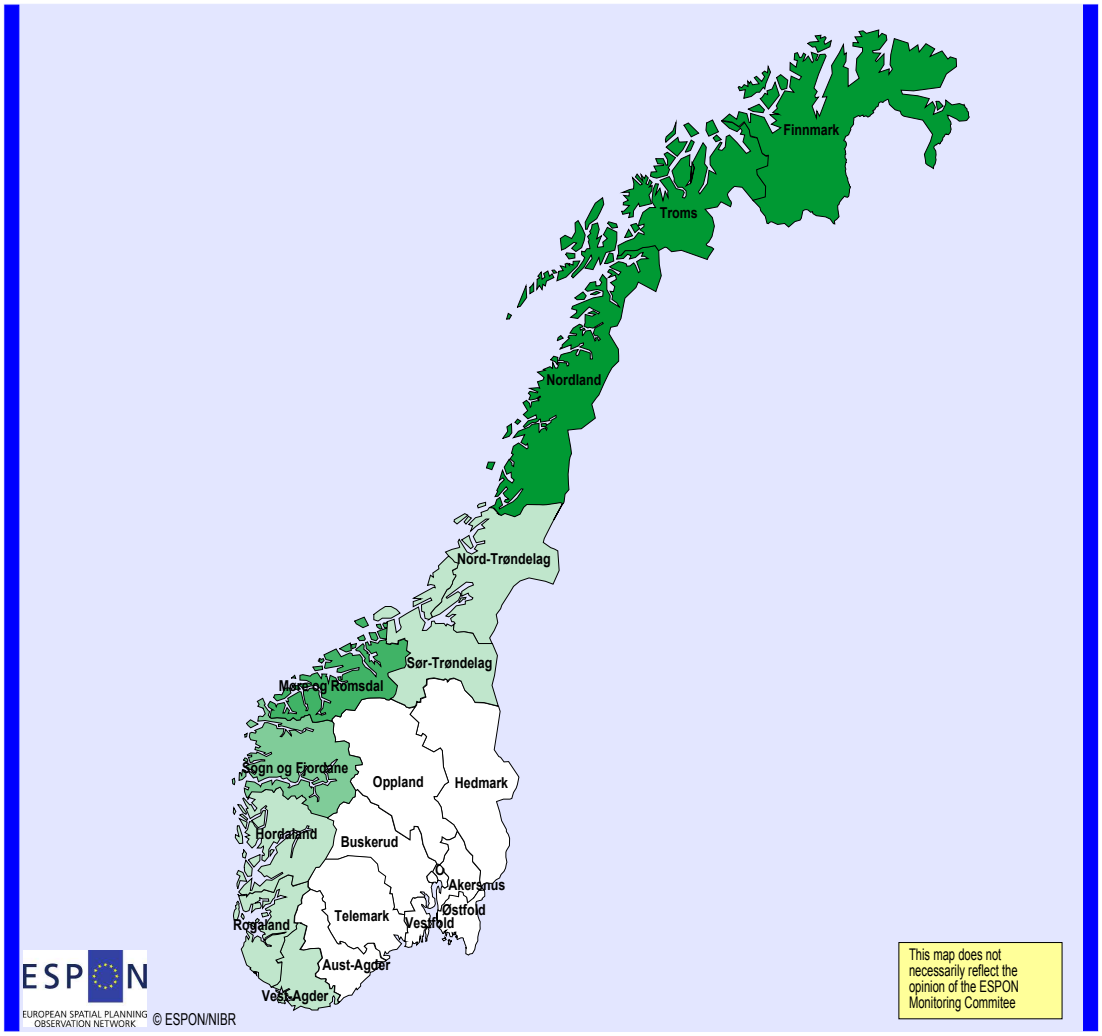
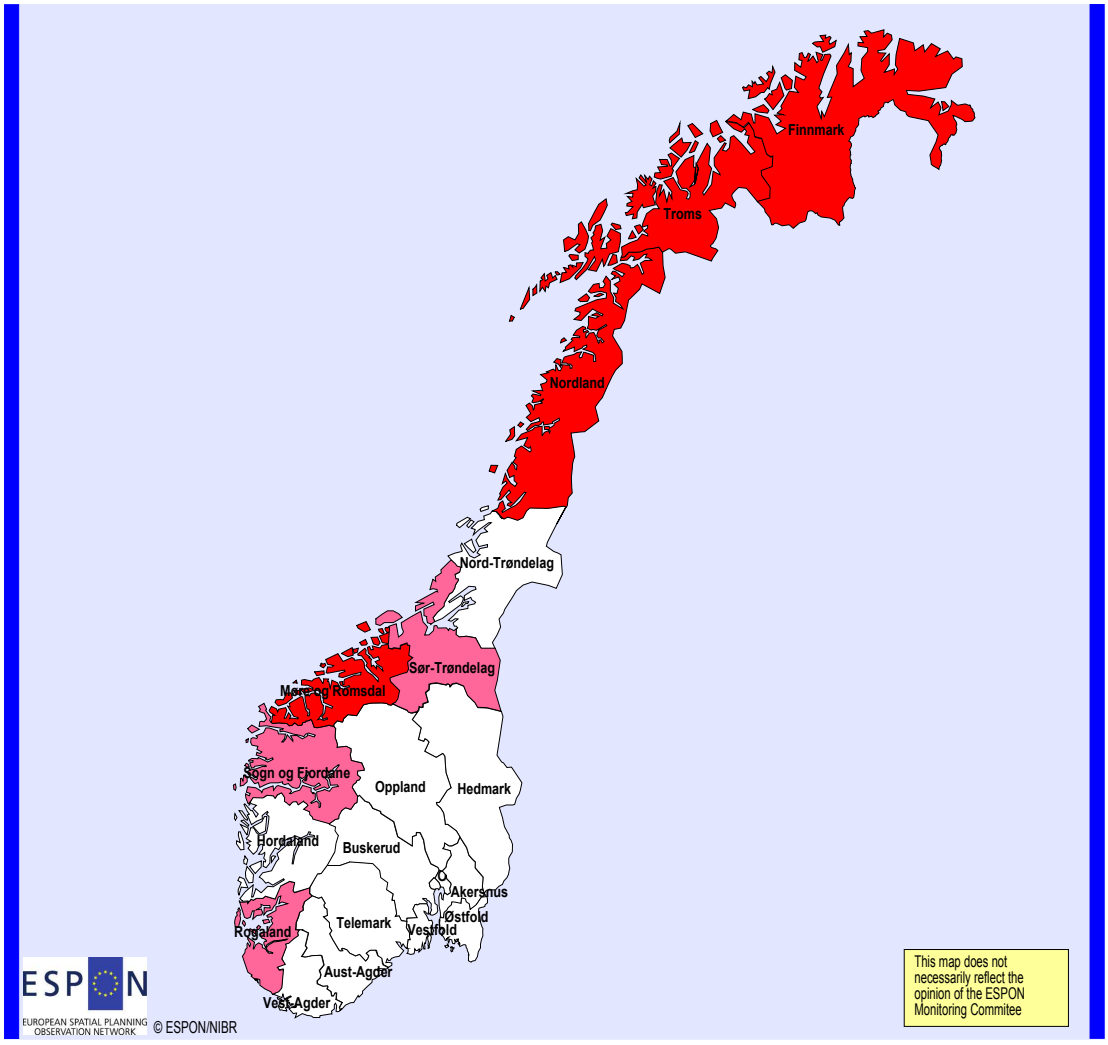


Figure 3.3 Map 3.3 Changes in the share of employment in fisheries. NUTS3. 1998-2005



3.2 Employment in aquaculture- NUTS3 analysis

The same maps can bee made for employees in aquaculture. Today, it is most of the same counties that have many employees in fisheries that also have the highest share of employees in aquaculture, namely Finnmark, Nordland and Møre og Romsdal (map 3.4). The map looked, however, a bit different seven years ago. In 1998 Sogn og Fjordane was on the top with a share of the employees in aquaculture at almost one per cent (map 3.5).

Figure 3.4 Map 3.4 Share of employees in aquaculture. NUTS3. 2005

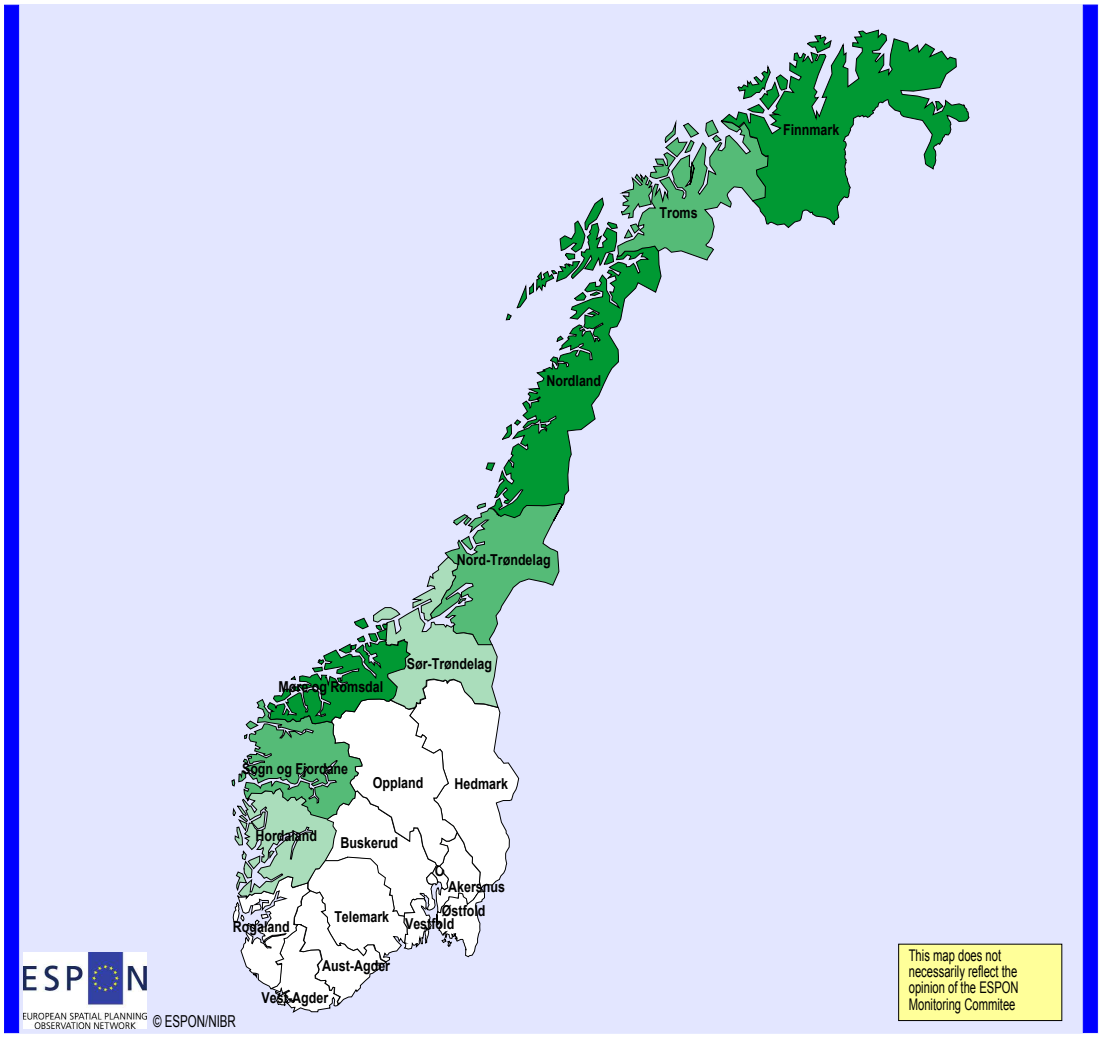
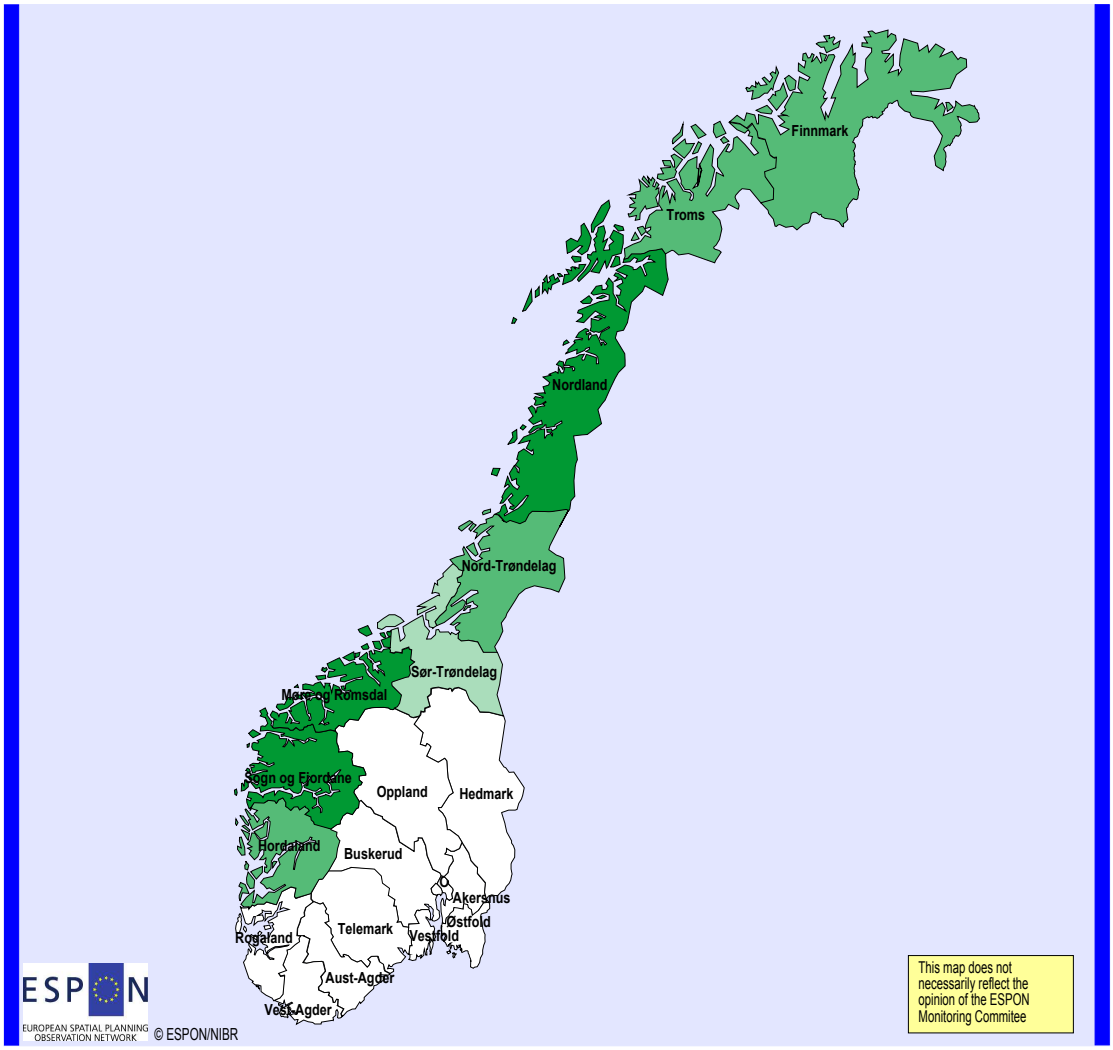


Figure 3.5 Map 3.5 Share of employees in aquaculture. NUTS3. 1998



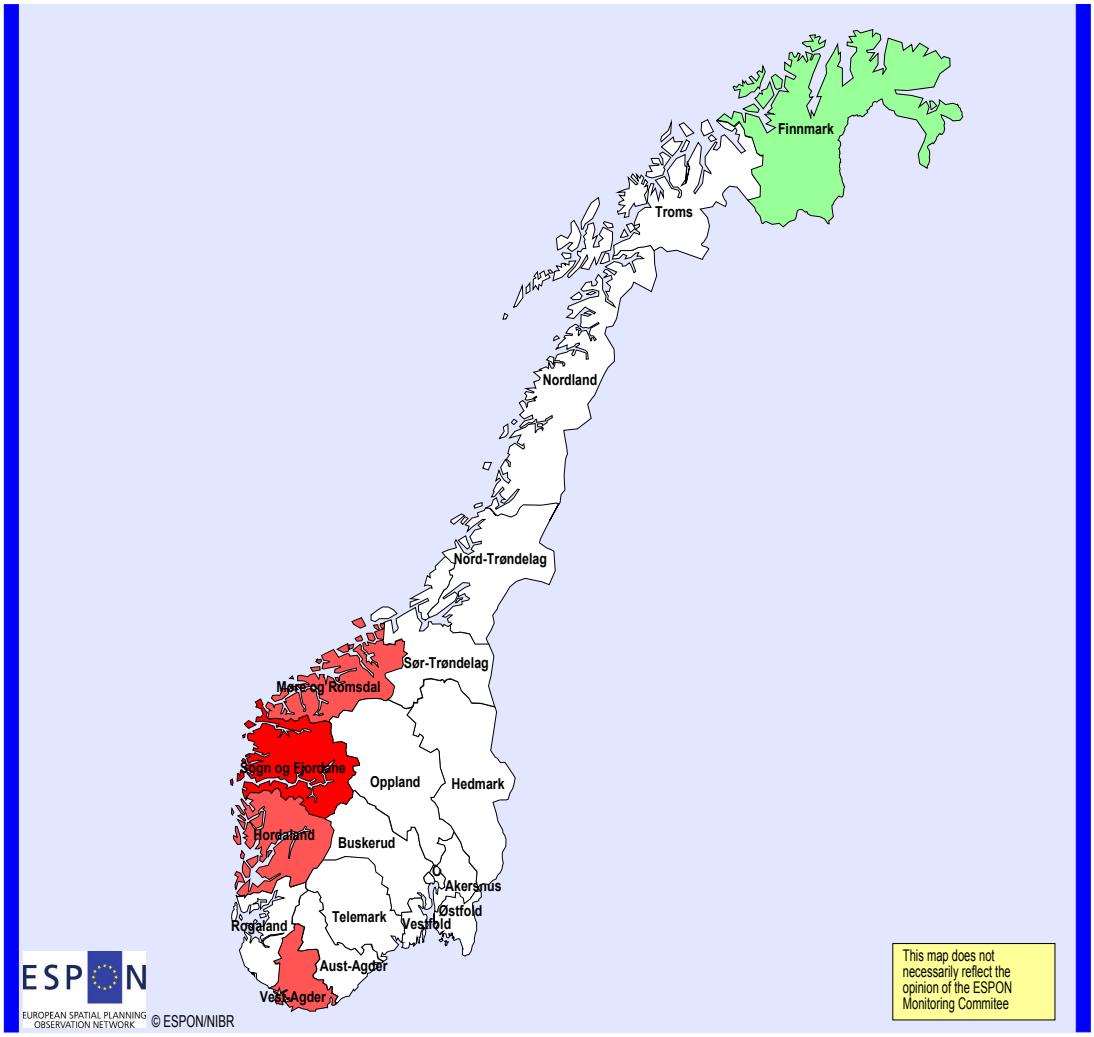
Origin of the data: Statistics Norway/Norwegian Institute of Urban and Regional Research

Share of employees in aquaculture. 1998. NUTS3.

- 0.60 % and over
- 0.40 % to 0.59 %
- 0.20 % to 0.39 %
- Under 0.20 %

In contradiction to the development of employees in fisheries (with a relative decrease in all counties), three counties have a relative increase in employment in aquaculture (Finnmark, Sør-Trøndelag and Rogaland) in the period from 1998 to 2005 (map 3.6). But also for fish farming, the county that had the highest rate of employees in 1998 also has the highest decrease in the share of people working in this sector. For aquaculture, it was Sogn og Fjordane county, while it was Finnmark county for fisheries.

Figure 3.6 Map 3.6 Changes in the share of employment in aquaculture. NUTS3. 1998-2005

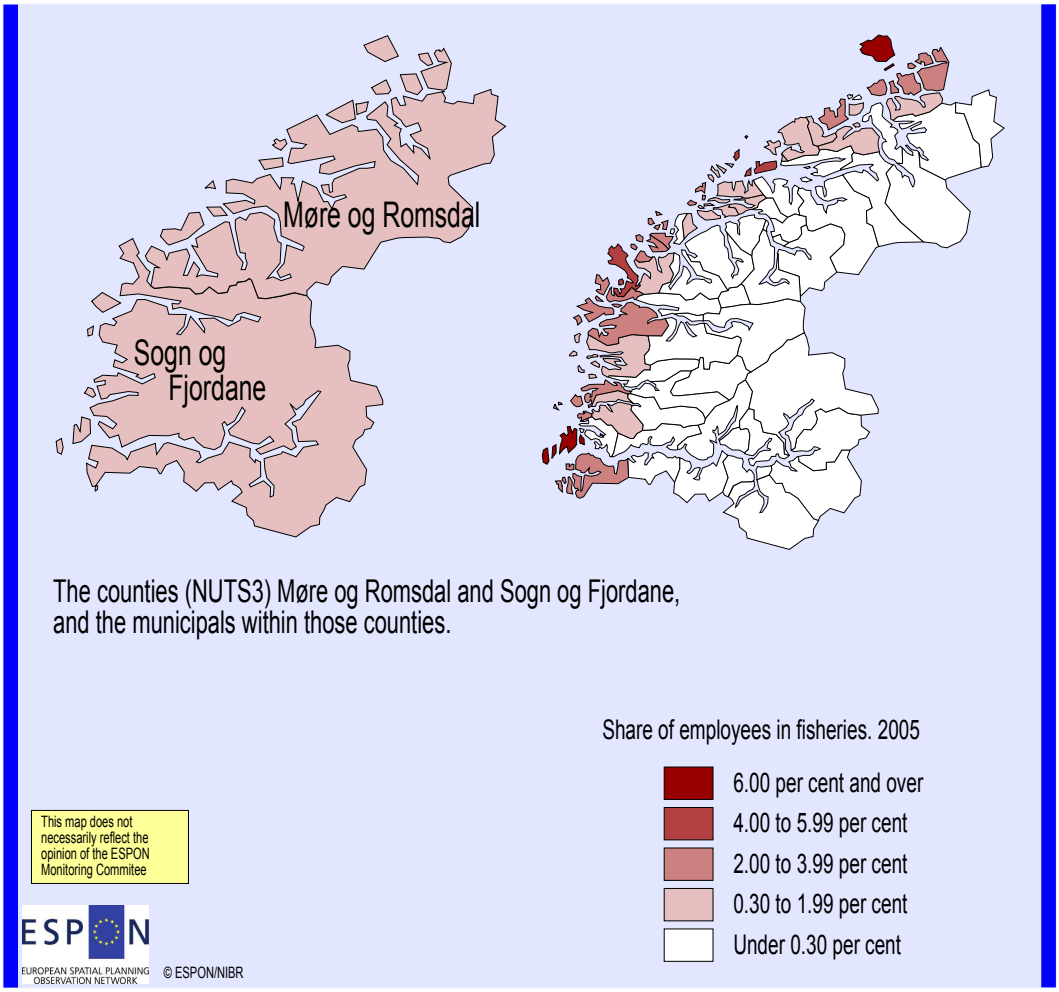


3.3 Employment in fisheries - analysis on municipal level

The NUTS3 level in Norway is in many cases too aggregated for analysing economic processes or phenomena. This is clearly shown in the case of fisheries or fish farming. Naturally these activities are tied to the coastline (with some exceptions for fishing and aquaculture in fresh water). Many counties in Norway are stretching from the coast and up to the watershed, or in to the boarder of Sweden, Finland or Russia. In map 3.7 and

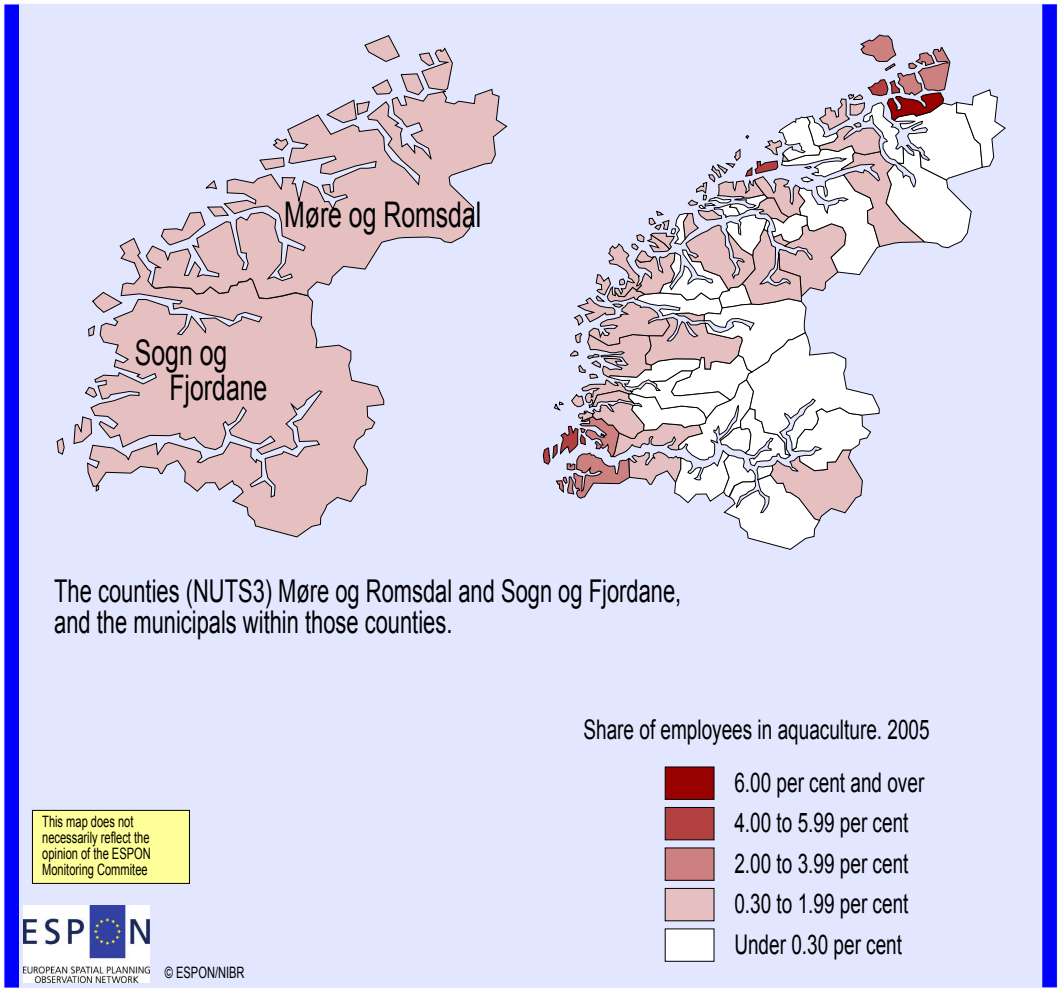
map 3.8, we have made two illustrations for the two counties Sogn og Fjordane and Møre og Romsdal. Here we see how both fisheries and aquaculture is tied to the municipals along the coast.

Figure 3.7 Map 3.7 Share of employees in fisheries at two geographical levels. 2005



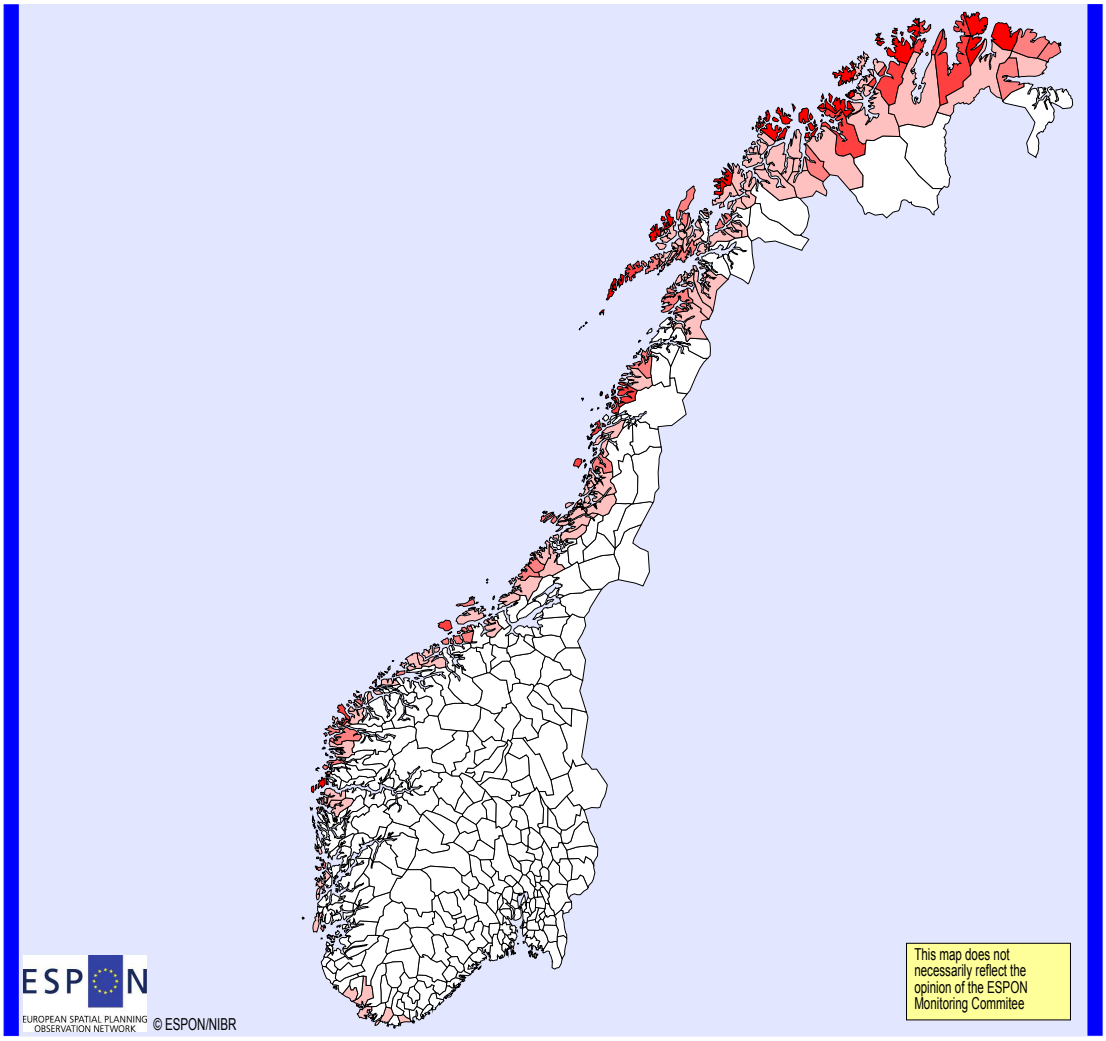
Another point to bee made is that the numbers connected to the NUTS3 level in the left of map 3.7 and 3.8 are representative for only a small part of the municipals inside the counties. For fisheries and aquaculture, this skewness is naturally large, but this is relevant to all phenomena that are not homogeneous over the area within a geographical unit.

Figure 3.8 Map 3.8 Share of employees in aquaculture at two geographical levels. 2005



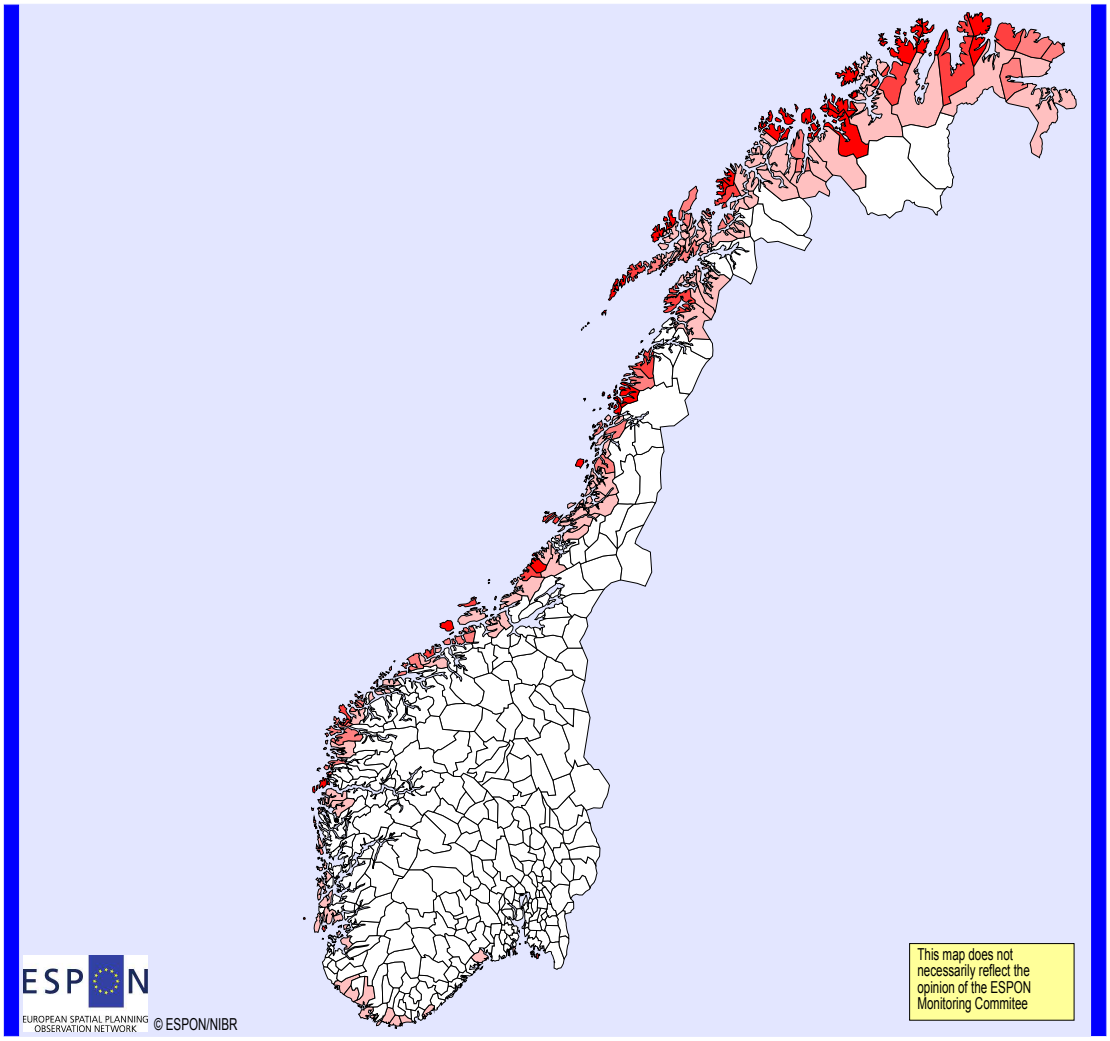
Looking at map 3.9, it is clear that fisheries are concentrated to the municipals along the coast, and mostly at the western and northern part of Norway. But even at the coast, we find a concentration to some municipals, with other municipals almost without employees in fisheries. Generally, it is the most outward coastal municipalities that have highest shares of employees in fisheries.

Figure 3.9 Map 3.9 Share of employees in fisheries in Norwegian municipals. 2005



Looking at the 1998-data, it is not obvious that much have happened the last seven years. We can see some municipals changing its colour, but the overall picture is quite stable (map 3.10). But if we make a map with the changes, it is clear that locally, it have been some major transformations within some counties. Especially in Finnmark and Northern Troms, we find that some municipalities have experienced a major decrease in the rate of employment in fisheries while others have experienced an increase in the same period (map 3.11). This demonstrates the importance of geographical breakdown in the analysis. Despite the fact that all counties have experienced a decrease in the rate of employment, there are major differences within some counties. The analysis on municipal level indicates that there has been a concentration regarding employment in fisheries to a few municipalities within some counties.

Figure 3.10 Map 3.10 Share of employees in fisheries in Norwegian municipals. 1998

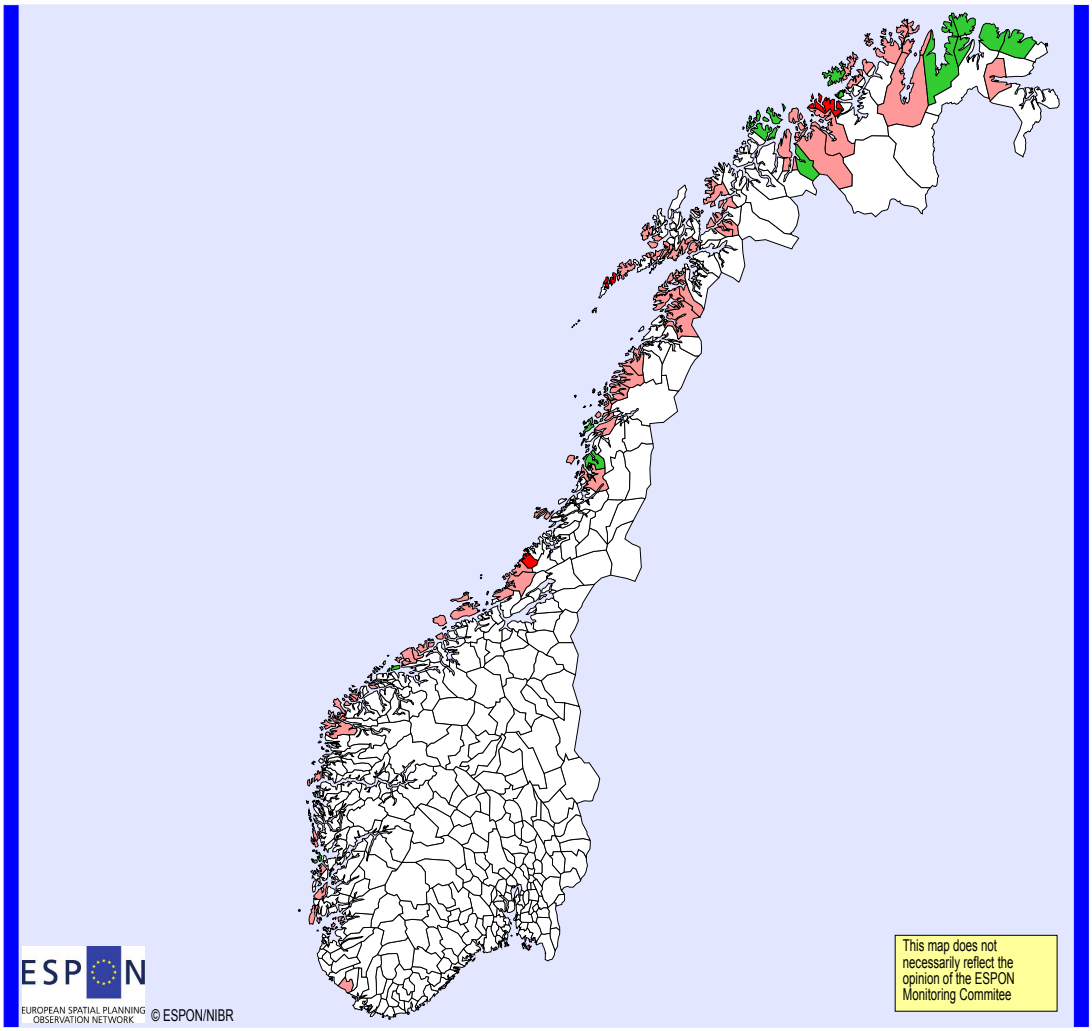


Origin of the data: Statistics Norway/Norwegian Institute of Urban and Regional Research

Share of employees in fisheries. 1998

- **7.50 % and over**
- **5.00 % to 7.49 %**
- **2.50 % to 4.99 %**
- **0.50 % to 2.49 %**
- **Under 0.50 %**

Figure 3.11 M 3.11 Changes in the share of employees in fisheries in Norwegian municipals. 1998-2005



Origin of the data: Statistics Norway/Norwegian Institute of Urban and Regional Research

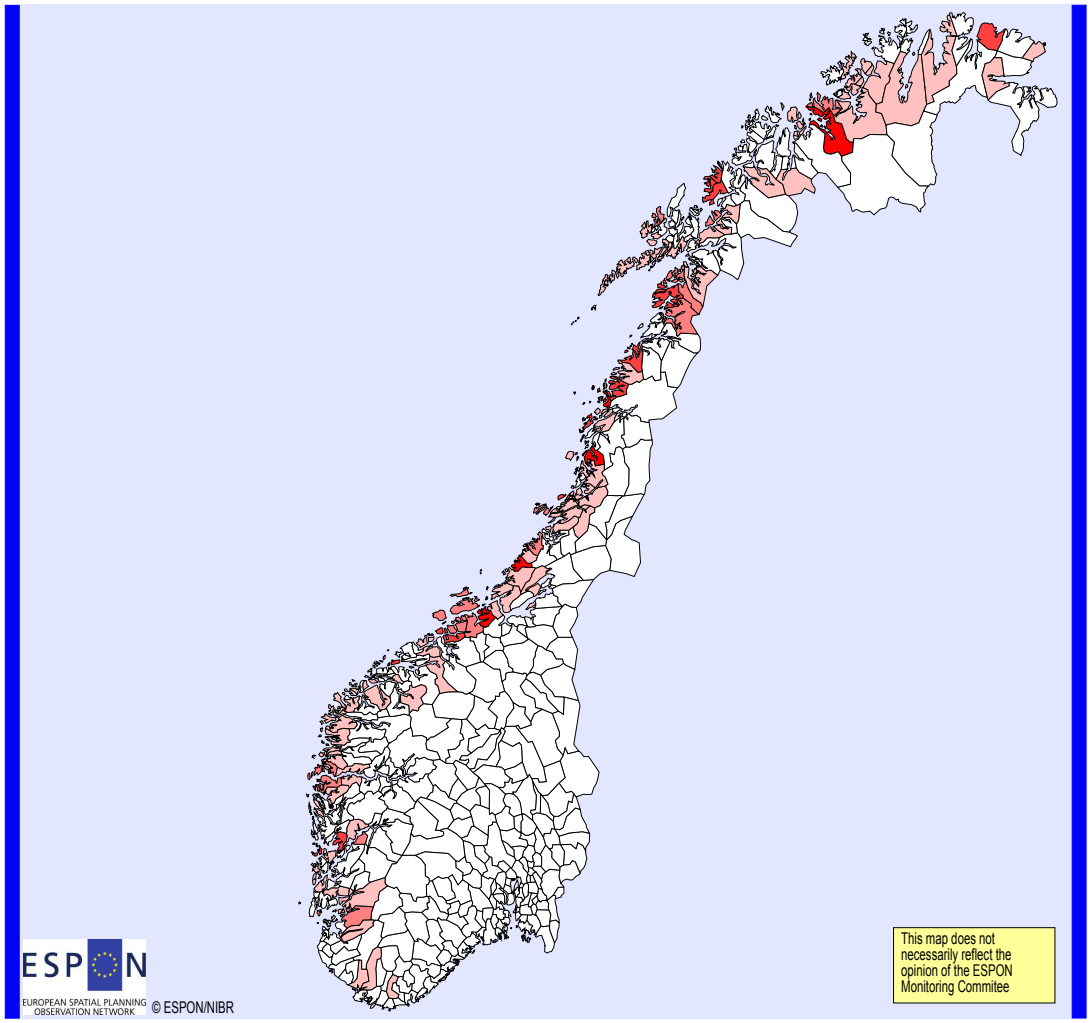
Changes in the share of employment in fisheries. 1998-2005. Per cent points.

- **Increase by 0.5 per cent point or more**
- **Increase or decrease by less than 0.5 per cent point**
- **Decrease by 0.5 to 5.0 per cent point**
- **Decrease by mor than 5.00 per cent points**

3.4 Employment in aquaculture – analysis on municipal level

For aquaculture, the situation and development are slightly different compared with fishing. Today (map 3.12), most municipalities along the western and northern coast are involved in aquaculture, and these types of activities are almost as widespread as traditional fisheries.

Figure 3.12 Map 3.12 Share of employees in aquaculture in Norwegian municipals. 2005



Seven years ago (map 3.13), the picture seems more or less the same. Making a map of the development during the period, however, clearly shows that there has been a development at the local level, and more municipalities have experienced growth in employment than in fisheries (map 3.14). It is almost as many municipalities with growth in the share of employment in fish farming, than it is municipalities with a decrease in the share of employment. On the same way as for employment in fisheries, these data show that there also has been a tendency of concentration in employment regarding fish farming within counties.

Figure 3.13 Map 3.13 Share of employees in aquaculture in Norwegian municipals. 1998

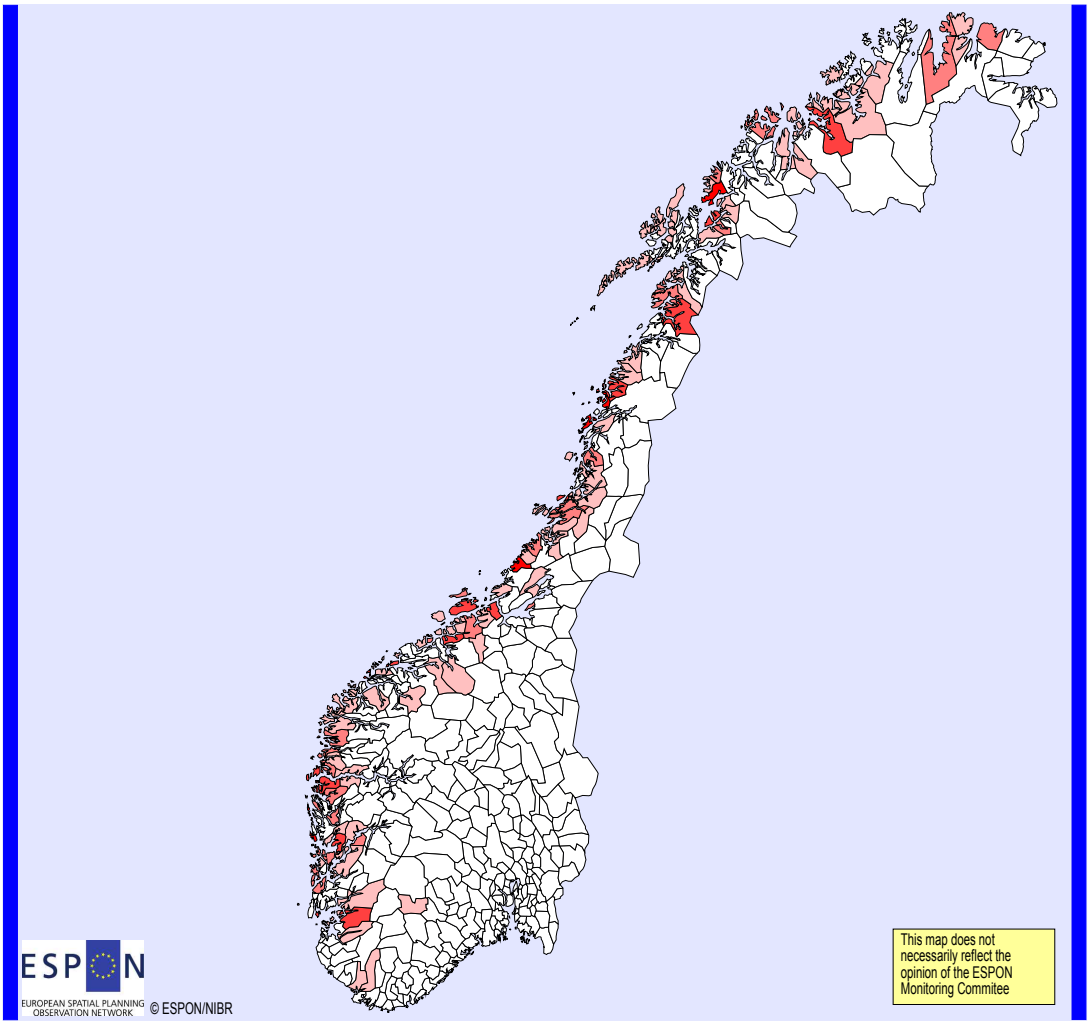
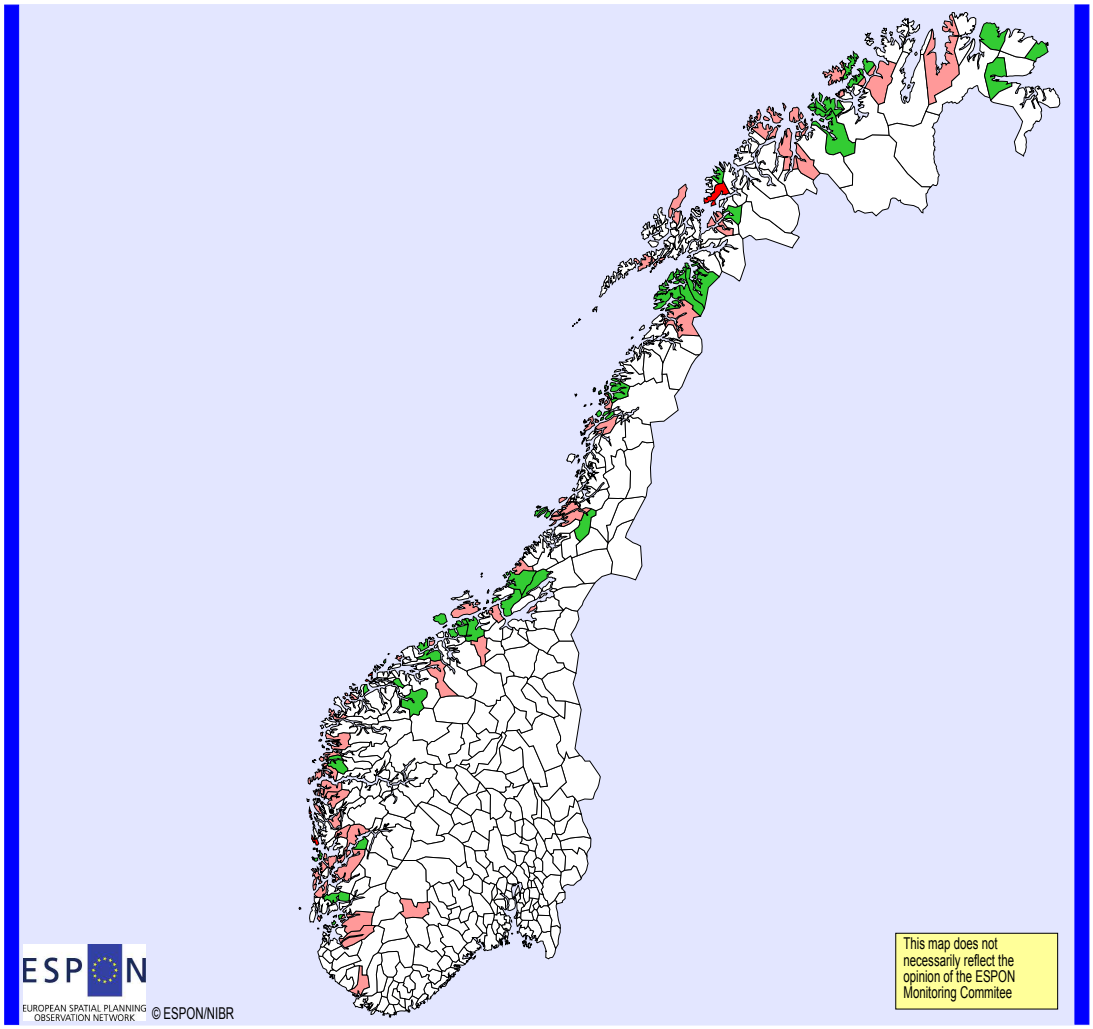


Figure 3.14 Map 3.14 Changes in the share of employees in aquaculture in Norwegian municipals. 1998-2005



Origin of the data: Statistics Norway/Norwegian Institute of Urban and Regional Research

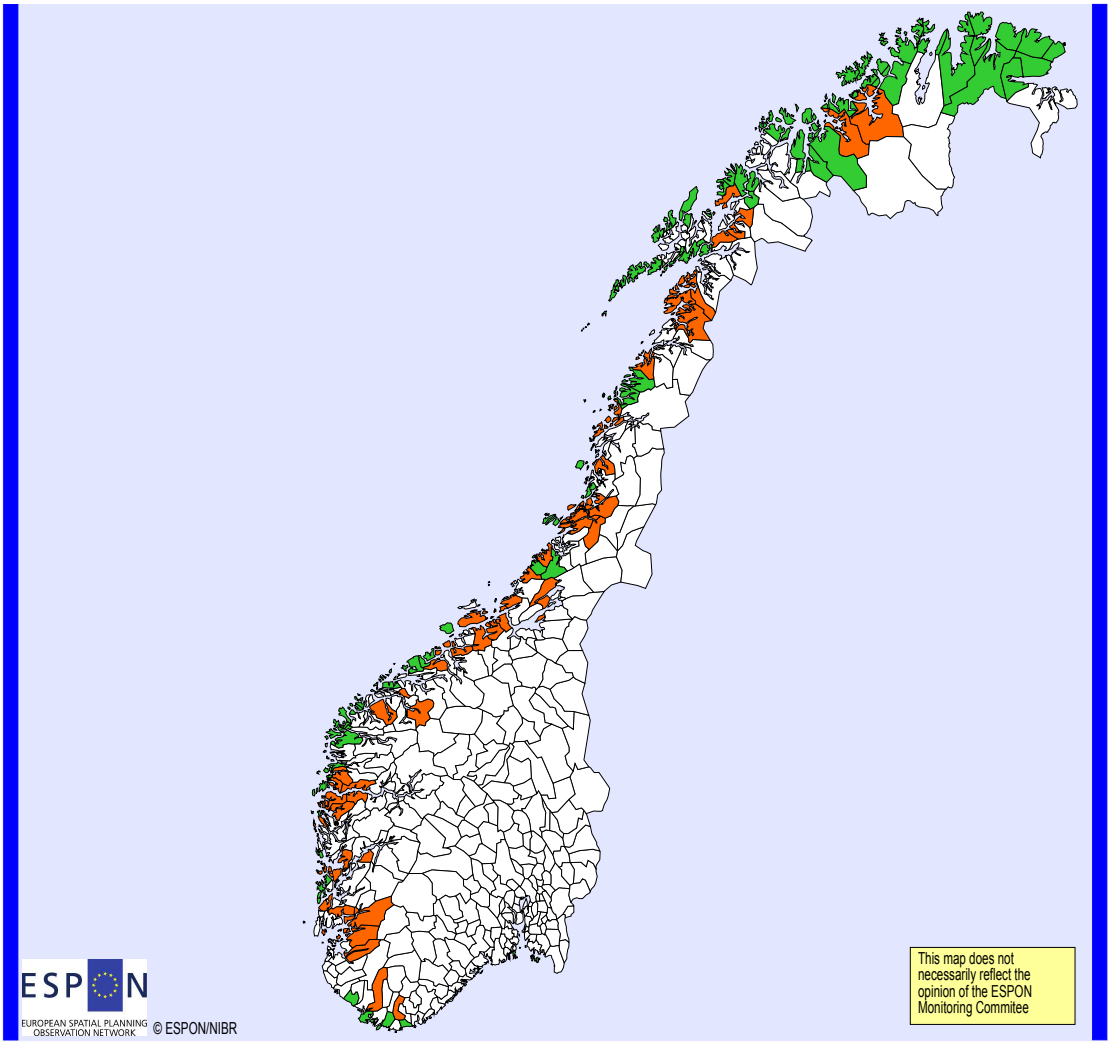
Changes in the share of employment in aquaculture. 1998-2005. Per cent points.

- **Increase by 0.5 per cent point or more**
- **Increase or decrease by less than 0.5 per cent point**
- **Decrease by 0.5 to 5.0 per cent point**
- **Decrease by mor than 5.00 per cent points**

Another aspect where the geographical level NUTS 3 is too aggregated is when it comes to the importance of aquaculture compared to fisheries. In most counties, fisheries constitute a higher share of the employees than aquaculture, but at the municipal level, this is certainly not the case (maps 3.15 – 3.17).

In the northern Norway, fisheries are more important than aquaculture, but aquaculture have gained importance since 1998. At the West coast, the picture is more mixed. Aquaculture is, for most municipals, not taking new shares of the employment, and for some municipals fisheries have gained importance compared to aquaculture.

Figure 3.15 Map 3.15 Comparison between fisheries and aquaculture in Norwegian municipals. 2005



Origin of the data: Statistics Norway/Norwegian Institute of Urban and Regional Research

Fisheries and aquaculture compared. 2005

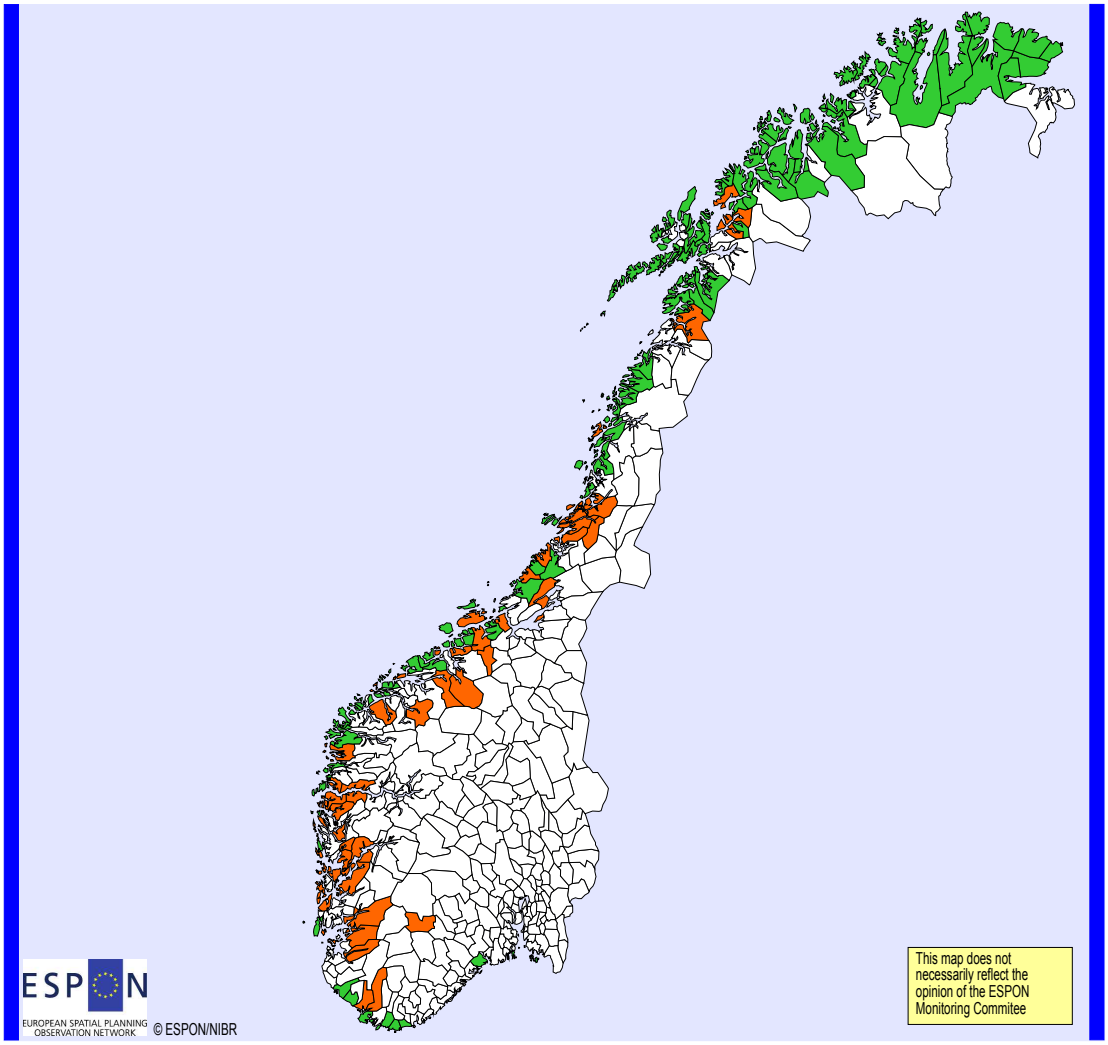
The share of employees in ...

fisheries is more than 0.5 per cent point higher then in aquaculture.

fisheries and aquaculture is within 0.5 per cent points from each other

fisheries is at least 0.5 per cent point lower then in aquaculture

Figure 3.16 Map 3.16 Comparison between fisheries and aquaculture in Norwegian municipals. 1998



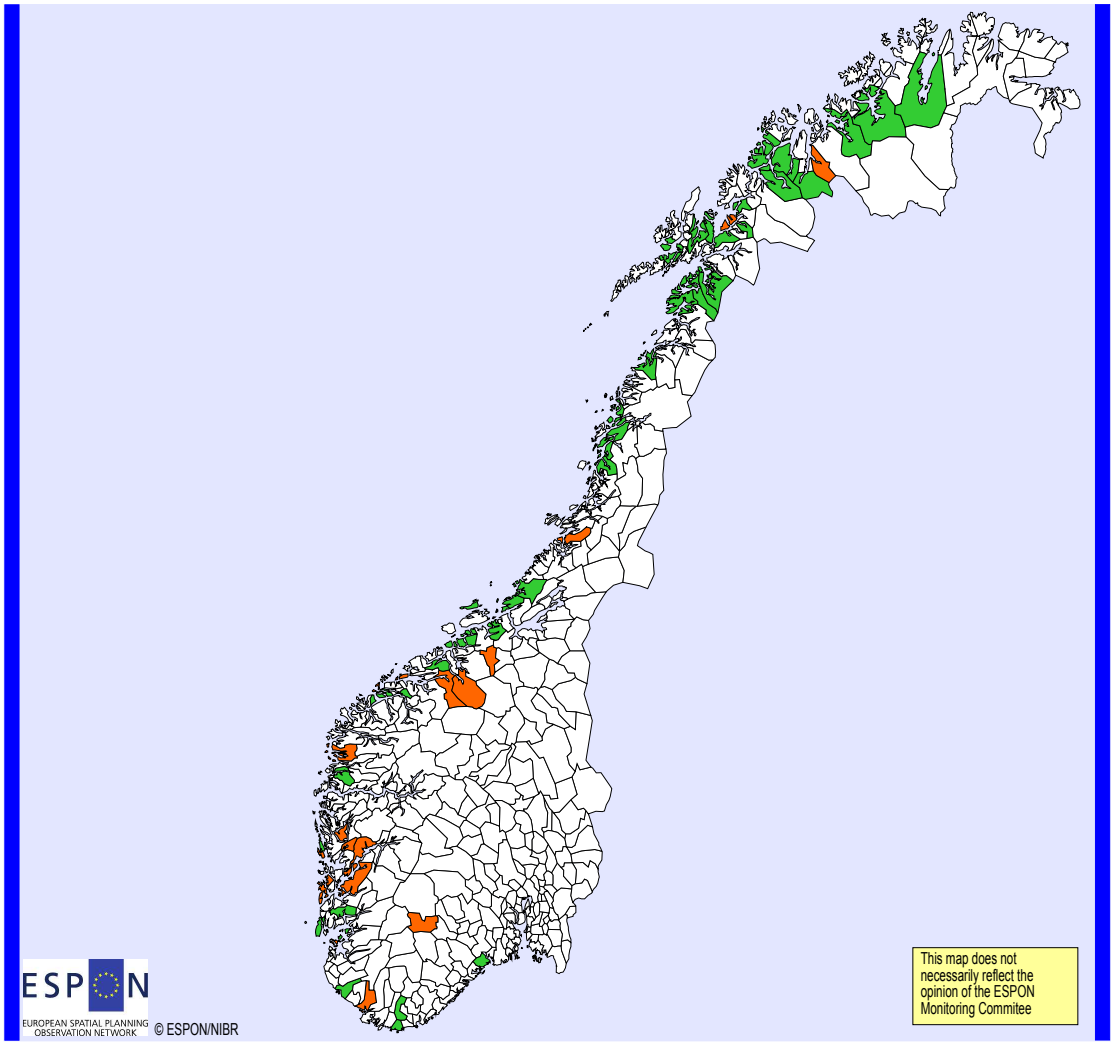
Origin of the data: Statistics Norway/Norwegian Institute of Urban and Regional Research

Fisheries and aquaculture compared. 1998

The share of employees in ...

- **fisheries is more than 0.5 per cent point higher then in aquaculture**
- **fisheries and aquaculture are within 0.5 per cent points from each other**
- **fisheries is at least 0.5 per cent point lower then in aquaculture**

Figure 3.17 Map 3.17 Comparison between fisheries and aquaculture in Norwegian municipals. Development between 1998 and 2005



Origin of the data: Statistics Norway/Norwegian Institute of Urban and Regional Research

Fisheries and aquaculture from 1998 to 2005

- The share of employees in aquaculture have caught up or surpassed the share of emplyees in fisheries
- No changes in the importance between fisheries and aquaculture
- The share of employees in fisheries have caught up or surpassed the share of employees in aquaculture

3.5 Employment in relation to Functional Urban Areas (FUAs) in Norway

For this example study the municipalities have been typologised as being within or outside a Functional Urban Area (FUA) as defined by ESPON project 1.1.1. The selected FUAs are among the labour market regions defined by Juvkam (2002). Within each FUA we distinguish between FUA centre and other municipalities. The typologisation differentiates between centres, intermediary municipalities (municipalities within a FUA, but not a FUA centre) and peripheral municipalities (municipalities outside the FUAs) to make possible an analysis according to urban-rural patterns.

A study based on a grouping of municipalities is important for answering some of our hypotheses, and some assumptions within more general hypotheses'. Already in hypothesis no. 1 it is stated that the impacts of CFP will be more significant the lower the geographical level. We also state in hypothesis no. 2 that economic, social and demographic impacts vary between urban and remote areas. The typologisation makes it possible to make further distinctions in an analysis between fishery dependent municipalities and other municipalities.

Figure 3.18 Map 3.18 Functional Urban Areas (FUAs) in Norway. 2005

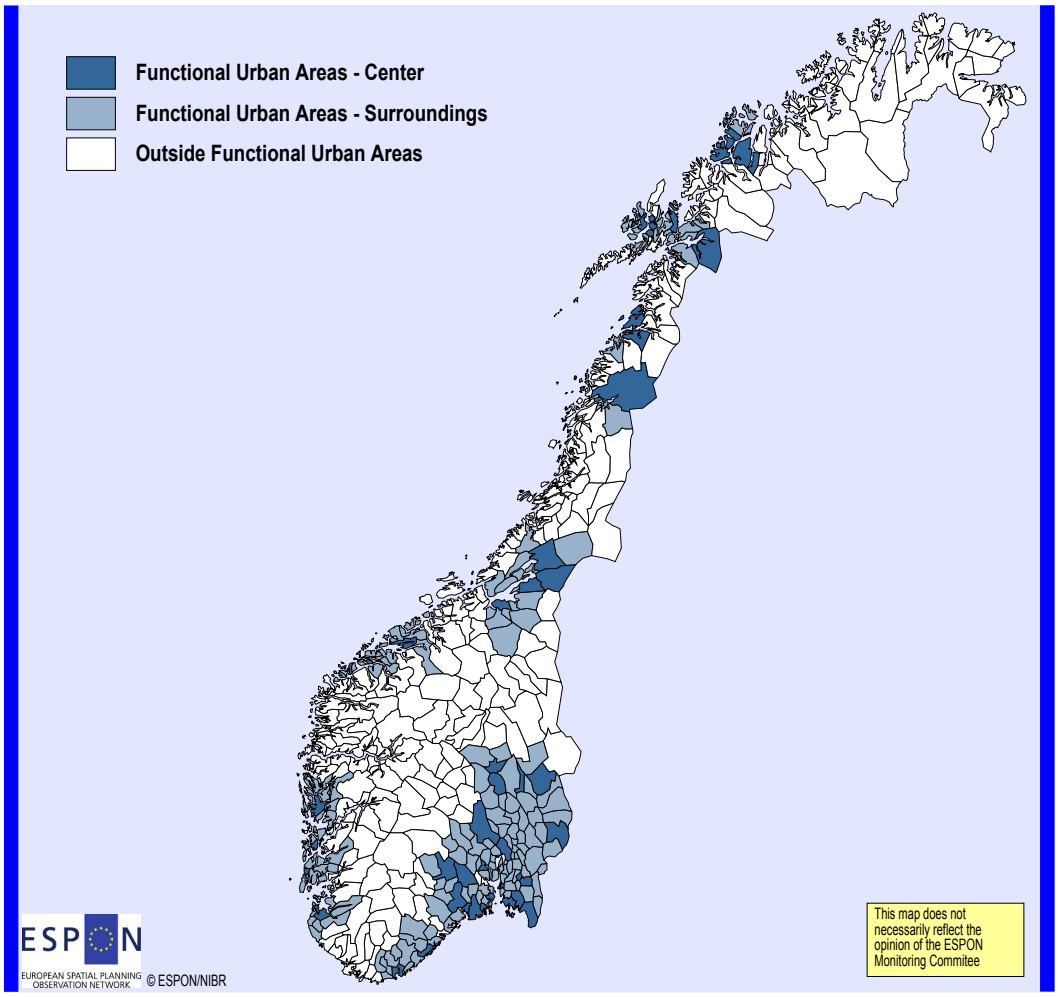


Table 3.1 Share of employees in fisheries and aquaculture in Functional Urban Areas (FUA). 1998 and 2005

	Fisheries		Aquaculture		Per cent points changes 1998-2005	
	1998	2005	1998	2005	Fisheries	Aquaculture
FUA - Centres	0.08	0.06	0.04	0.05	-0.02	0.01
FUA - Surroundings	0.39	0.23	0.25	0.15	-0.16	-0.10
Outside FUA	1.29	1.00	0.79	0.69	-0.29	-0.10

The share of employees in fisheries and aquaculture is very low for FUA-Centres, since most of the FUAs are located in the south-eastern Norway (map 3.18). The relative decrease is highest outside FUA for fisheries, and smallest for FUA-Centres, leaving FUA-Surrounding in between (table 3.1). For aquaculture the decrease in employment is not that significant outside FUA than for fisheries. However, also here there has been a decrease outside FUA and in FUA-Surroundings, with a small increase in FUA-Centres. Generally spoken, there have not only find place a concentration of employment in fishery and aquaculture during the latest years, but also an urbanisation.

Table 3.2 Share of employees in fisheries and aquaculture in FUA 1998 and 2005, in Western Norway and Middle and Northern Norway

	Fisheries		Aquaculture		Per cent points changes 1998-2005	
	1998	2005	1998	2005	Fisheries	Aquaculture
Western Norway						
FUA – Centre	0.09	0.05	0.11	0.12	0.02	0.07
FUA - Surroundings	1.07	0.59	0.87	0.48	-0.20	-0.11
Outside FUA	0.66	0.59	0.90	0.74	0.24	0.15
Middle and Northern Norway						
FUA – Centre	0.29	0.21	0.06	0.12	-0.23	-0.09
FUA - Surroundings	1.26	0.90	0.44	0.48	-0.82	-0.42
Outside FUA	2.53	1.88	1.08	1.05	-1.45	-0.83

However, if we only look at Western Norway the relative increase in employment is highest outside FUA, both for fisheries and for aquaculture (table 3.2). The decrease have find place in FUA-Surroundings. In Middle and Northern Norway, the decrease is highest outside FUA.

4 Forcing territorial differentiation

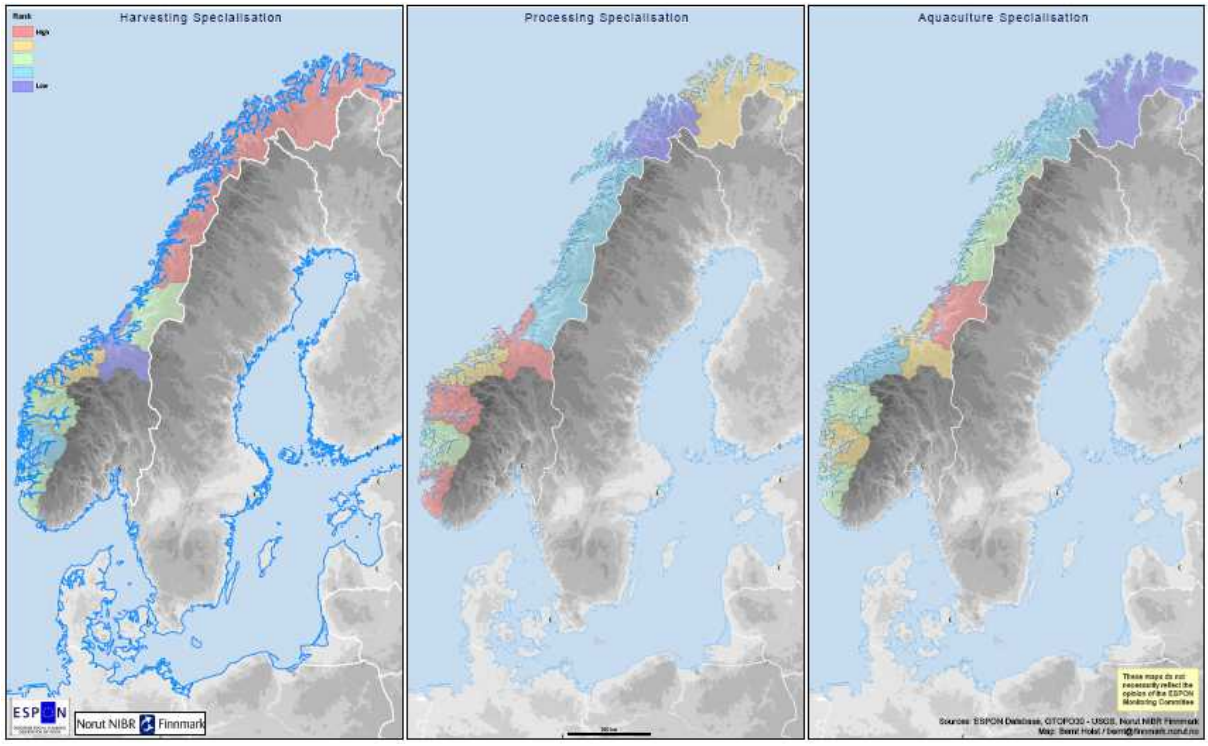
4.1 The Norwegian Example - Fisheries policies based on market models

Compared with almost all of the other European countries the Norwegian fisheries have several characteristics. *Historically*: The export basis of the fisheries, the domestic markets for fish in Norway have been of no importance for the developing of Norwegian fisheries. *Socio-economical*: The traditional co-ordination of the fisheries and agriculture in the coastal households, which constituted the Norwegian characteristic seasonal fisheries. *Biological*: The big fish stocks, mainly Cod and different pelagic species, have combined with a developed resource management system secured an increasing amount of catches the last 10-15 years. *Political*: A strong state intervention 1945-1985 caused by among others aspects objectives related to the rebuilding of the northern Norwegian regions. The state substituted these policies by market governing principals after the 1980'ies and disconnected fisheries policies from regional development policies. Today the level of economic support to the fisheries is very low compared to the CFP.

The fact that of 17 out of 19 nuts 3 regions in Norway are coastal regions demonstrates the central position of coast territories in Norway. Due to the historical distinctiveness of the Norwegian fisheries it has its embedding in coast regions in the west and north. Today only 9 nuts 3 regions, starting with Rogaland in the southwest and ending in Finnmark, can be characterised as fisheries regions. However, only some of the 9 regions are specialised in the fisheries, and the specialisation varies by the different fisheries sectors.

Figure 1: Fisheries specialisation in 9 of the Norwegian coast regions 2000 (3 small maps of Norway or west/north parts of Norway), standing parallel in the figure, showing specialisation 2000 (over the national average) in nuts 3 region

Figure 4.1 Map 1 Fisheries specialisation in Norwegian coastal regions



The figures demonstrate important characteristics of modern Norwegian fisheries: (i) The dominance of traditional fishing (harvesting) in the Northern regions: (ii) The dominance of "value adding" processes in southern west coast; and (iii) a broad diffusion of the aquaculture sector except for the two northernmost regions.

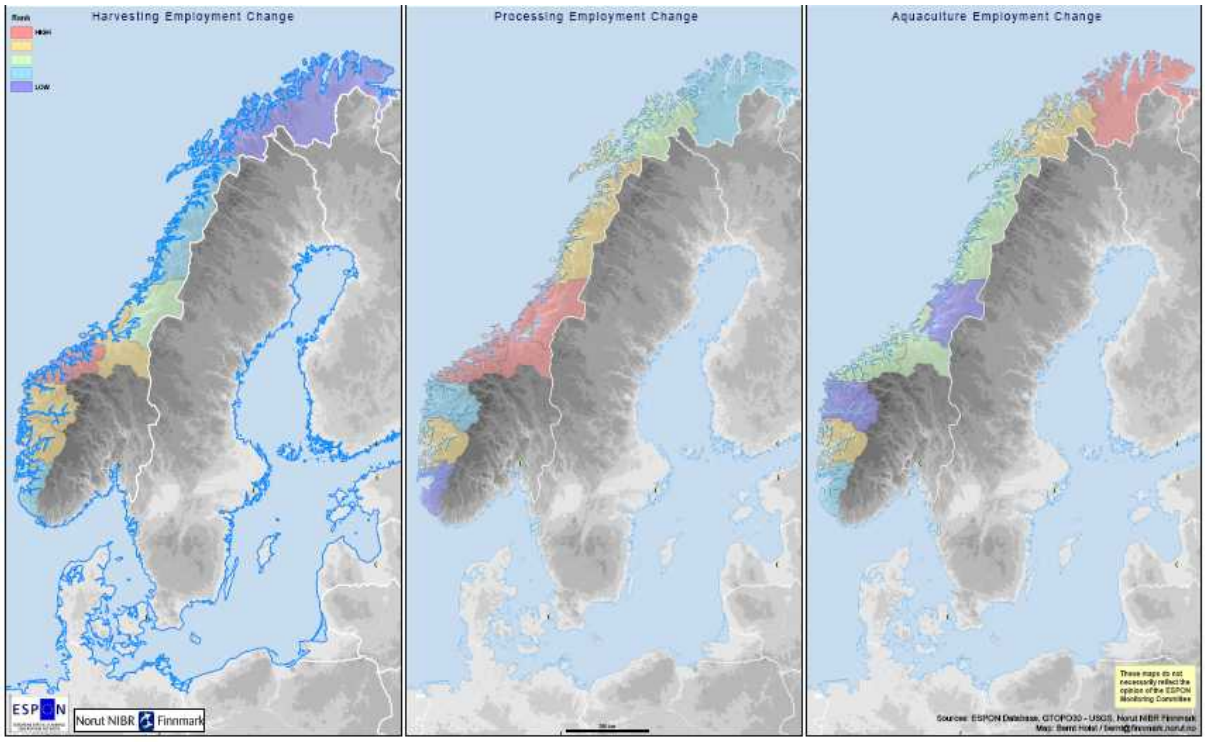
The Norwegian fisheries policies distribute the state economic support for the fisheries, and the allowable catches. The *economic measures* favour two regions: Møre og Romsdal (per capita of the fisheries population: 199 compared with the national level of 100) and Nord-Trøndelag (138)), all the other regions target below the national average. Important is however that the measures de facto are targeting a very few number of municipalities. 50 % of the total economic measures in the fisheries agreement were distributed to 10 communes, almost all of them municipalities on the South-west coast dominated by pelagic fisheries. The favouring of Nord-Trøndelag is caused by the importance of the aquaculture sector.

Due to that 2/3 of the *landings* took place in the 4 southernmost fisheries regions, only a minority of the catches were secured in the northern fisheries regions where the harvesting specialisation is high. Thereby the territorial distribution of the Norwegian fisheries policies is characterised by favouring the southern fisheries regions.

The same territorial pattern is demonstrated in analyses of *impacts* of Norwegian fisheries policies after 1990. While the total employment in the fisheries increased by 28 % in Hordaland, 21 % Møre og Romsdal as well as in Sør-Trøndelag, the figures decreased by 29 % in Finnmark and 7 % in Troms 1990-2003. Møre og Romsdal was the only region that increased the employment in the harvesting. Moreover, while this region increased the employment in the processing industry by 44 %, Finnmark reduced its employment by as much as 49 %.

Figure 2: Direct impacts measured by changes of employment in the fisheries sectors 1990-2003 (source: PANDA), the level in 1990 =100

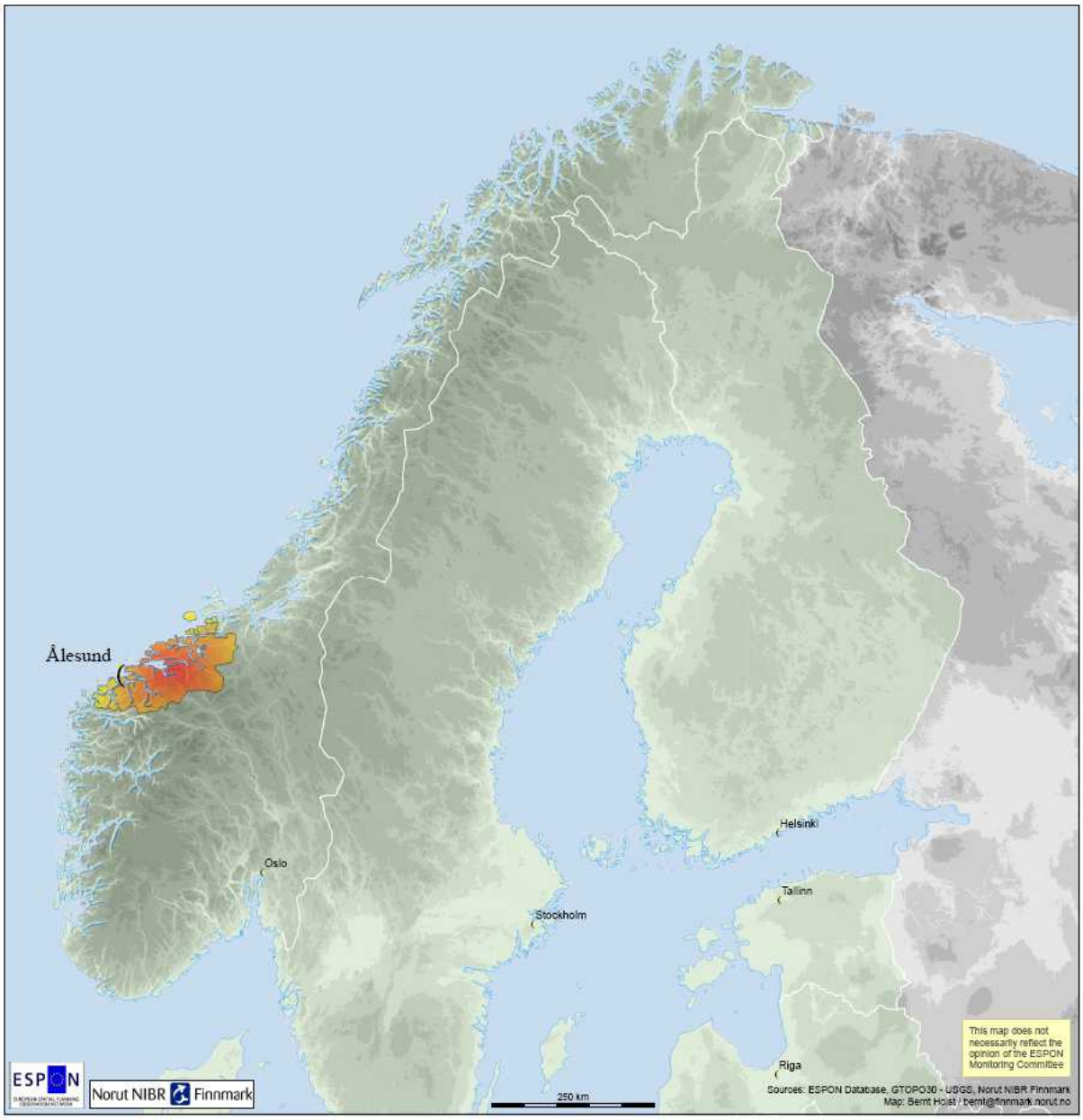
Figure 4.2 Map 2 Employment changes in Norwegain Fisheries 1990 - 2003



However, it has to be added that the winner regions in the south did not benefit from Norwegian regulation policies in terms of landings. Finnmark increased its landing by 67 % 1995-2000, Troms by 23 %. In the same period the south regions Hordaland and Møre og Romsdal decreased the landings by approx 10 %. Probably therefore Norwegian winner regions in the resource policies are raw fish satellites, and do not manage to use the raw fish in the industrial development of the region.

The relation between the Norwegian fisheries policies and the territorial specialisation in the fisheries are the favouring of specific types of new structures (particularly those developed by the integration of a modern fleet and ship building). The only Norwegian cluster (the region of Ålesund) targeting 28 % of the policies measures. The most dramatic territorial impact in Norway is the favouring of the southwest regions, and the discrimination of the harvesting specialised northern regions where Finnmark is most dramatically targeted. Thereby the Norwegian fisheries policies are well integrated with the "normal" territorial growth processes in Norway after 1990, favouring the already growing west coast regions and are not contributing to new growth in less prosperous regions in the north.

Figure 4.3 Map 3 The winner of the Norwegian market based fisheries policies



5 Example study: Island of Bornholm (Denmark)

5.1 Introduction

Bornholm is a small Danish island situated in the Baltic Sea between Sweden and Poland - relatively far from the mainland of Denmark, see map 1 beneath. The island is the only place in Denmark where mountainous areas are found – although the height of these mountains (max. 162 meters) would hardly impress anyone except Danes. Capture fisheries has since ancient times been an important activity for the people of Bornholm, for subsistence as well as for commerce/export of processed products. Fisheries in the waters around Bornholm have also traditionally attracted fishers from other parts of Denmark and from other countries bordering the Baltic Sea to land their catches in Bornholm on a seasonal basis. The island's geography has until recently not been considered particularly well suited for any type of aquaculture and the production has as a result hereof so far been negligible. There are no suitable freshwater streams on the island and marine aquaculture is complicated by several natural factors, i.e. the fact that there are hardly any places, which are sheltered from wind and waves. Partly because of its geographical location and partly because of the remoteness of the island a more diversified development of the economy has been difficult. Tourism is one of the few other sectors, which has benefited from the remoteness and natural conditions of the island.

Figure 5.1 Bornholm vis-à-vis the mainland of Denmark

Source of raw map: European Commission

The remoteness of the island must be considered a defining characteristic and discussions over the quality of the routes of transportation from the island to especially Copenhagen are often heated. The main mode of transportation is by ferry from Rønne, the largest city on Bornholm and administrative centre of Bornholms Regionskommune (region-municipality), to Ystad in Sweden. Other routes go from Rønne to Køge just outside Copenhagen, the capital of Denmark, and to Sassnitz and Swinoujscie in Poland. There are, however, also several daily flights back and forth between Copenhagen and Rønne.

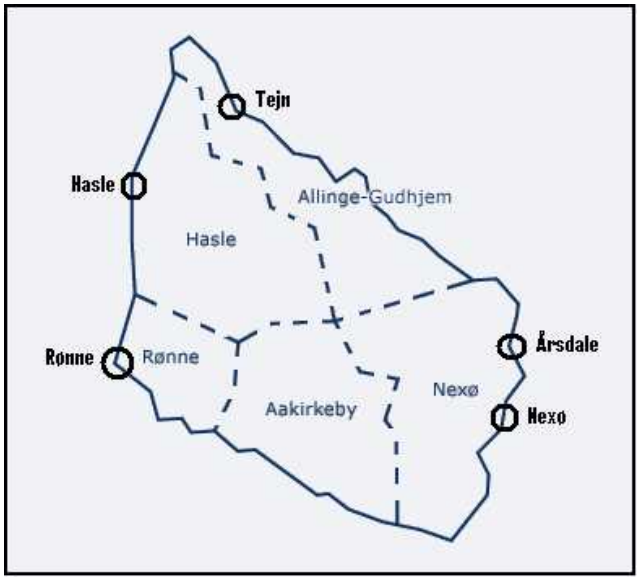
5.2 NUTS on Bornholm

Bornholms Regionskommune (until 31.12.2002 called Bornholms Amt (county), NUTS3 level code: DK007) is currently the smallest NUTS3 region in Denmark in terms of population with 43,445 inhabitants in 2005. The administrative structures in Denmark are currently undergoing reform and as from 1 January 2007 the number of administrative units at the level under the state of Denmark will be reduced from 16 (13 counties, 1 region-municipality, and 2 municipalities outside the counties) to 5 larger regions. The number of municipalities will likewise be reduced significantly from 271 to 98. Bornholm got a head start on this process by joining together the five municipalities (previously LAU2 areas of Nexø, Hasle, Allinge-Gudhjem, Rønne and Aakirkeby, see map 2) on the island to form Bornholms Regionskommune on 1 January 2003. This means that statistics for these areas ceased to be collected as from 2003 and it is therefore in general not possible to analyse the most recent development by these areas. Nonetheless, Bornholm

A Regionskommune remains smaller at least in terms of population than many Danish municipalities, which are currently defined as LAU2 areas. Bornholm will after the national reform of the administrative structures enters into force on 1 January 2007 become a municipality within a region otherwise comprising of Copenhagen and its

surroundings. In general, the reform will in important ways change the NUTS and LAU maps of Denmark.[1]

Figure 5.2 Fishing ports and old LAU areas



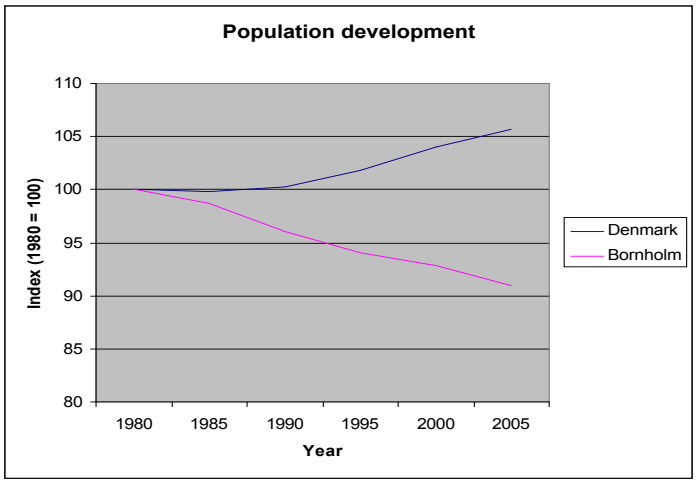
Statistics related to capture fisheries continue to be registered on port level, which allows for some regionalisation even beneath the level of the NUTS3 region. However, rather than analysing differences in the development in various parts of the island of Bornholm this case study will analyse the overall development on Bornholm, particularly in the fisheries sector. Bornholm's limited size means that it is considered as one labour market. Taxes are, furthermore, paid to Bornholms Regionskommune (as well as to the state). A job created or lost on Bornholm will therefore impact the entire island. The primary aim is to - as far as possible - relate the development to impacts of and changes in the Common Fisheries Policy and provide policy recommendations based on the findings. Map 2 shows where the main ports on Bornholm are situated. The port of Nexø is by far the most important in relation to fishing. Rønne is the most important port in relation to transport of goods as well as persons.

5.3 Overall Development of Bornholm

Bornholm has experienced a negative development in terms of population. The population of Bornholm has been continuously decreasing over last decades as shown in figure 1 beneath.

[1] The tiny island of Christiansø (population of 98) just east of Bornholm employs a special position within the Danish administrative system, which means that Christiansø is not included in any municipality. Consequently, statistics for Bornholm does not always automatically include this island. Christiansø will as far as possible be included in the present case-study of Bornholm. The small size of Christiansø means, however, that it makes little difference whether it is included or not; overall conclusions will not change in any case.

Figure 5.3 Population development

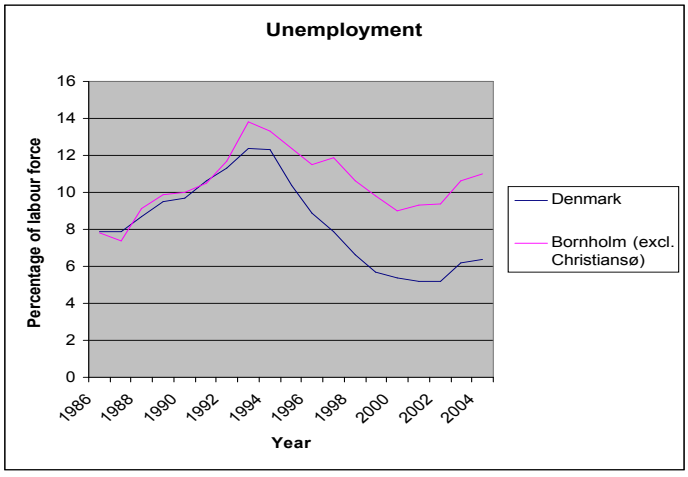


Source of data: Statistics Denmark

The population of Bornholm has decreased by approximately 9 percent over the period from 1980 to 2005. Over the latest 10 years the decrease has been 3.3 percent. The development in Denmark over the last 10 years has been an increase in the population of 3.8 percent.

Another important indicator of the overall development of Bornholm is the unemployment rate. The development has, as it can be seen in figure 2 beneath, not been particularly favourable on Bornholm in the later years compared to the development on national level.

Figure 5.4 Unemployment



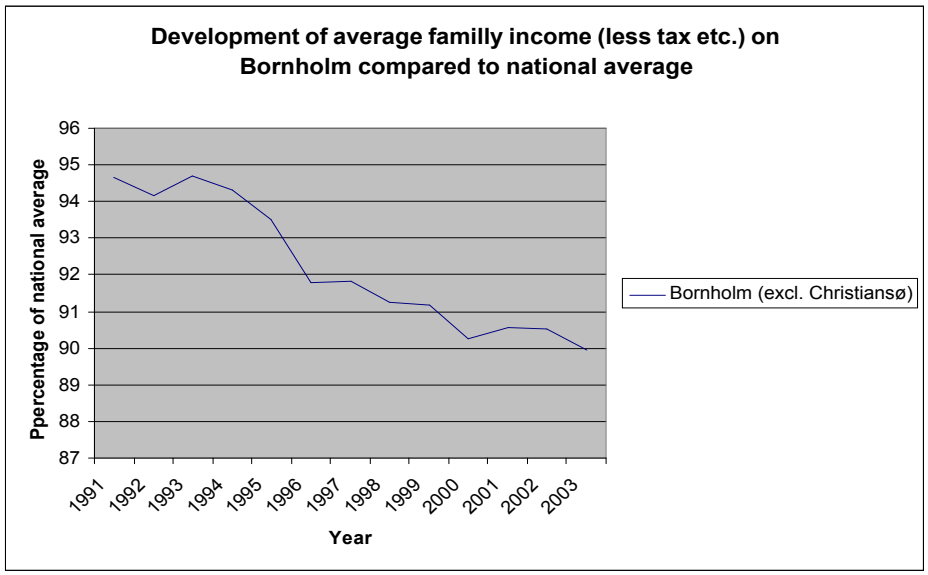
Source of data: Statistics Denmark

Although it is clear that Bornholm's unemployment rate to a large extent fluctuates along with the national rate according to the overall economic climate, it is equally clear that Bornholm has not been able to benefit as much from the favourable economic climate in the second half of the nineties as Denmark in general. As we shall see in the following sections, the period of favourable economic climate in the country as a whole coincided

with a period of increasing difficulties related to fisheries, which at least partly explain the different developments on Bornholm and in Denmark as a whole.

A final overall indicator, which highlights the situation of Bornholm, is the development of the average (disposable) family income. In general the average family income has increased since the beginning of the nineties both on Bornholm and in Denmark in general. However, the average family income on Bornholm was already in 1991 approximately 5 percent lower than the national average. Figure 3 shows the development from 1991 until 2003.

Figure 5.5 Development of average family income



Source of data: Own calculations based on data from Statistics Denmark

Figuere 5.5 shows clearly that the increase in the average family income on Bornholm has not been able to keep up with the increase of the average family income in the country as a whole. The average family income on Bornholm was in 2003 approximately 10 percent lower than the national average.

This section has painted a picture of a region with some clear problems and challenges ahead. Bornholm suffers from depopulation as well as from higher unemployment and lower average family income than the rest of Denmark. The development in the fisheries sector is one of the explanations of Bornholm's situation. This will be the topic of the following section.

5.4 Fisheries Sector

The fisheries sector is important for Bornholm. The regional socio-economic studies on employment and the level of dependency on fishing calculated that Bornholm was the most dependent NUTS3 region in Denmark in 1997 [1]. Although the dependency is not that impressive compared to dependent regions in other parts of Europe the development of the sector is, nonetheless, linked to the overall development of Bornholm. In the following sections the development of each of the sub-sectors of the fisheries sector will be described.

5.4.1 Past Fisheries Studies

Bornholm was chosen as one of two Danish case studies in connection with the Europe-wide regional socio-economic studies on employment and the level of dependency on fishing [2]. The study was finalised in November 1999 and the most recent numbers in the study on Bornholm are from 1997. That study draws to some extent on survey data gathered by the Institute for Fisheries Management (IFM) in 1997 and published in 1998 as part of an evaluation of the development possibilities of the fisheries sector of Bornholm in the period from 1998 to 2003 [3].

In 2004 the Centre for Regional and Tourism Research (CRTR) on Bornholm published a study on the development possibilities of Bornholm [4]. A report containing the background material for the study contains a section on the current situation of the fisheries sector with particular emphasis on the processing sub-sector [5].

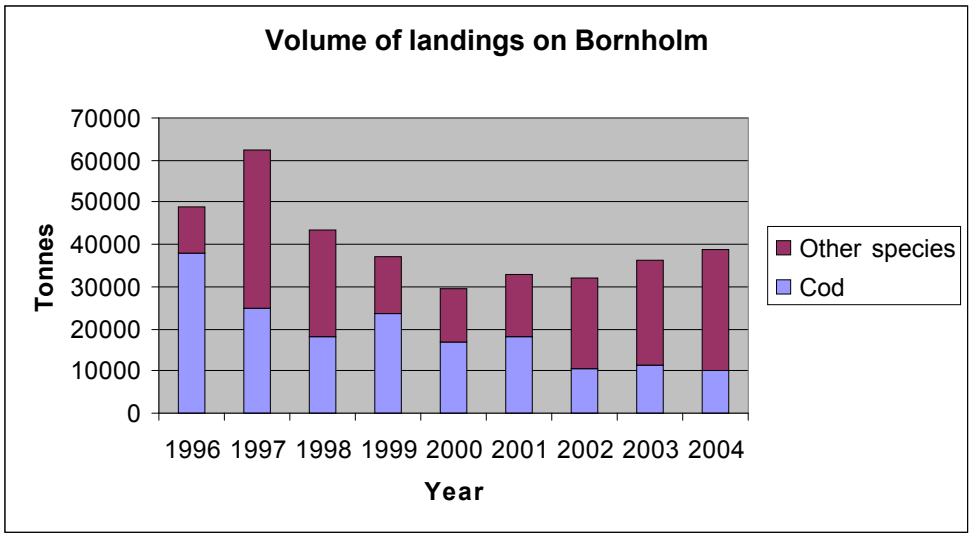
Moreover, the Danish Technological Institute in collaboration with IFM carried out the Danish evaluations of the FIFG programme 1994-1999 [6] and the PESCA programme from 1994-1999 [7] as well as the mid-term evaluation of the FIFG programme 2000-2006 [8]. However, as these were national studies detailed information on Bornholm is limited. Some information can nevertheless be derived on the impact of the structural measures under the CFP.

5.4.2 Capture Fishing

The fisheries sector of Bornholm has traditionally been dependent on a relatively limited number of species, namely cod, herring, sprat and salmon. Cod is by far the most important of these and the development of the sector is therefore particularly sensitive to the development of the catch and landings of cod. The regional socio-economic study on employment and the level of dependency on fishing calculated the quota dependency of Bornholm to be 95 percent - meaning that only 5 percent of the landings (by value of species destined for human consumption) on Bornholm were not subject to quotas. Bornholm is as a result very sensitive to the conservation policy of the CFP [1].

The TACs for cod in the Baltic (eastern and western stocks) were reduced significantly from 220,000 tons in 1989 to 40,000 tons in 1993 after which it went up to 180,000 tons in 1997. From 1997 and onwards the TAC for Baltic cod has declined to 61,600 tons in 2004 (International Baltic Sea Fisheries Commission). The recent and continuing decline in the TAC for cod is clearly reflected in the development of landings on Bornholm. Figure 4 shows the volume of landings from 1996 and onwards by cod and other species.

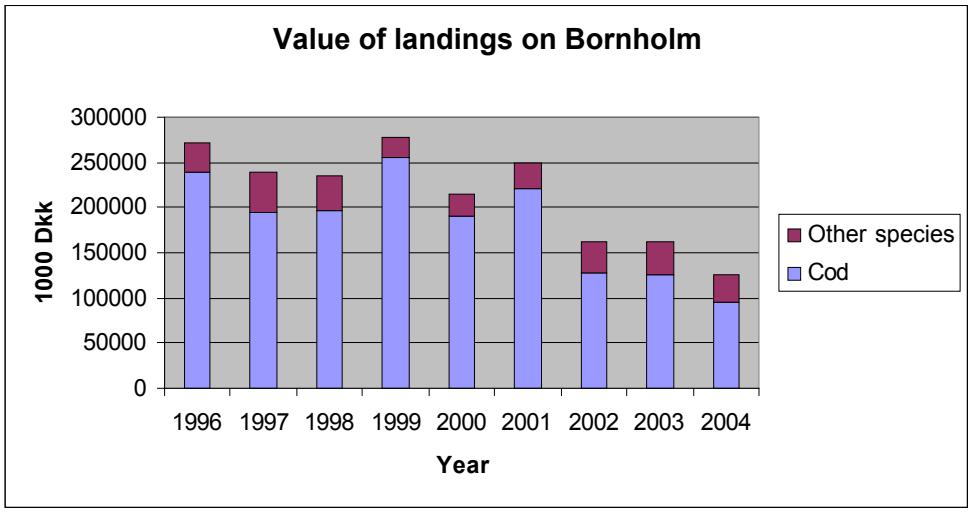
Figure 5.6 Volume of landings on Bornholm



Source of data: Directorate of Fisheries' dynamic landing and catch statistics

Over the period from 1996 to 2004 the landings of cod declined from just below 39,000 tonnes to only a little more than 10,000 tonnes. In 1994 more than 40,000 tonnes of cod were landed on Bornholm [3]. The majority of the volume of landings of other species consists of the low-value species sprat, which is not used for human consumption. The fact that a large proportion of the landings of other species consists of sprat is reflected in the contribution of cod in terms of value of landings. Figure 5 shows the value of cod and the value of other species landed on Bornholm.

Figure 5.7 Value of landings on Bornholm



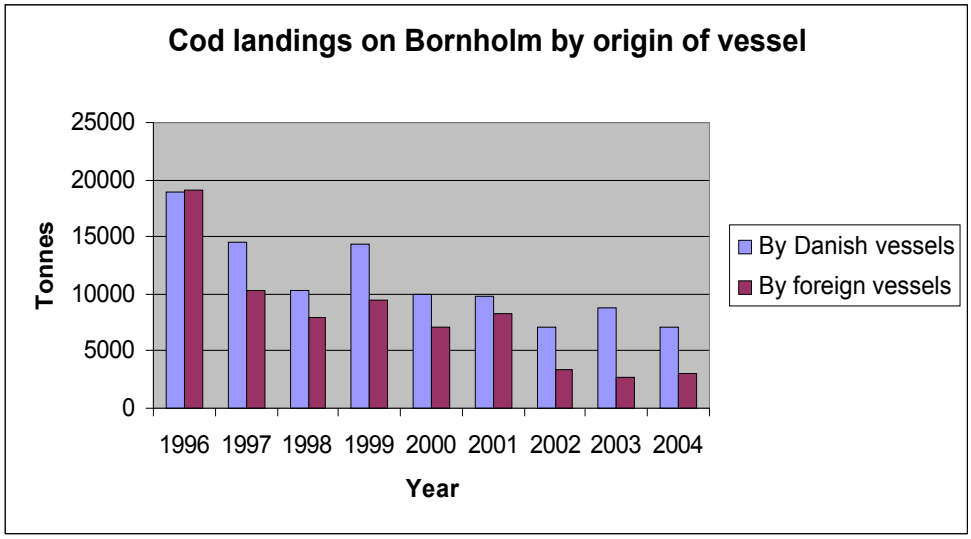
Source of data: Directorate of Fisheries' dynamic landing and catch statistics

Figure 5 shows that cod remains by far the most important species in terms of value. However, the relative share of the value of other species has been increasing from 1999 when the share was under 10 percent to 2004 when the share approached 25 percent. However, the increase in relative importance is mostly related to the decline in the

volume and value of landings of cod. The total value of landings on Bornholm in 2004 was less than half the value in 1999 (inflation not taken into consideration).

However, the size of the TAC is not the only factor, which determines the volume of cod landings on Bornholm. The Danish quotas for cod have not always been fully utilised due to the fishing conditions in the Baltic Sea for a fleet consisting to a large extent of smaller vessels. Furthermore, landings by foreign vessels have traditionally been an important source of cod for the processing industry of Bornholm. Figure 6 shows the volume of landings of cod by origin of vessel in the period from 1996 to 2004.

Figure 5.8 Cod landings on Bornholm by origin of vessel



Source of data: Directorate of Fisheries' dynamic landing and catch statistics

Landings of cod by foreign vessels accounted for more than 30,000 tonnes in 1994, approximately 75 percent of the total that year [3]. The share of cod landed by foreign vessels relative to Danish vessels has since then been declining. In the period from 2002 to 2004 cod landed by foreign vessels represented approximately 25 to 30 percent of the total volume. Bornholm has not in the period from 1997, when the TACs started to go down again, been able to attract more foreign landings to compensate for the negative development of the national quota. IFM calculated in 1998 that Bornholm's share of the aggregated landings of Baltic cod in all the countries around the sea was reduced from 42 percent in 1992, when Bornholm could rightly be considered the centre of Baltic landings, to only between 13 and 15 percent in 1997 [3]. The data does not suggest that Bornholm has been able to reverse this development and regain its previous position. The foreign landings are as indicated above important because the processing industry otherwise has to source raw material from elsewhere. Foreign vessels are also important for the companies servicing the fishing fleet. IFM reported in 1998 that the employment depending on servicing the fleet in these companies had decreased form 246 in 1993 to 148 in 1997 [3]. According to the companies themselves the decline was directly related to the decline in landings as it is not possible to attract vessels for servicing only. In the same report the institute listed the following reasons for the declining share of landings of especially cod (before the 2004 EU-accession of several states around the Baltic):

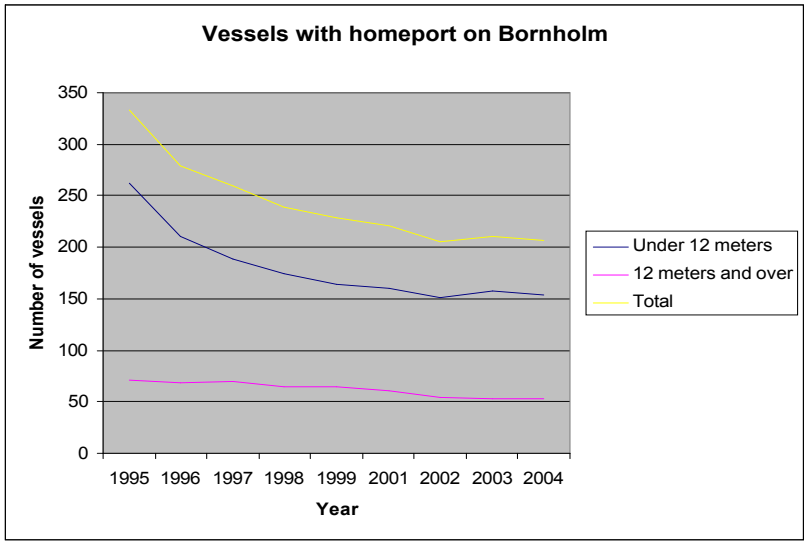
- increase in demand in especially Poland and Germany as well as in the Baltic countries and Russia;

- increasing capabilities in the sector servicing the fishing vessels in the other states around the Baltic Sea;
- complications of having to notify foreign landings in an EU member state in advance; and stricter enforcement of hygiene regulations and control in general than elsewhere in the area.

The reduced TACs have resulted in reduced employment, as well. There was in 1996 approximately 400 fishermen on Bornholm, as opposed to 1,000 in the mid-80s [3]. Only 251 persons were in 2003 registered as full-time fishermen (7 part-time) on Bornholm (Directorate of Fisheries' static employment tables).

In the study on employment and the level of dependency on fishing it was calculated that approximately 1.72 percent (as opposed to 0.29 percent nationally) of the total employment of Bornholm was in capture fishing in 1997 [1]. In comparison, the figure for 2003 is approximately 1.26 percent if the part-time fishermen are not included (own calculation based on Directorate of Fisheries' static employment tables and Statistics Denmark's register based labour force statistics, RAS). The development of the fleet can be examined in figure 7.

Figure 5.9 Vessels with homeport on Bornholm



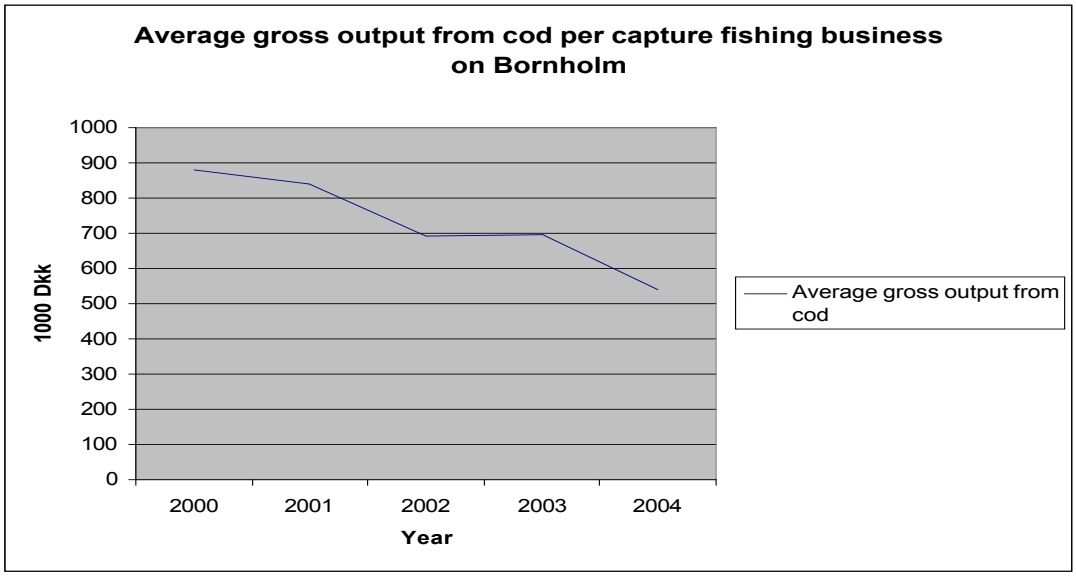
Source of data: Directorate of Fisheries' dynamic fleet statistics

Although there has been a significant reduction in the number of vessels on Bornholm the total tonnage has only been marginally reduced from 1995 to 2004. However, after having peaked in 1997 the tonnage has actually decreased with more than 15 percent. The peak in 1997 probably reflects the fact that this year marked the beginning of a substantial fishery of sprat. This fishery usually takes place from larger boats, which might explain that the total tonnage of the boats indicating to have homeport on Bornholm was particularly large that and the following years.

It seems clear that the capture fishing sector has been negatively affected by especially the declining quotas for cod in the later years. This is also reflected in the economy of the concerned businesses, which is evaluated each year by the Danish Food and Resource Economic Institute based on a sample survey of businesses' annual accounts. The

surveyed businesses have seen a serious decline in the average gross output from cod in the period from 2000 to 2004, see figure 8 (earlier figures are not available for NUTS3 regions in a comparable format).

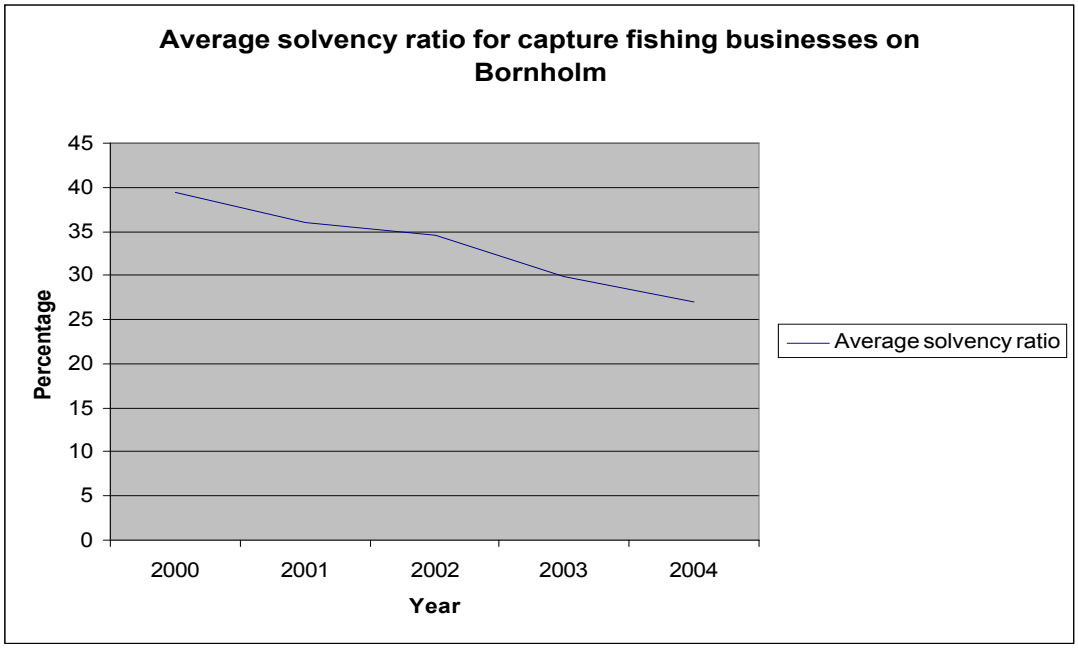
Figure 5.10 Average gross output from cod per capture fishing business



Source of data: Food and Resource Economic Institute's fisheries accounts statistics

Consequently, average operating profits of the businesses have been declining, too. This has over the period resulted in a severely declining solvency ratio (net capital / total liabilities), which is now well under 30 percent – the figure considered as a rule of thump the lower limit on sound solvency, see figure 9. The declining solvency ration clearly indicates that the capture fishing sector of Bornholm is in a difficult situation.

Figure 5.11 Average solvency ratio for capture fishing businesses



Source of data: Food and Resource Economic Institute's fisheries accounts statistics

The TACs and quotas decided under the conservation pillar of the CFP are, as documented in the section above, closely linked to the situation of the capture fishing sector of Bornholm. Declining quotas - especially for cod - in later years have affected the fleet negatively and led to a decline in employment, a decline in the number of vessels, and a worsening of the economic situation of the businesses. However, declining TACs and quotas are not the only elements, which have contributed to this development: the capture fishing sector has also been affected by the dioxin pollution in the Baltic, which have affected mainly salmon, and the declining employment must also partly be ascribed to increases in effectivity, which means that the same amount of fish can be caught with less input of labour.

Although the conservation measures of the CFP have affected the fleet negatively it should be remembered that these measures have not been applied without reason. The TACs and quotas are applied to protect fish stocks, which are if no measures were adopted in a risk of collapse - as the worst case scenario. Whereas these measures have resulted in lower quotas in the past and will probably not result in significantly higher quotas in the short or medium term, the longer term objective is to restore stocks to a level where they can support a higher overall yield to the benefit of the sector currently suffering. In regards to cod, there is, furthermore, the risk that progress in relation to farming of cod (especially in Norway) will change the situation by making capture fishing for cod unprofitable even with stocks in better condition. However, cod farming has been long underway and it is hard to say if and when farming of cod will make fishing for cod unprofitable – but when or if this happens it will surely impact fishing fleet of Bornholm significantly.

In regards to the decline in foreign landings, the main reason seems not to be the conservation measures but rather that the new EU member states in Eastern Europe are increasingly able to attract landings. This is related to the fact that their economies have been undergoing serious restructuring as a result of the fall of the Soviet Union and also

that transition funds have been available from the EU in the years prior to accession. The development in the foreign landings is thus related to the enlargement of the European Union and macro-economic developments in the accession states; however, the declining quotas are probably not without importance, either. The declining number of foreign landings has affected companies servicing the fishing fleet and other related businesses negatively. As a consequence some financial support (1.45 million Danish kroner) under the PESCA programme was directed towards providing these businesses with support to build new markets and export their services – as a first step to the rest of Denmark but also to other countries. It was estimated that these efforts on Bornholm saved a little less than 100 jobs, which would otherwise have been lost [7].

How the Danish quotas are managed at the national level is going to be particularly important in a regional perspective in the future. The Danish government and the Danish Peoples Party have recently decided to adopt a system of vessel quota shares (VQS) to be introduced from 1 January 2007. The VQS system introduces an element of transferability of quotas in the demersal fisheries. The introduction of an ITQ-type system in most herring fisheries some years ago led to great displacements in quota-shares between different ports in Denmark, which did not, however, affect Bornholm significantly because the Baltic Sea was not included. The fishermen's organisation on Bornholm has been a fierce opponent of the VQS system, which - it is feared - might result in quota concentration in some ports. It is, however, difficult to predict how this arrangement, which is meant to improve the economic situation of the sector, is going to affect Bornholm. Unlike in the Icelandic ITQ system there are no rules in the Danish system, which prohibits selling quotas out of a region. However, quota shares are linked to specific sea areas, which might protect Bornholm a little, since its ports are situated relatively far from other major fishing ports in Denmark and mainly oriented towards the Baltic Sea.

5.5 Aquaculture

Aquaculture has traditionally not been part of the profile of Bornholm. The natural conditions have, as described in the introduction, been unfavourable. However, as technologies change so do the possibilities for aquaculture on Bornholm. Bornholm is according to a presentation by Bovbjerg Jensen from the Danish Institute for Fisheries Research suitable for several types of aquaculture [9]. Bovbjerg Jensen lists the following aquaculture possibilities for Bornholm: farming of salmon type species in sea cages, farming of various brackish water species in sea cages, possibly shellfish, juvenile cod, juvenile brackish water species for restocking and aquaculture, farming of fish for put-and-take and farming of various species in recirculation installations.

Besides the fact that the technologies are available Bovbjerg Jensen points to the fact that Bornholm has some competitive advantages compared to other areas. These advantages relate to the fact that Bornholm is an area, which is used to fisheries related businesses: there is local experience with the product (fish), the infrastructure is well developed and there is a processing industry to handle the products. Furthermore, the areas for sea cages are available as opposed to other places where there are significant conflicts over this issue.

In other words, aquaculture is insignificant at present but has growth potential. FIFG support on Bornholm has already been targeted towards aquaculture development and related activities. Bornholms Lakseklækkeri (Bornholm's Salmon Hatchery) has for instance been involved in a FIFG supported project with a total budget of 4 million

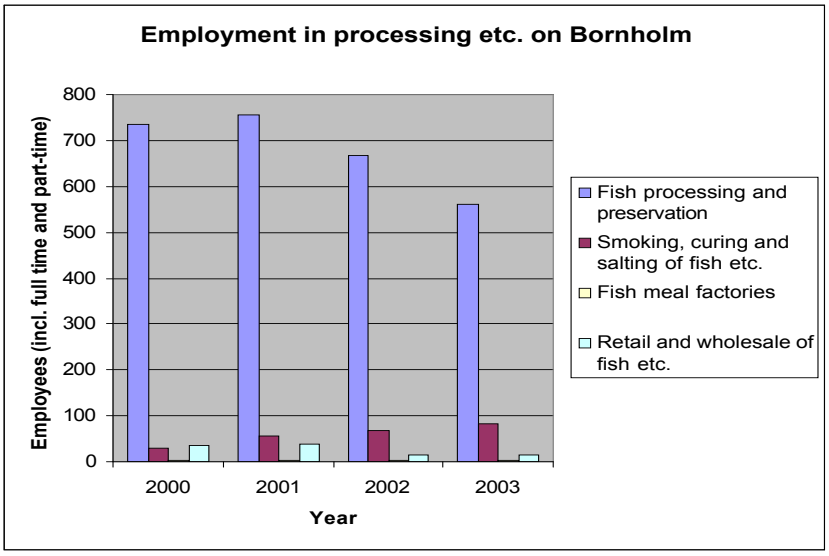
Danish kroner on the development of methods to farm perch. This is the first experiments with farming of this specie in Denmark. Perch are farmed in countries such as France and Switzerland [8]. The same institution has also been involved in a project to breed salmon smolt to release in the wild to increase the amount of salmon, which can be caught by the coastal fleet on Bornholm. The project was a success in the sense that many of the released salmon were caught by Danish fishermen. However, Swedish fishermen have raised concerns about the possible genetic pollution of wild salmon. FIFG support has as a consequence also been directed towards research into this issue [6].

FIFG support under the CFP has contributed to raising the profile of aquaculture on Bornholm and Bornholms Lakseklækkeri is today one of the knowledge centres of Danish aquaculture. However, aquaculture has not yet taken off as a production industry on Bornholm and this is an area where FIFG support would be in a position to facilitate a development, which according to Bovbjerg Jensen [9] is fully possible on Bornholm.

5.6 Processing

The processing industry is particularly important for Bornholm. This is especially the case for the industry engaged in processing of cod. The study on employment and the level of dependency on fishing calculated that 4.35 percent of the total employment of Bornholm was within the processing industry in 1997 [1]. According to IFM 654 (not counting 12 employed in trading firms) were employed in the processing industry that year. The equivalent figure for 1992 was approximately 1000 [3]. Comparability between the figures in the IFM report and those in the Directorate of Fisheries' static employment tables is not good because of differences in definitions of the processing industry; basically the Directorate's statistics include a broader spectrum of companies. However, CRTR gathered data in 2004, which are comparable to that of 1997. These figures indicate that the employment decreased with approximately 200 to 447 [5]. Figure 10 includes - besides the three (statistically defined) sub-sectors of the processing industry - also the employment in retail and wholesale of fish.

Figure 5.12 Employment in processing etc. on Bornholm



Source of data: Directorate of Fisheries' static employment tables

From 2001 to 2003 the employment in the sector decreased significantly. The negative development is due to a drastic decline in the employment in fish processing and preservation. Employment has on the other hand increased in especially smoking, curing and salting of fish over the same period. The total employment in the processing industry was 647 (incl. full time and part-time) in 2003. The majority of those employed in fish processing and preservation are employed by only two firms. One firm has 400 employees on Bornholm and by means of outsourcing 800 on factories in Poland, Lithuania and Poland [5]. The Danish processing industry is increasingly dependent on imports of raw materials because of decreasing landings. This is also the case for the processing industry of Bornholm. Anyway, Bornholm has in spite of fierce competition from other actors managed to keep a significant and viable processing industry on the island. According to CRTR the industry continues to have a strong position on the international market for processed whitefish [5].

CRTR lists the strengths, weaknesses, opportunities and threats of Bornholm's processing industry. Some of the points, which are mentioned, are summed up in the following [5]: Strengths: stable, qualified and loyal labour force; local raw material from local landings or import from nearby countries; high and uniform quality of products; and good contacts with customers, i.e. retail and fast-food chains. Weaknesses: local raw material is limited and highly sensitive to regulations; relatively high level of costs (due to wages) on standard products, i.e. fillets; and a need to develop technology to cut costs. Opportunities: higher quotas on and consequently easier access to cod if stocks improve; increased import of frozen fish and new species; industrial development to become able to produce the local artisan seafood specialities at larger scale; and develop new products for high-end market. Threats: pollution, i.e. dioxin; lower quotas; increased competition especially on standards products from low-cost areas such as China and Eastern Europe; and employees finding more attractive jobs.

As suggested by CRTR the processing sector is affected negatively by the low quotas on cod. However, the main challenge for the processing sector of Bornholm is not related to the CFP but rather to the globalisation of the market economy, which means that the sector is increasingly competing with low-cost countries. The enlargement of the EU has increased competition as well as made it easier to import raw material from nearby countries. Some companies on Bornholm have been able to take advantage of the new situation by means of outsourcing. FIFG support could with advantage continue to be directed towards developing some of the points mentioned as opportunities by CRTR, e.g. industrial development to become able to produce the local artisan seafood specialities at larger scale and developing new products for the high-end market. These are areas where Bornholm has a competitive advantage compared to many low-cost countries.

5.7 Impact of the CFP

It is difficult to link the overall development on Bornholm directly to impacts of the CFP. Bornholm is as an island facing particular difficulties, which have little to do with fisheries. However, the negative development, which the fisheries sector has experienced from the mid-90s (see for instance figures 5 and 6), corresponds to the period where the unemployment on Bornholm increased to become significantly higher than the national average (figure 2). Furthermore, in the same period the average family income on Bornholm declined from around 94 or 95 percent of the national average up to 1994 to 90 percent in 2003 (figure 3). Whereas this is not a proof that the development is directly linked to the fisheries sector it is nonetheless a good indication.

As described the difficulties of the fisheries sector of Bornholm can partly be ascribed to the measures adopted under the conservation pillar of the CFP. However, globalization and the enlargement of the European Union have also changed the situation for the sector. These developments have for instance increased the competition, which the processing sector is facing and redirected landings from foreign vessels to ports not situated on Bornholm.

In the longer term the conservation policy of the EU should result in better conditions for the fisheries sector but this can not be expected in the short term. FIFG support should be directed towards the areas where there is growth potential, for instance aquaculture or processing of special products. In regards to the capture fishing sector FIFG support should not be used to increase the fishing capacity of the fleet of Bornholm; rather it should be aimed at bringing the capacity in line with the fishing opportunities to improve the economic situation of the sector. This is also the approach, which has been taken by the EU since the end of 2004; since then it has not been possible to get FIFG support for renewal and modernisation. It is expected that this line will be followed in the EFF (successor to the FIFG 2000 to 2006) but this cannot be taken for granted. Several member states opposed the decision to abolish aid for renewal and modernisation when this was taken in 2002 and since then 10 new member states have entered the EU; a majority of these has a more favourable view on aid in general. Anyway, it is hard to believe that a Danish government would support applications in this category given the change to a more market based national management system and a general recognition of a need to reduce capacity.

In general any support should take into consideration that a diversification of the economy of Bornholm would be preferable. The fisheries sector will probably continue to play an important role in Bornholm's economy but it cannot be expected that this sector will be the backbone of the economy in the future.

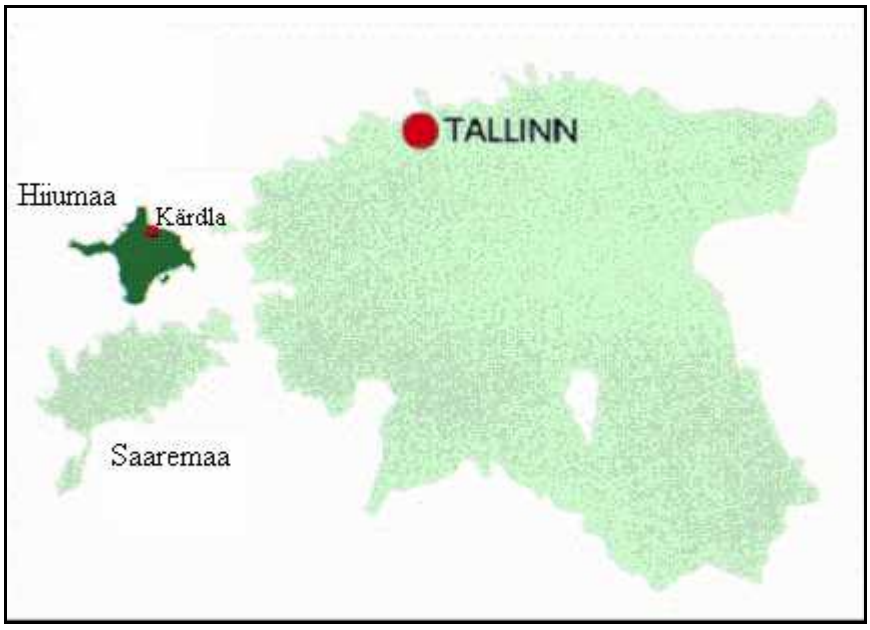
6 Example study: The West-Estonian Hiiumaa county

6.1 Introduction and the region

If fisheries of the new Baltic EU Member States (MS) are compared to the old MS situated in the Baltic Sea region, then it appears that in new MS the fisheries sector is more important. The number of fishermen is relatively high, both as a share from the total active population, or if expressed as a number of fishermen per length of the coastal strip or territory of Economic Zone. Partly this is an heritage from the Soviet period, but during the beginning of the post-soviet period number of employees and importance of the fishery even increased.

The aim of the present example study is to analyze how overall changes in the political and economic life of Estonia during the last decade have affected the life on Estonian western archipelago. This archipelago consists of four main (big) permanently populated islands and hundreds of smaller islands and islets, from which the bulk are inhabited at least during winters.

Figure 6.1 Hiiumaa and Saaremaa counties.



The islands in the West-Estonian archipelago area belong into three counties. Some form parts of counties situated on the West-Estonian mainland. Two counties, Saaremaa and Hiiumaa, are situated oly on islands. Saaremaa is bigger; its population is around 37000 and it hosts also some small-scale industries. Most of the island's territory can be used for agriculture. Besides, it is important tourist destination, at least in Estonia and neighbouring countries (e.g. thousands of finns visit this area every year). Therefore its dependence on fisheries is not so evident in comparison to Hiiumaa island.

Hiiumaa (Figure 1) is much smaller than Saaremaa, both by territory and population size. While ferries to Saaremaa depart after every hour and travel time is only 25 minutes, then there are only 4-5 ferries to Hiiumaa daily and the steaming time is 1.5 hours under normal conditions. During stormy periods and bad ice conditions, however, ferry trip might take 10 hours or more.

Fisheries have historically played very important role on the Hiiumaa island (todays Hiiumaa County). Most of the villages are situated by the sea, and fishery has always provided main or additional food for households, because good agricultural lands lie only on minor part of the island. During the rapidly changing economic situation during the past few decades, however, the life-style of the islanders has started to change too.

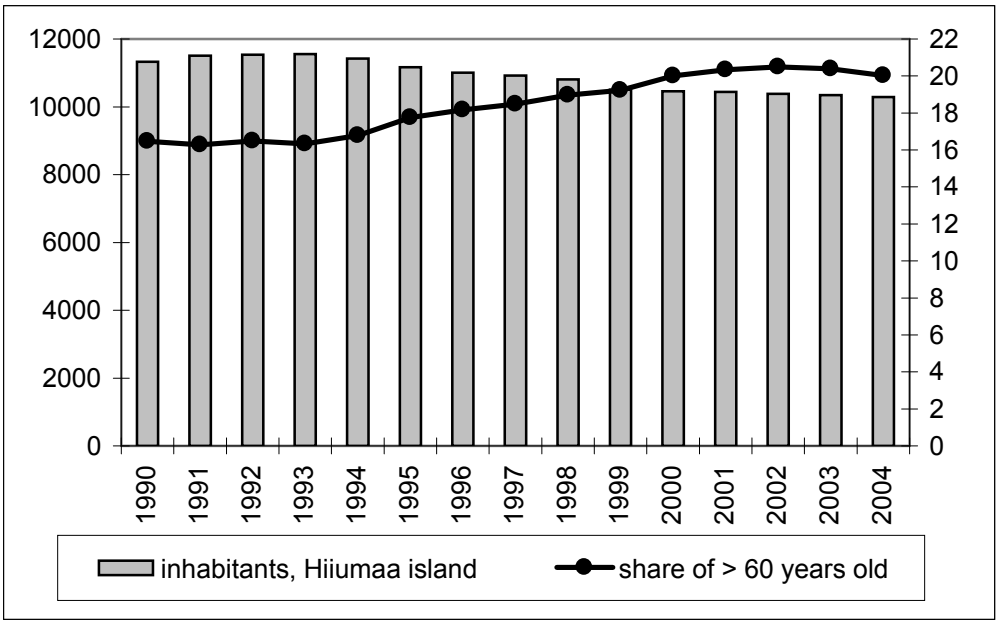
Table 6.1 Main data about Hiiumaa county and Estonia in total (2002). [1, 2]

	Hiiu County	Estonia total
Territory	1 019 km²	43 432 km²
Inhabitants	11 355	1 356 045
Population density	11.1 pers./km²	31.3 pers./km²
Births	84	13 001
Births-deaths	-46	-5 354
Capital	Kärdla	Tallinn
Administrative distribution	5 municipalities	15 counties, 241 municipalities

6.2 Demography and salaries, Hiiumaa island

During the soviet period population size of Hiiumaa island was rather stable. During last 10 years, however, it has started to decline; from 11554 in 1993 to 10289 in 2004 (Figure 2) [1]. Moreover, as the share of older people (more than 60 years) has increased from 16 to 20% ([2]), a further decline in population size is expected to take place in future.

Figure 6.2 Number of inhabitants in the Hiiumaa county (Hiiumaa island) and the share of elderly people (> 60 years old).



One of the reasons for the population decline is the decrease of employment possibilities in the fisheries sector. Secondly, fisheries sector (fishing + processing) offers the lowest salaries in the country, only 57% from the average brutto salary (16 sectors compared, data from 2004) [1]. So, employment in this sector is not very attractive. Average monthly salaries in Hiiumaa county (5975 EEK) in 2004 were close to the average of Estonian counties. However, they still form only 67% from the average salary in capital Tallinn (8800 EEK) [1]. In conclusion, outmigration (mainly to the capital area) is increasing problem in the Hiiumaa county.

6.3 Overview of fisheries

6.3.1 Coastal fishery

Traditionally, during the past centuries, fishery has been small-scale activity. Boats were open and small in size and they employed only passive gears: gill nets, trap nets and longlines.

During the last decades of the soviet period the number of coastal fishermen on Hiiumaa island was around 200 and they were almost all full-time employed. Coastal fishery used 10-15 bigger harbours which were well-equipped according to standards of that period [3]. For many reasons, such as restrictions on fishing connected to the border regime, the low value of fish, and the moderate number of fishermen, the stocks were relatively healthy at the end of the eighties. After the re-establishment of the independent Estonian Republic western markets opened. Trade liberalization enabled unlimited exports of fish. First-buyer prices of high-value species such as perch, pikeperch and pike increased rapidly almost up to the Western European level. Due to the high profitability of fishery the pressure on the fish resources increased substantially, both in terms of the total number of fishermen and in fishing effort. Since fishery costs were low and catches and

fish buyer prices high, the incomes of fishermen were good. The relative wealth of the people engaged in coastal fishery was also due to the fact that, at that time, most Estonians worked in sectors of the economy that were unable to export to Western Europe. Therefore the earnings of most people at that time were very low [3].

However, after the first prosperous years the incomes of fishermen started to decline both in the absolute and the relative sense. The first reason was that the first-buyer prices had already reached levels comparable to Western Europe and could rise no further. Soon stocks started to decline. Fishermen who were already used to high incomes increased their fishing effort, which in turn accelerated the decline of stocks. At the same time, dynamic development of the Estonian economy caused a steady increase in all costs connected to fishery. And finally, increases in earnings in other sectors of the economy have increased the average gross wage in the country to a level more than ten times as high as that during the first years of independence.

The described developments have resulted in a decline in the importance of coastal fishery during recent years and, as there are few alternative employment possibilities in many coastal areas, increasing social problems have hit households dependent on fishery [3].

The changes in the profitability of the coastal fishing are presented in Table 2. The very clear pattern is that while raw fish prices have remained on the same level, the average salary in the country has increased rapidly and steadily. As a result, comparative profitability of this sector has declined. Since the equilibrium between raw fish prices and average salaries is even worse in neighbouring (and much more developed) Finland, future decrease can be prognosticated also in the profitability of Estonian coastal fisheries sector.

Table 6.2 Decrease of profitability in Estonian coastal fishing: example with pikeperch prices and average salaries.

	Estonia					Finland
	1993	1996	1999	2001	2004	2004
first buyer price of pikeperch (Euro/kg)	1.60	1.98	1.21	1.85	1.53	2.90
average monthly brutto salary, Euro	68	191	291	352	451	2322
amount of pikeperch equalling salary, kg	43	96	240	190	294	801

6.4 Open-sea fishery

In the soviet period (1950s-1960s) large trawling in the Baltic Sea targeting herring and sprat was started. While the first trawlers were wooden and engines small, at the end of soviet period (1980s) there was already big and powerful steel trawler fleet. The number of fishermen was 100-150 and the bulk of them was full-time employed. Most of the vessels (length ca 24 m, engine power ca 220 kW) targeted herring and sprat [4]. Most of the catch was processed on the Hiiumaa island by state owned enterprise Hiiu Kalur. Salaries were comparatively high (i.e. in comparison with other sectors of economy) both in fishing and processing sector.

During the Soviet period the fisheries in Estonia were a part of the Soviet type planned economy, and fishing activities were carried out by collective farms. Fishermen were employees of the collective farms without any rights to the fish resources. Open-sea fishing enterprises were one of the most important employers on the Hiiumaa island.

Most important segment was Baltic Sea trawling, but also distant (Atlantic) fisheries targeting many different species. Easily comparable exact data from soviet period is not available (different accounting systems), but it seems that open-sea fishing was responsible to around 25% of Hiiumaa islands turnover.

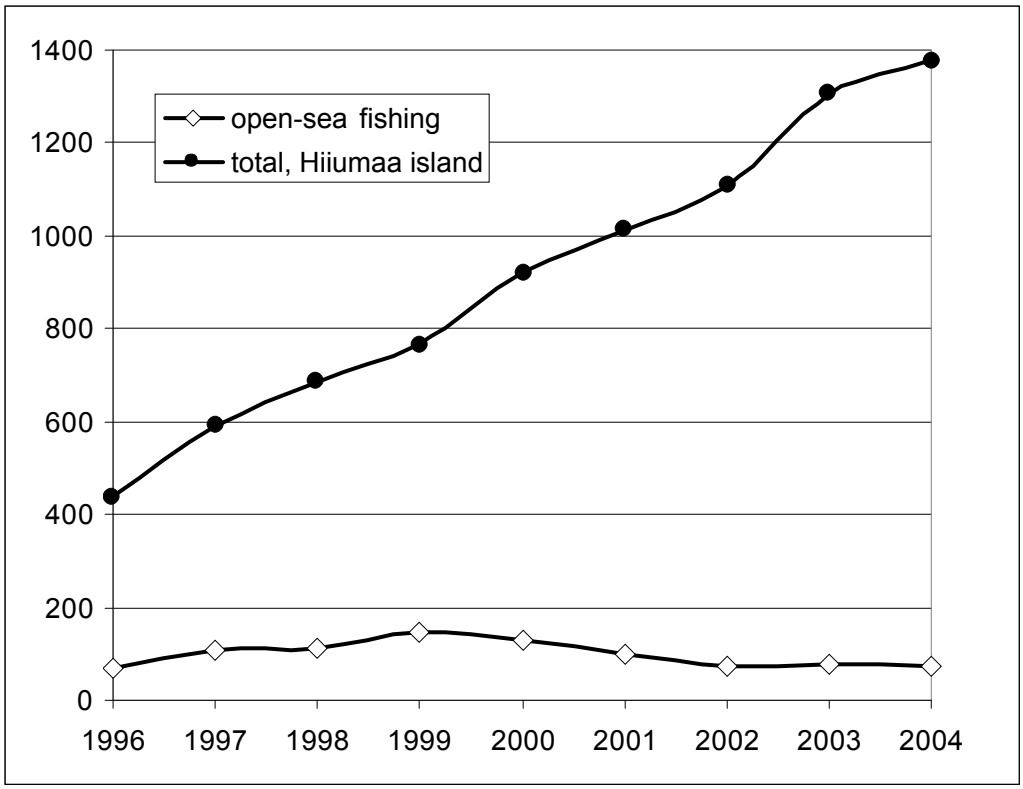
The re-establishment of independence in Estonia in 1991 was followed by a rapid transition to a market economy, and the fishery was privatised. During the soviet period the trawling sector used cheap fuel and machines produced in the Soviet Union, which were uneconomic in terms of fuel use. The disintegration of the centrally planned economy resulted in the discontinuation of subsidies. Furthermore, the profitability was reduced due to increased fishing costs, and low prices in Eastern Europe where the Estonian trawl fishery had its traditional market. As a result, catches decreased and national quotas were not fully utilised. While small-scale fisheries found new markets in the west, it was still only possible to export products made from herring and sprat to the eastern markets (Russia, Ukraine). Price levels in those markets were low, and Russia tried to enforce several trade barriers both to "punish" the Baltic states for their independence and to force them into a closer alliance with the Russian Federation. As a result, the profitability of Baltic trawling decreased sharply and the volume of catches fell [4,5].

In the middle of the 90s, however, the trawl fisheries started to grow again. The most important reason for this was the increasing purchasing power in the eastern markets. As those markets were known to Estonian fish processors from the soviet time, exports started to grow quickly. As a result, fish processors were interested in raw material and the prices for raw fish rose. In 1996 open-sea fishing created 15% (68 mill. EEK) of Hiiumaa islands turnover and in 1999 the figure was even 19% (143 mill. EEK) (Figure 3) [2].

However, the Russian financial crisis which broke out at the end of 1998 decreased drastically marketing possibilities in the eastern markets during 1998-99. Export volumes fell almost to zero and as a result many fishing and processing enterprises, oriented almost exclusively towards the eastern markets, went bankrupt in Estonia. Even if the situation stabilised after 2000, the economical situation (increasing labour costs etc.) for fisheries enterprises has not allowed to win back lost markets in Russia and Ukraine. In 2004 the turnover of open-sea fishery (73 mill. EEK) was responsible for only 5% of islands total (Figure 3) [2].

The number of people employed in connection to the open-sea fishery sector (fishermen + other land-based employees of the enterprises) has fallen dramatically. During the soviet period the statistics was counted differently, so it is not easy to draw parallels to today's figures. However, employment was 50-80% bigger than in 1998, when this sector responded to roughly 16% from the total employment on island.. In 2001 the respective number was 8%. The data from 2004 is not yet clear, but it is only around 5%.

Figure 6.3 The turnover of open-sea fishing enterprises based on Hiiumaa island (sprat and herring trawling in the Baltic Sea) and total turnover of Hiiumaa island economy (in million Estonian kroons; 1 Euro = 15.6466 EEK).



6.5 Conclusion, main trends in Hiiumaa county fisheries

Due to the differences in the accounting principles used in the soviet period and today it is not possible to presentexact statistics reflecting the developments in the fisheries sector. However, approximate figures presented in the Table 3 give rough overview of the changes.

Table 6.3 Developments in the fisheries sector of the Hiiumaa county

Year	1985	1995	2005
Role of fishery in County GDP, %	25 %	15 %	**5 %**
Number of fishermen in the coastal fishery sector	200	200	180
Share of fisheries income in the coastal fishermens income	100 %	100 %	20 %
Number of fishermen, trawling fishery	500	200	100
Share of fisheries income in total, trawling	100	100	75
Approximate employment in the fish processing	300	200	100

6.6 Future prospects

Estonia has comparatively limited fish resources. This is in some contradiction with the traditional importance of the fisheries. As it is typical, number of fishermen is high in less-developed countries, while in parallel to the rising living standard the importance of fishing revenues as source of income decreases. It is normal that if a country develops then the average salaries increase more than first-buyer prices of fish. Inevitably, number of full-time fishermen and relative importance of fisheries must in conclusion decline. For example, the number of professional fishermen using the resources of the Baltic Sea in Estonia is rather equal to Sweden (2000-2500). At the same time the size of the economic zone and length of coastline in Sweden surpasses Estonian ones 5-10 times. Rather analogous is comparison with Finland. Therefore, the decreasing importance of fishing sector can be prognosticated also for the future.

Common Fisheries Policy has set a target to guarantee at least relative stability to people employed in fisheries. Also, it aims to keep incomes of fishermen on decent level. However, if for example the revenues created per fishermen are compared between Estonia and Norway, then it appears that in Estonia an average fishermen creates value that responds to only 10% of value created in Norway. So, it seems quite clear that CFP cannot support such a low efficiency of work. Therefore, in future the decrease in the importance of the fisheries sector as an employer is inevitable and can be foreseen already now. If we take into consideration the general over-exploitation pattern of the Baltic Sea resources and remarkably increased labour efficiency, then it is of no surprise. In conclusion, the emphasis of the CFP structural support as well as other assisting funds should be rather in finding alternative employment possibilities than in maintaining the existing structure of the fisheries.

6.7 Developments related to CFP, national implementation of CFP

Estonia became a member of European Union in May 2004. Since the national statistics is collected on yearly basis, there are no data available not even about one entire year as a member state of EU yet. Therefore, there are not much numerical information available, which could reflect the territorial impacts of CFP in Estonia.

However, it is still possible to analyse how CFP can impact the fisheries sector of Hiiumaa county. First of all, it is important to keep in mind that since January 2003 the EU has had a new fisheries policy. It needed to be reformed as it was not effective enough in doing what it had been created to do, that is to conserve fish stocks, protect the marine environment, ensure the economic viability of the European fleets and provide good quality food to consumers. The main reason, as it is put out by EC [DF] was that far too many fish had been taken from the sea by fishing, leaving too few adult fish to reproduce and rebuild the stocks. Based on that, the principles for financial support to fisheries sector have also changed. While it is still possible to apply for support to modernise fishing vessels (e.g. to improve security and working conditions on board), the main emphasis has changed to reduce the overcapacity in European fisheries.

In Estonia support to fishing sector can be received for following activities: reducing of fishing capacity (i.e. for utilising vessels); modernisation of harbours and for projects connected to marketing. If these measures are weighted against the main problems of the sector (increasing labour costs, low price of the main fish species, problems on traditional

markets), then it is not likely that CFP can stop the "decline of the fisheries" in West-Estonian archipelago. Based on that it can be summarised that while CFP measures can mitigate the problems appeared during the last years, it is not realistic that fishery will once again receive such a high role in the economy of the Hiiumaa county as it had during the soviet period.

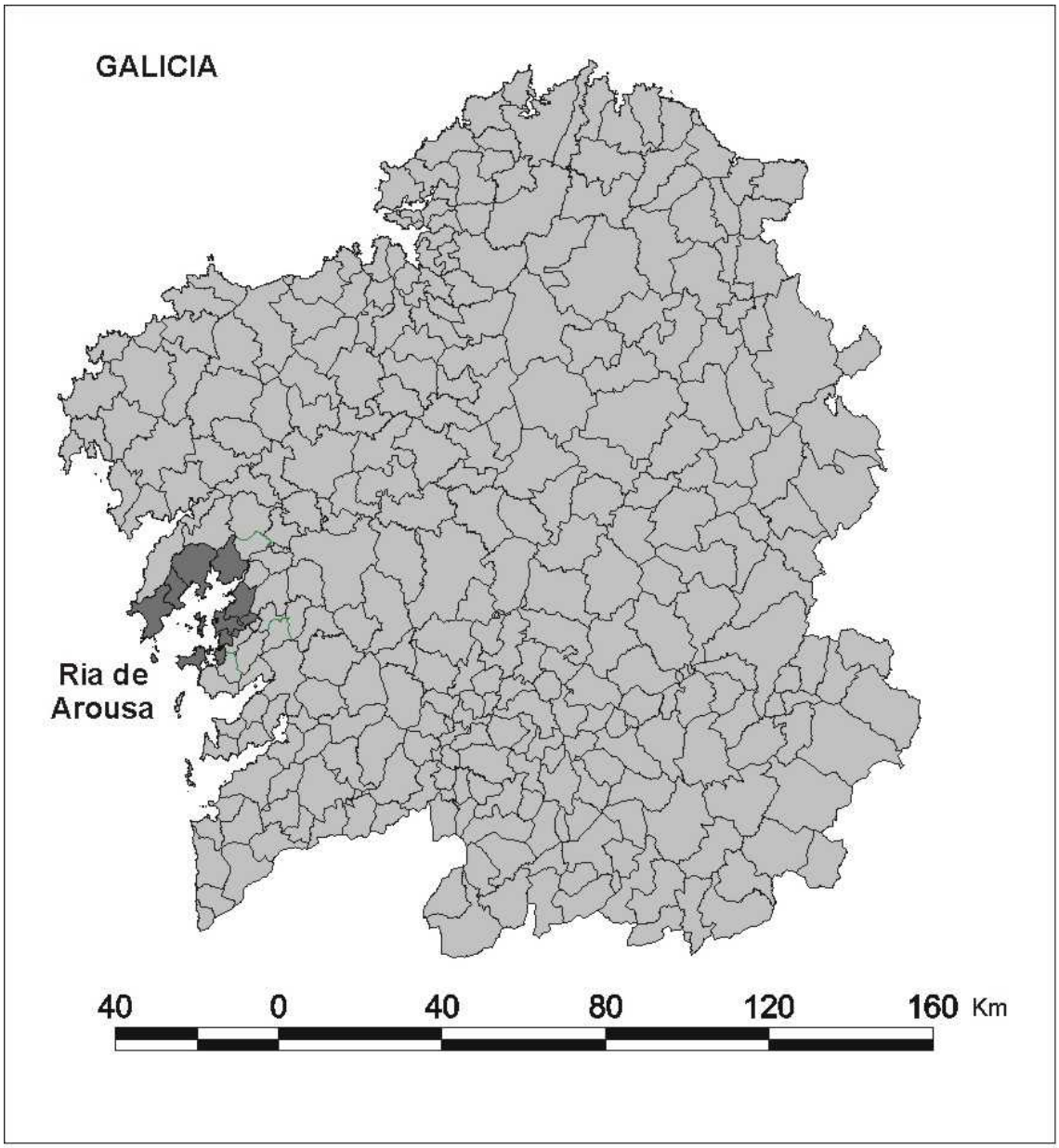
7 Example study: Ría de Aousa (Galicia, Spain)

7.1 The context

According to data of the autonomous Administration (Xunta de Galicia), fishing –the extractive sector and the processing industry- amounted to 4.6% of the Galician GDP in 2004.

The Galician fishing fleet is one of the most important of the European regions and the biggest of a country having one of the most powerful fishing sectors in the European Union, Spain. In 2000 Galicia owned almost half of the fishing vessels registered in Spain and 40% of the total carried tonnage. As to employment, despite the reduction in the number of jobs in fishing in Spain and Galicia in recent years, the Galician quota in the total Spanish fishing remained around 40%.

Galicia depends deeply on the respect of the sea environment, the employment and production numbers directly related to fishing activities show this. But this relevance is notably higher if we consider its multiplying effect on the economy of sea resources: ship building and repair, fabrication of fishing devices, transport and a long etcetera of activities which create lots of jobs and a high economic production. As an example, 20 out of the 100 most important companies located in Galicia operate in sectors that are closely related to the sea environment.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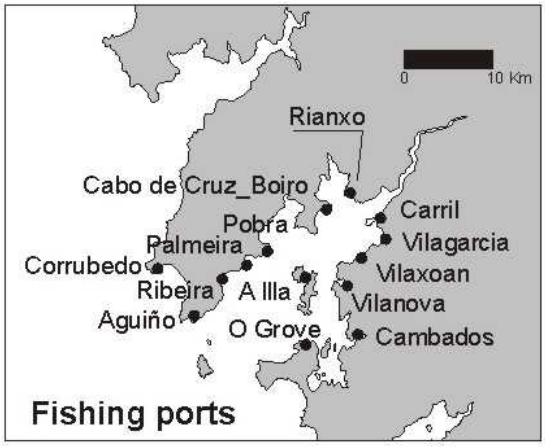
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Vilaxoan
Vilanova
Cambados
Fishing ports


España

Fishing and aquaculture are the main productive activities of the sea environment, where Galician companies have shown an outstanding dynamism both in the extractive process and the marketing of end products. Galicia has managed to associate its sea products with an a renowned image of quality, which makes them have an excelent reputation.

The number of direct jobs in extractive fishing in Galicia is approximately 29.400, which amounts to 11.6% of the total EU employment; and the production from extrative fishing (estuary, coastal, distant-water and deep-sea fishing) unloaded at Galician ports in 2000 increased to 128,035 tons and 329,148,357 €, which represents 2.9% and 10.10% of the EU production respectively.

The extractive fishing is made up by fishing units that are mostly dedicated to small-scale fishing in the "rías" and the coast. In 2002 the Galician fleet came to 7.27% of the number of vessels, 6.47% of GRTs and 7.69% of the EU fleet power.

We should also mention the presence of Galician capital and crew working in vessels attached to joint ventures in 26 countries, a total close to 265 vessels and more than 7,898 jobs created both on the sea and on land in the European Union and third countries, with an approximate annual production of 250,000 tons.

Taking into account the economic weight of the Galician fishing on the Spanish trade balance of sea products, the importance of joint ventures in the value of Galician imports is significant: in 2002 21% of fresh fish imports, over 55% of frozen fish imports and 50% of frozen mollusc and crustacean imports came from joint ventures, having the EU market as their first destination.

A simple quantification of the fleet and the jobs at Galician ports would not reflect the reality so as to understand the importance of fishing as an economic activity. The changes of the base port of vessels to other regions of the country or even abroad, the changes in the crew or in the presence of Spanish capital in foreing markets make us go beyond the premise of the mere localization of production means. Due to this, we should consider such data as the minimum for comparative purposes.

As to exports, and excluding the automobile sector, the fishing sector is the main Galician export sector. In 2001, 90% of fresh fish exports, 81% of frozen fish exports, 90.5% of crustacean and mollusc exports and 84.5% of canned products made with fish, seafood and other crustaceans had one of the EU member countries as its destination.

Shellfish fishing and aquaculture –especially the mussel production- created over 22,600 direct jobs, amounting to 40% of the employment in both sectors in Europe. The shellfish-fishing activity employs directly more than 9,000 people, most of them women. The direct jobs created on the 3,337 barges located in Galicia exceed the 13,500, being this region the first EU and the second world producer of mussel, with a production which varies between 250,000 and 300,000 tons.

The canning sector comprises the canning of fish, crustaceans and molluscs in different forms: canned, brine, salted, dried... which employs directly about 4,407 people; and the subsector of the new processed products -such as pre-cooked fish, crustaceans and molluscs-, which employs over 2,130 people. Both sectors are the most important ones in Spain, with pioneering companies in the production of food from fishing and in the labelling with the Galician trademark label.

7.2 Ría de Arousa

The Ría de Arousa is the most extensive of the Rías Baixas, with its mouth opening between the end of Covasa, on the north, and San Vicente, on the south. It clearly borders on the Barbanza range, to the south, and is bounded by the smooth plains of Salnés. There are numerous islands and islets in this "ría", being the most remarkable ones the island of Sálvora, in its entrance; the island of Arousa, in the centre; and the island of Cortegada, to the back, which touches the mouth of the river Ulla.

The winding profile of Arousa favors the existence of many coves and peninsulae that helped the settling of numerous sailor villages such as Aguiño, Ribeira, A Pobra do Caramiñal, Boiro and Rianxo, on the north; and Carril, Vilagarcía, Vilaxoán, Vilanova, Cambados and O Grove, on the south. Catoira, in the confluence with the river Ulla, in the center of the "ría", is the village of the island of Arousa.

From the economical point of view, we must point out that the richness of Arousa is not limited to the sellfish sector, fishing, aquaculture or the canning industry. The wine sector is also of great importance, being the Albariño the most outstanding wine of Arousa.

From the administrative point of view, the Ría de Arousa is part of nine municipalities: Ribeira, a Pobra do Caramiñal, Boiro and Rianxo in the province of Coruña (ES111), and Vilagarcía de Arousa, Vilanova de Arousa, A Illa de Arousa[2], Cambados, and O Grove in the province of Pontevedra (ES114).

In this territory there are 14 ports, 13 fish markets and 11 fisher guilds.

7.3 Demography

Galicia is currently experiencing a negative vegetative growth, with a balance of 7,682 people (provisional data of 2004). This region is characterized by its low birth rate and the ageing of the population. Its total population decreased in the last two decades from 2,811,912 inhabitants in 1981 to 2,751,094 in 2003. However, this negative trend stopped in recent years thanks to immigration.

The demographical evolution in the municipalities of Ría de Arousa is similar. The population grew in the 80's: from 133,407 inhabitants in 1981 to 145,823 in 1991. These numbers decrease in the 90's, down to 140,347 inhabitants in 2001. During this decade there were important migration flows of young people to the Canary Islands to work in the building industry and the hotel and catering trade. In the last few years the population became stable, with 140,904 inhabitants in 2004.

The population of Arousa shows a slower ageing when compared to Galicia. The percentage of the population under 20 in 2004 is 19.8% and 17.5% of the population is over 65. The average age is also around 3 years lower than that of Galicia, 40.8, and the ageing index is slightly lower.

The population **density** of Galicia in 2003 was 93.02 people per square kilometer, which means that there was a decrease compared to 1981 (95.97). On the contrary, the Ría de Arousa shows a much higher density: 441.6 people per square kilometer, standing out the 780 people per square kilometer in Vilagarcía de Arousa. The previous data clearly

[2] This municipality was created in 1997 from a split of the municipality of Vilanova de Arousa. Due to this, there are no municipal statistical data before that year.

reflect the Galician reality, where the population tends to concentrate on the coastal areas (58% of the population is settled here), while the inland of this autonomous community is becoming unhabited.

In recent years, the migration movements have compensated the negative vegetative growth of the Galician population. In 2004 Galicia took in 37,697 immigrants, compared to the 22,645 people who left the region, with a positive balance of 15,052 people. These numbers are better than thos of 1990, when the migration balance, even being positive, was much lower: 3,324 people. The municipalities of Arousa show a similar evolution, though more marked: 1,619 people emigrated in 1990, compared to 1,885 immigrants, with a positive balance of 266 people; in 2004 there were 3,048 registered emigrations and 4,032 immigrations, thus increasing the migration balance up to 984 people. However, not all municipalities show the same trend as immigration is concentrated in two municipalities: Ribeira (labour employed in fishing and in vessels that operate in international fishing grounds) and Vilagarcía de Arousa (having an important trade port and a diversified economy, this is the least dependent on fishing municipality in the Ría de Arousa).

7.4 Employment

The Galician unemployment rate in 2004 was 13.6%, the activity rate was 53.2% and the occupation rate 45.96%. These data show a general increase compared to the occupation levels of the 90's. The numbers in the Ría de Arousa are similar but there are more marked changes and a more positive evolution. While in 1991 the working population was 51.64%, the occupation rate 41.03% and unemployment 20.5%; in 2001 the working population increases up to 55.84% and the occupation rate to 48.35%, whereas the unemployment rate goes down to 13.28%. These numbers show a higher employment growth in the Arousa area than in the rest of Galicia, which clearly reflects the economic dynamism of the coastal area.

By municipalities, O Grove has the worst results. Here the unemployment rate in 2001 increased to 16.66%, though this is a considerable decrease compared to 28.95% in 1991. On the contrary, the municipality which has the best results is Illa de Arousa, with unemployment down to 7.66% in the same year. This municipality has the highest occupation rates in fishing, as the small-scale fleet is concentrated here.

Before analyzing the occupation levels in fishing, we should note that when talking about the fishing sector we do it according to the National Classification of Economic Activities (CNAE): 050 Fishing, aquaculture and services related to them (including: 0501, Fishing; 0502, Aquaculture).

Fishing is a fundamental sector for the development of the Ría de Arousa, currently employing almost 10,000 workers (mostly men, over 7,000). The activity rate reflects the importance of this sector, remaining since the 90's up to now around 20%. By municipalities, the numbers of the Illa de Arousa show a very high dependency on fishing, with an employment rate of 60% in this sector (and a remarkable participation of women); Ribeira, with 30%, is in the second place. The lowest fishing employment numbers correspond to Vilagarcía de Arousa, with a rate of only 4.7%.

Table 7.1 Percentage of population employed in fishing compared to the total employed population

	Total		
Municipalities	1991	1996	2001
Boiro	17,3	20,7	17,2
A Pobra do Caramiñal	11,8	15,6	11,6
Rianxo	12,9	15,3	12,5
Ribeira	35,2	36,8	30,1
Vilagarcía de Arousa	4,5	5,02	4,7
Vilanova de Arousa	21,1	29,4	13,4
A Illa de Arousa	..	..	60,3
Cambados	18,6	21,5	20,8
O Grove	20,0	21,01	16,1
Ría de Arousa	**17,6**	**20,6**	**20.7**

Source: IGE- Xunta de Galicia

As we can see, all municipalities experienced a growth in the population employed in fishing between 1991 and 1996, which may be due to the economical take-off of Galicia and particularly that of its coastal area (helped by the EU cohesion funds) and to the boom of miticulture, an activity which has its main productive focus in this region.

During the second half of the 90's, employment in this sector decreased substantially and occupation levels dropped below those of 1991.

7.5 Economic activities

The farming and fishing activities in the Ría de Arousa employed 72% of the working population in 1995, being this a deeply agricultural and rural society.

Since the 60's the fishing sector of Arousa passed from a family and artisanal organizative structure to a semi-industrial one oriented to specialized working processes (bottom trawling, long-line and seining).

In relation to the mussel sector, the improvement of the floating system (polyester and glass fibre) and the increase of the farming area of the stock ponds contributed to a higher production. The canning industry gained ground, to the detriment of the salting industry, being outstanding the technical progress of the sector and the improvement of preserving, handling and processing of fishing resources.

7.6 Fishing fleet

The number of vessels with base port in the Ría de Arousa amounts to 14.6% of the national total in 2004, but only 7.6% of its power. This just shows the proliferation of small vessels dedicated to small-scale fishing.

Table 7.2 The fishing fleet, 2004

	Nº of vessels	GRT	KW
Spain	14.627	498.988	1.210.106
Galicia	5.422	123.271	344.801
Arousa	2.139	21.491	92.911

Source: Pesca de Galicia, Xunta de Galicia.

In 1986 the distribution of the fishing fleet of Arousa –according to the tonnage- showed a strong relevance of smaller units, as vessels with a GRT under 10 added to over 70% of the total. If we look at the current data (November 2005), we can see that the weight of these vessels has not changed much. But the effort compliance schemes and the subsidized scrapping of big units which operated in Gran Sol and other deep-sea fishing grounds resulted in a sensible reduction of the percentage of vessels with a GRT over 100 because the size of new vessels was more adapted to the new conditions of resource reduction and limited access to fishing grounds.

Table 7.3 Evolution of the fleet size (GRT) in the Ría de Arousa

Ría de Arousa	1986	2005
1-10 GRT	75,4	70,2
11-100 GRT	17,7	26,9
Over 100 GRT	6,8	2,6

Source: 1986: Cofradías de pescadores; 2005: Pesca de Galicia

Since 1986 the fleet went through a re-dimensioning process. The small-scale sector lost weight in favour of the semi-industrial one.

The high participation of small coastal companies hides considerable differences depending on the ports in question. By fishing types, the deep size contrast between semi-industrial fleets –dedicated to coastal seining, trawling and long-line- and the small-scale fleet –which alternate fishing and shellfish fishing depending on the time of the year.

There is a big disparity in the inner structure of the fishing fleet: while the artisanal sector survives and is resistant to changes, the semi-industrial sector is experiencing a strong expansion. The analysis of the size of the fishing fleet based at the Ría de Arousa ports is further evidence of the strong predominance of smaller vessels. According to the vessels registry of November 2005, 94.8% of vessels are dedicated to coastal fishing with minor gears despite amounting to only 16.8% of the GRT of the total. Almost 43% of the vessels that use minor gears in Galicia have their base port in the Ría de Arousa.

A detailed analysis of the data refered to the fleet in the Ría de Arousa shows a duality with respect to the kinds of fishing practised here: on the one hand, a strong presence of small-power vessels dedicated to inshore fishing, quite spread among all the ports of the "ría" (being Illa de Arousa an outstanding case, with 22% of this kind of vessels); on the other hand, an industrial or semi-industrial fleet that operates in EU and international waters -including seiners of the national fishing ground- and is concentrated at the port of Ribeira, as can be seen in the following numbers:

- Vessels operating in deep-sea international fishing grounds, in distant-water EU fishing grounds and NEAFC long liners have their base at the Ribeira port. Over 70% of these vessels were built after Spain joined the EU with community funds.

- As to the national fishing ground, all seining vessels of the Ría de Arousa have their base at the port of Ribeira.

When considering the other categories, we can see that they are distributed among the ports of the "Ría" as follows:

- Bottom set longline: 1 vessel in Ribeira and 1 in Aguiño
- Seining: 32 in Cambados, 5 in Ribeira, 3 in Aguiño, 2 in the Illa de Arousa and 1 in Rianxo
- Minor gears: 463 vessels in the Illa de Arousa, 240 in Cambados, 180 in O Grove, 145 in Pobra do Caramiñal, 132 in Boiro, 127 in Aguiño, 114 in Vilanova de Arousa and the remaining 120 at the ports of Vilagarcía, Vilaxoán, Palmeira, Carril and Corrubedo.

Table 7.4 Ría de Arousa – description (November 2005)

RÍA DE AROUSA – DESCRIPTION (November 2005)				Nº VESSELS	GRT	GT
International fishing	Ground yarding		Freezers	4	3.486,79	4.972,01
(Deep-sea)	Seine			2	3.983,19	5.920,00
	Longline – Area			6	1.086,85	2.016,80
Community fishing (Deep-sea)	Bottom set longline	Neafc Bottom set longline		7	1.324,26	2.254,00
National fishing ground	Ground yarding			45	6.376,94	8.851,87
(Cant/Northwest)	Minor fishing gear			2,044	3.625,30	2.778,93
	Seine			43	1.207,48	1.721,16
	Ground yarding			2	123,77	299,47
Totals (except aquaculture auxiliary vessels)				**2,153**	**21.214,58**	**28.814,24**

Source: Pesca de Galicia, Xunta de Galicia

The Xunta de Galicia set up an empowerment plan aimed at this artisanal fleet to increase their competitiveness. Over 58,465,000 € are going to be invested on this plan until 2006, to a great extent to modernize vessels and the fish trade structures. The final goal is to adapt the estuary fleet to the new trade and social conditions.

The technical equipment level of the fleet makes it possible to distinguish between a widely spread artisanal sector -with old, smaller and less powerful vessels- and a semi-industrial sector concentrated at the ports of Aguiño, Ribeira and Cambados –with bigger and well-equipped vessels dedicated to seine, long lining and bottom trawl fishing.

7.6.1 Catches by fish markets

During the second half of the 90's catches remained stable in the fish markets of the "Ría" and even increased 9% until 1999, when a major change occured: unloadings decreased 33% in 2001 and kept on dropping in the following years[3] until 2004, when a slight recovery took place.

[3] We should take into account that the sinking of the tanker Prestige on 13 November 2002 brought all kinds of fishing and shellfish fishing to a standstill in most of the coast.

Table 7.5 Catches in volume (kg), Ría de Arousa (1997-2003)

Kg	*1997*	*1999*	*2003*
Ría de Arousa	34.243.257	37.250.261	23.061.912

Source: Pesca de Galicia, Xunta de Galicia.

Table 7.6 Catches in volume (kg) and value (€),Ría de Arousa (2004)

2004- Ría de Arousa (2004)	*Kg.*	*%*	*€*	*%*
Bivalves	4.749.212	14,91	30.722.622	45,81
Cephalopods	1.152.007	3,62	5.010.651	7,47
Crustaceans	251.478	0,79	6.129.267	9,14
Equinoderms	112.155	0,35	185.231	0,28
Gasteropods	553	0,00	1.308	0,00
Invertebrates	2	0,00	108	0,00
Fish	25.580.780	80,33	25.013.860	37,30
Rest	299	0,00	2.183	0,00
TOTAL	31.846.848	100	67.065.230	100

Source: Pesca de Galicia, Xunta de Galicia

Table 7.7 Catches in volume (kg) and value *(€),*Ría de Arousa and Galicia (2004

2004	*Kg.*	*%*	*€*	*%*
Ría de Arousa	31.864.484	21,06	67.065.230	17,21
Galicia	151.246.799	100	389.551.302	100

Source: Pesca de Galicia, Xunta de Galicia

The most important fish market of the thirteen which operate in the Ría de Arousa is that of Ribeira, due to its production volume and its turnover (it is, in fact, the second fish market of Galicia with respect to unloadings after Vigo). Fish catches are particularly high, being also quite important cephalopod, crustacean and bivalve catches.

The most representative and valuable product in all fish markets is certainly the group of bivalves (clams), which has the highest catches (800 tons) and sales (6 million euros) in the Illa de Arousa, having also the best numbers in the other fish markets.

The most profitable product of these fish markets are crustaceans. Particularly relevant are the results attained in Aguiño, where 62 tons of crustaceans added to 2.2 million euros. The fish markets of Aguiño, O Grove and the Illa de Arousa stand out in catch volume.

Cephalopods obtain far better results in Ribeira than in the other fish markets, where this product is not especially important.

Fish –except in the aforementioned case of Ribeira- does not have significant numbers in the total sea catches. The best results correspond to O Grove, Ribeira and Cambados.

In the fish markets of Arousa there is a clear trend to specializing sea products. Normally, a certain product stands out in each of them, taking up most of the catches and, above all, most of the turnover. Thus, in the biggest fish market, the Ribeira one, two species of fish –blue whiting and blue jack mackerel- account for the highest numbers in catches and turnover. Octopus is also very important.

7.6.2 Shellfish fishing and Aquaculture

Shellfish fishing is defined as an activity aimed at taking out bivalve molluscs from sandy bottoms (clams, cockles, razon clams...) and it is carried out by shellfishers on foot and with vessels. This is a traditionally undervalued activity which went through a deep transformation in recent years towards the professionalization of the sector, considered until now as a complement to the "family economy".

The Galician Administration organizes every year the intertidal areas by means of exploitation plans which specify dates, places, species, number of authorized professionals and maximum catches. In order to attain the full professionalization, the increase in the profitability of this occupation must be consolidated, investing in semi-farming to increase production.

Arousa is well-known around the world for being the most important mussel producer. Most of the Galician canning industry is concentrated here as well.

In 1945 the first well barge was placed in the "ría" and in 2004 there were already 36 ranges, where 68.8% of Galician well barges are.

This sector is characterized by smallholdings. There are 235 owners in this region, being the average close to 2 platforms per owner.

One of the main problems of farming is the "marea vermella" (red tide) -the presence of diarrheic (DSP) and amnesic (ASP) toxins-, which lashes Galicia intensely and frequently and forces to close almost 100% of the well-barge areas and the shellfish grounds of this autonomous community. Such a situation -which has to do with the prevailing climate and, mostly, with the temperature of the water and the strong blowing winds that introduce in the "ría" the phitoplancton carrying biotoxins from the continental platform- is specially serious in the Ría de Arousa, considering that it is a world phitoplancton reserve and the most productive one.

The high density of floating crops in Galician inland waters makes it essencial to promulgate regulations to garantee that these crops will not prove damaging for other activities, but particularly for themselves.

7.6.3 Canning industry

Galician companies are the most numerous in the Spanish sector and the most important referent in the European Union. Thus, out of the almost 145 Spanish companies dedicated to the production of canned products made with sea products, 76 are located in Galicia. They account for more than 70% of the Spanish turnover of this sector and have a great export vocation.

Galician canning companies are nowadays confronted with new challenges because there is a worldwide competitiveness in the market and less duties. A gradual process of business concentration took place in Galicia -due to globalization- in this sector with over a century of tradition in business associationism. At the same time, investments are increasing in order to gain new markets and the access to raw materials. The average growth of this sector was 7.25% from 1999 to 2002.

Galician canning companies are making investments to modernize themselves technologically and to produce new and higher-quality canned products. Besides, many

companies of this sector are making alterations to their installations in order to adapt themselves to the new health and environmental regulations.

The role played by canning companies in the Galician economy is vital. On the one hand, they demand lots of raw material from the fishing and shellfish fishing sector; for instance, about half of the Galician mussel production is processed through canning. On the other hand, this industry also needs to be supplied with additional high-value goods such as machinery or control laboratories. The number of direct jobs created by these companies exceeds 8,000, but indirect employment is much higher.

These canning factories are mostly located in the "Rías Baixas", exactly 46% in the Ría de Arousa and 28% in the Ría de Vigo, causing various problems due to the high volume of unloaded sewage waters and to the low water renewal of their surroundings.

As to business structure, there is a great number of small factories: 55% of the total turn over 9%, being 59% of the turnover shared only by 5 companies.

7.7 Research and development

In Galicia there are many research and initiave centres oriented directly and indirectly to the development of technologies which can be applied to the sea and, in particular, to the aquaculture sector. Most of them are located in the town councils which skirt the margins of the Ría de Arousa:

- Centro de Investigacións Mariñas ('Sea Research Center', Vilanova de Arousa)
- Instituto Tecnolóxico para o Control do Medio Mariño ('Technological Institute for the Control of the Sea Environment',Vilagarcía de Arousa)
- Centro de Experimentación en Acuicultura ('Aquaculture Experimentation Centre', Ribeira)
- Cluster de la Acuicultura de Galicia ('Aquaculture Cluster of Galicia', Ribeira)
- Instituto Galego de Formación en Acuicultura ('Galician Institute of Training in Aquaculture', Vilanova de Arousa)
- Consello Regulador do Mexillón de Galicia ('Galician Mussel Regulatory Council', Vilagarcía de Arousa)
- Escola Oficial Naútico-Pesqueira ('Official Nautical-Fishing School', Ribeira)

7.8 ICZM

Presently there is no integral planning instrument of coastal areas in the Galician spatial planning. On spatial planning matters, the autonomous administration has gives priority to correcting and redirecting the spatial unbalance process, marked by the use congestion of the western coast uses due to the passing of Integral Management Plan of Galician Coastal Areas (PILGA), which will be put in motion by the end of 2006 and will include measures on management, regulation, preservation and maintenance, while establishing sustainable development actions.

Several regulations and plans of coastal areas management have been passed: on certain sectors, on aquaculture, on port activity, on fishing, on industry, etc. In other words: plans and regulations which cannot solve those problems that require an integral approach, but which are a fundamental foundation and reference to consider when approaching and

formulating the integral spatial planning. The 1993 fishing law of Galicia is particularly relevant, being its main goal the regulation and management of fishing, shellfish fishing and aquaculture. On the other hand, the regulations on marine living resources management -which make reference to partial aspects- divide the sea environment into zones that have an obvious impact on the spatial distribution of coastal uses and activities.

The regulations on marine-fishing matters are so numerous and diversified that professionals and agents of this sector have difficulty in consulting and and getting to know them. This problem becomes worse if we consider the diversity of administrations of the Galician coastal areas and in Ría de Arousa in particular (the Central Administration is responsible for the protection and management of the marine and land environment, while the Autonomous Community is competent on coastal areas planning. Town councils also have competences on urbanism).

Since Spain joined the EU there was significant progress on the programming of regional development policies. In the case of Galicia, one of such proposals is the Strategic Economical Development Plan of Galicia 2000-2006 (PEDEGA). Two priority actions refered to the fishing sector are mentioned in it: boosting the competitiveness of the Galician productive core and protecting the environment. The former is aimed at creating and developing integrated multisector production networks that set up mixed activity conglomerates functionally and spatially linked. The latter action is aimed at overcoming conservationism and raising concern and awareness about these matters as an special long-term development strategy for Galicia.

Two EU programmes are currently in motion in Ría de Arousa. Their goal is the financing and promotion of all actions and projects directed to developing and activating the implementation of the EU's environmental policy:

- The AQUAREG Co-operation Programme through the Community Initiative Interreg IIIC, which is represented by the CETMAR Foundation (Centro Tecnológico del Mar, "Sea Technological Center").
- The ECOPORT project in the municipalities of the Association of O Salnés (having its head office in the town council of Cambados) was presented to the European Community through the LIFE project, as a pilot experience, for the integral management of fishing waste material in this Arousa coastal area.

7.9 Future perspectives

58% of the total Galician population lives on the coastal areas and concentrates 80% of Galician companies' turnover, which proves the important economical dynamism of this territory.

However, the fishing sector presents some specifical problems, the most important being the duality between a highly advanced segment that is placed at a worldwide top positiong and a traditional segment (coastal fleet and small-scale canning industry). The latter is facing problems related to its technological and trade antiquity and obsolescence, apart from the general problem of management efficiency and the preservation of marine resources.

The immediate future of this sector appears to be conditional on several factors such as: fishing agreements with third countries and within international organizations, the evolution of the recently modified CFP and the present trends in trade operations, with changes in product demand, channels, instruments and agents. The impact of fishing on

globalizing trends and the impact of the new knowledge society technologies should be taken into account as well.

7.10 National implementation of CFP

The legal-political order of the global fishing scenario favors –as a general rule- a better resource exploitation by making the regulation of this activity much easier, but it also brought about changes which, in principle, do not suit to the interests of Spain on fishing. Although this process of change was long, the key date was 1977, when the application of the 200- mile Exclusive Economic Zones started to expand, a fundamental point of the redefinition of international fishing rights and a strong determining factor for Galician fishers, whose historical presence in European waters became limited. There is another significant institutional scenario for Spanish and, particularly, Galician fishing, the one represented by the EU with its CFP. Since Spain joined the EU in 1986, the fisheries policy had a strong overnational component as many actions were integrated in the EU's framework.

Some aspects of the CFP pose quite a few problems, especially from the point of view of Spain. When Spain joined the EU, it was confronted with some barriers or restrictions like the existence of boxes and previously established resource access system and resource distribution. Another source of problems is the Galician and Spanish experience in internacional relations, with the setting up of joint ventures in third countries, a matter which was a cause of conflict due to the non-compliance with the EU common practices.

The implementation of the CFP resulted in the gradual reduction of vessel and employment numbers, while the extractive capacity remained stable through the renewal of vessels and the search for new species.

The evolution of the Galician fishing sector from 1980 to 2005 shows some changes:

- Reduction of the fishing sector quota in the total GBA.
- Loss of working population in the sector. The participation of the elderly is gradually smaller and there are less employees.
- Reduction of the productive units due to the existing unbalance between fishing power and catch possibilities.
- Technical development of the fleet, with bigger size with respecto to the crew and more power with respecto to tonnage. Vessels are more powerful, more efficient, they offer more possibilities of fishing in different areas and with different fishing gears and allow a more efficient use of the invested capital.
- Reduction of production levels: the quota cuts and the deterioration levels of stocks reduce catches.
- Higher productive specialization; sensible emergence of aquaculture.
- Recent process of increase in the value of fishing products, which makes it possible for fleets and business associations to obtain better results.
- Growth of fishing trade deficits due to changes in the international marine ordenation and the trade liberalization processes. Spain passed from being a mainly exporter country in the 70's to having a position strongly dependent on external supplies, thus losing its relative weight in world exports and increasing it dramatically in imports. Spain was the third fishing importer in 2000 after Japan and the EE UU, and the nineth world exporter. In the same year, 50% of fishing exports and almost a third of imports took place from Galicia.

- Higher market quotas as a result of product specialization, specification and diversification. Positive exploitaition of the trademark image both in territory and business. Some countries managed to associate their industrial or food products with a certain trademark image which makes them stand out with respect to other countries. Galicia was able to do so with sea products that enjoy an excelent reputation, which is an advantage to exploit.
- Gradual increase of efficient companies with the appropriate size, organization and relations to face the challenges of globalization.

7.10.1 FIFG Funds

The Xunta de Galicia, through the Ministry of Fisheries, manages the Structural Funds and, of course, distributes and finances the FIFG funds. Between 1986 and 1988, the Galician fishing sector benefited from the FEOGA-Guarantee Funds, as 9,910.1 million pesetas were obtained during these three years, allocating 1,524.5 million pesetas for the building of fishing vessels and 3,854.6 million pesetas for aquaculture. After the 1998 reform of the structural funds, Galicia became a target 1 region.

Table 7.8 FIFG's incidence on the Galician Fishing sector. Period January 1994-May 1999 (million €)

	Projects	Total expenditure	FIFG's expenditure	% of IFOP's contribution of the total expenditure
Scope 1: Adaptation of the fishing effort	215	61,3	42,7	69.6
Scope 2: Renewal and upgrading of the fishing fleet	591	142,5	68,7	48.2
Scope 3: Protection and development of aquatic resources...	970	27,6	13,5	52,2
Scope 4: Other measures	209	2,2	1,5	72,5
TOTAL	1.985	233,6	126,4	54,1

Source: Xunta de Galicia (Regional Government of Galicia).

Table 7.9 FIFG's Financial Implementation on the Galician Fishing sector. Period 2000-2006 (million €)

	Projects	Total expenditure	FIFG's expenditure	% of IFOP's contribution of the total expenditure
Scope 1: Adaptation of the fishing effort	253	38,72	30,35	78,3
Scope 2: Renewal and upgrading of the fishing fleet	661	197,1	78	39,5
Scope 3: Protection and development of aquatic resources...	1.861	409,94	152,83	37,2
Scope 4: Other measures	988	140,18	110,8	79
Scope 5: Technical assistance	25	0,62	0,5	80,6
TOTAL (million €)	3.788	786,56	372,48	62,92%

Source: Direction Générale de la Pêche

7.10.2 Problems of the implementation of the CFP in Galicia.

Since 1986 Galicia benefited from substantial structural subsidies. In fact, the fishing and aquaculture sector was one of the best to take advantage of EU's financing. However, this considerable financing lacked selectivity. The tendency was to finance as much as possible but, in general, in a very indiscriminate way. This resulted in the proliferation of

low-quality projects due to the large non-refundable aids offered and to the creation of a "subsidy culture" which did not help improve the business tissue. For instance, some of the problems derived from the excessive density of mussel farming by the end of the 80's can be related to many subsidized changes of farming devices which led many farmers to increase dramatically the number of ropes when making more modern and bigger devices.

In Galicia, structural financing was concentrated on particular private projects which did not help achieve the global objectives. No public project of coastal or marine coastal areas planning was financed. The same happens in France, where public financing from EU funds is more directed to public projects of reorganization and reestructuration of aquaculture areas and to the creation of favourable conditions for the private projects, than to private projects themselves.

7.10.3 Position of the Autonomous Government on the CFP

The Galician autonomous government is in favour of the development of market instruments and doubts the current relative stability as it is limited to the EU principle of free movement of people and capital, thus restricting economic efficiency.

One of the main demands of the Galician fishing sector –wich was not considered in the 1992 and 2002 CFP reforms- was the recognition of Galicia as a highly fishing-dependent region. The arguments used to apply for the correction of the list of fishing-dependent areas were based on two main considerations on the lack of a precise definition and on the concrete factors which should be taken into account to include an area or region in that concept. Though the shaping of the map of the highly fishing-dependent regions dates from 1976, neither the Commission nor the Council gave content to this concept or established in an appropriate way the socio-economical criteria for its revision.

Galician companies take the first position in terms of penetration in other EU Member countries' fishing sectors. The search for access to quotas in species with a high demand in the Spanish market and the fishing overcapacity are the main reasons. Presently, the situation of the Galician who invest in other Member countries is quite uncertain due to the measures adopted by the implicated States to defend the national character of their quotas.

The autonomous government considers that the market instruments (individual transferable quotas, fishing days, licences, etc.) are the best to attain a gradual reduction of fishing capital and to adapt to the state of natural resources, so that the most efficient companies are able to stay on the sea by financing the withdrawal of the least efficient companies.

The proposal of fishing decentralization towards fishers associations can boost fishing activities in all regions. The co-management alternative allows cooperatives, fisher guilds, producers' organizations, etc. to take decisions which nowadays are taken on EU, national or autonomic level. But in the end they appear to be abstract entities without a social base, boosted from governmental institutions of local groups to get the financial aids and benefits from the fishing administration.

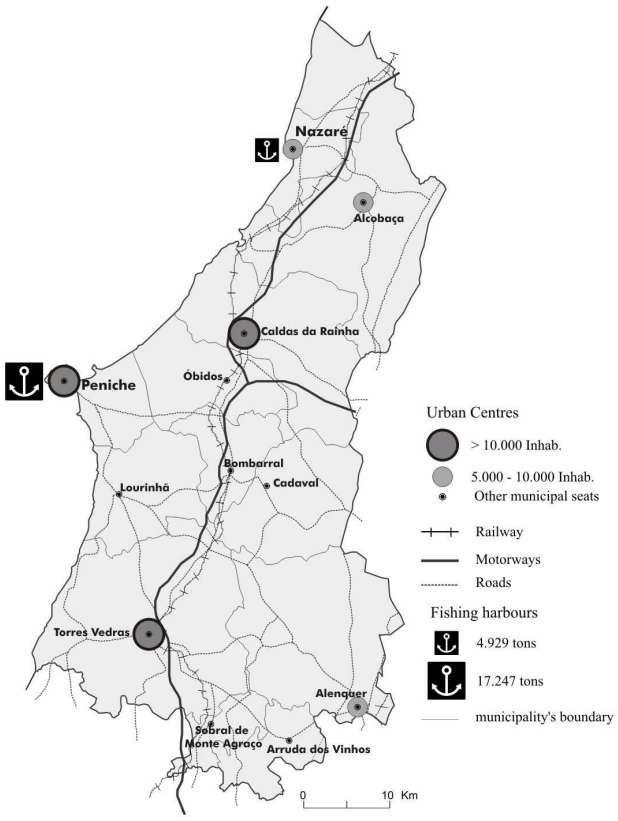
To sum up, the autonomous government thinks that the current EU system of fishing resources management limits and reduces the strategies which the Galician fleet could use to face the weather, technological and economic variability of fishing grounds. But, most of all, it distorts the biological perception of resource scarcity or abundance through the quota allocation framework, thus reducing the productivity of the fleet and its ability to generate income.

8 Example study: Peniche e Nazaré in the NUTS III Oeste (Portugal)

8.1 The Oeste sub-region: general presentation

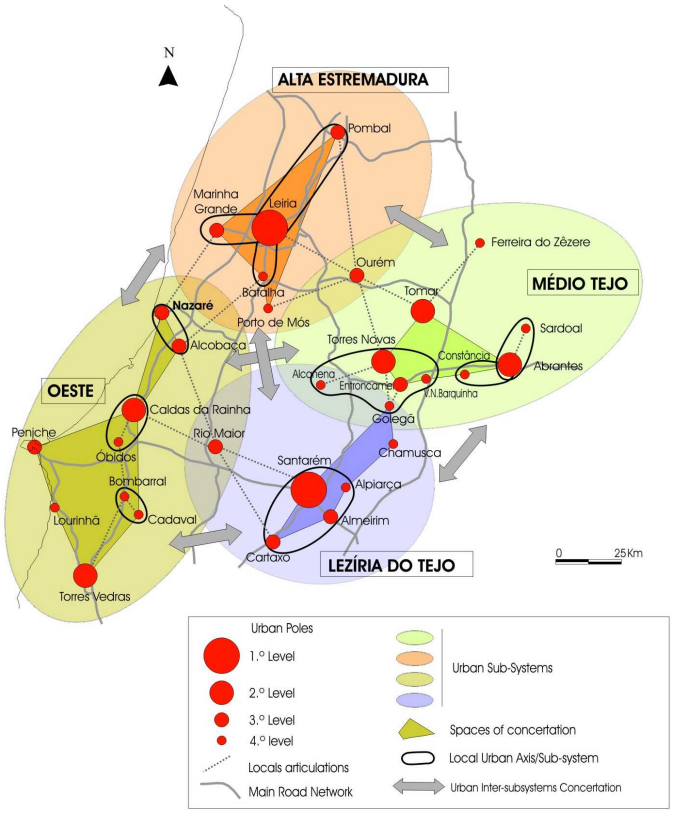
The NUTS III Oeste, in central Portugal (NUT II), north of the Lisbon Metropolitan Area, has 340.000 inhabitants (156 inh/Km2) and a diversified economy; it comprises three FUA - Functional Urban Areas (Torres Vedras, Peniche and Caldas da Rainha) with population below 50.000 inhabitants (cf. Nordregio, Espon 1.1.1., 2003). Including 12 municipalities (Alcobaça, Bombarral, Caldas da Rainha, Nazaré, Óbidos, Peniche, Alenquer, Arruda dos Vinhos, Cadaval, Lourinhã, Sobral de Monte Agraço e Torres Vedras), the sub-region Oeste presents a smooth relief and a landscape that oscillates between a rough coast line and a agro-forest interior, where the vine is the main culture.

Figure 8.1 NUT III Oeste



It is one of the Portuguese sub-regions where one can feel better the existence of a territorial cohesion, evidenced for the strong mobilization of its economic agents and the civil society in general. With a policentric urban system, four main urban poles are identified (Caldas da Raínha, Torres Vedras, Alcobaça and Peniche), presenting not only higher level functionalities, but also a relevant polarizing capacity. Thus, in this urban system, the two case study meet in differentiated positions. Peniche, in an eccentric position between Lisbon and Leiria regions, even tough it has an economic base very concentrated in the fishing industries, simultaneously, benefits from the existing road network, setting privileged relations with some middle sized cities of the region. Nazaré, instead, integrates an axe polarized by Leiria and Marinha Grande, an urban axis characterized for a strong industrial dynamism, potentiated by the recent improvements in accessibilities. In accordance with recent studies, in a circumscribed reading of the urban system of the sub-region Oeste, Nazaré and Peniche are considered to be same level urban poles. The population settlement structure of the sub-region Oeste is mainly dispersed, resulting from the process of diffuse urbanization along the main communication axes throughout the last years.

Figure 8.2 Urban Regional System



In the last intercensus period (1991-2001), the sub-region Oeste has registered a significant population variation (7,7%), due to increasing immigration flows and a relatively low birth rate (11%). In 2001, the population's age structure of this sub-region denoted an aging trend: the aged (over 65 years) corresponded to 17,9% of the total population, while the young (less than 15 years) only represented 15,5%. With a past strong marked by the agricultural and industrial dynamism, the fishing activity equally constitutes one of the most characteristic marks of this territory, in which we find two of the most important ports of the Country (Nazaré and Peniche), as well as a notable variety

of activities associates to fishery. Currently, in what concerns to the job structure, the tertiary sector is presented as the most relevant in the sub-region Oeste, with 54,1% of the employed resident population. Even though less important, the secondary sector, continues to enclose a significant parcel of the population (36,7%), while the primary sector does not go beyond 9,2%.

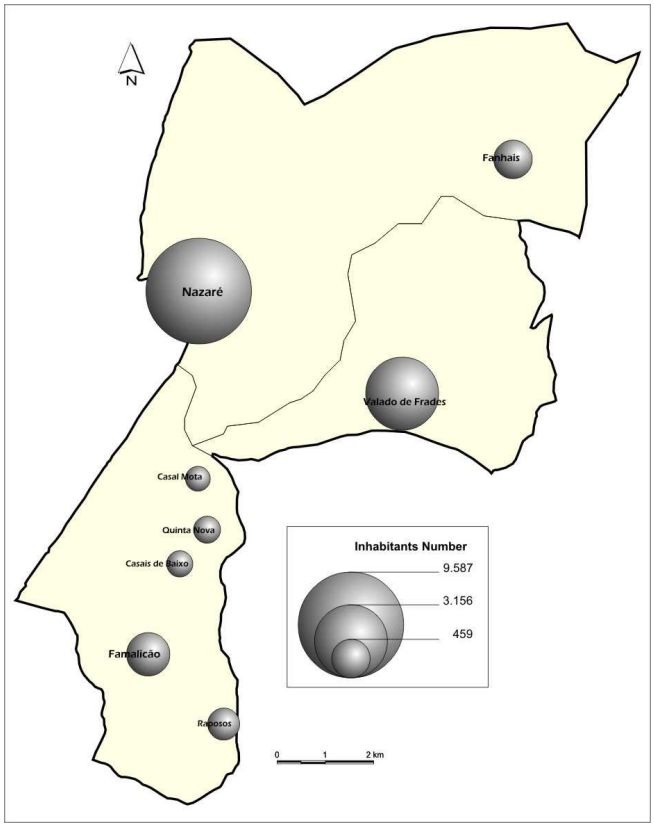
8.2 Nazaré and the Traditional Fishing Activities

8.2.1 The Municipality of Nazaré

Nazaré, a municipality located in the Northern sub-region of the West, is composed by three civil parishes (Nazaré, Famalicão and Valado dos Frades). With a total area of 85.1 Km^2 and a population density of 184,2 hab/ Km^2 in 2001, it is one of the ancient Portuguese fishing towns, although throughout the years it has lost some of its fishing importance and related traditions. In the past few years, the municipality of Nazaré has clearly taken advantage of its favorable location related to the proximity to some of the country's urban-industrial centers, namely, Caldas da Rainha and the axis Leiria/Marinha Grande, empowered by the recent improvement in the accessibility rates.

At large, Nazaré followed the pattern of the social and economical transformations registered in Portugal in the last decades, including the changes in the population structure. The settlement also evolved, to a more concentrated pattern, particularly with an increase of the municipal seat, which represents now some 64% of the total municipality population. Opposite to the population structure of the sub-region to which it belongs, Nazaré presents a concentrated population pattern, which is one of the competitive advantages of the municipality, even though in the last few years there has been a relative increase of the importance of the dispersion phenomena.

Figure 8.3 Population living in places over 100 inhabitants

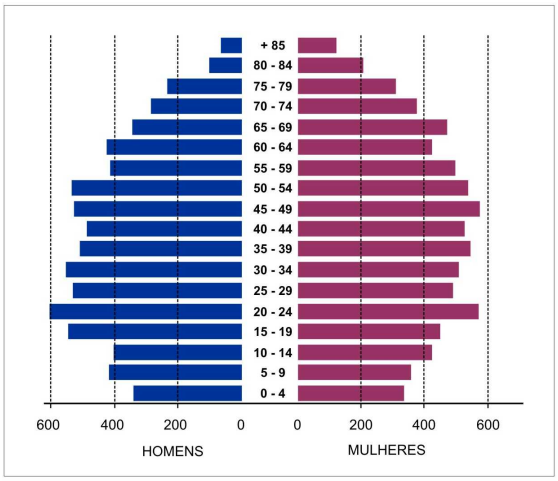


Source: Instituto Nacional de Estatística, Portugal, Recenseamento Geral da População, 2001

8.2.2 Population economy and Employment

At the end of the twentieth century the population of the municipality of Nazaré kept on increasing, from 10.148 inhabitants in 1981 to 15.060 in 2001. The 80ies decade has been, however, a turning point from which the population tends to stabilize, as a result of a decreasing birth rate and a decline of migratory movements. In what concerns the age structure, in the last twenty years, there is a progressive population ageing: the proportion of young people, with less than 15 years old, has decreased from 25,3% in 1981 to 15,1% in 2001, while the population over 65 years has considerably increased in the same period (from 11,7% to 16,7%). There was a significant increase on the dependencies rates, reproducing the fast ageing of the population.

Figure 8.4 Age Pyramid of the Municipality of Nazaré



Source: Instituto Nacional de Estatística, Portugal, Recenseamento Geral da População, 2001

The analysis of the municipal economic base shows a progressive tertiarization and a clear decrease of the share in the product by the primary sector, which is a consequence of the incapacity of modernization and reorientation of the agricultural productive structures and the decline of the fishing activities, partly as a result of an ageing of the fleet and of the human resources related to this activity.

On the other hand, the secondary sector has played a determinant role in the municipal economy, granting employment to 36% of the active population (2001), even though a significant part of this population is employed out of the municipality seat, namely in Valado dos Frades and Alcobaça, Caldas da Rainha and Marinha Grande. In the industrial structure of the municipality, the industries of porcelain manufacture and faience stand out. The tertiary sector has a higher economic relevance, covering 55.1% of the municipality's active population. In 2001, the employment's structure in the tertiary sector was relatively diversified, although the branches of retail trade and social services are the ones that absorb larger quantitatives of active population: 23,5% and 22,0%.

Within the tertiary sector, it is important to point out the increasing relevance that tourism has gained throughout the second half of 20th century. The increase on the number of tourists, as well as the premises for tourism purposes and the support services to this activity in the municipality of Nazaré are not only associated to the natural conditions that promote the Sea, Sun and Sand tourism, but also the complementarities that have been developed between tourism and the fishing activity.

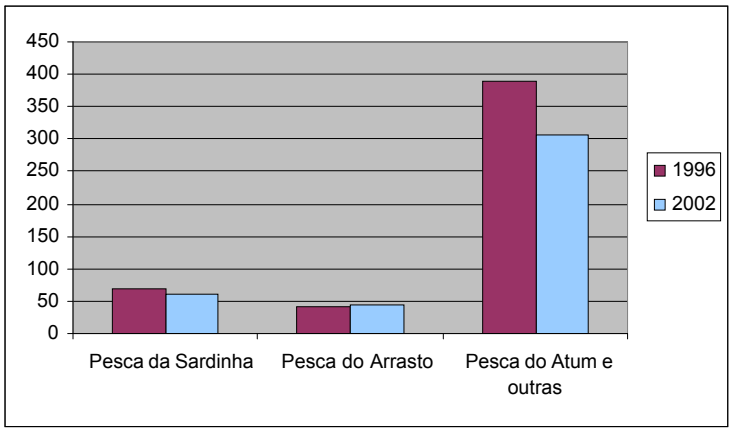
8.2.3 Fishing Activity

In a recent past, fishing (mainly hook fishing) was vital in the municipal economy. Although in the context of the post April 25th 1974, articulated with the returning migration of the ex-colonies great investments took place in the fishing activity, which was specially translated by the acquisition of more modern ships and with a higher capacity, in the last few years, this activity has suffered a serious crisis. The fact that fishing lost its importance stands out, among the aspects, by the rough decrease of the active population which is employed in this activity at a municipality level, once that it went from 54% in 1960 to 9% four decades later. In fact, an interpretation of the partition

of the resident population employed shows the weak importance of fishing, aquaculture and related activities and services (only 201 jobs in 2001).

In what concerns the number of fishermen registered in the Port of Nazaré, only in the period between 1996 and 2002, there was a quite significant decrease (-17.8%). However, important fluctuations occurred concerning the kind of fishing. While in *tuna fishing and others related* there was a rather significant decrease in the number of fishermen (21,3%), in *trawling* the decrease was substantially lower (-4,9%).

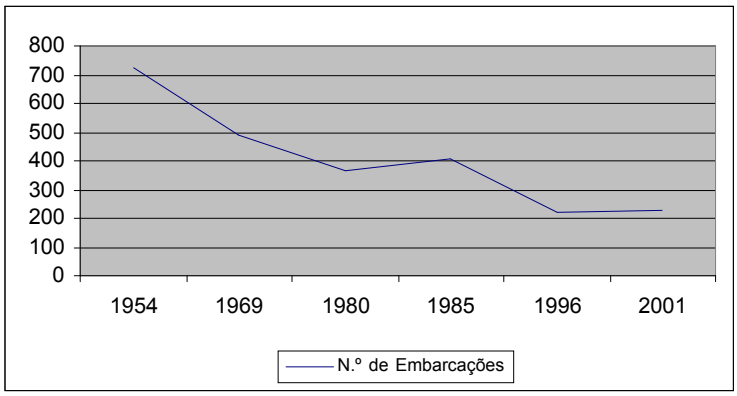
Figure 8.5 Registered Fishermen in the Port of Nazaré



Source: Instituto Nacional de Estatística, Portugal, Anuário Estatístico das Pescas, vários anos.

Simultaneously, the analysis of the number of vessels is also an indicative of the loss of relevance of this activity in Nazaré. In fact, since the middle of the 20th century, the number of vessels has been decreasing, for only between 1954 and 1985 there was a decline of 44,4%. Nevertheless, from the end of the 1980ies onward, this decrease is even higher, because in less than two decades (between 1985 and 2001) there was a negative variation of 43,6%. This significant decrease of the number of vessels in recent years is mainly explained by the systematic European policy of incentive/support to the destruction of vessels.

Figure 8.6 Evolution of the Number of Vessels in the Port of Nazaré



Source: Oliveira, 1955; *Estatísticas da Pesca* (between 1969 and 1995), INE

In the course of the 90ies, the fishery tonnage of the Port of Nazaré had an increase of 24,6% (went from 3.541 tons in 1990 to 4.411 tons in 2000), although there is some fluctuation. In terms of the main species caught, in the beginning of the 90ies decade the sea fish was the one who held the more privileged position (92% of the total of unloaded catch in the Port of Nazaré) and among these, o horse mackerel was the major specie, corresponding to 23% of the total. After a decade, and although sea fishes are still the most important in this Port, the dominant specie in terms of tonnage, is now the sardine (34% of the total) followed by horse mackerel (20,1% of the total).

8.2.4 Perspectives

Although this is a municipality and a port with an ancient tradition of fishing, Nazaré hasn't been able to stand up has a fishing centre.

However, complementarities and undeniable synergies between the more traditional fishing activity and tourism are established. This fact is validated, for instance, by the transformation of part of the fishing port into a Marina with success to an extent that there are plans to expand it. Consequently, it is considered in recent planning instruments that the future of Nazaré is in the interconnection of these activities, which might constitute a factor of development in the municipality.

8.3 Peniche, A Major Fishing Pole

8.3.1 The Municipality of Peniche

The municipality of Peniche, which is located in the most western area of the West sub-region, is in a peninsula of about 10 km of perimeter, being the Cabo Carvoeiro its western edge. With a total area of 77 km^2, the municipality of has six civil parishes (Ajuda, São Pedro, Conceição, Ferrel, Atouguia da Baleia e Serra d'El Rei) and has a population density of 360,2 inhab/ km^2.

Its geo-morphologic specificity has shaped and conditioned its population, throughout the years, from the cultural and socio-economic point of view. In fact, since ancient times, the populations which have stayed in this municipality has always seen fishing as an important economic resource, that can be proved by its several vestiges of the Roman Era, and took this municipality to be seen as one of the most important fishing centers of the Country.

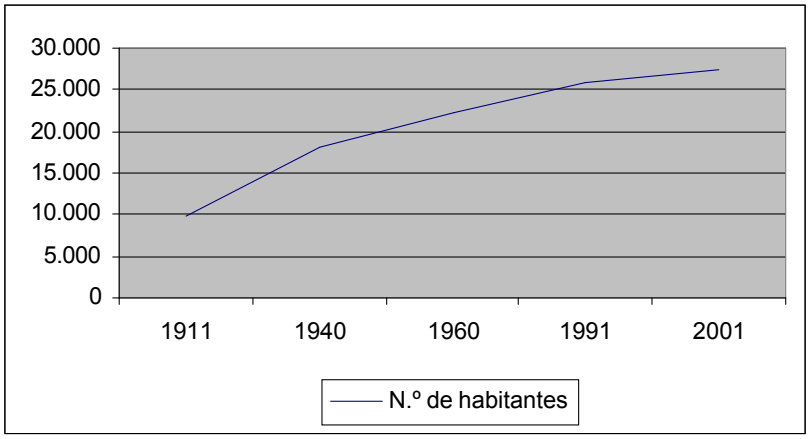
Like Nazaré, Peniche has a concentrated peopling and a strong tendency for concentration in towns of average dimension, once 57% of the population lives in places among 10.000 and 19.000 inhabitants, while only 27% of the population lives in places with less than 2.000 inhabitants. As it has happened in in the whole of the national urban network, also in Peniche there is a strong tendency for the population concentration in the city of Peniche, which tends to play a remarkable effect of population suction on the population of the remaining civil parishes. Thus, it is explained that 57% of the municipality population is concentrated in the civil parishes that form the city (Ajuda, Conceição and São Pedro), while in the rural civil parishes, that correspond to 90% of the municipality area, live only 43% of the population. This concentrated peopling is one of Peniche's competitive advantages.

Figure 8.7 An Overview of Peniche

8.3.2 Population economy and employment

Throughout the XXth century, the population of Peniche increased substantially, from 9.814 inhabitants in 1911 to 27.315 in However, the 60's constitute a turning period, since population growth from now on occurred in a substantially more moderate rhythm.

Figure 8.8 Population change in the municipality of Peniche



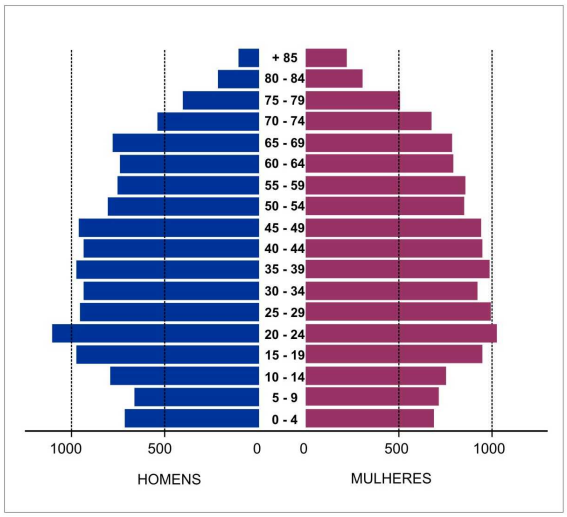
Source: Instituto Nacional de Estatística, Portugal,

The recent evolution of the age structure of the municipality of Peniche copies thick way the current standards of the Portuguese and European demography. In the intercensus period 1991-2001, it registered an accented and double aging population, resulting in a well-known loss of relevance of the population under 14 years - 20.9% of the population in 1991 and 15,9% in 2001 - while the population over 65 or more years increased very significantly - in 1991 was only 12.6% of the population of Peniche, and in 2001 its

proportion surpassed the one of the young population (16,7%). Althought these factors are clearly indicative of a population aging, it should be pointed out that Peniche, comparing to other municipalities, still has an important segment of young population the aged are still not accented.

Although in the most recent years important improvements in the instruction level of the resident population in Peniche has registered, diverse weaknesses continue to be identified. In fact, in 2001, a part of this population still did not have any level of education (13.1%), the illiteracy rate, similarly to the sub-region Oeste, was still considerably high (10.6% and 11.1%, respectively) and only 3.3% of this had complete higher education.

Figure 8.9 Age Pyramid of the Population in the Municipalty, in 2001



Source: Instituto Nacional de Estatística, Portugal, Recenseamento Geral da População, 2001

Although in more recent years there have been important improvements at the level of the population's education living in Peniche, there are still many weaknesses. In fact, in 2001, a proportion of this population still hasn't a single level of education (13.1%), the illiteracy rate, like the West sub-region, is considerably high (10.6% and 11,1%,) and still 3,3% had university qualifications.

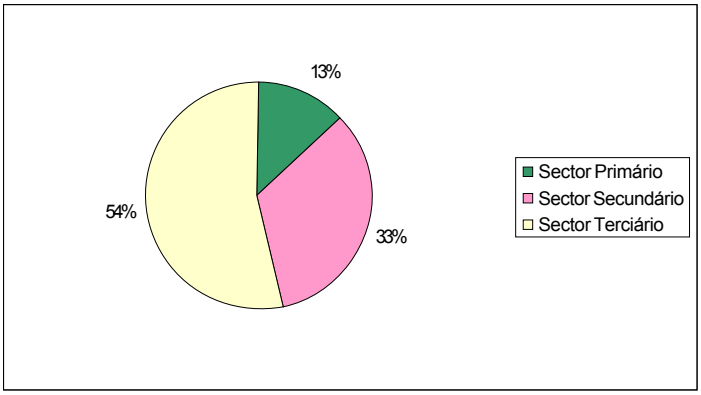
Peniche's economic base, although with a structure similar to the West sub-region and for the municipality of Nazaré, presents important specificities. The most remarkable feature is in the relevance that the primary sector still in the beginning of the20th century (covers 13,1% of the employed population) and which is, in part, a consequence of the fundamental role that the fishing activity still plays in the municipal economy, being inclusively its main economic activity. The rural activity hás also some importance, mainly in the municipality rural interior where the presence of several courses of water has confered this municipality the needed fertility for the development of an important horticultural and fruit productionprodução destined for the regional and local cinsuption, although there are several conditionalisms to a new rural practice, mainly, the shore proximity.

The secondary sector covers 33.2% of the employed resident population, being the construction the most relevant sub-sector in terms of labor; the second and third place

being fishing related activities, namely the fishing and aquaculture manufacturing and shipbuilding.

Finally, in what concerns the tertiary sector, it is possible to see that this is the economic sector that covers the larger segment of the employed resident population (53,8%), which shows the tertiary nature of Peniche's economy. Within the scope of the tertiary sector, the most relevant activity branches are retailing and public administration and social services. However, there has been an increase of the tourism activities associated to fishing activities, although less relevant than in Nazaré.

Figure 8.10 Employed Resident Population by Activity Sectors, em 2001



Suource: Instituto Nacional de Estatística, Portugal, Recenseamento Geral da População, 2001

8.3.3 Fishing activity

Peniche it is not only the Portuguese harbor with the most significant capacity, but also the one with major induced effects, downstream and upstream of fishing activities.

Once a major fish cannery centre, Peniche still plays an important role in caning, freezing and filleting. In 2001, activities directly related with fisheries employed around 1500 workers (13% of the municipality active population) and only 48 workers were enrolled at the unemployment centre (5.8% of total unemployment rate). Transformation industries related with fishing employed 913 active residents, that is, 8% of total active population of the municipality; within the same scope, there were 148 unemployed workers (18% of total unemployed workers in 31/12/2001).

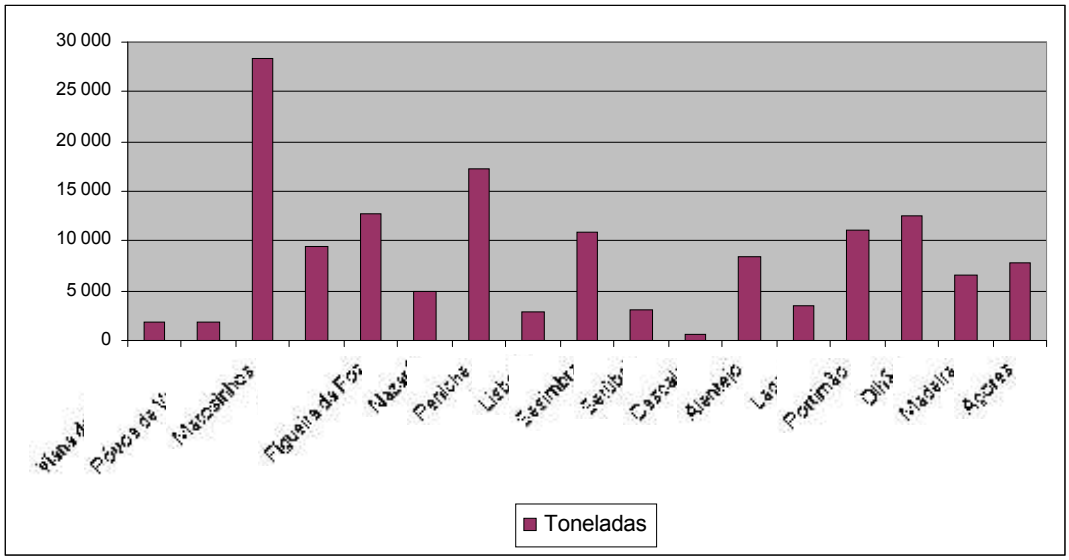
Associated with fishing activities one must also consider a construction and repairing wharf (fishing boats and, less important, recreation boats), land transportation and logistics, Forpescas training centre and the new Graduate School of Sea Technologies.

As a whole, employment directly generated by fishing activities almost reaches 30% of active population at the Peniche municipality, which due to its highly induced potential turns this into a crucial sector to local economy and social well-being.

The evaluation fishing representatives make of local projects within the last CSF as well within CI PESCA is positive – they consider it "well structured" and with an "efficient application of financial supports" – allowing the renewal of the fleet as well as a diversification of captures (both in species captured and geographical areas for capture).

Relatively to the fish unloaded in the Port of Peniche, the last decade has registered a significant reduction – from 34.318 tons in 1992 to 17.247 tons in 2002 - representing a negative variation of 50%. However, in 2002, the Port of Peniche was, in terms of tonnage of fish unloaded, the second most important one of the country, only surpassed for the Port of Matosinhos, situated in NUT II Norte, with 28,254 tons.

Figure 8.11 Tonnage of fish unloaded, by ports, in 2003



Fonte: Instituto Nacional de Estatística, Portugal, Anuário Estatísticos da Pesca, 2003

In the Port of Peniche, marine fish has been the main type captured in the last decade, representing 91.4% of the fish unloaded. Within it, one can distinguish sardine - in 1992 it corresponded to 54% of the total and in 2002 to 64%. Clams constitute the second major group of species captured and registered a fast increase between 1992 and 2002 (+27%). This corresponds to a reality quite similar to the one observed in Nazaré, even so the quantitative of fish is in Peniche substantially higher, as presented in the following table.

Table 8.1 Catches by major species and areas, 2002

Species	Nazaré		Peniche		Total NUT III Oeste	
	t	Million (Euros)	t	Million (Euros)	t	Million (Euros)
Total	**4.929**	**9.430**	**17.247**	**28.811**	**22.176**	**38.241,0**
Sea fishes	**4.504**	**7.353,0**	**15.776**	**23.490,0**	**20.280**	**30.843,0**
Atlantic horse mackerel	1.303	1.847,0	833	1.030,0	2.136	2.877,0
Common sole and Bastard sole	30	342,0	69	823,0	99	1.165,0
European hake	221	934,0	180	803,0	401	1.737,0
Skates	142	335,0	310	840,0	452	1.175,0
European seabass	23	207,0	116	1.054,0	139	1.261,0
European pilchard	1.384	1.125,0	11.047	7.296,0	12.431	8.421,0
Various	580	1.744,0	2.215	10.666,0	2.795	12.410,0
Crustacean	**5**	**60,0**	**23**	**148,0**	**28**	**208,0**
Various	3	5,0	21	73,0	24	78,0
Molluscs	**417**	**2.004,0**	**1.444**	**5.130,0**	**1.861**	**7.134,0**

Source: Instituto Nacional de Estatística, Portugal – Anuário Estatístico da Região Centro, 2003

8.3.4 Perspectives

Peniche has the conditions for its development as one of the major fishing harbours of the Iberian Península – for its tradition, infra-structures, local entrepreneurship, graduate educational and training equipments. Recent improvements in surface accessibilities and the upgrade in logistics have reinforced such conditions.

Local responsibles of fishery activities have the ambition to broaden the fisheries "filliére"/cluster, namely, through the expansion, qualification and diversification of captures transformation and commercialization – it is in such realms that the support from public policies can be most effective.

With this conditions Peniche can not only became a major development pole of NUTS III Oeste economy, but also reduce the constraints derived from the closure of the Lisbon fishing port.

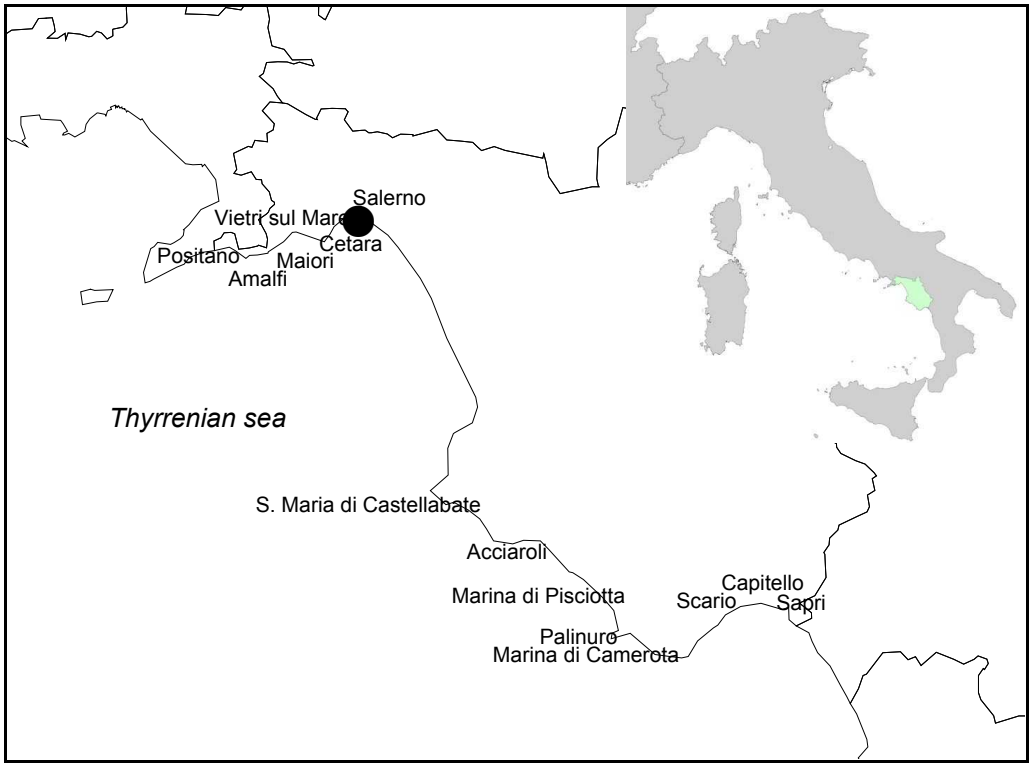
Tourism is being developed likewise along the Western coast, but in a controlled way; it brings up more synergies and complementarities rather than conflicts with fishing activities turning into the utmost alternative.

9 The province of Salerno (Italy)

9.1 Introduction

The Salerno province (NUTS 3 level) extends for a surface area of 4922,6 square km and it is one of the largest NUTS3 regions in Italy. It is made up of 158 communes or municipalities, identified as NUTS V levels. The Salerno province is located in the south of Italy and it is one of the five provinces of the Campania region. The extension of the province, with the localisation of the 15 enrolment offices[4] of the province, is reported in map 1. The geography of the area is very heterogeneous. The littoral is characterized by both high and rocky coasts, as in the first stretch of coast from north, along the renown Amalfi coast, and by long and sandy beaches, flanked by large plains, as it happens in the more southern "piana del Sele.

Figure 9.1 Map 1 – The Salerno province and the overall Italian territory



[4] Administrative districts, distributed along the coastline, where vessels have to be registered.

9.2 Demographic and the economic structure.[5]

The Salerno province has a population of about 1.100.000 (2001) inhabitants and a population density of 218 inhabitants for a square km. The population has grown, in the decade 1991-2001 of about 0,66%. The overall demographic dynamic of the Salerno province has been characterised, during the last century, by a growth lower than the national one and by an internal re-composition of the population. In fact, while the population of the coastal areas has grown more than the national average, the internal areas have progressively depopulated. The different population dynamic of the Salerno province is shown in table 9.1

The effect of this process has been a distribution of the population different over the province territory and different demographic structure among municipalities. This has had relevant effects also on the labour market indicators and on the activity rates. For instance, while the old age indicator for the Salerno province is lower than the national average, it is very higher in the internal areas than in the coastal ones or in recent urban settlements. The demographic dynamic of the Salerno province has also been influenced, in the last fifteen years, by the migratory flows. Also in this case, the differences among the coastal and internal areas are significant

Table 9.1 The population dynamic of the main municipalities in Salerno province

Municipalities	Square km	Population 1991	Population 2001	Difference 2001-1991	Density 2001
Agerola	1.8	779	810	3.98	450
Agropoli	142.1	27111	29026	7.06	204.26
Amalfi	28.5	11165	11086	-0.71	388.98
Ascea	169	19211	19232	0.11	113.8
Battipaglia	271.3	105337	114425	8.63	421.77
Buccino	268.2	20588	19456	-5.5	72.54
Camerota	180	17691	16773	-5.19	93.18
Capaccio	283.7	35746	37299	4.34	131.47
Castel San Lorenzo	87.7	6765	6226	-7.97	70.99
Castellabate	60.7	9287	9641	3.81	158.83
Eboli	392	58059	61722	6.31	157.45
Laurino	277.9	9960	8485	-14.81	30.53
Maiori	43.8	12744	12698	-0.36	289.91
Montano Antilia	150.6	9998	8683	-13.15	57.66
Nocera Inferiore	107.5	183796	184904	0.6	1720.04
Oliveto Citra	219.9	16984	15926	-6.23	72.42
Palomonte	108.7	8222	7581	-7.8	69.74
Pollica	72.3	6872	6404	-6.81	88.58
Positano	11.2	5521	5797	5	517.59
Postiglione	257.2	9030	7820	-13.4	30.4
Sala Consilina	718.7	65099	61892	-4.93	86.12
Salerno	388.6	294318	290942	-1.15	748.69

[5] All the data of this paragraph are taken from the II Interime Report of the COMMENT project, Base analysis of the supply and demand of the local employment, CELPE, Centro di Economia del Lavoro e di Politica Economica, Università degli studi di Salerno, Salerno, 15.4.2005.

Municipalities	Square km	Population 1991	Population 2001	Difference 2001-1991	Density 2001
Sapri	376.3	30731	28559	-7.07	75.89
Sarno	49	39712	40344	1.59	823.35
Torre Annunziata	19.8	40710	47082	15.65	2377.88
Vallo della Lucania	236.1	21165	20830	-1.58	88.23
Tot Salerno province	4922.6	1066601	1073643	0.66	218.1

Source: Istat

As far as the economic structure of the Salerno province it concerns, the value added per inhabitant presents high differences among the areas. In the internal areas the value added per inhabitant very lower – in some cases equal to 1/3 - than that of the urban areas. A second element that emerges from the analysis is the different productive structure. Only in some municipalities the number of people employed in the agriculture sector plays a fundamental role, while the majority of municipalities are specialised in the tertiary sector. The industrial sector is developed only in few of them. From the geographical structure it emerges that internal municipalities serve as labour basin for the coastal municipalities.

Finally, the Salerno province is characterised by a local labour market where unemployment rates are very high and equals to 17.47 (ISTAT, 2001).

9.3 Fisheries Sector

This region is traditionally devoted to marine economic activities. The great part of the fleet consists, in fact, of small boats exercising small-scale fishery whose landings are mostly made up of high valued fishes. An important role in the fishing industry of the Salerno province is played by the "Associazione dei Produttori Tonnieri del Tirreno" which constitutes the most important reality in the tuna production sector at local, regional and national level.

Landings are almost totally destined to the fresh fish consumption. The local demand for fresh fish products, as in the whole Campania region, is, in fact, very high (in 2003 the monthly pro-capita consumption for consumers of the Campania region was equal to €16 whereas, at national level, it was equal to €14,64). For this reason, the regional fishing production is not sufficient to cover local demand and the fish market has to face the high demand for fresh fish asking supply to outside markets (especially in other Italian regions).

The fish processing industry is made up of very different realities, from very modern and innovative plants to small and artisanal ones. The area mostly devoted to fish processing activities (mainly tuna and anchovies preserved in oil) is located around Cetara, a little village of the coast of Amalfi, traditionally vocated to fishing activities.

The great part of employment in the fishing sector consists of people employed on board of the vessels. Anyway, people employed in commercialisation of fish products, both in wholesaling and retailing activities, also constitute an important share of total employment of the fishery sector in the Salerno province.

Whereas people employed on board of fishing vessels are only male, in the fish processing employment the female component is very important. Females have an important role also in the commercialisation sector.

As far as the aquaculture sector, at the present time few data are available, especially on production. Anyway, along the coastline of the province of Salerno there are two mariculture plants. In both cases, they are managed by local fishing co-operatives and they constitute an alternative way to diversify fishing activity and hence to integrate income coming from fish catching activity.

9.3.1 Fleet structure

Table 9.2 Classification of Vessels

Year	Regional waters			EU waters			Third countries		
	No. vessels	Tonnage (GRT)	Power (kW)	No. vessels	Tonnage (GRT)	Power (kW)	No. vessels	Tonnage (GRT)	Power (kW)
1992	618	7.309	5.488	13	2.591	15.602	1	299	1.081
1993	587	6.601	42.974	13	2.591	15.602	1	299	1.081
1994	593	6.646	43.249	13	2.591	15.602	1	299	1.081
1995	591	6.171	41.406	13	2.591	15.602	-	-	-
1996	607	6.964	45.088	15	2.863	17.049	1	295	1.081
1997	583	4.118	33.254	16	3.157	16.855	1	295	1.081
1998	744	3.734	33.016	16	3.406	16.855	1	295	1.081
1999	750	3.866	31.713	16	3.283	12.648	1	295	1.081
2000	724	3.537	29.924	15	2.961	11.574	1	295	1.081
2001	623	3.327	27.609	15	2.969	11.574	1	295	1.081
2002	568	3.302	26.464	16	2.843	11.305	1	295	1.081
2003	550	3.367	27.361	17	2.843	11.305	1	295	1.081

Source: Mipaf

Table 9.2 reports the historic series of the fleet composition for the Salerno province (NUTS III level). The table distinguishes among vessels operating in regional waters from those operating in EU waters and in Third country waters. The majority of the fleet enrolled in the Salerno province performs its fishing activities in regional waters, i.e. not outside the province's waters. As it will be showed in table 9.2, 9.3 and 9.4, the great bulk of the fleet is, in fact, made up of small boats devoted to small-scale fishery near to the coastal zone. The only vessels operating in EU waters, that mean, in this case, outside the waters of the Salerno province, are those vessels associated to the local tuna fleet, named "Associazione dei Produttori Tonnieri del Tirreno". These vessels operate with great seines for tuna and fish in the Thyrrenian, in the Ionic and in the Adriatic seas. Apart of these vessels, there are around three great purse seines that fish inside and outside the province's waters. Only one vessel fish in Third country waters as it is registered as vessel for "oceanic fishery".

Table 9.3 Classification of Vessels by Length

Year	Less than 10m	Between 10 and 15m	Between 15 and 24m	Over 24m	Total
1992	n.a.	n.a.	n.a.	n.a.	619
1993	434	84	50	20	588
1994	443	79	52	20	594
1995	443	77	52	20	592
1996	456	79	51	23	609
1997	449	77	48	11	585
1998	620	72	46	8	746
1999	620	74	50	8	752
2000	602	69	48	7	726
2001	512	60	46	8	626
2002	461	57	43	24	585
2003	444	57	42	25	568

Source: Mipaf

Table 9.3 shows the historic series, for the 1992-2003 period, of the fleet of the Salerno province distributed by length classes. The measure unit is the overall length (LOA) of the vessels. As said above, most of the vessels enrolled in the administrative district of the Salerno province are small vessels. In 2003, 78% of the vessels were shorter than 10 m. Only 10% of the fleet had a length between 10 and 15 m of LOA whereas the share of the fleet falling into the last classes (15-24 m and over 24) amounted, respectively, to 7,4% and to 4,4% of the fleet.

Table 9.4 Classification of vessels by age classes

Year	0<5	5<10	10<15	15<20	20<25	25<30	30<35	35<40	>=40	Total
1992	78	135	96	86	72	59	47	18	28	619
1993	60	119	109	67	84	51	54	19	25	588
1994	47	102	124	76	85	52	62	19	27	594
1995	12	89	129	91	76	65	64	36	30	592
1996	26	91	128	94	79	66	59	35	31	609
1997	20	75	135	90	69	67	49	39	41	585
1998	25	79	140	121	63	107	61	69	81	746
1999	22	66	116	140	78	101	72	68	89	752
2000	20	42	117	140	73	83	80	77	94	726
2001	16	25	79	118	92	64	79	49	104	626
2002	17	25	64	106	93	56	78	42	104	585
2003	27	18	56	82	107	62	66	49	101	568

Source: Mipaf

Table 9.4 shows the classification of vessels of the Salerno province by age classes. The evidence of the table is the increasing age of the fleet. While in the first three years of the analysed period (1992-1994) most of the vessels had an age between 5 and 10 years, since 1995 the most abundant age classes are 10-15 and 15-20 years. Furthermore, since 1998, a consistent number of the vessels have an age between 25 and 30 years and over 40 years. The explanation of this is the increasing tendency to leave the fishery sector that, in most recent years, has also been enhanced by economic subsidies for final withdrawal and re-conversion.

Another interesting thing is the fact that most of the fleet (95%) entered the sector before 1994. Since 2001 there aren't new entrance. This is an evidence of what said above, in terms of obsolescence of the fleet and on the influence to leave the sector played by incentives to withdrawal and re-conversion.

Table 9.5 Classification of vessels by tonnage classes

Year	0-2,9	3-5,9	6-9,9	10-20,9	21-35,9	36-50,9	51-99,9	100-199,9	>=200	Total
1992	319	119	114	9	22	12	11	9	4	619
1993	313	109	105	7	20	12	11	7	4	588
1994	320	110	103	7	19	12	12	7	4	594
1995	319	110	104	6	18	13	11	8	3	592
1996	330	113	105	5	19	12	11	8	6	609
1997	327	110	101	6	16	12	11	2	-	585
1998	500	110	96	4	16	9	11	-	-	746
1999	499	111	98	4	19	10	11	-	-	752
2000	492	103	93	4	14	11	9	-	-	726
2001	422	87	80	3	14	10	9	1	-	626
2002	382	78	76	3	12	8	9	6	9	585
2003	363	80	76	3	14	8	11	6	9	568

Source: Mipaf.

Table 9.5 reports the classification of the fleet by tonnage. As showed in previous tables, the fleet of the Salerno province is mainly an artisanal fleet, made up of small sized boats. The most numerous class is the first, of those vessels with smaller dimension (less than 2,9 GRT). In 2003 this class amounted to 64% of the whole fleet. In the same year, vessels with tonnage higher than 10 GRT represent only the 8% of the fleet. Since 1997, due to community regulations on capacity reduction, the number of vessels falling into the higher classes decreased.

In 2003, the whole fleet of the Salerno province was made up of 568 vessels for a total capacity of 6210 GRT and 38666 kW . The average values of tonnage and power were equal to 10.95 GRT and 83,333 kW. This small dimension is very influenced by the large size of the small-scale fleet. (Tab.9.5). In fact, the most numerous segment is, a said above, the small scale one that was constituted of 428 small boats under 12 m of LOA. The small size of the vessels is evident in the average tonnage that is equal to 2,5 GRT and in the average power of 27,94 kW. The second segment, in terms of number of vessels, is the one of the demersal trawlers, which consists of 45 vessels, mainly enrolled in the Salerno offices. The average size of the trawlers is around 28 GRT and 196 kW of engine power. The Tuna Fleet Association of Salerno is the most important Italian reality in the tuna fishery. It consists of vessels not all enrolled in the administrative district of Salerno as they fish in other zones, but delivering their captures to the tuna association of Salerno. In 2003, they are 14 with an average tonnage of 204 GRT and an average power of 826 kW. The other tuna are large seines used for the tuna fishing but not associated to the tuna fleet association of Salerno. They have smaller average dimensions: 80 GRT powered with around 445 kW.

The average days at sea per vessel vary from 207 for demersal trawlers to 45 for the Tuna Fleet Association.

Table 9.6 Effort by fleet segment, 2003

Fleet segments	Number of vessels	GRT		kW		Average days at sea
		Total	Average	Total	Average	
Demersal trawl	45	1266.56	28.15	8837.39	196.39	207
Purse seine	9	160.58	17.84	1530.98	170.11	83
Small scale <12m	428	1061.29	2.48	9191.11	27.94	167
Polyvalents	66	464.27	7.03	5316.22	85.75	158
Other tuna vessels	5	400.34	80.07	2232.31	446.46	
Tuna Fleet Association	14	2857.55	204.11	11558.00	825.57	45.2
Total	568	6210.59	10.95	38666.01	83.33	162

Source: Mipaf - Irepa

9.3.2 Production

The province of Salerno accounts for more than 50% of the regional fish production both in terms of weight and values. Table 9.7 shows the historic series of landings realised by the fleet of the Salerno province and destined to human consumption in the period 1993-2003. Almost the whole fleet (99,8%) lands their catches in the fishing bases of the region. The fish production is divided into five groups of homogenous fish products: anchovies and sardines, other fishes, molluscs, crustaceans and tuna. Data on tuna production refers to the Tuna Fleet Association of Salerno. In the table it can be seen that, in the area under consideration, as for the whole Italian fishery production, quotas on fish captures exist only for bluefin tuna (*Thunnus thynnus*). As a consequence of the adhesion of EU to the ICCAT, quotas on bluefin tuna are set for Member countries since 1999. Captures of bluefin tuna allowed to vessels of the tuna fleet association amounted, in 1999, to 1413 tons. The quota was used for the 100%. It must be outlined that where quota is disposed only for bluefin tuna, tuna captures in the table include also other type of tunas. The quota increased in the following years, reaching 2909 tons in 2003. In 2003, total fish catch production amounted to around 8000 tons, worthing for around 44.4 million Euro. The great part of the captures, both in quantity and in value terms, realised by the fleet of the Salerno province was made up of "other fishes". This group, basically made up of high value species, amounts to 3440 tons for around 19.5 million Euro.

Table 9.7 Landings for human consumption by species, value and tonnage (NUTS III level)

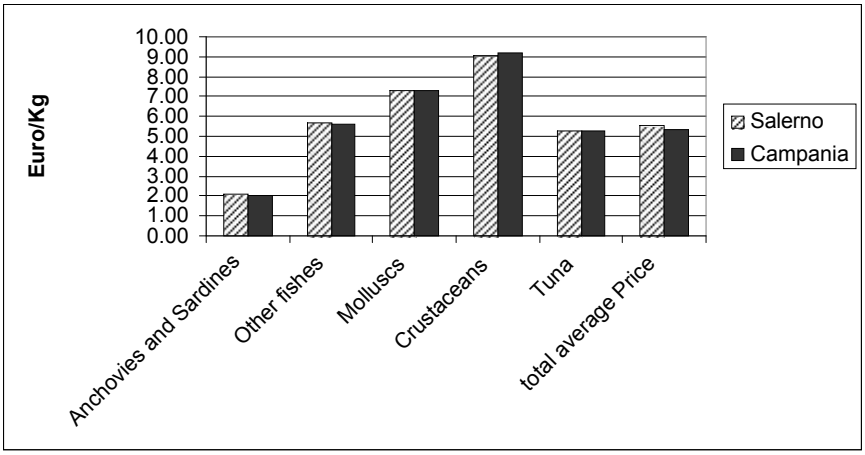
Year	Species for consumption	Value	Tonnage	Quota (a)	% quota used
		mEuro	Tons		
1993	Anchovies and sardines	-	-	-	-
	Other fishes	6.0	1180.0	-	-
	Molluscs	1.5	376.0	-	-
	Crustaceans	1.9	319.0	-	-
	Tuna	3.2	1596.0	-	-
	Total	*12.7*	*3471.0*	-	-
1994	Anchovies and sardines	-	-	-	-
	Other fishes	4.8	1085.0	-	-
	Molluscs	2.2	488.0	-	-
	Crustaceans	2.8	372.0	-	-
	Tuna	5.1	2167.0	-	-
	Total	*14.8*	*4112.0*	-	-
1995	Anchovies and sardines	*2.8*	*1754.0*	-	-
	Other fishes	19.2	3835.0	-	-
	Molluscs	4.5	842.0	-	-

	Crustaceans	2.0	684.0	-	-
	Tuna	5.8	2311.0	-	-
	Total	*34.3*	*9426.0*	-	-
1996	Anchovies and sardines	1.7	1045.0	-	-
	Other fishes	14.2	2800.0	-	-
	Molluscs	4.8	932.0	-	-
	Crustaceans	2.6	322.0	-	-
	Tuna	7.0	3202.0	-	-
	Total	*30.3*	*8301.0*	-	-
1997	Anchovies and sardines	1.7	1319.0	-	-
	Other fishes	12.2	2569.0	-	-
	Molluscs	4.3	838.0	-	-
	Crustaceans	2.3	280.0	-	-
	Tuna	8.6	3349.0	-	-
	Total	*29.1*	*8355.0*	-	-
1998	Anchovies and sardines	2.6	1526.0	-	-
	Other fishes	13.7	3456.0	-	-
	Molluscs	2.8	575.0	-	-
	Crustaceans	1.1	150.0	-	-
	Tuna	7.4	3054.0	-	-
	Total	*27.6*	*8761.0*	-	-
1999	Anchovies and sardines	2.8	1536.0	-	-
	Other fishes	13.7	3534.0	-	-
	Molluscs	3.8	673.0	-	-
	Crustaceans	1.4	191.0	-	-
	Tuna	8.3	2823.0	1413	100%
	Total	*29.9*	*8757.0*	*1413*	*100%*
2000	Anchovies and sardines	2.2	762.8	-	-
	Other fishes	19.3	2977.6	-	-
	Molluscs	7.2	1052.2	-	-
	Crustaceans	1.0	170.1	-	-
	Tuna	8.7	3378.0	1835	100%
	Total	*38.3*	*8340.7*	*1835*	*100%*
2001	Anchovies and sardines	0.7	536.7	-	-
	Other fishes	14.2	1606.7	-	-
	Molluscs	5.5	796.0	-	-
	Crustaceans	3.3	313.1	-	-
	Tuna	21.8	3306.3	2607	100%
	Total	*45.5*	*6558.8*	*2607*	*100%*
2002	Anchovies and sardines	0.5	208		
	Other fishes	17.2	2643		
	Molluscs	6.6	984		
	Crustaceans	1.9	308		
	Tuna	18.9	2804	2708	100%
	Total	*45.2*	*6948*	*2708*	*100%*
2003	Anchovies and sardines	1.1	500		
	Other fishes	19.5	3440		
	Molluscs	5.8	797		
	Crustaceans	1.8	201		
	Tuna	16.2	3066	2909	100%
	Total	*44.4*	*8003*	*2909*	*100%*

Source: Mipaf-Irepa. Note: (a) quota refers only to bluefin tuna.

The highest valued group of fish species was, in 2003, crustaceans, worthing 9.09 €/kg; molluscs follow with 7.30 €/kg while other fishes and tuna have more or less the same average value (5.66 €/kg and 5.30 €/kg respectively). Anchovies and sardines have the lowest average value (2.08 €/kg). These values are in line with those collected in the other ports of the Campania region (figure 9.1).

Figure 9.2 Price (€/kg) by groups of species of Salerno and Campania (2003)



9.3.3 Processing

Table 9.8 shows quantity and value of fish processing production in the province of Salerno by Prodcom codes. The prevailing products are preserved in oil, salted and, for a smallest part, marinade anchovies. In a second position we can find preserved tuna. Only a small part of the production is made up of products that are more and more becoming important in the local demand for fish products as salad of sea products (mainly molluscs and crustaceans). Chilling of fish products is totally absent in the area under consideration.

Production of salted fish products is limited and has lost importance in the last years; the specialising process that involved this type of production gave gradually to it the features of an artisanal sector.

For the most part, fish processing plants realise combined production of fish fillets preserved in oil and vegetables preserved in oil and winegard. The combination is due to the similarity of the production process, simple and partly handle made. The combined productions also favour the combined commercialisation of both products.

The fish processing sector is supplied by different markets: Medium and Lower Tyrrhenian, Adriatic Sea, Sicily and Sardinia. In particular, anchovies come from the Adriatic Sea and from the Upper Tyrrhenian Sea (Piombino, an important fishing base of Tuscany). For preserved tuna, supply, made up mainly of yellowfin tuna, comes for a 50% from other sides of Italy and for a 50% from countries outside EU.[6] All the landings are destined to fresh consumption. No quantitative data are available on the transfer of fresh fish from outside the region.

[6] Some information on the fish processing sector in the province of Salerno are extracted *Progetto per la razionalizzazione dell'attività di pesca in provincia di Salerno – Rapporto sulle strutture produttive e commerciali,* report of the Salerno Provincial Administration to the Ministery of Agricultural and Forestry Policy – Community Initiative Pesca – Project – Decree 33/I.P.

Table 9.8 Processing, value and tonnage (NUTS III)

Type of Processed products	PRODCOM	Tonnage	Value of output (mEuro)
Extracts & Juices	15.13.12		
Fish Products, fresh or chilled	15.20.11		
Fish Products, frozen	15.20.12		
Fish products, dried, salted and smoked	15.20.13	218.523	1,08
Fish Products, preserved/prepared	15.20.14	2.090.221	12,16
Aquatic invertebrates, frozen, dried, salted	15.20.15		
Crustaceans and molluscs, preserved , prepared	15.20.16	45.605	0,34
Fats and oils fish and marine animals, fish meal	15.41.11		
Total		**2.354.349**	**13,59**

Source: a) Istat-Censimento Intermedio dell'Industria e dei Servizi for the number of fish processing enterprises and b) Ancit, Associazione Nazionale dei Conservieri Ittici e dei Tonnieri for national weight and value of fish processing products.

9.3.4 Employment

Table 9.9 reports data on employment in the fishing sector. Data relate only to people employed on board. Total employment amounted, in 2001, to 1581 units. In the fish catching sector work only male. The percentage of self-employment is equal to 71%. The areas with the large number of employees are: Salerno, Pollica, Cetara and Castellabate with, respectively, 550, 167, 138 and 137 people employed in the sector.

Table 9.9 Employment in Fishing Industry, 2001

NUTS V	FT	Total
Agropoli	95	6%
Amalfi	72	5%
Camerota	72	5%
Castellabate	137	9%
Centola	61	4%
Cetara	138	9%
Ispani	58	4%
Maiori	66	4%
Pisciotta	36	2%
Pollica	167	11%
Positano	56	4%
Salerno	550	35%
San Giovanni a Piro	21	1%
Sapri	35	2%
Vietri sul Mare	17	1%
Total	1581	100%

Source: In order to abtain an estimate of figures for NUTS5 level, data from Irepa National Observatory on fishing fleet 2001 have been used. For distribution of fihers among gender and among type of job, data of Socio-economic study 1999 have been used.

Table 9.10 shows figures on employment in the fish industry in the province of Salerno. The units employed in the fish processing plants amounted to 123. The greater part (87%) is constituted of female units. Full time units are equal to 105 units where part time is only a smaller part of the total employment (15%). The most important fish processing plants are based in places located near to the coast. This is due more to historical and

traditional reasons than to the need of links to fishing areas as supply sources. In fact, tuna destined to processing (mostly yellowfin) comes mainly from abroad and only a small part of anchovies destined to processing comes from local landings: the small size of local anchovies is, in fact, not good for processing. The creation of a processing "district" in this area has its origin in the anchovies processing that developed in Cetara, ancient base of the fishing industry of the province of Salerno where, even today, there is a well developed and modern fishing industry.

The total employment in the construction and repair industry was 53 in 1996. In this sector, the female employment represents only a small part of the total (5,5 %). The percentage of self-employment is larger in the female employment then in the male one. Employment in the commercialisation of fish products, related to wholesalers, amounts to 661 units, almost equally distributed between the female and male component. The great bulk of the wholesalers operate in the city of Salerno. Finally, people employed as retailers in the commercialisation of fish products are 296 units, almost equally distributed between the female and male component. The 15% of the retailers operate in the city of Salerno.

Table 9.10 Employment in Fish Industry, 1996

Sector	Female				Male				Total
	FT	PT	%Self Emp	Total	FT	PT	%Self Emp	Total	
Processing Industry	91	17	32	107	14	1	48	16	123
Construction and Repairs Industry	3	0	50	3	50	0	32	50	53
Commercialisation – Wholesalers				316	-	-	-	345	661
Commercialisation – Retailers				142	-	-	-	154	296

Source: Istat-Censimento intermedio industria e servizi 1996.

Figure 9.2 shows the distribution of people employed in the fishing fleet by educational attainments. Most people working on board have a primary degree of scholar education; another large part (40%) has a secondary level of education while only 17% of the employment on board has a further level of education.

Figure 9.3 Distribution of people employed in the fishing fleet by educational level, IREPA 2001

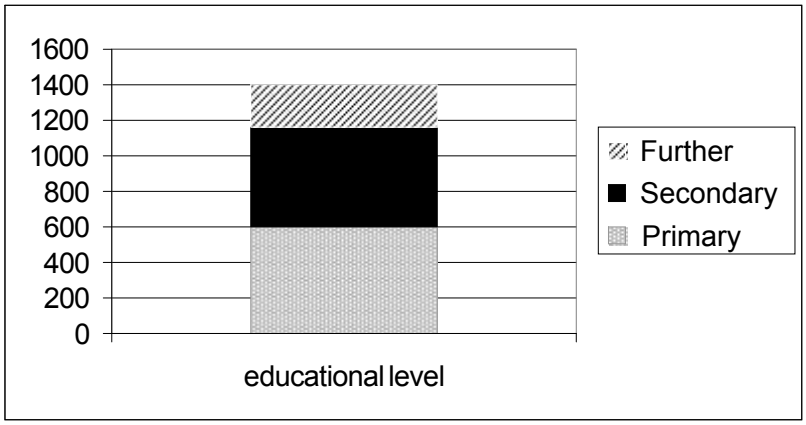


Figure 9.3 shows the distribution of employment in the fish catching sector among age class. The most evident thing is the old age of the crews employed on board of the vessels of the fleet of the Salerno province. The greatest part (47%) of it falls into the medium age class: between 24 and 54 years. Another large part is made up of people aged more than 54 whereas young people (less than 24 years) represent a very small part of total employment.

Figure 9.4 Distribution of employment in the fish catching sector among age class (IREPA 2001)

Feil! Ugyldig kobling.

9.3.5 Impact of the CFP

The main management measure refers to the buy-back program in order to control the fishing capacity and the effort. This measure comes under the jurisdiction of the EC regulations and is governed by the Multi-Annual Guidance Plans (MAGPs).

The analysis of the trends in fishing capacity and effort represents an interesting starting point in order to evaluate the impact of the buy-back program on productivity and economic rents. As previously said, the total number of boats remained constant between 1992 and 2003 (more or less around 600 units). In contrast the tonnage and the power have strongly reduced since 1997, following the adoption of the fourth generation of MAGP's (period 1997-2001). This re-assessment has largely regarded small vessels.

Table 9.11 reports the levels of capacity and activity between 1998 and 2003. A negative trend for all segments with the exception of demersal trawlers is shown. It follows that between 1998 and 2003, while the number of vessels decreased by 24% , GRT increased by 59% and power by 14%. Activity, expressed in terms of average days at sea, decreased by 76%.

Table 9.11 Capacity and activity levels (1998 and 2003)

	Number of vessels			GRT			kW			Average days at sea		
	2003	1998	Var. %	2003	1998	Var. %	2003	1998	Var. %	2003	1998	Var. %
Demersal trawl	45	30	50	1266.56	894	42	8837	6189	43	207	194	7
Purse seine	9	15	-40	160.58	527	-70	1530	4050	-62	83	125	-34
Small scale <12m	428	637	-33	1061.29	1588	-33	9191	14580	-37	167	195	-14
Polyvalents	66	64	3	464.27	892	-48	5316	9078	-41	158	172	-8
Total	568	746	-24	6210.59	3901	59	38666	33897	14	162	686	-76

Source: Mipaf - Irepa

These conclusions are supported by data on fleet permanent withdrawal. During 2003 and 2004, the number of vessels which complied with the permanent withdrawal was 15 (tab. 9.12). Among these, only three vessels didn't require the Community aid.

Table 9.12 Fleet permanent withdrawal in the Salerno province

DESCRIPTION	2003	2004	Total
Withdrawal without Community aid	1	2	3
Withdrawal with public aid	3	9	12
Change of enrolment office	1	3	4

Non renewed license	10	3	13
Replacement without public aid	10	3	13
Other	1	6	7
Total	26	26	52

Source: Mipaf

Over the same period, the fleet registered a reduction of 52 units in terms of number and 400.26 GRT in terms of capacity (Tab. 9.13). With reference to the segments, the higher number of withdrawal was recorded within the small scale fishery (31), followed by the purse seine segments (16), demersal trawl (3) and polyvalent (2).

Table 9.13 Numbers of permanent withdrawal in Salerno province, 2003-2004

Fleet segment	No. Vessels	Total GRT	Average GRT	Average LOA
Small Scale fishery < 12m	31	67.97	2.1926	6.2423
Demersal trawl	3	97.54	32.513	18.123
Purse seine	16	218.68	13.668	8.8056
Polyvalent	2	16.07	8.035	11.95
Total	52	400.26	7.6973	7.9692

Source: Mipaf

Small scale fishery, with 6 vessels, was most affected by the EU by-back program. Purse seine and demersal trawl follow with respectively 4 and 2 units. (tab. 9.14).

Table 9.14 Number of withdrawals with Community aid, 2003-2004

	No. Vessels	Total GRT	Average GRT	Average LOA
Small Scale fishery < 12m	6	10.62	1.77	5.43
Demersal trawl	2	73.3	36.65	18.56
Purse seine	4	16.76	4.19	8.02
Total	12	100.68	8.39	8.48

Source: Mipaf

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Part IV Annexes

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IT92	Basilicata
IT93	Calabria
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ITB	Sardegna
LT	Lietuva
LV	Latvija

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NL32	Noord-Holland
NL33	Zuid-Holland
NL34	Zeeland
NL41	Noord-Brabant
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NO03	Sør-Østlandet
NO04	Agder Og Rogaland
NO05	Vestlandet
NO06	Trøndelag
NO07	Nord-Norge
PL0B	Pomorskie
PL0E	Warminsko-Mazurskie
PL0G	Zachodniopomorskie
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PT12	Centro (PT)
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SE0A	Västsverige
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UKC2	Northumberland, Tyne and Wear
UKD1	Cumbria
UKD2	Cheshire
UKD4	Lancashire
UKD5	Merseyside
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UKH1	East Anglia
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NL12	Friesland
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NL33	Zuid-Holland

Annex 2

The 386 NUTS 3 territories with coastline

NUTS_3			
BE211	ANTWERPEN (ARRONDISSEMENT)	DEF0C	SCHLESWIG-FLENSBURG
BE236	SINT-NIKLAAS	DK001	KOEBENHAVN OG FREDERIKS.KOM
BE251	BRUGGE	DK002	KOEBENHAVNS AMT
BE255	OOSTENDE	DK003	FREDERIKSBORG AMT
BE258	VEURNE	DK004	ROSKILDE AMT
BG031	VARNA	DK005	VESTSJAELLANDS AMT
BG032	DOBRICH	DK006	STORSTROEMS AMT
BG061	BURGAS	DK007	BORNHOLMS AMT
CY	KIBRIS	DK008	FYNS AMT
DE502	BREMERHAVEN, KRFR.ST.	DK009	SOENDERJYLLANDS AMT
DE6	HAMBURG	DK00A	RIBE AMT
DE801	GREIFSWALD, KRFR.ST.	DK00B	VEJLE AMT
DE803	ROSTOCK, KRFR.ST.	DK00C	RINGKOEBING AMT
DE805	STRALSUND, KRFR.ST.	DK00D	AARHUS AMT
DE806	WISMAR, KRFR.ST.	DK00E	VIBORG AMT
DE807	BAD DOBERAN	DK00F	NORDJYLLANDS AMT
DE80D	NORDVORPOMMERN	EE001	POHJA-EESTI
DE80E	NORDWESTMECKLENBURG	EE004	LÄÄNE-EESTI
DE80F	OSTVORPOMMERN	EE006	KESK-EESTI
DE80H	RUEGEN	EE007	KIRDE-EESTI
DE80I	UECKER-RANDOW	ES111	LA CORUNA
DE932	CUXHAVEN	ES112	LUGO
DE939	STADE	ES114	PONTEVEDRA
DE942	EMDEN, KRFR.ST.	ES12	ASTURIAS
DE945	WILHELMSHAVEN, KRFR.ST.	ES13	CANTABRIA
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DE94A	FRIESLAND	ES213	VIZCAYA
DE94C	LEER	ES511	BARCELONA
DE94G	WESERMARSCH	ES512	GIRONA
DE94H	WITTMUND	ES514	TARRAGONA
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DEF02	KIEL, KRFR.ST.	ES522	CASTELLON DE LA PLANA
DEF03	LUEBECK, KRFR.ST.	ES523	VALENCIA
DEF05	DITHMARSCHEN	ES53	BALEARES
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DEF08	OSTHOLSTEIN	ES612	CADIZ
DEF0A	PLÖN	ES614	GRANADA
DEF0B	RENDSBURG-ECKERNFOERDE	ES615	HUELVA

ES617	MALAGA		
ES62	MURCIA	ES62	MURCIA
ES631	CEUTA	ES631	CEUTA
ES632	MELILLA	ES632	MELILLA
ES701	CANARIAS	ES701	CANARIAS
ES702	CANARIAS	ES702	CANARIAS
FI143	POHJANMAA	FI143	POHJANMAA
FI144	KESKI-POHJANMAA	FI144	KESKI-POHJANMAA
FI151	POHJOIS-POHJANMAA	FI151	POHJOIS-POHJANMAA
FI152	LAPPI	FI152	LAPPI
FI161	UUSIMAA (MAAKUNTA)	FI161	UUSIMAA (MAAKUNTA)
FI162	ITA-UUSIMAA	FI162	ITA-UUSIMAA
FI171	VARSINAIS-SUOMI	FI171	VARSINAIS-SUOMI
FI172	SATAKUNTA	FI172	SATAKUNTA
FI176	KYMENLAAKSO	FI176	KYMENLAAKSO
FI2	AALAND	FI2	AALAND
FR223	SOMME	FR223	SOMME
FR231	EURE	FR231	EURE
FR232	SEINE-MARITIME	FR232	SEINE-MARITIME
FR251	CALVADOS	FR251	CALVADOS
FR252	MANCHE	FR252	MANCHE
FR301	NORD	FR301	NORD
FR302	PAS-DE-CALAIS	FR302	PAS-DE-CALAIS
FR511	LOIRE-ATLANTIQUE	FR511	LOIRE-ATLANTIQUE
FR515	VENDEE	FR515	VENDEE
FR521	COTES-DA'RMOR	FR521	COTES-DA'RMOR
FR522	FINISTERE	FR522	FINISTERE
FR523	ILLE-ET-VILAINE	FR523	ILLE-ET-VILAINE
FR524	MORBIHAN	FR524	MORBIHAN
FR532	CHARENTE-MARITIME	FR532	CHARENTE-MARITIME
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FR613	LANDES	FR613	LANDES
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FR815	PYRENEES-ORIENTALES	FR815	PYRENEES-ORIENTALES
FR823	ALPES-MARITIMES	FR823	ALPES-MARITIMES
FR824	BOUCHES-DU-RHONE	FR824	BOUCHES-DU-RHONE
FR825	VAR	FR825	VAR
FR831	CORSE-DU-SUD	FR831	CORSE-DU-SUD
FR832	HAUTE-CORSE	FR832	HAUTE-CORSE
FR91	GUADELOUPE	FR91	GUADELOUPE
FR92	MARTINIQUE	FR92	MARTINIQUE
FR93	GUYANE	FR93	GUYANE
FR94	REUNION	FR94	REUNION
GR111	EVROS	GR111	EVROS
GR112	XANTHI	GR112	XANTHI
GR113	RODOPI	GR113	RODOPI
GR115	KAVALA	GR115	KAVALA
GR121	IMATHIA	GR121	IMATHIA
GR122	THESSALONIKI	GR122	THESSALONIKI
GR125	PIERIA	GR125	PIERIA
GR126	SERRES	GR126	SERRES

IT516	LIVORNO		
IT517	PISA	IT517	PISA
IT51A	GROSSETO	IT51A	GROSSETO
IT531	PESARO E URBINO	IT531	PESARO E URBINO
IT532	ANCONA	IT532	ANCONA
IT533	MACERATA	IT533	MACERATA
IT534	ASCOLI PICENO	IT534	ASCOLI PICENO
IT601	VITERBO	IT601	VITERBO
IT603	ROMA	IT603	ROMA
IT604	LATINA	IT604	LATINA
IT712	TERAMO	IT712	TERAMO
IT713	PESCARA	IT713	PESCARA
IT714	CHIETI	IT714	CHIETI
IT722	CAMPOBASSO	IT722	CAMPOBASSO
IT801	CASERTA	IT801	CASERTA
IT803	NAPOLI	IT803	NAPOLI
IT805	SALERNO	IT805	SALERNO
IT911	FOGGIA	IT911	FOGGIA
IT912	BARI	IT912	BARI
IT913	TARANTO	IT913	TARANTO
IT914	BRINDISI	IT914	BRINDISI
IT915	LECCE	IT915	LECCE
IT921	POTENZA	IT921	POTENZA
IT922	MATERA	IT922	MATERA
IT931	COSENZA	IT931	COSENZA
IT932	CROTONE	IT932	CROTONE
IT933	CATANZARO	IT933	CATANZARO
IT934	VIBO VALENTIA	IT934	VIBO VALENTIA
IT935	REGGIO DI CALABRIA	IT935	REGGIO DI CALABRIA
ITA01	TRAPANI	ITA01	TRAPANI
ITA02	PALERMO	ITA02	PALERMO
ITA03	MESSINA	ITA03	MESSINA
ITA04	AGRIGENTO	ITA04	AGRIGENTO
ITA05	CALTANISSETTA	ITA05	CALTANISSETTA
ITA07	CATANIA	ITA07	CATANIA
ITA08	RAGUSA	ITA08	RAGUSA
ITA09	SIRACUSA	ITA09	SIRACUSA
ITB01	SASSARI	ITB01	SASSARI
ITB02	NUORO	ITB02	NUORO
ITB03	ORISTANO	ITB03	ORISTANO
ITB04	CAGLIARI	ITB04	CAGLIARI
LT003	KLAIPEDOS (APSKRITIS)	LT003	KLAIPEDOS (APSKRITIS)
LV001	RIGA	LV001	RIGA
LV002	VIDZEME	LV002	VIDZEME
LV003	KURZEME	LV003	KURZEME
LV004	ZEMGALE	LV004	ZEMGALE
MT001	MALTA	MT001	MALTA
MT002	GOZO AND COMINO	MT002	GOZO AND COMINO
NL111	OOST-GRONINGEN	NL111	OOST-GRONINGEN
NL112	DELFZIJL E.O.	NL112	DELFZIJL E.O.
NL113	OVERIG GRONINGEN	NL113	OVERIG GRONINGEN
NL121	NOORD-FRIESLAND	NL121	NOORD-FRIESLAND
NL122	ZUIDWEST-FRIESLAND	NL122	ZUIDWEST-FRIESLAND
NL321	KOP VAN NOORD-HOLLAND	NL321	KOP VAN NOORD-HOLLAND

SE023	OESTERGOETLANDS LAEN
SE041	BLEKINGE LAEN
SE044	SKAANE LAEN
SE063	GAEVLEBORGS LAEN
SE071	VAESTERNORRLANDS LAEN
SE081	VAESTERBOTTENS LAEN
SE082	NORRBOTTENS LAEN
SE093	KALMAR LAEN
SE094	GOTLANDS LAEN
SE0A1	HALLANDS LAEN
SE0A2	VAESTRA GOETALANDS LAEN
SI00C	OBALNO-KRASKA
UKC11	HARTLEPOOL AND STOCKTON-ON-TEES
UKC12	SOUTH TEESIDE
UKC14	DURHAM CC
UKC21	NORTHUMBERLAND
UKC22	TYNESIDE-NEWCASTLE-GATESHEAD
UKC23	SUNDERLAND
UKD11	WEST CUMBRIA
UKD12	EAST CUMBRIA
UKD21	HALTON AND WARRINGTON
UKD22	CHESHIRE CC
UKD42	BLACKPOOL
UKD43	LANCASHIRE CC
UKD52	LIVERPOOL
UKD53	SEFTON
UKD54	WIRRAL
UKE11	CITY OF KINGSTON UPON HULL
UKE12	EAST RIDING OF YORKSHIRE
UKE13	NORTH AND NORTH EAST LINCOLSHIRE
UKE22	NORTH YORKSHIRE CC
UKF3	LINCOLNSHIRE
UKH13	NORFOLK
UKH14	SUFFOLK
UKH31	SOUTHEND-ON-SEA
UKH32	THURROCK
UKH33	ESSEX CC
UKI11	INNER LONDON - WEST
UKI12	INNER LONDON - EAST
UKI21	OUTER LONDON - EAST AND NORTH EAST
UKJ21	BRIGHTON AND HOVE
UKJ22	EAST SUSSEX CC
UKJ24	WEST SUSSEX
UKJ31	PORTSMOUTH
UKJ32	SOUTHAMPTON
UKJ33	HAMPSHIRE CC
UKJ34	ISLE OF WIGHT
UKJ41	MEDWAY TOWNS
UKJ42	KENT CC
UKK11	CITY OF BRISTOL
UKK12	NORTH AND NORTH EAST SOMERSET, SOUTH GLOUCESTERSHIRE

SE041	BLEKINGE LAEN
SE044	SKAANE LAEN
SE063	GAEVLEBORGS LAEN
SE071	VAESTERNORRLANDS LAEN
SE081	VAESTERBOTTENS LAEN
SE082	NORRBOTTENS LAEN
SE093	KALMAR LAEN
SE094	GOTLANDS LAEN
SE0A1	HALLANDS LAEN
SE0A2	VAESTRA GOETALANDS LAEN
SI00C	OBALNO-KRASKA
UKC11	HARTLEPOOL AND STOCKTON-ON-TEES
UKC12	SOUTH TEESIDE
UKC14	DURHAM CC
UKC21	NORTHUMBERLAND
UKC22	TYNESIDE-NEWCASTLE-GATESHEAD
UKC23	SUNDERLAND
UKD11	WEST CUMBRIA
UKD12	EAST CUMBRIA
UKD21	HALTON AND WARRINGTON
UKD22	CHESHIRE CC
UKD42	BLACKPOOL
UKD43	LANCASHIRE CC
UKD52	LIVERPOOL
UKD53	SEFTON
UKD54	WIRRAL
UKE11	CITY OF KINGSTON UPON HULL
UKE12	EAST RIDING OF YORKSHIRE
UKE13	NORTH AND NORTH EAST LINCOLSHIRE
UKE22	NORTH YORKSHIRE CC
UKF3	LINCOLNSHIRE
UKH13	NORFOLK
UKH14	SUFFOLK
UKH31	SOUTHEND-ON-SEA
UKH32	THURROCK
UKH33	ESSEX CC
UKI11	INNER LONDON - WEST
UKI12	INNER LONDON - EAST
UKI21	OUTER LONDON - EAST AND NORTH EAST
UKJ21	BRIGHTON AND HOVE
UKJ22	EAST SUSSEX CC
UKJ24	WEST SUSSEX
UKJ31	PORTSMOUTH
UKJ32	SOUTHAMPTON
UKJ33	HAMPSHIRE CC
UKJ34	ISLE OF WIGHT

Annex 3

The coastal typology

NUTS_3	REGION	Coastal typology
BE211	ANTWERPEN (ARRONDISSEMENT)	10
BE236	SINT-NIKLAAS	7
BE251	BRUGGE	9
BE255	OOSTENDE	7
BE258	VEURNE	1
BG031	VARNA	9
BG032	DOBRICH	6
BG061	BURGAS	8
CY	KIBRIS	9
DE502	BREMERHAVEN, KRFR.ST.	7
DE6	HAMBURG	10
DE801	GREIFSWALD, KRFR.ST.	7
DE803	ROSTOCK, KRFR.ST.	9
DE805	STRALSUND, KRFR.ST.	7
DE806	WISMAR, KRFR.ST.	7
DE807	BAD DOBERAN	3
DE80D	NORDVORPOMMERN	1
DE80E	NORDWESTMECKLENBURG	1
DE80F	OSTVORPOMMERN	1
DE80H	RUEGEN	1
DE80I	UECKER-RANDOW	1
DE932	CUXHAVEN	5
DE939	STADE	1
DE942	EMDEN, KRFR.ST.	7
DE945	WILHELMSHAVEN, KRFR.ST.	7
DE947	AURICH	1
DE94A	FRIESLAND	1
DE94C	LEER	1
DE94G	WESERMARSCH	1
DE94H	WITTMUND	1
DEF01	FLENSBURG, KRFR.ST.	7
DEF02	KIEL, KRFR.ST.	9
DEF03	LUEBECK, KRFR.ST.	7
DEF05	DITHMARSCHEN	1
DEF07	NORDFRIESLAND	1
DEF08	OSTHOLSTEIN	1
DEF0A	PLÖN	1
DEF0B	RENDSBURG-ECKERNFOERDE	5

DEF0C	SCHLESWIG-FLENSBURG	1
DK001	KOEBENHAVN OG FREDERIKS.KOM	10
DK002	KOEBENHAVNS AMT	3
DK003	FREDERIKSBORG AMT	1
DK004	ROSKILDE AMT	1
DK005	VESTSJAELLANDS AMT	7
DK006	STORSTROEMS AMT	7
DK007	BORNHOLMS AMT	7
DK008	FYNS AMT	9
DK009	SOENDERJYLLANDS AMT	7
DK00A	RIBE AMT	7
DK00B	VEJLE AMT	7
DK00C	RINGKOEBING AMT	7
DK00D	AARHUS AMT	10
DK00E	VIBORG AMT	7
DK00F	NORDJYLLANDS AMT	9
EE001	POHJA-EESTI	10
EE004	LÄÄNE-EESTI	4
EE006	KESK-EESTI	6
EE007	KIRDE-EESTI	9
ES111	LA CORUNA	9
ES112	LUGO	4
ES114	PONTEVEDRA	9
ES12	ASTURIAS	9
ES13	CANTABRIA	9
ES212	GUIPUZCOA	9
ES213	VIZCAYA	10
ES511	BARCELONA	10
ES512	GIRONA	7
ES514	TARRAGONA	9
ES521	ALICANTE	9
ES522	CASTELLON DE LA PLANA	9
ES523	VALENCIA	10
ES53	BALEARES	10
ES611	ALMERIA	9
ES612	CADIZ	9
ES614	GRANADA	9
ES615	HUELVA	8
ES617	MALAGA	9
ES62	MURCIA	9
ES631	CEUTA	7
ES632	MELILLA	7
ES701	CANARIAS	9
ES702	CANARIAS	9
FI143	POHJANMAA	9
FI144	KESKI-POHJANMAA	6
FI151	POHJOIS-POHJANMAA	9
FI152	LAPPI	6
FI161	UUSIMAA (MAAKUNTA)	10
FI162	ITA-UUSIMAA	1
FI171	VARSINAIS-SUOMI	10
FI172	SATAKUNTA	9
FI176	KYMENLAAKSO	9
FI2	AALAND	6
FR223	SOMME	9

FR231	EURE	5
FR232	SEINE-MARITIME	10
FR251	CALVADOS	9
FR252	MANCHE	5
FR301	NORD	10
FR302	PAS-DE-CALAIS	7
FR511	LOIRE-ATLANTIQUE	9
FR515	VENDEE	8
FR521	COTES-DA'RMOR	5
FR522	FINISTERE	9
FR523	ILLE-ET-VILAINE	9
FR524	MORBIHAN	7
FR532	CHARENTE-MARITIME	8
FR612	GIRONDE	10
FR613	LANDES	4
FR615	PYRENEES-ATLANTIQUES	9
FR811	AUDE	4
FR812	GARD	8
FR813	HERAULT	9
FR815	PYRENEES-ORIENTALES	9
FR823	ALPES-MARITIMES	10
FR824	BOUCHES-DU-RHONE	10
FR825	VAR	9
FR831	CORSE-DU-SUD	9
FR832	HAUTE-CORSE	6
FR91	GUADELOUPE	1
FR92	MARTINIQUE	1
FR93	GUYANE	1
FR94	REUNION	1
GR111	EVROS	6
GR112	XANTHI	7
GR113	RODOPI	6
GR115	KAVALA	5
GR121	IMATHIA	5
GR122	THESSALONIKI	9
GR125	PIERIA	5
GR126	SERRES	4
GR127	CHALKIDIKI	1
GR142	LARISA	8
GR143	MAGNISIA	5
GR211	ARTA	4
GR212	THESPROTIA	1
GR214	PREVEZA	1
GR221	ZAKYNTHOS	1
GR222	KERKYRA	5
GR223	KEFALLINIA	1
GR224	LEFKADA	1
GR231	AITOLOAKARNANIA	4
GR232	ACHAIA	9
GR233	ILEIA	5
GR241	VOIOTIA	4
GR242	EVVOIA	8
GR244	FTHIOTIDA	4
GR245	FOKIDA	1
GR251	ARGOLIDA	4

GR252	ARKADIA	4
GR253	KORINTHIA	5
GR254	LAKONIA	1
GR255	MESSINIA	5
GR3	ATTIKI	10
GR411	LESVOS	4
GR412	SAMOS	1
GR413	CHIOS	5
GR421	DODEKANISOS	8
GR422	KYKLADES	4
GR431	IRAKLEIO	9
GR432	LASITHI	4
GR433	RETHYMNI	4
GR434	CHANIA	8
IE011	BORDER	4
IE013	WEST	8
IE021	DUBLIN	10
IE022	MID-EAST	1
IE023	MID-WEST	8
IE024	SOUTH-EAST (IRL)	4
IE025	SOUTH-WEST (IRL)	10
IT131	IMPERIA	7
IT132	SAVONA	7
IT133	GENOVA	10
IT134	LA SPEZIA	9
IT325	VENEZIA	9
IT327	ROVIGO	7
IT332	UDINE	9
IT333	GORIZIA	7
IT334	TRIESTE	9
IT406	FERRARA	7
IT407	RAVENNA	7
IT408	FORLI-CESENA	7
IT409	RIMINI	7
IT511	MASSA-CARRARA	7
IT512	LUCCA	7
IT516	LIVORNO	9
IT517	PISA	9
IT51A	GROSSETO	4
IT531	PESARO E URBINO	7
IT532	ANCONA	7
IT533	MACERATA	5
IT534	ASCOLI PICENO	7
IT601	VITERBO	5
IT603	ROMA	10
IT604	LATINA	7
IT712	TERAMO	7
IT713	PESCARA	7
IT714	CHIETI	7
IT722	CAMPOBASSO	7
IT801	CASERTA	7
IT803	NAPOLI	10
IT805	SALERNO	9
IT911	FOGGIA	7
IT912	BARI	9

IT913	TARANTO	7
IT914	BRINDISI	7
IT915	LECCE	7
IT921	POTENZA	5
IT922	MATERA	5
IT931	COSENZA	5
IT932	CROTONE	7
IT933	CATANZARO	7
IT934	VIBO VALENTIA	5
IT935	REGGIO DI CALABRIA	7
ITA01	TRAPANI	7
ITA02	PALERMO	9
ITA03	MESSINA	7
ITA04	AGRIGENTO	7
ITA05	CALTANISSETTA	7
ITA07	CATANIA	9
ITA08	RAGUSA	7
ITA09	SIRACUSA	7
ITB01	SASSARI	7
ITB02	NUORO	4
ITB03	ORISTANO	4
ITB04	CAGLIARI	9
LT003	KLAIPEDOS (APSKRITIS)	8
LV001	RIGA	10
LV002	VIDZEME	4
LV003	KURZEME	4
LV004	ZEMGALE	4
MT001	MALTA	10
MT002	GOZO AND COMINO	1
NL111	OOST-GRONINGEN	1
NL112	DELFZIJL E.O.	1
NL113	OVERIG GRONINGEN	9
NL121	NOORD-FRIESLAND	8
NL122	ZUIDWEST-FRIESLAND	1
NL321	KOP VAN NOORD-HOLLAND	5
NL322	ALKMAAR E.O.	5
NL323	IJMOND	5
NL324	AGGLOM. HAARLEM	7
NL326	GROOT-AMSTERDAM	10
NL327	HET GOOI EN VECHTSTREEK	5
NL331	AGGLOM. LEIDEN EN BOLLENST.	9
NL332	AGGLOM.'S-GRAVENHAGE	9
NL333	DELFT EN WESTLAND	1
NL335	GROOT-RIJNMOND	10
NL341	ZEEUWSCH-VLAANDEREN	1
NL342	OVERIG ZEELAND	1
NL411	WEST-NOORD-BRABANT	9
NO011	OSLO	10
NO012	AKERSHUS	3
NO031	OSTFOLD	7
NO032	BUSKERUD	6
NO033	VESTFOLD	7
NO034	TELEMARK	6
NO041	AUST-AGDER	6
NO042	VEST-AGDER	9

NO043	ROGALAND	9
NO051	HORDALAND	10
NO052	SOGN OG FJORDANE	1
NO053	MORE OG ROMSDAL	9
NO061	SOR-TRONDELAG	9
NO062	NORD-TRONDELAG	6
NO071	NORDLAND	6
NO072	TROMS	4
NO073	FINNMARK	1
PL0B1	SLUPSKI	5
PL0B2	GDANSKI	1
PL0B3	GDANSK-GDYNIA-SOPOT	10
PL0E1	ELBLASKI	5
PL0G1	SZCZECINSKI	10
PL0G2	KOSZALINSKI	5
PT111	MINHO-LIMA	5
PT112	CAVADO	9
PT114	GRANDE PORTO	10
PT121	BAIXO VOUGA	9
PT122	BAIXO MONDEGO	9
PT123	PINHAL LITORAL	5
PT131	OESTE	5
PT132	GRANDE LISBOA	10
PT133	PENINSULA DE SETUBAL	1
PT135	LEZIRIA DO TEJO	5
PT141	ALENTEJO LITORAL	1
PT15	ALGARVE	9
PT2	ACORES	5
PT3	MADEIRA	8
RO023	CONSTANTA	8
RO025	TULCEA	4
SE011	STOCKHOLM LÄN	10
SE021	UPPSALA LAEN	9
SE022	SOEDERMANLANDS LAEN	6
SE023	OESTERGOETLANDS LAEN	9
SE041	BLEKINGE LAEN	6
SE044	SKAANE LAEN	10
SE063	GAEVLEBORGS LAEN	9
SE071	VAESTERNORRLANDS LAEN	6
SE081	VAESTERBOTTENS LAEN	9
SE082	NORRBOTTENS LAEN	6
SE093	KALMAR LAEN	9
SE094	GOTLANDS LAEN	6
SE0A1	HALLANDS LAEN	9
SE0A2	VAESTRA GOETALANDS LAEN	10
SI00C	OBALNO-KRASKA	9
UKC11	HARTLEPOOL AND STOCKTON-ON-TEES	5
UKC12	SOUTH TEESIDE	7
UKC14	DURHAM CC	1
UKC21	NORTHUMBERLAND	5
UKC22	TYNESIDE-NEWCASTLE-GATESHEAD	9
UKC23	SUNDERLAND	7
UKD11	WEST CUMBRIA	5
UKD12	EAST CUMBRIA	4
UKD21	HALTON AND WARRINGTON	5

UKD22	CHESHIRE CC	5
UKD42	BLACKPOOL	7
UKD43	LANCASHIRE CC	5
UKD52	LIVERPOOL	9
UKD53	SEFTON	1
UKD54	WIRRAL	1
UKE11	CITY OF KINGSTON UPON HULL	1
UKE12	EAST RIDING OF YORKSHIRE	5
UKE13	NORTH AND NORTH EAST LINCOLSHIRE	9
UKE22	NORTH YORKSHIRE CC	5
UKF3	LINCOLNSHIRE	5
UKH13	NORFOLK	8
UKH14	SUFFOLK	5
UKH31	SOUTHEND-ON-SEA	7
UKH32	THURROCK	1
UKH33	ESSEX CC	5
UKI11	INNER LONDON - WEST	10
UKI12	INNER LONDON - EAST	10
UKI21	OUTER LONDON - EAST AND NORTH EAST	10
UKJ21	BRIGHTON AND HOVE	9
UKJ22	EAST SUSSEX CC	5
UKJ24	WEST SUSSEX	5
UKJ31	PORTSMOUTH	9
UKJ32	SOUTHAMPTON	10
UKJ33	HAMPSHIRE CC	5
UKJ34	ISLE OF WIGHT	1
UKJ41	MEDWAY TOWNS	1
UKJ42	KENT CC	5
UKK11	CITY OF BRISTOL	9
UKK12	NORTH AND NORTH EAST SOMERSET, SOUTH GLOUCESTERSHIRE	5
UKK13	GLOUCESTERSHIRE	5
UKK21	BOURNEMOUTH AND POOLE	9
UKK22	DORSET CC	1
UKK23	SOMERSET	5
UKK3	CORNWALL AND ISLES OF SCILLY	5
UKK41	PLYMOUTH	7
UKK42	TORBAY	5
UKK43	DEVON CC	8
UKL11	ISLE OF ANGLESEY	1
UKL12	GWYNEDD	6
UKL13	CONWY AND DENBIGHSHIRE	5
UKL14	SOUTH WEST WALES	5
UKL17	BRIDGEND AND NEATH PORT TALBOT	1
UKL18	SWANSEA	7
UKL21	MONMOUTHSHIRE AND NEWPORT	1
UKL22	CARDIFF AND VALE OF GLAMORGAN	9
UKL23	FLINTSHIRE AND WREXHAM	1
UKM11	ABERDEEN CITY, ABERDEEN AND NORTH EAST MORAY	8
UKM21	ANGUS AND DUNDEE CITY	7
UKM22	CLACKMANNANSHIRE AND FIFE	7
UKM23	EAST LOTHIAN AND MIDLOTHIAN	1
UKM24	THE SCOTTISH BORDERS	1
UKM25	EDINBURGH, CITY OF	10

UKM26	FALKIRK	7
UKM27	PERTH AND KINROSS AND STIRLING	4
UKM28	WEST LOTHIAN	1
UKM31	E AND W DUNBARTONSHIRE, HELENSBURGH AND LOMOND	1
UKM32	DUMFRIES AND GALLOWAY	1
UKM33	EAST AYRSHIRE AND NORTH AYRSHIRE MAINLAND	7
UKM34	GLASGOW CITY	10
UKM35	INVERCLYDE, EAST RENFREWSHIRE AND RENFREWSHIRE	5
UKM37	SOUTH AYRSHIRE	7
UKM41	CAITHNESS AND SUTHERLAND AND ROSS AND CROMARTY	1
UKM42	INVERNESS AND NAIRN AND MORAY, BADENOCH AND STRATHSPEY	6
UKM43	LOCHABER, SKYE AND LOCHALSH AND ARGYLL AND THE ISLANDS	1
UKM44	COMHAIRLE NAN EILAN (WESTERN ISLES)	1
UKM45	ORKNEY ISLANDS	1
UKM46	SHETLAND ISLANDS	1
UKN01	BELFAST	9
UKN02	OUTER BELFAST	5
UKN03	EAST OF NORTHERN IRELAND	5
UKN04	NORTH OF NORTHERN IRELAND	5
UKN05	WEST AND SOUTH OF NORTHERN IRELAND	1

Annex 4

Aquaculture

Chapter 5

Seawater aquaculture in EU27 + EFTA (tonnes live weight) - Countries without registered production in the period are not included

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Denmark	6500	5958	6798	7852	6793	7348	7802	5852	7089	7053	7264	5853	3288	7691
Germany	20329	30077	50906	24750	4952	19046	38213	22405	31288	38039	24207	11723	8105	28634
Greece	5286	9348	16240	28274	30307	29866	36044	44866	56247	80449	91168	92924	84312	96119
Spain	182865	204357	149868	106041	157491	201741	206413	209841	285078	290738	278626	277029	230767	279764
France	209942	197534	198094	220498	221936	221243	222161	222142	209795	212297	212562	192480	192316	195305
FR92	2	10	15	10	12	7	10	12	20	30	24	24	24	:
FR94	0	0	0	0	0	0	0	0	0	0	0	17	8	:
Ireland	25968	26904	26192	29252	27761	26363	33765	35753	41150	42677	50130	60175	61763	:
Italy	43102	46452	44099	42748	38261	47260	46002	48401	55103	57753	59906	63107	101160	83349
Netherl.	99747	50348	52835	68775	106982	81172	95596	94478	115887	104014	69000	51579	47925	59450
Portugal	2508	3712	4193	3935	3301	3336	3288	5277	5670	4251	5786	6219	6871	6540
Sweden	5291	4621	3895	2997	4480	4463	5072	3591	2481	2888	2022	3376	2988	2802
UK	36126	46471	41571	54641	69331	77217	93086	113765	121360	138716	142287	157826	165637	:
UK (C.I.)	67	67	50	81	103	114	191	130	196	249	390	487	580	:
EU15	**637664**	**625782**	**594691**	**589763**	**671595**	**719055**	**787442**	**806371**	**931148**	**978875**	**942958**	**922291**	**905132**	**:**
Cyprus	52	60	61	167	210	354	682	864	1078	1356	1800	1800	1782	1731
Malta	0	200	500	650	904	904	1552	1800	1950	2002	1746	1235	1116	881
Estonia	87	270	160	166	156	150	0	0	0	0	:	:	:	:
Slovenia	:	:	156	65	103	62	125	127	154	102	117	154	120	206
EU25	**:**	**:**	**:**	**590811**	**672968**	**720525**	**789801**	**809162**	**934330**	**982335**	**946621**	**925480**	**908150**	**:**
Iceland	2716	2566	2125	2351	2648	2625	2832	2122	2215	2418	2109	2722	1615	:
Norway	150583	160705	131102	164499	218486	277615	321516	367617	410757	475932	491175	510748	553933	582015
Bulgaria	0	0	0	0	0	265	42	67	92	100	10	0	55	15

Source: Eurostat database, 1 March 2005

Seawater aquaculture in EU27 + EFTA (1000 euro) - Countries without registered production in the period are not included

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Denmark	18171	15092	16234	20116	17418	17415	19662	17029	18970	19853	23594	21566	11667
Germany	5958	12903	11893	9491	3049	5934	10358	11447	9528	13007	18117	18471	5588
Greece	21443	53864	110844	104744	90445	109387	170888	202500	231252	294450	301551	323251	244514
Spain	194195	199616	137639	111547	131924	149721	150519	160830	212814	258371	326927	348857	290084
France	291596	276567	301745	340771	383701	387958	318320	350005	341600	357012	355942	381221	379535
FR92	15	72	115	83	100	59	85	100	166	191	146	178	179
FR94	0	0	0	0	0	0	0	0	0	0	0	127	70
Ireland	37089	49452	51539	60889	59433	54961	62219	64955	72557	70110	102353	99683	117532
Italy	43623	46219	49350	47692	45516	53194	61957	73615	99535	95385	130907	121915	115394
Sweden	12731	11698	7506	6681	8467	8888	9453	6784	6053	7069	5317	6470	5731
Portugal	14556	23687	25503	21692	19610	17696	19429	36261	40413	31727	48785	55456	56340
Netherl.	45414	40975	43880	43963	50341	38871	44550	51312	55156	61590	75898	84739	69616
UK	120074	143312	132423	195992	263002	149170	162207	311872	317191	380886	449234	508236	511961
UK (C.I.)	143	143	114	173	220	197	296	234	332	555	973	1196	1228
EU15	**804850**	**873386**	**888554**	**963578**	**1072905**	**993195**	**1029562**	**1286609**	**1405068**	**1589460**	**1838627**	**1969866**	**1807963**
Cyprus	625	787	630	1722	1961	2620	5064	6450	7387	8544	10626	10032	10630
Malta	0	1291	3467	4996	6832	6213	7969	9114	9419	7983	5425	3439	3963
Slovenia	:	:	149	199	555	269	502	674	863	515	612	648	315
Estonia	120	381	225	349	364	325	0	0	0	0	:	:	:
EU25	**:**	**:**	**:**	**970843**	**1082618**	**1002623**	**1043099**	**1302846**	**1422738**	**1606502**	**1855290**	**1983985**	**1822871**
Iceland	11304	12632	10149	9493	9937	8996	7806	6946	7607	8611	9122	11651	7482
Norway	608490	540561	481628	542460	713417	786165	785246	929317	1020788	1256946	1498425	1138735	1221882
Bulgaria	0	0	0	0	0	122	23	41	57	66	9	0	47

Source: Eurostat database, 1 March 2005

Freshwater aquaculture in EU27 + EFTA (tonnes live weight) - Countries without registered production in the period are not included

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Belgium	675	846	846	846	846	846	946	846	846	1597	1871	1630	1600	:
Denmark	35446	36140	36466	31887	36099	37382	34122	33845	35279	35617	36345	35720	28688	27074
Germany	43540	44600	45735	44600	43800	45000	45000	43000	41700	41500	41650	41650	41684	45627
Greece	2287	2118	2746	2484	2875	2006	2651	3133	2976	2711	2983	3391	2816	2479
Spain	20901	20614	18891	20089	20449	22224	25220	29295	30399	30407	33545	35618	32995	33522
France	46255	47110	51710	56375	58585	59470	63295	65037	58025	52530	54206	59155	57398	50520
FR91	42	44	35	40	26	30	30	20	14	20	14	14	14	:
FR92	75	77	63	67	80	58	45	54	35	30	27	27	27	:
FR93	83	83	0	0	0	0	0	7	18	31	31	37	38	:
FR94	2	3	3	3	4	4	4	119	109	123	127	102	97	:
Ireland	705	845	965	906	854	1003	1160	1101	1225	1179	1117	765	805	:
Italy	41300	46075	46950	49395	52875	55180	53000	56500	52600	48850	48750	48350	37636	36792
Netherl.	1250	1300	1270	2350	2397	2754	4250	3707	4182	4771	6339	5485	6517	7500
Austria	3126	3135	3140	3140	3103	2918	2949	3018	2909	3067	2847	2393	2333	2234
Portugal	2267	2260	1308	1435	2141	955	1329	996	1258	1250	1292	1211	1309	333
Finland	5369	4073	3236	3828	3363	3422	2952	3419	2755	2679	2121	2549	2972	2123
Sweden	3855	3382	3248	2930	2952	3110	3195	3118	3023	3147	2812	3397	2630	3532
UK	13918	14416	15252	14132	16369	16617	16811	15950	16061	16084	10198	12690	13399	:
EU15	**220894**	**226914**	**231763**	**234397**	**246708**	**252887**	**256880**	**262965**	**253238**	**245389**	**246076**	**254004**	**232782**	**:**
Estonia	849	1067	533	164	261	165	272	260	260	200	225	467	257	257
Czech R.	:	:	:	20242	18655	18679	18200	17560	17231	18775	19475	20098	19210	19670
Cyprus	73	67	94	92	81	98	105	105	100	66	78	83	80	90
Latvia	2235	2685	641	339	560	525	380	345	425	468	325	463	430	637
Lithuania	4666	4792	3899	2907	1874	1714	1537	1516	1516	1650	1996	2001	1750	2356
Hungary	17600	14434	14230	9492	9899	9360	8080	9334	10222	11947	12886	13056	11574	11870
Poland	26200	29200	29650	18309	24500	25111	27700	28680	29791	33711	35795	35460	32709	35440
Slovenia	:	:	712	653	684	727	744	790	755	1104	1064	1108	1170	1146
Slovakia	:	:	:	1588	1861	1617	954	1254	648	872	887	999	829	881
EU25	**:**	**:**	**:**	**288183**	**305083**	**310883**	**314852**	**322809**	**314186**	**314182**	**318807**	**327739**	**300791**	**:**
Bulgaria	7849	7798	8132	7897	6100	4350	4685	5370	4160	7680	3644	2938	2253	4450
Romania	34950	29530	24620	21100	20400	19830	13900	11168	9614	8998	9727	10818	9248	:
Iceland	20	25	5	5	24	10	1	427	341	369	303	493	412	:

Source: Eurostat database, 1 March 2005

Freshwater aquaculture in EU27 + EFTA (1000 euro) - Countries without registered production in the period are not included

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Belgium	2311	3158	3198	3290	3352	3454	3691	3351	3389	5017	6648	6049	4600
Denmark	102398	95590	92215	86709	97829	93244	93491	107331	107650	115552	135424	145479	106250
Germany	113297	118231	156503	115240	113600	131566	104156	89778	71337	78757	118840	137365	200746
Greece	5343	6411	8221	8466	10201	7168	9973	11421	10932	11609	9552	14869	9921
Spain	83665	79234	29132	27895	39085	41421	46473	57807	61572	64733	82118	88949	84358
France	119626	117996	123946	139015	146403	118262	153433	201997	157787	100372	103816	125122	119467
FR91	790	781	593	683	481	505	554	363	287	370	259	255	256
FR92	1147	1070	828	956	983	885	735	882	529	386	399	419	420
FR93	456	469	0	0	0	0	0	127	321	503	501	440	477
FR94	37	48	42	46	59	54	58	611	554	753	1008	751	732
Ireland	2497	2501	2788	2690	2495	2694	3028	2948	3673	3367	4153	2272	2223
Italy	116019	135129	136340	157459	117074	109322	114775	140021	142576	105426	134151	152147	90896
Netherl.	5756	6557	5791	11570	13855	12968	21697	21149	23106	28957	40221	39747	27248
Austria	10451	10519	9862	9706	9673	8208	8176	10074	10468	10504	12950	12239	11461
Portugal	7849	8225	4085	6723	10781	2515	3532	3051	3742	3935	4686	4597	4707
Finland	21082	16308	11595	12253	11938	10476	7659	8773	7641	7610	8603	7173	7747
Sweden	12374	14221	10290	9809	10987	10296	10266	10502	10338	11823	10819	11010	9846
UK	36935	40596	42916	48831	51449	53690	49343	64507	64468	68111	50032	64225	64095
EU15	**639602**	**654676**	**636882**	**639658**	**638721**	**605285**	**629693**	**732709**	**678678**	**615773**	**722012**	**811241**	**743565**
Cyprus	702	668	825	727	651	795	851	758	652	440	531	605	460
Estonia	940	1253	618	312	401	348	622	610	676	533	567	1451	806
Latvia	2808	4213	908	628	955	894	511	530	509	581	448	710	570
Czech R.	:	:	:	44908	42188	38359	38492	41603	41351	44115	52942	56399	35309
Lithuania	7436	6861	4505	2880	1977	1638	1664	1838	1961	2129	2613	2810	2567
Hungary	18218	12955	12569	12937	15886	12920	11213	16112	18123	21551	23637	25283	27310
Poland	39343	44805	43739	26510	35555	51112	54193	53417	55011	62149	72462	71706	63651
Slovenia	:	:	1614	1604	1671	2170	2413	2447	2419	3550	3305	3276	3427
Slovakia	:	:	:	3389	3307	2913	1607	2514	1257	1756	2038	2402	1928
EU25	**:**	**:**	**:**	**733552**	**741312**	**716435**	**741260**	**852538**	**800636**	**752576**	**880556**	**975885**	**879593**
Iceland	76	127	24	21	91	38	4	1988	1586	1708	1624	2697	2179
Bulgaria	16075	16725	16658	17937	13745	9339	10331	13060	9813	15909	7933	8783	5652
Romania	68830	62221	53246	45354	43185	36683	27667	14613	14078	15523	16930	19473	17512

Source: Eurostat database, 1 March 2005

Brackish water aquaculture in EU27 + EFTA (tonnes live weight) - Countries without production in the period are not included

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Denmark	0	0	0	0	0	0	0	0	0	0	0	0	50	230
Germany	566	15	13	150	100	50	24	28	32	28	34	36	63	19
Greece	1950	1149	1320	1820	0	772	1157	839	703	1114	1267	1197	800	1107
France	456	450	450	450	433	73	70	64	30	30	34	20	20	41
FR92	10	10	25	37	25	12	3	0	0	0	0	0	0	:
FR94	30	30	20	10	5	0	0	15	15	15	15	11	5	:
Italy	69342	82666	79328	74177	85285	112285	90371	90818	100922	103765	107869	106812	45166	18381
Netherl.	0	0	0	0	0	12	25	25	25	:	:	:	:	75
Portugal	193	305	901	600	1119	690	747	912	608	767	460	781	257	955
Finland	13181	15198	14673	13698	13319	13923	14707	13007	13269	12770	13279	13190	12160	10435
UK	0	0	1	1	1	4	4	0	0	0	0	0	0	:
EU15	**85688**	**99783**	**96686**	**90896**	**100257**	**127809**	**107105**	**105693**	**115589**	**118474**	**122943**	**122036**	**58516**	**:**
Poland	200	300	550	300	:	:	:	:	:	:	:	:	:	:
Malta	3	0	0	0	0	0	0	0	0	0	0	0	0	:
EU25	**:**	**:**	**:**	**91196**	**100257**	**127809**	**107105**	**105693**	**115589**	**118474**	**122943**	**122036**	**58516**	**:**
Iceland	93	282	394	561	550	850	854	1114	1312	1110	1211	1156	1558	:

Source: Eurostat database, 1 March 2005

Brackish water aquaculture in EU27 + EFTA (1000 euro) - Countries without production in the period are not included

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Denmark	0	0	0	0	0	0	0	0	0	0	0	0	174
Germany	1791	49	53	504	338	174	62	60	68	68	154	170	446
Greece	22793	16366	17439	15402	0	3708	4895	3523	3110	3956	4308	5062	3494
France	3088	6388	8298	8298	8390	791	886	786	417	422	450	299	300
FR92	65	46	119	195	121	59	19	0	0	0	0	0	0
FR94	204	218	139	81	42	0	0	93	94	99	114	68	32
Italy	104614	118887	108488	89712	132503	158038	134304	137308	158720	141756	228411	189655	150245
Netherl.	0	0	0	0	0	83	193	216	219	:	:	:	:
Portugal	797	1152	4455	1171	2158	1362	1715	3045	1310	1729	1215	2059	649
Finland	51893	60857	52685	43851	47358	42684	38198	33459	36910	36285	54084	37040	31598
UK	0	0	3	3	3	13	11	0	0	0	0	0	0
EU15	**184977**	**203699**	**191422**	**158942**	**190750**	**206852**	**180265**	**178397**	**200754**	**184216**	**288622**	**234284**	**186906**
Poland	393	629	1483	769	:	:	:	:	:	:	:	:	:
Malta	14	0	0	0	0	0	0	0	0	0	0	0	0
Iceland	354	1523	2038	2343	2271	2815	3502	3769	4696	4469	5798	5737	7405

Source: Eurostat database, 1 March 2005

Annex 5

FIFG implementation NUTS2 1994-1999

Each year since the programmes have been set in motion, the management authorities have been sending the Commission implementation reports, i.e. information on the actual execution of each project, in a strictly standardised form.

For each country, the data are grouped by area of assistance and, within each area, by measure, as well as by administrative unit (level II of the Nomenclature of statistical territorial units or NUTS 2).[1]

Some projects are not actually sited in a particular region (e.g. generic promotion campaigns and technical assistance relating to the programme as a whole). In such cases, the corresponding expenditure is shown against the capital of the country (since that is where the beneficiary has its address) or the country or region, without any further details.

The implementation reports shown here are in French and give information on NUTS 2 on: area of assistance ('Domaine'), the region's share of the EU aid given to the member state ('Répartition Aide UE'), total costs in million € ('Côut total M€'), the national financial aid in million € ('Aide État membre M€'), EU financial aid in million € ('Aide UE M€') and finally the number of projects ('Nombre de projects').

The source of the information is DG Fish's website on community structural assistance in the fisheries and aquaculture sector (1994-99):

http://europa.eu.int/comm/fisheries/structures/index_en.htm

The reports are shown in the following order:

Austria
Belgium
Finland
France
Germany
Greece
Italy
Luxemburg
Netherlands
Portugal
Spain
Sweden
United Kingdom

There are no regional reports on Denmark and Ireland.

[1] There has been changes with regards to the NUTS regions in certain countries since these reports were drafted. An overview of the changes can be found on the following website: http://europa.eu.int/comm/eurostat/ramon/nuts/changes_1999_en.html (3 March 2005)

Österreich

Région. Code NUTS II		Domaine	Répartition Aide UE	Coût total M€	Aide État membre M€	Aide UE M€	Nombre de projets
AT12	NIEDEROESTERREICH						
		3		2,16	0,51	0,24	57
		6		1,50	0,35	0,20	21
		Total	**24,4%**	**3,66**	**0,85**	**0,44**	**78**
AT13	WIEN						
		6		1,50	0,32	0,13	1
		7		0,16	0,03	0,01	1
		Total	**8,2%**	**1,66**	**0,35**	**0,15**	**2**
AT21	KAERNTEN						
		3		2,20	0,51	0,30	17
		6		0,91	0,18	0,12	6
		7		0,01	0,00	0,00	2
		Total	**23,5%**	**3,11**	**0,69**	**0,42**	**25**
AT22	STEIERMARK						
		3		3,31	0,77	0,36	98
		6		0,77	0,18	0,08	33
		7		0,06	0,01	0,01	2
		Total	**24,9%**	**4,13**	**0,96**	**0,45**	**133**
AT31	OBEROESTERREICH						
		3		1,06	0,24	0,11	30
		6		0,83	0,19	0,10	11
		7		0,02	0,00	0,00	1
		Total	**11,9%**	**1,90**	**0,44**	**0,21**	**42**
AT32	SALZBURG						
		3		0,12	0,03	0,01	5
		6		0,04	0,01	0,01	2
		Total	**1,1%**	**0,16**	**0,04**	**0,02**	**7**
AT33	TIROL						
		3		0,32	0,07	0,03	10
		6		0,10	0,02	0,01	7
		Total	**2,7%**	**0,42**	**0,10**	**0,05**	**17**
AT34	VORARLBERG						
		3		0,26	0,07	0,03	31
		6		0,27	0,07	0,03	22
		7		0,00	0,00	0,00	4
		Total	**3,4%**	**0,54**	**0,13**	**0,06**	**57**
Total		**100,0%**		**15,58**	**3,56**	**1,80**	**361**

Belgique-België						
Région. Code NUTS II	Domaine	Répartition Aide UE	Coût total M€	Aide État membre M€	Aide UE M€	Nombre de projets
BE1	REG.BRUXELLES-CAP./BRUSSEL HFDST. GEW.					
	7		2,44	0,71	1,13	5
	Total	**6,6%**	**2,44**	**0,71**	**1,13**	**5**
BE2	VLAAMS GEWEST					
	7		0,32	0,16	0,16	1
	Total	**0,9%**	**0,32**	**0,16**	**0,16**	**1**
BE21	ANTWERPEN					
	2		0,07	0,01	0,01	1
	3		0,34	0,04	0,09	3
	6		4,34	0,27	0,71	7
	Total	**4,7%**	**4,75**	**0,32**	**0,81**	**11**
BE22	LIMBURG (B)					
	6		2,58	0,16	0,43	3
	Total	**2,5%**	**2,58**	**0,16**	**0,43**	**3**
BE23	OOST-VLAANDEREN					
	6		2,80	0,18	0,50	7
	8		0,15	0,05	0,10	1
	Total	**3,5%**	**2,96**	**0,23**	**0,60**	**8**
BE25	WEST-VLAANDEREN					
	1		4,06	2,03	2,03	11
	2		46,82	7,68	7,85	89
	4		0,06	0,04	0,02	2
	5		3,57	0,26	0,73	16
	6		14,48	0,93	2,65	25
	Total	**77,2%**	**69,00**	**10,93**	**13,29**	**143**
BE3	REGION WALLONNE					
	7		0,01	0,01	0,00	1
	Total	**0,0%**	**0,01**	**0,01**	**0,00**	**1**
BE32	HAINAUT					
	6		1,62	0,29	0,34	2
	Total	**2,0%**	**1,62**	**0,29**	**0,34**	**2**
BE33	LIEGE					
	3		0,73	0,13	0,26	2
	6		0,03	0,00	0,01	1
	Total	**1,6%**	**0,76**	**0,13**	**0,27**	**3**
BE34	LUXEMBOURG (B)					
	3		0,09	0,01	0,02	2
	Total	**0,1%**	**0,09**	**0,01**	**0,02**	**2**

Belgique-België							
Région. Code NUTS II		Domaine	Répartition Aide UE	Coût total M€	Aide État membre M€	Aide UE M€	Nombre de projets
BE35	NAMUR						
		6		0,53	0,07	0,16	1
		Total	0,9%	0,53	0,07	0,16	1
Total		100,0%		85,04	13,02	17,20	180

Suomi-Finland							
Région. Code NUTS II		Domaine	Répartition Aide UE	Coût total M€	Aide État membre M€	Aide UE M€	Nombre de projets
FI11	UUSIMAA						
		2		0,46	0,07	0,10	40
		3		0,67	0,11	0,18	15
		4		0,05	0,03	0,03	1
		5		0,11	0,05	0,05	1
		6		5,53	0,73	1,44	74
		7		1,90	0,90	0,93	52
		8		0,52	0,28	0,24	18
		Total	**13,3%**	**9,25**	**2,17**	**2,98**	**201**
FI12	ETELAE-SUOMI						
		1		1,71	0,85	0,85	15
		2		2,10	0,24	0,52	147
		3		1,96	0,23	0,51	69
		4		0,42	0,17	0,19	21
		5		2,11	0,97	1,03	18
		6		14,55	1,75	3,68	256
		7		1,07	0,47	0,46	45
		8		0,05	0,02	0,03	6
		Total	**32,6%**	**23,97**	**4,70**	**7,27**	**577**
FI13	ITAE-SUOMI						
		2		0,45	0,10	0,10	41
		3		1,95	0,39	0,45	49
		5		1,15	0,59	0,55	21
		6		4,86	0,84	1,16	125
		7		0,26	0,11	0,12	24
		8		0,10	0,04	0,04	7
		Total	**10,8%**	**8,76**	**2,07**	**2,41**	**267**
FI14	VAELI-SUOMI						
		1		1,63	0,82	0,82	13
		2		5,03	0,50	1,12	71
		3		1,70	0,26	0,42	49
		4		0,23	0,11	0,11	3
		5		1,43	0,67	0,72	22
		6		4,51	0,63	1,07	117
		7		1,61	0,80	0,77	57
		8		0,15	0,05	0,06	8
		Total	**22,8%**	**16,28**	**3,84**	**5,09**	**340**

Suomi-Finland						
Région. Code NUTS II	Domaine	Répartition Aide UE	Coût total M€	Aide État membre M€	Aide UE M€	Nombre de projets
FI15	POHJOIS-SUOMI					
	1		0,45	0,23	0,23	4
	2		0,79	0,08	0,23	56
	3		0,64	0,16	0,14	21
	4		0,07	0,04	0,02	2
	5		1,05	0,50	0,54	23
	6		1,98	0,35	0,58	102
	7		0,15	0,04	0,06	12
	8		0,05	0,02	0,02	4
	Total	**8,1%**	**5,17**	**1,42**	**1,80**	**224**
FI2	AHVENANMAA/AALAND					
	1		0,47	0,24	0,24	7
	2		1,80	0,22	0,48	115
	3		3,41	0,42	0,91	37
	4		0,05	0,02	0,02	6
	5		0,60	0,31	0,26	16
	6		2,85	0,37	0,77	45
	7		0,06	0,03	0,03	11
	8		0,10	0,05	0,04	9
	Total	**12,3%**	**9,33**	**1,65**	**2,74**	**246**
Total		**100,0%**	**72,77**	**15,85**	**22,29**	**1.855**

France						
Région. Code NUTS II	Domaine	Répartition Aide UE	Coût total M€	Aide État membre M€	Aide UE M€	Nombre de projets
FR	FRANCE					
	8		0,02		0,02	1
	Total	**0,0%**	**0,02**		**0,02**	**1**
FR1	ILE DE FRANCE					
	3		0,13	0,02	0,11	2
	6		1,43	0,72	0,72	1
	Total	**0,7%**	**1,57**	**0,74**	**0,83**	**3**
FR10	ILE-DE-FRANCE					
	2		0,03	0,01	0,02	1
	4		0,43	0,14	0,29	2
	5		1,17	0,57	0,60	3
	6		2,72	0,32	0,42	2
	7		17,77	13,48	8,29	36
	8		9,47	4,04	4,02	7
	9		1,47	0,74	0,74	10
	Total	**11,9%**	**33,06**	**19,29**	**14,38**	**61**
FR22	PICARDIE					
	1		0,01	0,01	0,01	1
	Total	**0,0%**	**0,01**	**0,01**	**0,01**	**1**
FR23	HAUTE-NORMANDIE					
	1		0,19	0,08	0,11	11
	2		7,99	0,79	2,10	52
	5		0,04	0,01	0,00	1
	6		10,86	0,74	1,89	12
	Total	**3,4%**	**19,07**	**1,63**	**4,10**	**76**
FR24	CENTRE					
	3		1,05	0,16	0,24	5
	6		13,59	0,02	0,03	2
	8		0,07	0,04	0,03	1
	Total	**0,2%**	**14,71**	**0,23**	**0,30**	**8**
FR25	BASSE-NORMANDIE					
	1		3,04	1,48	1,57	76
	2		3,37	0,50	0,67	16
	3		6,18	0,44	1,12	56
	6		18,98	1,65	3,34	23
	Total	**5,5%**	**31,58**	**4,07**	**6,70**	**171**

France						
Région. Code NUTS II	Domaine	Répartition Aide UE	Coût total M€	Aide État membre M€	Aide UE M€	Nombre de projets
FR30	NORD-PAS-DE-CALAIS					
	1		1,95	0,96	0,99	27
	2		12,30	1,67	2,23	60
	3		2,10	0,24	0,33	3
	5		11,34	2,22	1,63	5
	6		39,24	5,46	6,23	38
	Total	**9,4%**	**66,92**	**10,56**	**11,41**	**133**
FR41	LORRAINE					
	3		1,16	0,21	0,29	3
	6		0,85	0,25	0,17	1
	Total	**0,4%**	**2,01**	**0,46**	**0,46**	**4**
FR42	ALSACE					
	6		0,47	0,03	0,09	1
	Total	**0,1%**	**0,47**	**0,03**	**0,09**	**1**
FR43	FRANCHE-COMTE					
	6		0,04	0,01	0,01	1
	Total	**0,0%**	**0,04**	**0,01**	**0,01**	**1**
FR5	OUEST					
	1		1,04	0,52	0,52	29
	2		0,85	0,15	0,15	1
	Total	**0,6%**	**1,89**	**0,67**	**0,67**	**30**
FR51	PAYS DE LA LOIRE					
	1		6,48	2,78	3,70	155
	2		23,30	4,72	5,23	249
	3		9,32	2,25	1,81	260
	5		2,38	0,72	0,54	21
	6		17,93	2,57	3,25	41
	8		0,29	0,04	0,12	2
	Total	**12,1%**	**59,70**	**13,08**	**14,65**	**728**
FR52	BRETAGNE					
	1		14,03	7,04	7,00	265
	2		55,46	9,20	13,21	459
	3		19,15	3,02	3,35	204
	5		0,82	0,19	0,10	5
	6		67,99	10,14	12,49	118
	Total	**29,8%**	**157,45**	**29,59**	**36,15**	**1.051**

France						
Région. Code NUTS II	Domaine	Répartition Aide UE	Coût total M€	Aide État membre M€	Aide UE M€	Nombre de projets
FR53	POITOU-CHARENTES					
	1		1,49	0,62	0,87	37
	2		1,06	0,17	0,13	3
	3		12,78	1,80	2,43	333
	5		2,66	0,70	0,33	5
	6		5,00	1,35	0,75	28
	7		0,07	0,03	0,03	3
	Total	**3,8%**	**23,06**	**4,67**	**4,56**	**409**
FR61	AQUITAINE					
	1		4,08	1,88	2,57	69
	2		3,26	0,57	0,69	37
	3		2,32	0,48	0,48	69
	5		0,11	0,04	0,01	2
	6		3,80	0,65	0,65	17
	8		0,73	0,07	0,29	1
	Total	**3,9%**	**14,31**	**3,70**	**4,68**	**195**
FR62	MIDI-PYRENEES					
	2		0,34	0,07	0,07	4
	3		1,81	0,23	0,45	1
	Total	**0,4%**	**2,15**	**0,30**	**0,52**	**5**
FR71	RHONE-ALPES					
	3		0,85	0,11	0,22	8
	6		3,86	0,21	0,77	6
	Total	**0,8%**	**4,71**	**0,32**	**0,99**	**14**
FR81	LANGUEDOC-ROUSSILLON					
	1		4,03	2,09	1,94	57
	2		19,98	2,91	3,61	164
	3		5,91	1,20	1,17	67
	5		0,17	0,06	0,02	2
	6		3,54	0,83	0,51	11
	Total	**6,0%**	**33,64**	**7,10**	**7,25**	**301**
FR82	PROVENCE-ALPES-COTE D'AZUR					
	1		3,19	1,56	1,63	99
	2		2,13	0,43	0,38	14
	3		0,87	0,16	0,14	4
	6		4,12	0,66	0,87	12
	7		0,03	0,02	0,01	1
	Total	**2,5%**	**10,34**	**2,82**	**3,02**	**130**

France							
Région. Code NUTS II		Domaine	Répartition Aide UE	Coût total M€	Aide État membre M€	Aide UE M€	Nombre de projets
FR83	CORSE						
		1		0,18	0,09	0,09	8
		2		0,69	0,17	0,12	4
		3		2,93	0,66	1,05	8
		5		0,97	0,32	0,62	5
		6		0,23	0,02	0,12	4
		8		0,04	0,01	0,03	2
		Total	**1,7%**	**5,05**	**1,26**	**2,03**	**31**
FR9	DEPARTEMENTS D'OUTRE-MER						
		2		0,14	0,04	0,10	3
		Total	**0,1%**	**0,14**	**0,04**	**0,10**	**3**
FR91	GUADELOUPE						
		1		0,06	0,02	0,05	1
		Total	**0,0%**	**0,06**	**0,02**	**0,05**	**1**
FR92	MARTINIQUE						
		1		0,05	0,01	0,04	1
		3		1,61	0,10	0,95	4
		5		5,45	0,59	1,19	4
		6		0,04	0,01	0,05	2
		8		0,13	0,04	0,09	3
		Total	**1,9%**	**7,28**	**0,75**	**2,30**	**14**
FR93	GUYANE						
		2		0,72	0,07	0,52	18
		3		0,34	0,11	0,11	4
		5		0,44	0,05	0,20	2
		6		4,10	1,18	3,00	15
		8		0,46	0,23	0,19	3
		Total	**3,3%**	**6,07**	**1,64**	**4,02**	**42**
FR94	REUNION						
		2		1,31	0,28	0,43	43
		3		1,92	0,91	1,08	26
		5		0,28	0,07	0,14	1
		6		0,31	0,07	0,15	3
		8			0,02	0,06	3
		Total	**1,5%**	**3,82**	**1,36**	**1,86**	**76**
Total		**100,0%**		**499,13**	**104,33**	**121,15**	**3.490**

Deutschland						
Région. Code NUTS II	Domaine	Répartition Aide UE	Coût total M€	Aide État membre M€	Aide UE M€	Nombre de projets
DE	DEUTSCHLAND					
	7		0,36	0,10	0,13	2
	8		0,06	0,03	0,03	8
	Total	**0,1%**	**0,42**	**0,14**	**0,16**	**10**
DE1	BADEN-WUERTTEMBERG					
	8		0,00	0,00	0,00	1
	Total	**0,0%**	**0,00**	**0,00**	**0,00**	**1**
DE11	STUTTGART					
	3		0,44	0,02	0,13	2
	6		0,15	0,01	0,04	2
	Total	**0,1%**	**0,59**	**0,03**	**0,17**	**4**
DE12	KARLSRUHE					
	6		0,67	0,03	0,18	4
	Total	**0,2%**	**0,67**	**0,03**	**0,18**	**4**
DE13	FREIBURG					
	3		1,97	0,10	0,56	4
	6		0,02	0,00	0,03	1
	Total	**0,5%**	**1,98**	**0,10**	**0,59**	**5**
DE14	TUEBINGEN					
	3		1,40	0,05	0,38	5
	6		1,53	0,07	0,42	1
	Total	**0,7%**	**2,93**	**0,12**	**0,80**	**6**
DE2	BAYERN					
	8		0,02	0,01	0,01	1
	Total	**0,0%**	**0,02**	**0,01**	**0,01**	**1**
DE21	OBERBAYERN					
	3		1,43	0,13	0,43	26
	6		0,95	0,05	0,28	27
	Total	**0,6%**	**2,38**	**0,18**	**0,71**	**53**
DE22	NIEDERBAYERN					
	3		0,18	0,02	0,05	5
	6		6,61	0,33	1,98	5
	Total	**1,7%**	**6,79**	**0,35**	**2,04**	**10**
DE23	OBERPFALZ					
	3		2,32	0,22	0,70	19
	6		1,15	0,06	0,34	12
	Total	**0,9%**	**3,47**	**0,28**	**1,04**	**31**

Deutschland						
Région. Code NUTS II	Domaine	Répartition Aide UE	Coût total M€	Aide État membre M€	Aide UE M€	Nombre de projets
DE24	OBERFRANKEN					
	3		2,23	0,21	0,67	37
	6		0,36	0,02	0,11	6
	Total	**0,7%**	**2,59**	**0,23**	**0,78**	**43**
DE25	MITTELFRANKEN					
	3		1,62	0,16	0,49	21
	6		0,57	0,03	0,17	10
	7		0,01	0,00	0,00	1
	Total	**0,6%**	**2,20**	**0,19**	**0,66**	**32**
DE26	UNTERFRANKEN					
	3		0,73	0,07	0,22	16
	6		1,08	0,06	0,33	8
	Total	**0,5%**	**1,82**	**0,13**	**0,54**	**24**
DE27	SCHWABEN					
	3		0,55	0,05	0,17	17
	6		0,42	0,02	0,12	9
	Total	**0,2%**	**0,97**	**0,08**	**0,29**	**26**
DE3	BERLIN					
	3		0,05	0,01	0,02	1
	Total	**0,0%**	**0,05**	**0,01**	**0,02**	**1**
DE4	BRANDENBURG					
	3		0,02	0,00	0,01	1
	6		0,86	0,13	0,26	18
	8		0,09	0,02	0,07	1
	Total	**0,3%**	**0,97**	**0,15**	**0,33**	**20**
DE5	BREMEN					
	1		0,37	0,19	0,19	2
	2		13,02	1,12	3,26	8
	5		0,94	0,19	0,34	3
	6		39,74	6,19	7,35	50
	7		1,79	0,88	0,89	4
	8		0,05	0,02	0,02	4
	Total	**10,2%**	**55,91**	**8,59**	**12,04**	**71**
DE6	HAMBURG					
	1		0,71	0,38	0,34	5
	6		12,33	0,62	3,70	4
	8		0,02	0,01	0,01	5
	Total	**3,4%**	**13,07**	**1,00**	**4,05**	**14**
DE7	HESSEN					
	7		0,03	0,02	0,02	1
	8		0,00	0,00	0,00	2
	Total	**0,0%**	**0,04**	**0,02**	**0,02**	**3**

Deutschland						
Région. Code NUTS II	Domaine	Répartition Aide UE	Coût total M€	Aide État membre M€	Aide UE M€	Nombre de projets
DE71	DARMSTADT					
	3		0,33	0,02	0,08	9
	Total	**0,1%**	**0,33**	**0,02**	**0,08**	**9**
DE72	GIESSEN					
	3		0,40	0,06	0,10	3
	6		0,04	0,00	0,01	2
	Total	**0,1%**	**0,44**	**0,06**	**0,11**	**5**
DE73	KASSEL					
	3		0,38	0,02	0,10	11
	6		0,98	0,08	0,25	11
	Total	**0,3%**	**1,36**	**0,10**	**0,35**	**22**
DE8	MECKLENBURG-VORPOMMERN					
	1		1,97	0,52	1,45	26
	2		31,02	3,29	14,78	211
	3		0,80	0,08	0,40	6
	4		0,12	0,03	0,09	3
	5		31,58	5,22	22,53	36
	6		57,68	9,08	14,48	73
	7		0,99	0,25	0,58	8
	8		1,57	0,38	0,58	9
	Total	**46,4%**	**125,72**	**18,84**	**54,88**	**372**
DE91	BRAUNSCHWEIG					
	3		0,95	0,05	0,10	1
	6		0,14	0,01	0,03	2
	Total	**0,1%**	**1,08**	**0,06**	**0,14**	**3**
DE92	HANNOVER					
	6		4,55	0,46	0,72	9
	Total	**0,6%**	**4,55**	**0,46**	**0,72**	**9**
DE93	LUENEBURG					
	1		2,38	1,19	1,19	4
	2		8,25	1,07	1,93	47
	5		0,27	0,01	0,08	1
	6		44,59	6,01	6,73	31
	8		0,03	0,01	0,01	2
	Total	**8,4%**	**55,52**	**8,31**	**9,94**	**85**
DE94	WESER-EMS					
	1		0,06	0,03	0,03	3
	2		10,56	1,75	2,17	83
	6		13,51	1,26	2,80	29
	Total	**4,2%**	**24,13**	**3,05**	**5,01**	**115**

Deutschland						
Région. Code NUTS II	Domaine	Répartition Aide UE	Coût total M€	Aide État membre M€	Aide UE M€	Nombre de projets
DEA	NORDRHEIN-WESTFALEN					
	8		0,02	0,01	0,01	4
	Total	**0,0%**	**0,02**	**0,01**	**0,01**	**4**
DEA1	DUESSELDORF					
	3		0,09	0,00	0,03	3
	6		0,38	0,02	0,11	3
	Total	**0,1%**	**0,47**	**0,02**	**0,14**	**6**
DEA2	KOELN					
	3		0,47	0,02	0,15	14
	6		6,76	0,45	2,02	28
	Total	**1,8%**	**7,23**	**0,48**	**2,16**	**42**
DEA3	MUENSTER					
	3		0,12	0,01	0,04	1
	6		0,05	0,00	0,02	1
	7		0,01	0,00	0,00	1
	Total	**0,0%**	**0,18**	**0,01**	**0,06**	**3**
DEA4	DETMOLD					
	3		0,72	0,04	0,22	4
	6		0,27	0,01	0,08	9
	Total	**0,3%**	**0,99**	**0,05**	**0,30**	**13**
DEA5	ARNSBERG					
	3		0,92	0,05	0,28	12
	6		1,19	0,06	0,36	11
	Total	**0,5%**	**2,11**	**0,11**	**0,63**	**23**
DEB	RHEINLAND-PFALZ					
	8		0,00	0,00	0,00	4
	Total	**0,0%**	**0,00**	**0,00**	**0,00**	**4**
DEB1	KOBLENZ					
	3		0,62	0,03	0,19	3
	6		0,09	0,00	0,03	6
	Total	**0,2%**	**0,71**	**0,04**	**0,21**	**9**
DEB2	TRIER					
	6		0,32	0,02	0,10	10
	Total	**0,1%**	**0,32**	**0,02**	**0,10**	**10**
DED	SACHSEN					
	3		0,01	0,00	0,00	1
	6		3,31	0,36	1,12	27
	7		0,65	0,07	0,21	6
	Total	**1,1%**	**3,96**	**0,43**	**1,33**	**34**

Deutschland						
Région. Code NUTS II	Domaine	Répartition Aide UE	Coût total M€	Aide État membre M€	Aide UE M€	Nombre de projets
DEE3	MAGDEBURG					
	3		0,70	0,11	0,26	3
	6		0,98	0,05	0,39	11
	Total	**0,6%**	**1,68**	**0,16**	**0,66**	**14**
DEF	SCHLESWIG-HOLSTEIN					
	1		0,61	0,31	0,31	7
	2		21,84	3,24	5,22	220
	3		1,36	0,11	0,59	3
	5		2,10	0,66	0,79	4
	6		27,19	1,70	6,07	38
	8		1,03	0,32	0,19	11
	Total	**11,1%**	**54,13**	**6,33**	**13,15**	**283**
DEG	THUERINGEN					
	3		3,43	0,45	1,75	23
	6		7,12	1,10	2,10	22
	Total	**3,2%**	**10,55**	**1,55**	**3,84**	**45**
Total	**100,0%**		**392,35**	**51,70**	**118,24**	**1.469**

Ellas

Région. Code NUTS II		Domaine	Répartition Aide UE	Coût total M€	Aide État membre M€	Aide UE M€	Nombre de projets
GR	ELLADA						
		7		1,85	0,30	0,92	2
		8		1,72	0,57	1,98	1
		Total	**2,8%**	**3,57**	**0,87**	**2,91**	**3**
GR11	ANATOLIKI MAKEDONIA, THRAKI						
		1		6,52	1,64	4,88	98
		2		1,92	0,27	0,56	78
		3		0,31	0,04	0,12	2
		4		0,39	0,13	0,64	1
		6		2,79	0,33	1,18	9
		Total	**7,0%**	**11,93**	**2,40**	**7,39**	**188**
GR12	KENTRIKI MAKEDONIA						
		1		8,52	2,16	6,36	160
		2		6,47	0,72	2,11	128
		3		8,38	0,99	2,96	32
		6		9,68	1,26	3,95	15
		Total	**14,7%**	**33,04**	**5,13**	**15,38**	**335**
GR13	DYTIKI MAKEDONIA						
		5		0,17	0,03	0,09	1
		Total	**0,1%**	**0,17**	**0,03**	**0,09**	**1**
GR14	THESSALIA						
		1		3,36	0,85	2,51	74
		2		1,34	0,19	0,40	39
		3		0,16	0,02	0,05	1
		6		3,23	0,42	1,32	5
		Total	**4,1%**	**8,08**	**1,48**	**4,28**	**119**
GR21	IPEIROS						
		1		0,42	0,10	0,31	61
		2		0,24	0,06	0,05	22
		3		12,85	1,46	4,38	24
		6		3,59	0,47	1,49	9
		Total	**5,9%**	**17,10**	**2,09**	**6,23**	**116**
GR22	IONIA NISIA						
		1		2,67	0,71	1,95	98
		2		1,38	0,22	0,38	65
		3		3,45	0,40	1,20	7
		5		0,08	0,01	0,04	1
		6		3,12	0,41	1,26	3
		Total	**4,6%**	**10,69**	**1,76**	**4,83**	**174**

Ellas

Région. Code NUTS II	Domaine	Répartition Aide UE	Coût total M€	Aide État membre M€	Aide UE M€	Nombre de projets
GR23	DYTIKI ELLADA					
	1		2,21	0,57	1,64	84
	2		0,48	0,08	0,13	18
	3		4,88	0,55	1,66	15
	6		2,72	0,28	1,14	7
	Total	**4,4%**	**10,30**	**1,49**	**4,56**	**124**
GR24	STEREA ELLADA					
	1		2,75	0,69	2,06	71
	2		3,01	0,46	0,87	56
	3		28,66	3,20	9,77	57
	6		14,43	1,88	5,89	25
	Total	**17,7%**	**48,85**	**6,22**	**18,58**	**209**
GR25	PELOPONNISOS					
	1		2,69	0,65	2,01	85
	2		2,03	0,26	0,62	71
	3		6,80	0,77	2,31	16
	5		0,08	0,01	0,04	1
	6		1,17	0,15	0,47	2
	Total	**5,2%**	**12,78**	**1,85**	**5,46**	**175**
GR3	ATTIKI					
	1		13,11	3,15	9,96	169
	2		3,81	0,47	1,18	69
	3		4,11	0,46	1,40	12
	5		0,09	0,02	0,05	1
	6		5,48	0,72	2,22	9
	7		0,13	0,02	0,07	1
	8		0,64	0,21	0,73	2
	Total	**14,9%**	**27,38**	**5,06**	**15,60**	**263**
GR4	NISIA AIGAIOU, KRITI					
	3		0,23	0,03	0,09	1
	Total	**0,1%**	**0,23**	**0,03**	**0,09**	**1**
GR41	VOREIO AIGAIO					
	1		3,86	0,98	2,87	137
	2		1,17	0,20	0,31	87
	3		3,73	0,42	1,27	8
	6		2,22	0,29	0,89	4
	Total	**5,1%**	**10,98**	**1,89**	**5,34**	**236**
GR42	NOTIO AIGAIO					
	1		7,93	2,04	5,85	173
	2		2,45	0,34	0,73	122
	3		6,36	0,76	2,26	17
	6		1,18	0,16	0,51	4
	Total	**8,9%**	**17,92**	**3,30**	**9,35**	**316**

Ellas							
Région. Code NUTS II		Domaine	Répartition Aide UE	Coût total M€	Aide État membre M€	Aide UE M€	Nombre de projets
GR43	KRITI						
		1		4,02	0,97	3,01	86
		2		1,42	0,26	0,36	70
		6		3,32	0,43	1,35	6
		Total	4,5%	8,76	1,66	4,73	162
Total		100,0%		221,78	35,25	104,82	2.422

Italia						
Région. Code NUTS II	Domaine	Répartition Aide UE	Coût total M€	Aide État membre M€	Aide UE M€	Nombre de projets
IT	ITALIA					
	8		92,66	46,33	46,33	12
	Total	**19,4%**	**92,66**	**46,33**	**46,33**	**12**
IT11	PIEMONTE					
	3		0,43	0,11	0,11	1
	6		0,85	0,21	0,21	1
	Total	**0,1%**	**1,28**	**0,32**	**0,32**	**2**
IT13	LIGURIA					
	1		3,32	1,64	1,67	78
	2		0,38	0,04	0,11	3
	3		0,46	0,10	0,30	2
	6		2,96	0,48	0,72	3
	Total	**1,2%**	**7,12**	**2,26**	**2,81**	**86**
IT2	LOMBARDIA					
	3		3,66	0,43	1,30	5
	6		9,85	1,92	2,88	6
	Total	**1,8%**	**13,51**	**2,36**	**4,17**	**11**
IT31	TRENTINO-ALTO ADIGE					
	3		3,45	0,34	1,03	13
	Total	**0,4%**	**3,45**	**0,34**	**1,03**	**13**
IT32	VENETO					
	1		1,75	0,79	0,96	12
	2		3,34	0,52	1,00	28
	3		10,05	1,84	3,36	22
	5		0,58	0,24	0,24	2
	6		23,70	4,58	5,90	33
	8		0,15	0,07	0,07	2
	Total	**4,8%**	**39,56**	**8,04**	**11,53**	**99**
IT33	FRIULI-VENEZIA GIULIA					
	1		1,57	0,75	0,82	32
	2		0,15	0,02	0,05	2
	3		0,23	0,03	0,09	2
	4		0,45	0,23	0,23	1
	6		2,15	0,37	0,53	2
	Total	**0,7%**	**4,55**	**1,38**	**1,72**	**39**

Italia						
Région. Code NUTS II	Domaine	Répartition Aide UE	Coût total M€	Aide État membre M€	Aide UE M€	Nombre de projets
IT4	EMILIA-ROMAGNA					
	1		6,02	2,98	3,04	117
	2		2,91	0,29	0,87	24
	3		4,32	0,64	1,15	7
	5		1,69	0,63	0,70	5
	6		12,03	2,70	3,39	18
	Total	**3,8%**	**26,97**	**7,25**	**9,15**	**171**
IT51	TOSCANA					
	1		4,43	2,17	2,26	51
	2		0,88	0,11	0,24	10
	3		3,63	0,36	1,09	4
	5		0,38	0,14	0,14	1
	6		5,42	1,34	1,56	6
	Total	**2,2%**	**14,74**	**4,12**	**5,29**	**72**
IT52	UMBRIA					
	3		0,12	0,01	0,04	1
	Total	**0,0%**	**0,12**	**0,01**	**0,04**	**1**
IT53	MARCHE					
	1		17,07	8,35	8,70	118
	2		7,81	0,88	2,30	67
	3		0,35	0,09	0,09	1
	5		3,84	0,90	1,68	4
	6		11,76	2,98	3,55	17
	Total	**6,8%**	**40,83**	**13,20**	**16,32**	**207**
IT6	LAZIO					
	1		6,03	2,92	2,95	99
	2		1,33	0,20	0,38	14
	3		2,26	0,27	0,81	7
	5		0,72	0,14	0,21	1
	6		3,92	1,11	1,38	7
	7		10,55	5,28	5,28	2
	8		21,75	10,85	10,90	8
	Total	**9,2%**	**46,56**	**20,77**	**21,91**	**138**
IT71	ABRUZZO					
	1		10,48	5,24	5,24	53
	2		5,28	0,61	2,44	46
	5		2,50	0,66	1,07	4
	6		10,39	2,69	5,29	10
	Total	**5,9%**	**28,65**	**9,19**	**14,04**	**113**

Italia							
Région. Code NUTS II		Domaine	Répartition Aide UE	Coût total M€	Aide État membre M€	Aide UE M€	Nombre de projets
IT72	MOLISE						
		1		2,60	1,30	1,30	7
		2		0,50	0,05	0,25	3
		3		2,45	0,42	1,09	3
		6		0,29	0,07	0,15	1
		Total	**1,2%**	**5,84**	**1,84**	**2,79**	**14**
IT8	CAMPANIA						
		1		4,84	2,39	2,45	55
		2		9,33	1,13	4,13	43
		3		2,06	0,20	1,01	3
		6		5,29	1,13	2,25	5
		8		4,12	2,04	2,08	2
		Total	**5,0%**	**25,64**	**6,88**	**11,91**	**108**
IT91	PUGLIA						
		1		22,97	10,56	12,41	172
		2		10,58	1,34	4,90	109
		3		11,37	1,26	5,44	17
		5		0,95	0,47	0,47	2
		6		6,22	1,21	2,42	8
		Total	**10,8%**	**52,08**	**14,84**	**25,65**	**308**
IT92	BASILICATA						
		3		1,85	0,18	0,92	2
		6		1,92	0,58	1,15	1
		Total	**0,9%**	**3,78**	**0,76**	**2,07**	**3**
IT93	CALABRIA						
		1		4,78	2,34	2,43	58
		2		1,34	0,18	0,59	19
		3		1,37	0,14	0,70	2
		5		1,08	0,38	0,38	1
		6		6,33	1,70	3,22	3
		Total	**3,1%**	**14,90**	**4,73**	**7,32**	**83**
ITA	SICILIA						
		1		52,10	23,15	28,95	240
		2		20,99	2,43	9,87	107
		3		4,07	0,38	1,89	7
		5		4,79	1,15	2,31	5
		6		12,44	2,93	5,86	12
		Total	**20,5%**	**94,39**	**30,04**	**48,88**	**371**

Italia							
Région. Code NUTS II		Domaine	Répartition Aide UE	Coût total M€	Aide État membre M€	Aide UE M€	Nombre de projets
ITB	SARDEGNA						
		1		2,30	1,14	1,16	10
		2		0,02	0,00	0,01	1
		3		2,01	0,19	0,95	5
		5		2,30	0,78	0,78	1
		6		4,87	1,12	2,23	5
		Total	**2,2%**	**11,50**	**3,22**	**5,13**	**22**
Total		**100,0%**		**528,13**	**177,90**	**238,41**	**1.873**

Luxembourg						
Région. Code NUTS II	Domaine	Répartition Aide UE	Coût total M€	Aide État membre M€	Aide UE M€	Nombre de projets
LU	LUXEMBOURG (GRAND-DUCHE)					
	3		0,26	0,03	0,08	1
	6		0,03	0,00	0,01	1
	7		0,00	0,00	0,00	1
	Total	100,0%	0,29	0,03	0,09	3
Total	100,0%		0,29	0,03	0,09	3

Nederland						
Région. Code NUTS II		Domaine	Répartition Aide UE	Coût total M€	Aide État membre M€	Aide UE M€	Nombre de projets
NL11	GRONINGEN						
		1		0,85	0,63	0,22	2
		8		0,10	0,01	0,02	1
		Total	**1,4%**	**0,95**	**0,63**	**0,24**	**3**
NL12	FRIESLAND						
		1		0,16	0,09	0,07	1
		Total	**0,4%**	**0,16**	**0,09**	**0,07**	**1**
NL2	OOST-NEDERLAND						
		1		6,98	7,55	7,55	21
		3		2,34	0,35	0,83	3
		6		5,82	6,51	2,89	8
		Total	**66,2%**	**15,13**	**14,41**	**11,28**	**32**
NL32	NOORD-HOLLAND						
		1		5,13	3,29	1,84	15
		6		0,41	0,02	0,10	3
		8		1,95	0,35	0,52	1
		9		0,20	0,10	0,10	6
		Total	**15,1%**	**7,69**	**3,76**	**2,57**	**25**
NL33	ZUID-HOLLAND						
		1		1,58	1,11	0,47	4
		6		1,48	0,07	0,34	3
		7		1,07		0,26	1
		8		0,14	0,07	0,07	3
		9		0,07	0,03	0,03	6
		Total	**6,9%**	**4,34**	**1,28**	**1,17**	**17**
NL34	ZEELAND						
		1		3,39	2,12	1,27	8
		3		0,66	0,07	0,17	1
		6		1,31	0,05	0,27	3
		Total	**10,0%**	**5,36**	**2,24**	**1,71**	**12**
Total		**100,0%**		**33,63**	**22,41**	**17,03**	**90**

Portugal						
Région. Code NUTS II	Domaine	Répartition Aide UE	Coût total M€	Aide État membre M€	Aide UE M€	Nombre de projets
PT11	NORTE					
	1		7,60	1,90	5,70	115
	2		25,67	2,91	14,19	273
	3		1,21	0,13	0,60	8
	5		1,80	0,45	0,90	5
	6		7,05	1,07	3,57	7
	7		0,09	0,02	0,04	1
	8		3,03	0,76	2,27	139
	9		2,88	0,72	2,16	414
	Total	**18,0%**	**49,34**	**7,97**	**29,46**	**962**
PT12	CENTRO (P)					
	1		19,83	4,85	14,99	75
	2		22,83	2,53	11,92	98
	3		2,46	0,38	1,18	10
	5		11,44	1,70	8,16	26
	6		18,50	3,57	9,40	27
	8		0,35	0,09	0,26	10
	9		0,19	0,05	0,14	28
	Total	**28,1%**	**75,60**	**13,16**	**46,05**	**274**
PT13	LISBOA E VALE DO TEJO					
	1		15,24	3,81	11,43	173
	2		14,24	1,82	9,12	149
	3		1,61	0,37	0,94	4
	5		6,11	1,83	3,81	46
	6		12,27	2,16	6,86	20
	7		2,97	0,74	1,68	6
	8		3,17	0,49	2,76	484
	9		1,31	0,33	0,98	188
	Total	**22,9%**	**56,92**	**11,53**	**37,58**	**1.070**
PT14	ALENTEJO					
	1		0,48	0,12	0,36	13
	2		1,37	0,15	0,72	28
	3		0,55	0,19	0,96	2
	5		0,09	0,02	0,04	1
	6		1,31	0,31	1,04	4
	8		0,12	0,03	0,09	2
	9		0,02	0,01	0,02	3
	Total	**2,0%**	**3,92**	**0,82**	**3,22**	**53**

Portugal							
Région. Code NUTS II		Domaine	Répartition Aide UE	Coût total M€	Aide État membre M€	Aide UE M€	Nombre de projets
PT15	ALGARVE						
		1		7,61	1,90	5,71	106
		2		24,48	2,79	14,09	173
		3		3,67	0,67	3,42	9
		4		1,31		1,77	1
		5		4,92	0,64	3,56	12
		6		6,50	1,25	4,29	11
		8		3,32	0,83	2,49	245
		9		1,38	0,35	1,04	198
		Total	**22,2%**	**53,20**	**8,44**	**36,36**	**755**
PT3	MADEIRA						
		1		2,89	0,72	2,17	23
		2		10,13	1,01	5,06	45
		3		1,22	0,30	0,61	1
		5		0,35	0,09	0,18	3
		6		6,54	1,63	3,27	7
		8		0,02	0,00	0,02	1
		Total	**6,9%**	**21,15**	**3,77**	**11,31**	**80**
Total		**100,0%**		**260,13**	**45,68**	**163,98**	**3.194**

España						
Région. Code NUTS II	Domaine	Répartition Aide UE	Coût total M€	Aide État membre M€	Aide UE M€	Nombre de projets
ES	ESPAÑA					
	3		0,27	0,08	0,19	6
	4		3,83	1,05	2,78	36
	5		0,04	0,01	0,03	1
	6		0,24	0,06	0,18	1
	7		27,47	8,00	18,50	518
	8		62,15	15,80	46,34	43
	Total	**6,5%**	**94,00**	**25,00**	**68,02**	**605**
ES11	GALICIA					
	1		204,86	58,32	146,54	385
	2		267,44	28,70	125,71	1.051
	3		63,61	6,94	31,56	860
	4		2,02	0,61	1,41	57
	5		24,30	3,67	13,65	213
	6		222,49	24,74	107,43	503
	7		6,36	1,92	4,44	168
	8		2,89	0,46	2,43	35
	9		0,42	0,10	0,31	73
	Total	**41,3%**	**794,38**	**125,45**	**433,49**	**3.345**
ES12	PRINCIPADO DE ASTURIAS					
	1		5,18	1,91	3,26	61
	2		46,28	6,44	21,07	285
	3		0,21	0,03	0,10	9
	4		0,07	0,04	0,04	2
	5		3,00	0,79	2,02	45
	6		20,60	2,96	10,15	125
	7		0,01	0,00	0,00	3
	9		0,03	0,01	0,02	5
	Total	**3,5%**	**75,37**	**12,17**	**36,66**	**535**
ES13	CANTABRIA					
	1		8,10	2,47	5,64	35
	2		54,60	13,04	19,50	142
	3		2,32	0,24	1,15	4
	5		0,24	0,02	0,12	1
	6		52,39	17,57	13,86	90
	9		0,10	0,03	0,08	18
	Total	**3,8%**	**117,76**	**33,37**	**40,35**	**290**

España						
Région. Code NUTS II	Domaine	Répartition Aide UE	Coût total M€	Aide État membre M€	Aide UE M€	Nombre de projets
ES21	PAIS VASCO					
	1		63,08	31,54	31,54	123
	2		102,04	9,24	28,48	698
	3		0,86	0,17	0,23	4
	5		19,39	8,27	7,51	31
	6		34,21	1,87	7,18	67
	7		0,00	0,00	0,00	2
	8		0,23	0,05	0,07	2
	9		0,41	0,21	0,21	90
	Total	**7,2%**	**220,22**	**51,35**	**75,22**	**1.017**
ES22	COMUNIDAD FORAL DE NAVARRA					
	3		0,82	0,04	0,16	3
	6		3,17	0,28	0,49	9
	Total	**0,1%**	**3,99**	**0,32**	**0,65**	**12**
ES23	LA RIOJA					
	3		1,04	0,05	0,28	3
	6		0,73	0,04	0,17	3
	7		0,00	0,00	0,00	1
	Total	**0,0%**	**1,77**	**0,09**	**0,44**	**7**
ES24	ARAGON					
	3		1,54	0,08	0,46	8
	6		2,76	0,12	0,53	5
	Total	**0,1%**	**4,31**	**0,19**	**0,99**	**13**
ES3	COMUNIDAD DE MADRID					
	6		22,02	1,10	4,46	22
	7		0,01	0,00	0,00	3
	8		0,22	0,07	0,15	2
	Total	**0,4%**	**22,24**	**1,17**	**4,61**	**27**
ES41	CASTILLA Y LEON					
	3		5,88	0,10	3,09	14
	6		14,72	0,71	5,20	14
	7		0,04	0,02	0,02	6
	Total	**0,8%**	**20,64**	**0,83**	**8,31**	**34**
ES42	CASTILLA-LA MANCHA					
	3		1,62	0,08	0,77	21
	6		7,21	0,34	3,41	5
	Total	**0,4%**	**8,83**	**0,42**	**4,18**	**26**
ES43	EXTREMADURA					
	3		0,58	0,07	0,27	8
	6		2,13	0,14	1,03	6
	8		0,33	0,10	0,23	2
	Total	**0,1%**	**3,04**	**0,31**	**1,53**	**16**

España						
Région. Code NUTS II	Domaine	Répartition Aide UE	Coût total M€	Aide État membre M€	Aide UE M€	Nombre de projets
ES51	CATALUÑA					
	1		10,32	5,16	5,16	40
	2		32,55	1,93	8,89	321
	3		6,78	1,56	2,44	34
	4		1,66	0,79	0,81	16
	5		0,62	0,31	0,21	4
	6		28,47	2,60	6,22	99
	7		0,09	0,05	0,05	7
	8		1,37	0,60	0,64	13
	9		0,38	0,20	0,18	51
	Total	**2,3%**	**82,24**	**13,20**	**24,60**	**585**
ES52	COMUNIDAD VALENCIANA					
	1		17,30	5,82	11,49	49
	2		64,27	8,20	29,29	565
	3		4,37	0,55	2,04	16
	4		5,23	1,43	3,80	24
	5		5,50	1,46	2,71	27
	6		13,35	1,55	4,72	46
	7		0,00	0,00	0,00	2
	9		0,22	0,06	0,17	41
	Total	**5,2%**	**110,24**	**19,05**	**54,23**	**770**
ES53	ISLAS BALEARES					
	1		2,95	1,48	1,48	58
	2		8,16	0,66	2,54	170
	3		0,30	0,02	0,09	4
	4		0,19	0,09	0,09	1
	6		1,72	0,19	0,30	4
	9		0,03	0,02	0,02	4
	Total	**0,4%**	**13,36**	**2,46**	**4,51**	**241**
ES61	ANDALUCIA					
	1		113,72	31,14	82,58	208
	2		157,90	14,96	72,74	929
	3		7,44	0,38	3,70	25
	4		2,40	0,60	1,80	20
	5		17,79	4,08	11,68	77
	6		37,65	5,53	19,91	166
	7		0,04	0,00	0,02	3
	8		0,29	0,11	0,18	4
	9		0,43	0,11	0,32	71
	Total	**18,4%**	**337,66**	**56,91**	**192,93**	**1.503**

España						
Région. Code NUTS II	Domaine	Répartition Aide UE	Coût total M€	Aide État membre M€	Aide UE M€	Nombre de projets
ES62	REGION DE MURCIA					
	1		1,50	0,45	1,05	7
	2		11,33	0,75	5,58	134
	3		7,82	1,05	3,14	5
	4		1,68	0,43	1,16	20
	5		1,67	0,21	0,75	3
	6		10,93	1,07	4,95	18
	9		0,05	0,01	0,04	18
	Total	**1,6%**	**34,98**	**3,97**	**16,67**	**205**
ES63	CEUTA Y MELILLA					
	1		10,16	4,83	5,33	30
	2		26,91	3,31	12,20	32
	5		0,08	0,02	0,06	1
	6		0,54	0,14	0,41	1
	Total	**1,7%**	**37,69**	**8,30**	**18,00**	**64**
ES7	CANARIAS					
	1		32,07	9,83	22,24	58
	2		38,02	3,36	19,50	112
	3		3,60	0,23	1,80	8
	4		0,65	0,16	0,49	3
	5		11,38	2,86	7,10	13
	6		28,60	4,59	14,09	46
	8		0,02	0,01	0,01	1
	9		0,06	0,02	0,05	12
	Total	**6,2%**	**114,40**	**21,05**	**65,27**	**253**
Total	**100,0%**		**2.097,11**	**375,62**	**1.050,68**	**9.548**

Sverige						
Région. Code NUTS II	Domaine	Répartition Aide UE	Coût total M€	Aide État membre M€	Aide UE M€	Nombre de projets
SE	SVERIGE					
	1		2,79	1,40	1,40	39
	2		55,09	2,80	9,40	307
	3		3,18	0,31	0,95	75
	4		3,15	1,56	1,57	10
	5		6,63	1,61	1,97	52
	6		25,44	2,49	7,30	89
	7		2,62	1,17	1,26	50
	8		3,65	1,55	1,80	85
	Total	**74,1%**	**102,54**	**12,89**	**25,64**	**707**
SE01	STOCKHOLM					
	1		0,01	0,00	0,00	1
	2		0,35	0,02	0,07	4
	3		0,29	0,02	0,09	5
	6		2,27	0,20	0,60	6
	7		0,32	0,03	0,10	8
	8		0,08	0,04	0,04	1
	Total	**2,6%**	**3,32**	**0,32**	**0,91**	**25**
SE02	OESTRA MELLANSVERIGE					
	1		0,08	0,04	0,04	4
	2		0,11	0,01	0,03	14
	3		0,52	0,04	0,15	14
	5		0,12	0,01	0,04	16
	6		0,22	0,02	0,06	9
	7		0,01	0,01	0,01	1
	8		0,06	0,01	0,02	3
	Total	**1,0%**	**1,12**	**0,13**	**0,34**	**61**
SE03	SMAALAND MED OEARNA					
	2		0,01	0,00	0,00	1
	Total	**0,0%**	**0,01**	**0,00**	**0,00**	**1**
SE04	SYDSVERIGE					
	1		1,32	0,66	0,66	29
	2		3,00	0,26	0,82	76
	3		1,64	0,13	0,49	19
	4		0,30	0,15	0,15	2
	5		1,29	0,71	0,39	25
	6		5,47	0,45	1,38	57
	7		0,02	0,00	0,00	1
	8		0,09	0,01	0,03	3
	Total	**11,3%**	**13,13**	**2,39**	**3,92**	**212**

Sverige						
Région. Code NUTS II	Domaine	Répartition Aide UE	Coût total M€	Aide État membre M€	Aide UE M€	Nombre de projets
SE05	VAESTSVERIGE					
	2		0,00	0,00	0,00	1
	3		0,08	0,01	0,02	4
	Total	**0,1%**	**0,08**	**0,01**	**0,02**	**5**
SE06	NORRA MELLANSVERIGE					
	1		0,01	0,01	0,01	2
	2		0,15	0,01	0,03	6
	3		1,38	0,14	0,53	27
	6		1,25	0,11	0,35	27
	8		0,01	0,00	0,00	4
	Total	**2,7%**	**2,80**	**0,26**	**0,92**	**66**
SE07	MELLERSTA NORRLAND					
	2		0,03	0,00	0,01	5
	3		1,75	0,17	0,79	32
	4		0,03	0,02	0,02	1
	6		0,78	0,08	0,24	15
	7		0,01	0,01	0,01	1
	8		0,17	0,06	0,11	7
	Total	**3,4%**	**2,78**	**0,33**	**1,18**	**61**
SE08	OEVRE NORRLAND					
	1		0,02	0,01	0,01	2
	2		0,29	0,03	0,11	21
	3		2,45	0,25	1,01	15
	5		0,04	0,01	0,01	2
	6		0,45	0,05	0,18	18
	8		0,65	0,27	0,34	7
	Total	**4,8%**	**3,91**	**0,62**	**1,65**	**65**
Total		**100,0%**	**129,68**	**16,95**	**34,59**	**1.203**

United Kingdom						
Région. Code NUTS II	Domaine	Répartition Aide UE	Coût total M€	Aide État membre M€	Aide UE M€	Nombre de projets
UK11	CLEVELAND, DURHAM					
	1		0,39	0,22	0,17	9
	6		0,48	0,02	0,10	1
	Total	**0,3%**	**0,87**	**0,24**	**0,27**	**10**
UK12	CUMBRIA					
	1		1,52	0,78	0,74	12
	2		0,34	0,02	0,09	7
	5		0,62	0,04	0,17	2
	6		3,11	0,64	0,62	1
	Total	**1,7%**	**5,60**	**1,49**	**1,61**	**22**
UK13	NORTHUMBERLAND,TYNE AND WEAR					
	1		3,53	1,93	1,60	46
	2		0,10	0,01	0,03	6
	5		0,08	0,00	0,02	1
	6		0,21	0,01	0,04	2
	Total	**1,8%**	**3,93**	**1,95**	**1,69**	**55**
UK21	HUMBERSIDE					
	1		3,42	1,75	1,67	25
	2		0,69	0,03	0,15	39
	5		0,56	0,03	0,14	3
	6		13,83	0,55	2,77	18
	Total	**4,9%**	**18,49**	**2,36**	**4,73**	**85**
UK22	NORTH YORKSHIRE					
	1		2,24	1,25	0,99	27
	2		0,59	0,03	0,15	27
	6		1,23	0,04	0,18	4
	Total	**1,4%**	**4,05**	**1,33**	**1,31**	**58**
UK31	DERBYSHIRE, NOTTINGHAMSHIRE					
	6		0,19	0,01	0,04	1
	Total	**0,0%**	**0,19**	**0,01**	**0,04**	**1**
UK33	LINCOLNSHIRE					
	1		0,26	0,18	0,08	2
	Total	**0,1%**	**0,26**	**0,18**	**0,08**	**2**
UK4	EAST ANGLIA					
	1		4,94	2,52	2,43	31
	6		1,16	0,06	0,23	4
	Total	**2,8%**	**6,11**	**2,58**	**2,66**	**35**
UK52	BERKSHIRE, BUCKINGHAMSHIRE, OXFORDSHIRE					
	2		0,01	0,00	0,00	1
	Total	**0,0%**	**0,01**	**0,00**	**0,00**	**1**

United Kingdom						
Région. Code NUTS II	Domaine	Répartition Aide UE	Coût total M€	Aide État membre M€	Aide UE M€	Nombre de projets
UK53	SURREY, EAST-WEST SUSSEX					
	1		1,53	0,84	0,68	17
	2		0,03	0,00	0,01	2
	Total	**0,7%**	**1,56**	**0,85**	**0,69**	**19**
UK54	ESSEX					
	1		1,60	0,92	0,68	18
	6		0,13	0,01	0,03	1
	Total	**0,7%**	**1,73**	**0,93**	**0,70**	**19**
UK55	GREATER LONDON					
	6		2,86	0,14	0,57	6
	7		0,23	0,02	0,08	1
	Total	**0,7%**	**3,10**	**0,16**	**0,65**	**7**
UK56	HAMPSHIRE, ISLE OF WIGHT					
	1		0,14	0,08	0,06	3
	2		0,03	0,00	0,01	2
	6		1,03	0,05	0,21	1
	Total	**0,3%**	**1,20**	**0,14**	**0,27**	**6**
UK57	KENT					
	1		1,09	0,57	0,52	13
	5		0,04	0,00	0,01	1
	Total	**0,6%**	**1,13**	**0,57**	**0,53**	**14**
UK61	AVON, GLOUCESTERSHIRE, WILTSHIRE					
	6		1,15	0,05	0,21	3
	Total	**0,2%**	**1,15**	**0,05**	**0,21**	**3**
UK62	CORNWALL, DEVON					
	1		8,73	4,77	3,96	87
	2		2,55	0,13	0,64	80
	5		0,73	0,10	0,16	3
	6		2,69	0,16	0,54	5
	Total	**5,5%**	**14,70**	**5,16**	**5,30**	**175**
UK63	DORSET, SOMERSET					
	1		0,45	0,27	0,18	6
	5		0,04	0,00	0,01	1
	6		2,80	0,14	0,56	2
	Total	**0,8%**	**3,29**	**0,41**	**0,75**	**9**
UK71	HEREFORD & WORCESTER, WARWICKSHIRE.					
	6		0,27	0,01	0,05	1
	Total	**0,1%**	**0,27**	**0,01**	**0,05**	**1**

United Kingdom						
Région. Code NUTS II	Domaine	Répartition Aide UE	Coût total M€	Aide État membre M€	Aide UE M€	Nombre de projets
UK83	LANCASHIRE					
	1		3,21	1,75	1,46	23
	2		0,12	0,01	0,03	8
	6		0,95	0,05	0,19	4
	Total	**1,7%**	**4,27**	**1,80**	**1,67**	**35**
UK84	MERSEYSIDE					
	6		0,11	0,01	0,03	1
	Total	**0,0%**	**0,11**	**0,01**	**0,03**	**1**
UK91	CLWYD, DYFED, GWYNEDD, POWYS					
	1		4,09	2,30	1,78	19
	2		0,02	0,00	0,00	1
	3		3,07	0,24	1,42	2
	6		1,30	0,07	0,69	4
	Total	**4,1%**	**8,48**	**2,61**	**3,89**	**26**
UK92	GWENT, MID-SOUTH-WEST GLAMORGAN					
	1		0,27	0,13	0,13	3
	6		0,16	0,02	0,11	1
	Total	**0,3%**	**0,43**	**0,15**	**0,25**	**4**
UKA1	BORDERS-CENTRAL-FIFE-LOTHIAN-TAYSIDE					
	1		2,94	1,53	1,41	24
	2		0,70	0,17	0,10	12
	3		0,12	0,01	0,04	2
	5		1,48		0,38	1
	6		7,85	0,52	1,38	8
	7		11,05	0,10	5,27	4
	Total	**8,9%**	**24,14**	**2,33**	**8,57**	**51**
UKA2	DUMFRIES & GALLOWAY, STRATHCLYDE					
	1		2,51	1,06	1,45	27
	2		0,37	0,06	0,10	14
	3		2,49	0,24	1,11	16
	5		0,14	0,01	0,03	1
	6		6,84	0,35	1,42	14
	Total	**4,3%**	**12,35**	**1,72**	**4,11**	**72**
UKA3	HIGHLANDS, ISLANDS					
	1		6,75	1,69	5,06	56
	2		9,78	1,84	3,29	85
	3		16,84	2,48	6,91	64
	5		5,72	0,79	1,95	8
	6		17,18	2,99	5,73	39
	Total	**23,9%**	**56,28**	**9,79**	**22,95**	**252**

United Kingdom						
Région. Code NUTS II		Domaine	Répartition Aide UE	Coût total M€	Aide État membre M€	Aide UE M€	Nombre de projets
UKA4	GRAMPIAN						
		1		8,89	4,63	4,26	42
		2		8,99	1,52	1,84	162
		3		0,12	0,01	0,04	2
		5		4,91	0,25	1,03	13
		6		46,61	2,31	9,14	59
		7		0,76	0,13	0,22	2
		Total	**17,2%**	**70,28**	**8,86**	**16,53**	**280**
UKB	NORTHERN IRELAND						
		1		9,24	2,99	6,25	49
		2		5,12	1,39	3,73	145
		3		1,28	0,72	0,56	15
		5		2,58	0,94	1,65	10
		6		4,58	0,77	3,81	23
		7		0,51	0,20	0,31	8
		Total	**17,0%**	**23,31**	**7,00**	**16,31**	**250**
Total		**100,0%**		**267,27**	**52,67**	**95,86**	**1.493**

Annex 6

FIFG implementation NUTS2 2000-2004

Each year since the programmes have been set in motion, the management authorities have been sending the Commission implementation reports, i.e. information on the actual execution of each project, in a strictly standardised form.

For each country, the data are grouped by area of assistance and, within each area, by measure, as well as by administrative unit (level II of the Nomenclature of statistical territorial units or NUTS 2).

Some projects are not actually sited in a particular region (e.g. generic promotion campaigns and technical assistance relating to the programme as a whole). In such cases, the corresponding expenditure is shown against the capital of the country (since that is where the beneficiary has its address) or the country or region, without any further details.

The summary sheets, which contain the **cumulated data from the 1st January 2000 to 31st December 2004**, were kindly provided by the European Commission, DG Fisheries.

The priorities referred to in the sheets are the following (based on Commission Regulation (EC) No 366/2001 of 22 February 2001 laying down detailed rules for implementing the measures provided for in Council Regulation (EC) No 2792/1999, in Official Journal, L 55, 24.02.2001, p. 3-15.):

Priority 1: Adjustment of fishing effort

Priority 2: Fleet renewal and modernisation

Priority 3: Protection and development of aquatic resources, aquaculture, fishing port facilities, processing and marketing and inland fishing

Priority 4: Other measures

Priority 5: Technical assistance

Priority 6: Measures financed by other structural funds under this programme (only in Objective 1 regions)

The sheets are presented in the following order:

Belgium

Italy

United Kingdom

Sweden

Slovenia

Poland

The Netherlands

Malta

Lithuania

Latvia

Ireland

Greece

France

Finland

Estonia

Spain

Denmark

Austria

Germany

No sheets are provided for the remaining member states.

Belgique-België

Region. NUTS II code	Co-financing	Priority	Total cost M€	National public aid M€	EU aid M€	Number of projects
BE1	18,5%	***RÉGION DE BRUXELLES-CAPITALE / BRUSSELS HOOFDSTEDELIJK GEWEST***				
		4	1,71	0,85	0,85	3
		Total	**1,71**	**0,85**	**0,85**	**3**
BE2	2,0%	***VLAAMS GEWEST***				
		5	0,22	0,13	0,09	3
		Total	**0,22**	**0,13**	**0,09**	**3**
BE22	1,3%	***Prov. Limburg (B)***				
		3	0,46	0,02	0,06	1
		Total	**0,46**	**0,02**	**0,06**	**1**
BE23	2,0%	***Prov. Oost-Vlaanderen***				
		2	0,19	0,03	0,03	1
		3	0,37	0,02	0,06	2
		Total	**0,56**	**0,05**	**0,09**	**3**
BE25	74,3%	***Prov. West-Vlaanderen***				
		1	2,39	1,19	1,19	4
		2	4,55	0,81	0,68	44
		3	4,77	0,27	0,71	10
		4	1,93	1,09	0,84	9
		5	0	0	0	1
		Total	**13,64**	**3,36**	**3,42**	**68**
BE33	0,7%	***Prov. Liège***				
		3	0,21	0,03	0,03	4
		4	0	0	0	1
		Total	**0,21**	**0,03**	**0,03**	**5**
BE34	0,7%	***Prov. Luxembourg (B)***				
		3	0,2	0,04	0,03	4
		Total	**0,2**	**0,04**	**0,03**	**4**
BE35	0,7%	***Prov. Namur***				
		3	0,18	0,03	0,03	2
		Total	**0,18**	**0,03**	**0,03**	**2**
Total	**100,0%**		**17,18**	**4,51**	**4,6**	**89**

Italia

Region. NUTS II code	Co-financing	Priority	Total cost M€	National public aid M€	EU aid M€	Number of projects
ITC1	0,2%	***Piemonte***				
		3	0,4	0,28	0,13	23
		4	0,13	0,08	0,05	6
		5	0,02	0,01	0,01	3
		Total	**0,55**	**0,37**	**0,19**	**32**
ITC3	1,5%	***Liguria***				
		1	2,31	1,16	1,16	88
		2	0,2	0,05	0,03	14
		3	1,66	0,45	0,3	30
		4	0,69	0,41	0,41	36
		5	0,03	0,02	0,02	4
		Total	**4,89**	**2,09**	**1,92**	**172**
ITC4	0,2%	***Lombardia***				
		3	0,61	0,27	0,23	10
		5	0,04	0,02	0,02	17
		Total	**0,65**	**0,29**	**0,25**	**27**
ITD2	0,3%	***Provincia Autonoma Trento***				
		0	0,98	0,24	0,15	4
		3	1,47	0,37	0,22	9
		Total	**2,45**	**0,61**	**0,37**	**13**
ITD3	2,8%	***Veneto***				
		0	0	0	0	7
		1	3,6	1,8	1,8	70
		2	1,23	0,31	0,18	64
		3	6,34	1,83	1,1	270
		4	1,13	0,53	0,43	73
		Total	**12,3**	**4,47**	**3,51**	**484**
ITD4	1,7%	***Friuli-Venezia Giulia***				
		1	1,81	0,9	0,9	46
		2	0,74	0,19	0,11	35
		3	4,58	1,38	0,89	58
		4	0,69	0,29	0,29	10
		5	0	0	0	1
		Total	**7,82**	**2,76**	**2,19**	**150**

Italia

Region. NUTS II code	Co-financing	Priority	Total cost M€	National public aid M€	EU aid M€	Number of projects
ITD5	3,1%	***Emilia-Romagna***				
		1	5,19	2,6	2,6	171
		2	0,6	0,15	0,09	18
		3	2,79	1,42	0,98	46
		4	0,15	0,23	0,23	14
		5	0,02	0,01	0,01	10
		Total	**8,75**	**4,41**	**3,91**	**259**
ITE1	4,2%	***Toscana***				
		1	7,34	3,67	3,67	132
		2	0,23	0,06	0,03	36
		3	5,84	1,89	1,33	27
		4	0,2	0,29	0,29	23
		Total	**13,61**	**5,91**	**5,32**	**218**
ITE2	0,2%	***Umbria***				
		3	0,79	0,21	0,12	4
		4	0,26	0,15	0,11	12
		5	0,01	0	0	2
		Total	**1,06**	**0,36**	**0,23**	**18**
ITE3	6,1%	***Marche***				
		1	11,02	5,51	5,51	126
		2	1,61	0,4	0,24	45
		3	6,93	2,16	1,49	76
		4	0,95	0,25	0,37	56
		5	0,13	0,07	0,07	14
		Total	**20,64**	**8,39**	**7,68**	**317**
ITE4	5,8%	***Lazio***				
		1	5,89	2,95	2,95	129
		2	0,72	0,18	0,11	11
		3	5,39	1,09	0,42	35
		4	4,52	2,13	2,04	26
		5	3,05	1,84	1,84	70
		Total	**19,57**	**8,19**	**7,36**	**271**
ITF1	3,0%	***Abruzzo***				
		1	4,67	2,33	2,33	89
		2	0	0	0	23
		3	5,09	1,85	1,27	17
		4	0,28	0,08	0,14	15
		5	0,08	0,04	0,04	21
		Total	**10,12**	**4,3**	**3,78**	**165**

Italia

Region. NUTS II code	Co-financing	Priority	Total cost M€	National public aid M€	EU aid M€	Number of projects
ITF2	0,1%	***Molise***				
		3	0,61	0,27	0,12	2
		Total	**0,61**	**0,27**	**0,12**	**2**
ITF3	18,2%	***Campania***				
		1	5,44	2,72	2,72	210
		2	3,24	0,16	1,13	26
		3	25,31	10,31	10,49	46
		4	11,65	5,55	5,65	122
		5	5,52	2,99	2,99	11
		Total	**51,16**	**21,73**	**22,98**	**415**
ITF4	15,3%	***Puglia***				
		1	26,11	13,05	13,05	467
		2	1,74	0,09	0,61	44
		3	8,65	4,97	3,68	29
		4	4,13	2,22	1,91	78
		Total	**40,63**	**20,33**	**19,25**	**618**
ITF6	2,0%	***Calabria***				
		1	5,12	2,56	2,56	102
		2	0	0	0,01	60
		3	0	0	0	22
		4	0,01	0	0	43
		Total	**5,13**	**2,56**	**2,57**	**227**
ITG1	28,9%	***Sicilia***				
		1	49,78	25,58	25,58	948
		2	5,02	0,36	2,51	67
		3	10,16	4,98	5,18	36
		4	6,14	3,02	3,12	35
		5	0,03	0,01	0,01	2
		Total	**71,13**	**33,95**	**36,4**	**1.088**
ITG2	6,3%	***Sardegna***				
		1	5,03	2,52	2,52	93
		3	10,61	3,53	3,53	51
		4	3,73	1,86	1,86	38
		Total	**19,37**	**7,91**	**7,91**	**182**
Total	**100,0%**		**290,44**	**128,9**	**125,94**	**4.658**

United Kingdom

Region. NUTS II code	Co-financing	Priority	Total cost M€	National public aid M€	EU aid M€	Number of projects
UKC2	3,4%	***Northumberland and Tyne and Wear***				
		1	2,7	1,35	1,35	15
		2	0,07	0	0,01	8
		3	1,91	0,95	0,95	5
		4	0,02	0,01	0,01	1
		Total	**4,7**	**2,31**	**2,32**	**29**
UKD1	0,0%	***Cumbria***				
		3	0	0	0	1
		Total	**0**	**0**	**0**	**1**
UKD4	1,6%	***Lancashire***				
		1	1,72	0,86	0,86	6
		3	1,25	0,06	0,19	9
		4	0,03	0	0,02	2
		Total	**3**	**0,92**	**1,07**	**17**
UKD5	0,1%	***Merseyside***				
		4	0,16	0,08	0,08	4
		Total	**0,16**	**0,08**	**0,08**	**4**
UKE1	8,0%	***East Riding and North Lincolnshire***				
		1	8,34	4,17	4,17	15
		2	0,04	0,01	0,01	5
		3	2,92	0,6	0,57	22
		4	1,5	0,67	0,72	30
		5	0,04	0,02	0,02	1
		Total	**12,84**	**5,47**	**5,49**	**73**
UKE2	1,3%	***North Yorkshire***				
		1	1,53	0,76	0,76	5
		2	0	0	0	1
		3	0,5	0,02	0,07	4
		4	0,08	0,04	0,04	1
		Total	**2,11**	**0,82**	**0,87**	**11**
UKF3	0,0%	***Lincolnshire***				
		3	0,1	0,01	0,03	1
		Total	**0,1**	**0,01**	**0,03**	**1**
UKH1	0,9%	***East Anglia***				
		1	1,06	0,53	0,53	2
		3	0,25	0,01	0,04	2
		4	0,08	0,04	0,04	3
		Total	**1,39**	**0,58**	**0,61**	**7**

United Kingdom

Region. NUTS II code	Co-financing	Priority	Total cost M€	National public aid M€	EU aid M€	Number of projects
UKH3	0,0%	***Essex***				
		3	0,06	0,01	0,02	1
		4	0	0	0	2
		Total	**0,06**	**0,01**	**0,02**	**3**
UKI1	0,1%	***Inner London***				
		3	0,41	0,02	0,06	1
		5	0,07	0,03	0,03	2
		Total	**0,48**	**0,05**	**0,09**	**3**
UKJ2	0,3%	***Surrey, East and West Sussex***				
		1	0,11	0,06	0,06	1
		3	0,23	0,12	0,12	3
		4	0,01	0,01	0,01	4
		Total	**0,35**	**0,19**	**0,19**	**8**
UKJ3	0,0%	***Hampshire and Isle of Wight***				
		2	0,01	0	0	1
		3	0,15	0,03	0,01	1
		Total	**0,16**	**0,03**	**0,01**	**2**
UKJ4	0,0%	***Kent***				
		3	0,01	0,01	0,01	1
		Total	**0,01**	**0,01**	**0,01**	**1**
UKK2	0,2%	***Dorset and Somerset***				
		1	0,26	0,13	0,13	1
		3	0,04	0,01	0,02	5
		Total	**0,3**	**0,14**	**0,15**	**6**
UKK3	10,5%	***Cornwall and Isles of Scilly***				
		1	2,39	0,6	1,8	7
		2	1,27	0,06	0,44	79
		3	7,45	0,96	3,53	88
		4	1,49	0,23	1,23	27
		5	0,31	0,08	0,23	4
		Total	**12,91**	**1,93**	**7,23**	**205**
UKK4	0,5%	***Devon***				
		2	0,06	0	0,01	2
		3	1,75	0,1	0,27	11
		4	0,13	0,07	0,07	3
		Total	**1,94**	**0,17**	**0,35**	**16**

United Kingdom

Region. NUTS II code	Co-financing	Priority	Total cost M€	National public aid M€	EU aid M€	Number of projects
UKL1	9,7%	***West Wales and The Valleys***				
		2	0	0	0	1
		3	11,59	0,66	4,21	10
		4	3,2	0,63	2,46	14
		Total	**14,79**	**1,29**	**6,67**	**25**
UKM	0,6%	***SCOTLAND***				
		3	0	0	0	1
		4	0,87	0,41	0,41	7
		Total	**0,87**	**0,41**	**0,41**	**8**
UKM1	22,9%	***North Eastern Scotland***				
		1	28,51	21,38	7,13	62
		2	2,12	0,13	0,3	54
		3	54,69	2,73	8,17	81
		4	0,35	0,02	0,16	6
		Total	**85,67**	**24,26**	**15,76**	**203**
UKM2	2,8%	***Eastern Scotland***				
		1	2,65	1,99	0,66	9
		2	0,03	0	0	1
		3	6,49	0,33	0,98	29
		4	0,68	0,33	0,26	15
		Total	**9,85**	**2,65**	**1,9**	**54**
UKM3	1,3%	***South Western Scotland***				
		1	0,88	0,66	0,22	3
		2	0	0	0	1
		3	4,7	0,24	0,7	17
		4	0	0	0	2
		Total	**5,58**	**0,9**	**0,92**	**23**
UKM4	15,8%	***Highlands and Islands***				
		1	4,94	4,47	0,46	24
		2	1,16	0,09	0,37	35
		3	26,01	2,49	8,56	135
		4	3,43	0,9	1,49	19
		5	0	0	0	1
		Total	**35,54**	**7,95**	**10,88**	**214**
UKN	20,1%	***NORTHERN IRELAND***				
		1	13,65	3,41	10,24	66
		2	0,03	0	0,01	15
		3	3,27	0,3	1,56	42
		4	3,05	0,98	2,05	46
		Total	**20**	**4,69**	**13,86**	**169**

United Kingdom

Region. NUTS II code	Co-financing	Priority	Total cost M€	National public aid M€	EU aid M€	Number of projects
Total	**100,0%**		**212,81**	**54,87**	**68,92**	**1.083**

Sverige

Region. NUTS II code	Co-financing	Priority	Total cost M€	National public aid M€	EU aid M€	Number of projects
SE	4,1%	***SVERIGE***				
		2	0,48	0,02	0,13	48
		4	13,38	6,23	6,7	23
		5	0,01	0	0	4
		Total	**13,87**	**6,25**	**6,83**	**75**
SE01	3,3%	***Stockholm***				
		1	7,69	3,85	3,85	3
		2	0,73	0,04	0,11	2
		3	4,41	0,22	0,66	9
		4	3,03	0,78	0,85	17
		Total	**15,86**	**4,89**	**5,47**	**31**
SE02	2,1%	***Östra Mellansverige***				
		1	4,78	2,39	2,39	2
		2	0,15	0,01	0,02	7
		3	3,12	0,16	0,48	35
		4	1,64	0,36	0,69	16
		Total	**9,69**	**2,92**	**3,58**	**60**
SE04	9,6%	***Sydsverige***				
		1	5,75	2,87	2,87	12
		2	16,21	0,81	2,43	108
		3	61,84	3,48	9,58	63
		4	4,97	1,04	1,05	27
		5	0,09	0,04	0,04	2
		Total	**88,86**	**8,24**	**15,97**	**212**
SE06	1,7%	***Norra Mellansverige***				
		1	2,19	1,1	1,1	1
		2	0,14	0,01	0,02	4
		3	4,61	0,23	0,82	11
		4	2,31	0,67	0,86	11
		5	0,01	0	0	1
		Total	**9,26**	**2,01**	**2,8**	**28**
SE07	5,6%	***Mellersta Norrland***				
		1	0,07	0,02	0,05	1
		2	1,33	0,07	0,47	10
		3	16,08	1	5,7	51
		4	4,14	0,74	2,57	11
		5	0,99	0,5	0,5	7
		Total	**22,61**	**2,33**	**9,29**	**80**

Sverige

Region. NUTS II code	Co-financing	Priority	Total cost M€	National public aid M€	EU aid M€	Number of projects
SE08	4,0%	***Övre Norrland***				
		2	1,41	0,07	0,49	22
		3	12,45	0,62	4,36	50
		4	2,76	0,7	1,79	19
		5	0,01	0,01	0,01	3
		Total	**16,63**	**1,4**	**6,65**	**94**
SE09	8,4%	***Småland med öarna***				
		1	9,32	4,66	4,66	5
		2	2,92	0,14	0,44	27
		3	42,94	2,99	7,08	26
		4	3,67	1,56	1,87	34
		Total	**58,85**	**9,35**	**14,05**	**92**
SE0A	61,2%	***Västsverige***				
		1	56,9	28,45	28,45	28
		2	96,59	4,83	14,5	235
		3	176,29	16,85	35,54	163
		4	42,43	17,89	14,88	70
		5	17,45	8,73	8,73	65
		Total	**389,66**	**76,75**	**102,1**	**561**
Total	**100,0%**		**625,29**	**114,14**	**166,74**	**1.233**

Slovenija

Region. NUTS II code	Co-financing	Priority	Total cost M€	National public aid M€	EU aid M€	Number of projects
SI00	#Num!	***Slovenija***				
		3	0	0	0	6
		4	0	0	0	6
		Total	**0**	**0**	**0**	**12**
Total	**100,0%**		**0**	**0**	**0**	**12**

Polska

Region. NUTS II code	Co-financing	Priority	Total cost M€	National public aid M€	EU aid M€	Number of projects
PL42	#Num!	***Zachodniopomorskie***				
		1	0	0	0	96
		Total	**0**	**0**	**0**	**96**
PL62	#Num!	***Warminsko-Mazurskie***				
		1	0	0	0	13
		Total	**0**	**0**	**0**	**13**
PL63	#Num!	***Pomorskie***				
		1	0	0	0	74
		Total	**0**	**0**	**0**	**74**
Total	**100,0%**		**0**	**0**	**0**	**183**

Nederland

Region. NUTS II code	Co-financing	Priority	Total cost M€	National public aid M€	EU aid M€	Number of projects
NL11	1,4%	***Groningen***				
		1	0,48	0,32	0,16	4
		4	0,09	0,05	0,04	37
		Total	**0,57**	**0,37**	**0,2**	**41**
NL12	1,1%	***Friesland***				
		1	0,37	0,27	0,1	2
		4	0,14	0,09	0,06	32
		Total	**0,51**	**0,36**	**0,16**	**34**
NL23	29,3%	***Flevoland***				
		1	11,45	8,25	3,19	13
		3	9,29	2,57	0,96	8
		Total	**20,74**	**10,82**	**4,15**	**21**
NL3	0,5%	***WEST-NEDERLAND***				
		1	0,18	0,11	0,07	1
		Total	**0,18**	**0,11**	**0,07**	**1**
NL32	46,6%	***Noord-Holland***				
		1	7,31	5,2	2,11	9
		4	9,53	5,06	4,46	137
		5	0,04	0,02	0,02	1
		Total	**16,88**	**10,28**	**6,59**	**147**
NL33	11,9%	***Zuid-Holland***				
		1	3,06	2,18	0,88	5
		4	1,91	1,26	0,65	113
		5	0,33	0,16	0,16	7
		Total	**5,3**	**3,6**	**1,69**	**125**
NL34	9,0%	***Zeeland***				
		1	3,77	2,73	1,03	4
		4	0,76	0,52	0,24	52
		Total	**4,53**	**3,25**	**1,27**	**56**
NL41	0,1%	***Noord-Brabant***				
		4	0,05	0,03	0,02	6
		Total	**0,05**	**0,03**	**0,02**	**6**
Total	**100,0%**		**48,76**	**28,82**	**14,15**	**431**

Malta

Region. NUTS II code	Co-financing	Priority	Total cost M€	National public aid M€	EU aid M€	Number of projects
MT00	#Num!	***Malta***				
		2	0	0	0	1
		Total	**0**	**0**	**0**	**1**
Total	**100,0%**		**0**	**0**	**0**	**1**

Lietuva

Region. NUTS II code	Co-financing	Priority	Total cost M€	National public aid M€	EU aid M€	Number of projects
LT00	#Num!	***Lietuva***				
		1	0	0	0	20
		Total	**0**	**0**	**0**	**20**
Total	**100,0%**		**0**	**0**	**0**	**20**

Latvia

Region. NUTS II code	Co-financing	Priority	Total cost M€	National public aid M€	EU aid M€	Number of projects
LV00	100,0%	***Latvija***				
		1	2,71	0,54	2,17	33
		2	0,04	0	0,01	34
		3	0	0	0	26
		4	0,05	0,01	0,04	7
		Total	**2,8**	**0,55**	**2,22**	**100**
Total	**100,0%**		**2,8**	**0,55**	**2,22**	**100**

Ireland

Region. NUTS II code	Co-financing	Priority	Total cost M€	National public aid M€	EU aid M€	Number of projects
IE01	59,6%	***Border, Midland and Western***				
		2	18,93	0,93	5,91	84
		3	18,58	1,15	6,87	61
		4	1,7	1,3	3,93	35
		Total	**39,21**	**3,38**	**16,71**	**180**
IE02	40,4%	***Southern and Eastern***				
		2	14,54	0,81	4,51	211
		3	11,33	1,04	4,12	29
		4	0,69	0,72	2,25	26
		5	0	0,15	0,44	1
		Total	**26,56**	**2,72**	**11,32**	**267**
Total	**100,0%**		**65,77**	**6,1**	**28,03**	**447**

Ellas

Region. NUTS II code	Co-financing	Priority	Total cost M€	National public aid M€	EU aid M€	Number of projects
GR	5,4%	***ELLADA***				
		3	0	0	0	2
		4	0	0	0	14
		5	5,28	1,32	3,96	11
		Total	**5,28**	**1,32**	**3,96**	**27**
GR11	3,7%	***Anatoliki Makedonia, Thraki***				
		1	1,35	0,34	1,01	105
		2	0,9	0,04	0,31	44
		3	3,68	0,52	1,33	19
		4	0,1	0,02	0,07	25
		Total	**6,03**	**0,92**	**2,72**	**193**
GR12	14,4%	***Kentriki Makedonia***				
		1	6,26	1,56	4,69	229
		2	2,1	0,1	0,73	78
		3	14,54	2,06	5,15	30
		4	0,07	0,02	0,05	28
		Total	**22,97**	**3,74**	**10,62**	**365**
GR13	0,1%	***Dytiki Makedonia***				
		3	0,29	0,04	0,1	2
		Total	**0,29**	**0,04**	**0,1**	**2**
GR14	3,2%	***Thessalia***				
		1	2,34	0,58	1,75	139
		2	0,14	0,01	0,05	38
		3	1,48	0,21	0,52	4
		4	0,09	0,02	0,07	20
		Total	**4,05**	**0,82**	**2,39**	**201**
GR21	5,9%	***Ipeiros***				
		1	1,16	0,29	0,87	66
		2	0,04	0	0,01	22
		3	9,3	1,08	3,33	35
		4	0,17	0,04	0,12	41
		Total	**10,67**	**1,41**	**4,33**	**164**
GR22	4,6%	***Ionia Nisia***				
		1	2	0,5	1,5	153
		2	0,25	0,01	0,09	39
		3	4,83	0,64	1,69	12
		4	0,16	0,04	0,12	25
		Total	**7,24**	**1,19**	**3,4**	**229**

Ellas

Region. NUTS II code	Co-financing	Priority	Total cost M€	National public aid M€	EU aid M€	Number of projects
GR23	7,0%	***Dytiki Ellada***				
		1	3,37	0,84	2,53	121
		2	0,25	0,01	0,09	26
		3	7,15	0,83	2,5	34
		4	0,09	0,02	0,07	25
		Total	**10,86**	**1,7**	**5,19**	**206**
GR24	8,9%	***Sterea Ellada***				
		1	3,18	0,8	2,39	199
		2	0,33	0,02	0,11	40
		3	11,53	1,19	4,05	47
		4	0,07	0,02	0,05	22
		Total	**15,11**	**2,03**	**6,6**	**308**
GR25	5,4%	***Peloponnisos***				
		1	3,93	0,98	2,95	213
		2	0,29	0,01	0,1	36
		3	2,64	0,4	0,93	22
		4	0,02	0,01	0,02	8
		Total	**6,88**	**1,4**	**4**	**279**
GR3	19,9%	***ATTIKI***				
		1	13,66	3,42	10,25	295
		2	1,29	0,06	0,45	44
		3	11,29	1,64	3,95	21
		4	0,04	0,01	0,03	14
		Total	**26,28**	**5,13**	**14,68**	**374**
GR41	4,4%	***Voreio Aigaio***				
		1	3,27	0,82	2,45	169
		2	0,45	0,02	0,16	58
		3	1,48	0,16	0,52	8
		4	0,14	0,03	0,1	14
		Total	**5,34**	**1,03**	**3,23**	**249**
GR42	12,4%	***Notio Aigaio***				
		1	9,52	2,38	7,14	343
		2	2,42	0,12	0,85	120
		3	2,73	0,31	1	19
		4	0,18	0,04	0,13	43
		Total	**14,85**	**2,85**	**9,12**	**525**

Ellas

Region. NUTS II code	Co-financing	Priority	Total cost M€	National public aid M€	EU aid M€	Number of projects
GR43	4,7%	***Kriti***				
		1	3,91	0,98	2,93	112
		2	0,23	0,01	0,08	41
		3	0,61	0,14	0,43	10
		4	0,03	0,01	0,02	10
		Total	**4,78**	**1,14**	**3,46**	**173**
Total	**100,0%**		**140,63**	**24,72**	**73,8**	**3.295**

France

Region. NUTS II code	Co-financing	Priority	Total cost M€	National public aid M€	EU aid M€	Number of projects
FR	0,0%	***FRANCE***				
		3	0	0	0	1
		4	0	0	0	5
		Total	**0**	**0**	**0**	**6**
FR21	0,0%	***Champagne-Ardenne***				
		4	0,06	0	0,02	1
		Total	**0,06**	**0**	**0,02**	**1**
FR22	0,4%	***Picardie***				
		2	0,16	0,04	0,02	11
		3	1,63	0,2	0,24	4
		4	0,56	0,03	0,03	2
		Total	**2,35**	**0,27**	**0,29**	**17**
FR23	5,3%	***Haute-Normandie***				
		1	6,14	3,07	3,06	22
		2	2,11	0,26	0,32	76
		3	2,17	0,11	0,32	11
		4	6,68	0,43	0,5	21
		5	0,01	0	0	1
		Total	**17,11**	**3,87**	**4,2**	**131**
FR24	0,0%	***Centre***				
		3	0,04	0	0,01	1
		Total	**0,04**	**0**	**0,01**	**1**
FR25	8,9%	***Basse-Normandie***				
		1	3,42	1,71	1,71	35
		2	2,23	0,4	0,33	198
		3	29,53	2,12	4,7	144
		4	2,78	0,29	0,24	35
		Total	**37,96**	**4,52**	**6,98**	**412**
FR41	0,4%	***Lorraine***				
		3	0,05	0	0,01	2
		4	0,56	0,16	0,28	3
		Total	**0,61**	**0,16**	**0,29**	**5**
FR5	0,0%	***OUEST***				
		4	0,05	0,02	0,02	1
		Total	**0,05**	**0,02**	**0,02**	**1**

France

Region. NUTS II code	Co-financing	Priority	Total cost M€	National public aid M€	EU aid M€	Number of projects
FR51	11,6%	***Pays de la Loire***				
		1	5,35	2,68	2,68	52
		2	13,17	2,59	1,96	236
		3	16,81	3,07	3,62	245
		4	3,92	0,96	0,91	28
		Total	**39,25**	**9,3**	**9,17**	**561**
FR52	31,1%	***Bretagne***				
		1	21,42	11,03	10,39	153
		2	29,23	4,66	4,38	614
		3	39,89	7,9	8,11	542
		4	14,28	1,67	1,66	138
		Total	**104,82**	**25,26**	**24,54**	**1.447**
FR53	5,5%	***Poitou-Charentes***				
		1	0,69	0,34	0,34	16
		2	0,12	0,02	0,01	45
		3	17,07	2,96	2,92	616
		4	3,26	2,2	1,05	24
		Total	**21,14**	**5,52**	**4,32**	**701**
FR61	11,8%	***Aquitaine***				
		1	6,57	3,29	3,15	43
		2	13,01	1,71	1,88	140
		3	10,26	2,03	2,56	328
		4	5,9	1,4	1,73	34
		5	0	0	0	2
		Total	**35,74**	**8,43**	**9,32**	**547**
FR62	0,0%	***Midi-Pyrénées***				
		3	0	0	0	1
		Total	**0**	**0**	**0**	**1**
FR71	0,3%	***Rhône-Alpes***				
		3	1,09	0,06	0,16	9
		4	0,16	0,09	0,07	3
		Total	**1,25**	**0,15**	**0,23**	**12**
FR81	6,3%	***Languedoc-Roussillon***				
		1	0,56	0,28	0,28	9
		2	21,9	3,65	2,86	245
		3	9,37	1,94	1,66	164
		4	0,42	0,1	0,16	15
		Total	**32,25**	**5,97**	**4,96**	**433**

France

Region. NUTS II code	Co-financing	Priority	Total cost M€	National public aid M€	EU aid M€	Number of projects
FR82	1,3%	***Provence-Alpes-Côte d'Azur***				
		1	0	0	0	2
		2	4,91	1,17	0,69	108
		3	1,1	0,32	0,11	18
		4	1,31	0,2	0,19	13
		Total	**7,32**	**1,69**	**0,99**	**141**
FR83	1,2%	***Corse***				
		3	1,91	0,48	0,75	9
		4	0,3	0,09	0,21	4
		Total	**2,21**	**0,57**	**0,96**	**13**
FR91	1,9%	***Guadeloupe***				
		1	0	0,03	0,08	1
		2	1,17	0,07	0,43	15
		3	0,28	0,09	0,19	8
		4	1,36	1,21	0,78	10
		Total	**2,81**	**1,4**	**1,48**	**34**
FR92	3,8%	***Martinique***				
		2	0,83	0,22	0,04	5
		3	7,31	2,65	2,89	51
		4	0,06	0,07	0,03	8
		5	0,18	0,05	0,01	5
		Total	**8,38**	**2,99**	**2,97**	**69**
FR93	3,5%	***Guyane***				
		2	4,45	0,29	1,39	46
		3	2,7	1,39	1,15	36
		4	0,05	0,07	0,04	1
		5	0,22	0,07	0,17	5
		Total	**7,42**	**1,82**	**2,75**	**88**
FR94	6,8%	***Réunion***				
		2	2,7	0,25	1,02	164
		3	4,51	1,22	1,57	37
		4	3,53	0,61	2,27	28
		5	0,76	0,18	0,49	21
		Total	**11,5**	**2,26**	**5,35**	**250**
Total	**100,0%**		**332,27**	**74,2**	**78,85**	**4.871**

Suomi-Finland

Region. NUTS II code	Co-financing	Priority	Total cost M€	National public aid M€	EU aid M€	Number of projects
FI13	15,9%	***Itä-Suomi***				
		3	10,79	2,65	2,64	252
		4	0,82	0,38	0,38	25
		5	0,03	0,02	0,02	15
		Total	**11,64**	**3,05**	**3,04**	**292**
FI14	16,8%	***Väli-Suomi***				
		1	0,58	0,29	0,29	2
		2	0,94	0,19	0,14	66
		3	5,97	1,79	1,57	190
		4	2,36	1,15	1,13	31
		5	0,16	0,08	0,08	21
		Total	**10,01**	**3,5**	**3,21**	**310**
FI15	11,0%	***Pohjois-Suomi***				
		2	0,58	0,12	0,09	43
		3	10,3	2,26	1,94	185
		4	0,14	0,06	0,06	12
		5	0,02	0,01	0,01	8
		Total	**11,04**	**2,45**	**2,1**	**248**
FI16	18,1%	***Uusimaa (suuralue)***				
		1	0,3	0,15	0,15	3
		2	0,55	0,11	0,08	39
		3	8,12	1,63	1,2	90
		4	3,87	1,91	1,9	46
		5	0,25	0,12	0,12	21
		Total	**13,09**	**3,92**	**3,45**	**199**
FI17	34,4%	***Etelä-Suomi***				
		1	0,18	0,09	0,09	1
		2	1,93	0,4	0,29	129
		3	15,27	4,07	3,3	362
		4	6,53	3,17	2,83	87
		5	0,1	0,05	0,05	13
		Total	**24,01**	**7,78**	**6,56**	**592**
FI2	3,8%	***ÅLAND***				
		2	0,66	0,16	0,1	40
		3	2,33	0,44	0,32	47
		4	0,73	0,32	0,3	33
		5	0,01	0	0	1
		Total	**3,73**	**0,92**	**0,72**	**121**
Total	**100,0%**		**73,52**	**21,62**	**19,08**	**1.762**

Eesti

Region. NUTS II code	Co-financing	Priority	Total cost M€	National public aid M€	EU aid M€	Number of projects
EE00	100,0%	***Eesti***				
		2	0	0	0	16
		3	0,5	0,08	0,18	22
		Total	**0,5**	**0,08**	**0,18**	**38**
Total	**100,0%**		**0,5**	**0,08**	**0,18**	**38**

España

Region. NUTS II code	Co-financing	Priority	Total cost M€	National public aid M€	EU aid M€	Number of projects
ES	18,7%	***ESPAÑA***				
		1	0,17	0,1	0,06	1
		3	2,09	0,57	1,52	9
		4	216,65	45,42	169,21	1.681
		5	11,34	3,46	7,88	54
		Total	**230,25**	**49,55**	**178,67**	**1.745**
ES11	39,0%	***Galicia***				
		1	38,72	8,37	30,35	253
		2	197,1	9,89	78	661
		3	409,94	61,98	152,83	1.861
		4	140,18	25,4	110,8	988
		5	0,62	0,12	0,5	25
		Total	**786,56**	**105,76**	**372,48**	**3.788**
ES12	3,3%	***Principado de Asturias***				
		1	3,02	0,76	2,27	29
		2	29,55	1,54	12,8	212
		3	27,22	6,77	11,27	331
		4	4,68	1,17	3,51	1.405
		5	2,01	0,5	1,51	93
		Total	**66,48**	**10,74**	**31,36**	**2.070**
ES13	1,8%	***Cantabria***				
		2	24,67	8,93	3,14	109
		3	59,98	24	8,04	97
		4	8,51	2,26	6,25	49
		Total	**93,16**	**35,19**	**17,43**	**255**
ES21	6,1%	***País Vasco***				
		1	3,04	1,62	1,42	18
		2	148,71	32,55	29,7	394
		3	67,08	18,26	19,06	253
		4	16,27	7,57	8,02	2.189
		5	0,45	0,22	0,22	13
		Total	**235,55**	**60,22**	**58,42**	**2.867**
ES22	0,1%	***Comunidad Foral de Navarra***				
		3	6,79	0,36	1	5
		Total	**6,79**	**0,36**	**1**	**5**
ES23	0,0%	***La Rioja***				
		3	1,13	0,06	0,17	7
		Total	**1,13**	**0,06**	**0,17**	**7**

España

Region. NUTS II code	Co-financing	Priority	Total cost M€	National public aid M€	EU aid M€	Number of projects
ES24	0,1%	***Aragón***				
		3	8,42	0,57	1,26	9
		Total	**8,42**	**0,57**	**1,26**	**9**
ES3	0,4%	***COMUNIDAD DE MADRID***				
		3	20,97	1,48	3,73	73
		Total	**20,97**	**1,48**	**3,73**	**73**
ES41	0,8%	***Castilla y León***				
		3	24,93	1,26	7,59	62
		4	0,44	0,23	0,21	4
		5	0,02	0	0,02	2
		Total	**25,39**	**1,49**	**7,82**	**68**
ES42	0,2%	***Castilla-La Mancha***				
		3	4,91	0,25	1,72	31
		Total	**4,91**	**0,25**	**1,72**	**31**
ES43	0,1%	***Extremadura***				
		3	3,23	0,48	0,67	38
		4	0,29	0,07	0,21	3
		5	0,15	0,03	0,12	8
		Total	**3,67**	**0,58**	**1**	**49**
ES51	2,4%	***Cataluña***				
		1	11,24	5,38	5,86	63
		2	38,97	10,61	6,32	481
		3	30,02	4,87	6,54	196
		4	8,69	4,25	3,35	375
		5	1,73	1,06	0,67	10
		Total	**90,65**	**26,17**	**22,74**	**1.125**
ES52	4,7%	***Comunidad Valenciana***				
		1	10,3	2,57	7,72	37
		2	61,75	3,12	21,58	627
		3	38,36	6,9	13,86	193
		4	2,22	0,5	1,69	48
		5	0,24	0,06	0,18	13
		Total	**112,87**	**13,15**	**45,03**	**918**

España

Region. NUTS II code	Co-financing	Priority	Total cost M€	National public aid M€	EU aid M€	Number of projects
ES53	0,4%	***Illes Balears***				
		1	2,55	1,27	1,27	48
		2	7,26	1,59	1,09	201
		3	1,8	0,89	0,78	18
		4	0,56	0,16	0,24	25
		5	1,22	0,68	0,55	24
		Total	**13,39**	**4,59**	**3,93**	**316**
ES61	12,7%	***Andalucía***				
		1	14,27	3,08	11,2	41
		2	149,33	7,58	59,83	1.015
		3	65,34	13,74	29,7	305
		4	22,11	4,12	17,25	791
		5	3,75	0,81	2,94	30
		Total	**254,8**	**29,33**	**120,92**	**2.182**
ES62	1,4%	***Región de Murcia***				
		1	1,2	0,3	0,9	7
		2	12,25	0,62	4,29	154
		3	14,57	3,62	6,84	48
		4	1,87	0,47	1,4	25
		5	0,53	0,13	0,39	30
		Total	**30,42**	**5,14**	**13,82**	**264**
ES63	3,0%	***Ciudad Autónoma de Ceuta***				
		1	15,55	3,12	12,43	90
		2	43,73	2,21	15,49	37
		3	1,04	0,14	0,39	2
		4	0,18	0,04	0,15	88
		5	0,03	0,01	0,02	2
		Total	**60,53**	**5,52**	**28,48**	**219**
ES7	4,7%	***CANARIAS***				
		1	5,03	0,9	4,13	51
		2	29,74	1,56	10,49	169
		3	52,05	10,33	23,89	225
		4	6,86	0,84	5,46	32
		5	1,2	0,23	0,97	43
		Total	**94,88**	**13,86**	**44,94**	**520**
Total	**100,0%**		**2140,82**	**364,01**	**954,92**	**16.511**

Danmark

Region. NUTS II code	Co-financing	Priority	Total cost M€	National public aid M€	EU aid M€	Number of projects
DK00	100,0%	***Danmark***				
		1	45,51	22,82	22,69	255
		2	87,26	4,36	13,08	1.267
		3	113,99	10,96	21,43	325
		4	18,66	9,12	9,51	244
		5	0,93	0,46	0,46	114
		Total	**266,35**	**47,72**	**67,17**	**2.205**
Total	**100,0%**		**266,35**	**47,72**	**67,17**	**2.205**

Österreich

Region. NUTS II code	Co-financing	Priority	Total cost M€	National public aid M€	EU aid M€	Number of projects
AT12	23,6%	***Niederösterreich***				
		3	4,55	0,85	0,6	165
		Total	**4,55**	**0,85**	**0,6**	**165**
AT13	0,8%	***Wien***				
		3	0,13	0,02	0,02	1
		4	0,01	0	0	2
		Total	**0,14**	**0,02**	**0,02**	**3**
AT21	11,8%	***Kärnten***				
		3	2,27	0,43	0,3	41
		Total	**2,27**	**0,43**	**0,3**	**41**
AT22	31,5%	***Steiermark***				
		3	6,1	1,14	0,8	134
		Total	**6,1**	**1,14**	**0,8**	**134**
AT31	28,3%	***Oberösterreich***				
		3	5,52	1,04	0,72	89
		Total	**5,52**	**1,04**	**0,72**	**89**
AT32	0,8%	***Salzburg***				
		3	0,15	0,03	0,02	9
		Total	**0,15**	**0,03**	**0,02**	**9**
AT33	0,8%	***Tirol***				
		3	0,16	0,03	0,02	10
		Total	**0,16**	**0,03**	**0,02**	**10**
AT34	2,4%	***Vorarlberg***				
		3	0,48	0,09	0,06	26
		Total	**0,48**	**0,09**	**0,06**	**26**
Total	**100,0%**		**19,37**	**3,63**	**2,54**	**477**

Deutschland

Region. NUTS II code	Co-financing	Priority	Total cost M€	National public aid M€	EU aid M€	Number of projects
DE	0,0%	***DEUTSCHLAND***				
		5	0	0	0	1
		Total	**0**	**0**	**0**	**1**
DE11	0,1%	***Stuttgart***				
		3	0,15	0,01	0,04	1
		5	0,01	0	0	2
		Total	**0,16**	**0,01**	**0,04**	**3**
DE12	0,0%	***Karlsruhe***				
		3	0	0	0	1
		Total	**0**	**0**	**0**	**1**
DE13	0,9%	***Freiburg***				
		3	3,3	0,19	0,66	12
		Total	**3,3**	**0,19**	**0,66**	**12**
DE14	0,5%	***Tübingen***				
		3	2,07	0,24	0,36	21
		Total	**2,07**	**0,24**	**0,36**	**21**
DE2	0,0%	***BAYERN***				
		5	0,03	0,02	0,02	2
		Total	**0,03**	**0,02**	**0,02**	**2**
DE21	0,8%	***Oberbayern***				
		3	3,15	0,47	0,53	133
		4	0,12	0,02	0,06	1
		Total	**3,27**	**0,49**	**0,59**	**134**
DE22	0,1%	***Niederbayern***				
		3	0,31	0,05	0,05	13
		4	0,05	0,01	0,02	1
		Total	**0,36**	**0,06**	**0,07**	**14**
DE23	0,4%	***Oberpfalz***				
		3	1,94	0,29	0,3	396
		4	0,03	0	0,02	2
		Total	**1,97**	**0,29**	**0,32**	**398**
DE24	0,2%	***Oberfranken***				
		3	1,17	0,18	0,18	269
		4	0	0	0	1
		Total	**1,17**	**0,18**	**0,18**	**270**

Deutschland

Region. NUTS II code	Co-financing	Priority	Total cost M€	National public aid M€	EU aid M€	Number of projects
DE25	0,3%	***Mittelfranken***				
		3	1,35	0,2	0,2	258
		4	0	0	0	1
		Total	**1,35**	**0,2**	**0,2**	**259**
DE26	0,1%	***Unterfranken***				
		3	0,56	0,08	0,08	63
		Total	**0,56**	**0,08**	**0,08**	**63**
DE27	0,1%	***Schwaben***				
		3	0,58	0,09	0,09	40
		Total	**0,58**	**0,09**	**0,09**	**40**
DE30	0,6%	***Berlin***				
		3	0,14	0,01	0,05	1
		4	0,58	0,16	0,41	2
		5	0	0	0	3
		Total	**0,72**	**0,17**	**0,46**	**6**
DE4	0,0%	***BRANDENBURG***				
		4	0	0	0	1
		Total	**0**	**0**	**0**	**1**
DE41	0,4%	***Brandenburg - Nordost***				
		3	0,65	0,09	0,27	21
		Total	**0,65**	**0,09**	**0,27**	**21**
DE42	1,5%	***Brandenburg - Südwest***				
		3	0,75	0,09	0,27	29
		4	1,2	0,28	0,83	8
		5	0,05	0,01	0,03	1
		Total	**2**	**0,38**	**1,13**	**38**
DE5	0,6%	***BREMEN***				
		3	1,29	0,15	0,19	2
		4	0,34	0,18	0,17	2
		5	0,17	0,09	0,09	5
		Total	**1,8**	**0,42**	**0,45**	**9**
DE50	2,7%	***Bremen***				
		3	13,37	0,69	2,01	31
		Total	**13,37**	**0,69**	**2,01**	**31**
DE6	0,2%	***HAMBURG***				
		3	0,89	0,04	0,13	2
		5	0,01	0,01	0,01	2
		Total	**0,9**	**0,05**	**0,14**	**4**

Deutschland

Region. NUTS II code	Co-financing	Priority	Total cost M€	National public aid M€	EU aid M€	Number of projects
DE7	0,1%	***HESSEN***				
		3	0,25	0,01	0,04	1
		Total	**0,25**	**0,01**	**0,04**	**1**
DE71	0,0%	***Darmstadt***				
		3	0,14	0,01	0,02	7
		5	0	0	0	2
		Total	**0,14**	**0,01**	**0,02**	**9**
DE72	0,0%	***Gießen***				
		3	0,13	0,01	0,01	1
		Total	**0,13**	**0,01**	**0,01**	**1**
DE73	0,0%	***Kassel***				
		3	0,17	0,02	0,01	7
		Total	**0,17**	**0,02**	**0,01**	**7**
DE8	0,1%	***MECKLENBURG-VORPOMMERN***				
		3	0,63	0,03	0,09	1
		Total	**0,63**	**0,03**	**0,09**	**1**
DE80	74,2%	***Mecklenburg-Vorpommern***				
		1	0,41	0,1	0,31	6
		2	9,35	0,47	3,14	44
		3	103,35	12,34	49,41	71
		4	3,37	0,84	1,53	50
		5	0,5	0,12	0,38	16
		Total	**116,98**	**13,87**	**54,77**	**187**
DE9	0,0%	***NIEDERSACHSEN***				
		3	0,1	0	0,01	1
		Total	**0,1**	**0**	**0,01**	**1**
DE91	0,4%	***Braunschweig***				
		3	2,08	0,1	0,31	1
		Total	**2,08**	**0,1**	**0,31**	**1**
DE92	0,4%	***Hannover***				
		3	1,41	0,14	0,2	12
		5	0,21	0,1	0,1	6
		Total	**1,62**	**0,24**	**0,3**	**18**
DE93	3,8%	***Lüneburg***				
		2	4,64	0,96	0,66	9
		3	14,01	1,16	2,12	15
		Total	**18,65**	**2,12**	**2,78**	**24**

Deutschland

Region. NUTS II code	Co-financing	Priority	Total cost M€	National public aid M€	EU aid M€	Number of projects
DE94	1,6%	***Weser-Ems***				
		2	2,69	0,42	0,38	37
		3	10,39	0,9	0,67	6
		4	0,25	0,01	0,13	1
		Total	**13,33**	**1,33**	**1,18**	**44**
DEA1	0,0%	***Düsseldorf***				
		5	0,02	0,01	0,01	2
		Total	**0,02**	**0,01**	**0,01**	**2**
DEA2	0,3%	***Köln***				
		3	1,7	0,11	0,25	9
		Total	**1,7**	**0,11**	**0,25**	**9**
DEA4	0,0%	***Detmold***				
		3	0	0	0	1
		Total	**0**	**0**	**0**	**1**
DEA5	0,1%	***Arnsberg***				
		3	0,4	0,02	0,06	10
		Total	**0,4**	**0,02**	**0,06**	**10**
DEB3	0,0%	***Rheinhessen-Pfalz***				
		5	0,01	0	0	2
		Total	**0,01**	**0**	**0**	**2**
DEC0	0,0%	***Saarland***				
		5	0	0	0	1
		Total	**0**	**0**	**0**	**1**
DED1	0,2%	***Chemnitz***				
		3	0,16	0,01	0,05	4
		4	0,1	0,02	0,07	2
		Total	**0,26**	**0,03**	**0,12**	**6**
DED2	1,5%	***Dresden***				
		3	0,69	0,07	0,2	18
		4	1,36	0,34	0,94	21
		5	0	0	0	1
		Total	**2,05**	**0,41**	**1,14**	**40**
DED3	0,2%	***Leipzig***				
		4	0,2	0,01	0,15	4
		Total	**0,2**	**0,01**	**0,15**	**4**

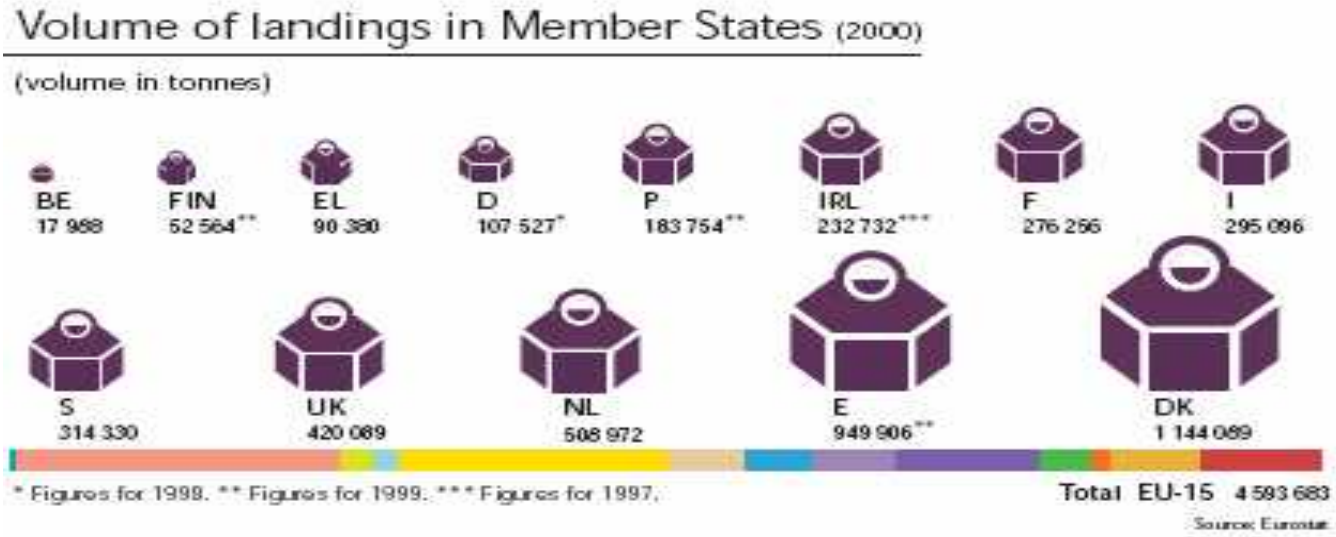
Deutschland

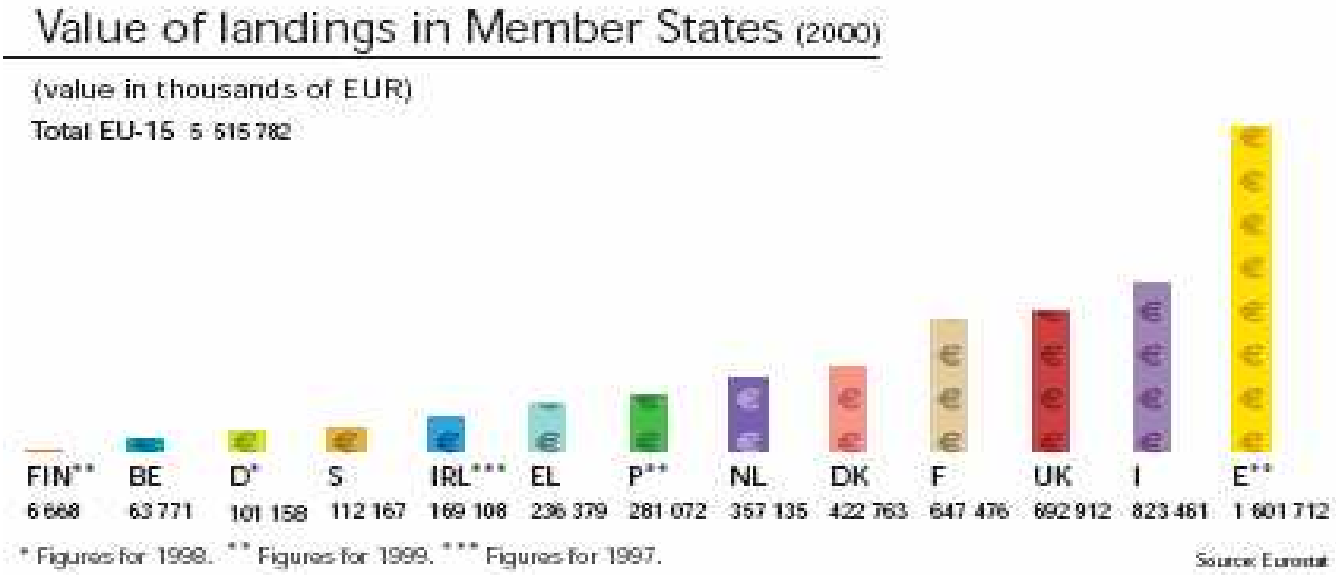
Region. NUTS II code	Co-financing	Priority	Total cost M€	National public aid M€	EU aid M€	Number of projects
DEE1	0,8%	***Dessau***				
		3	1,71	0,09	0,61	2
		Total	**1,71**	**0,09**	**0,61**	**2**
DEE3	0,3%	***Magdeburg***				
		3	0,66	0,06	0,19	5
		4	0	0	0	1
		Total	**0,66**	**0,06**	**0,19**	**6**
DEF0	4,7%	***Schleswig-Holstein***				
		1	0,41	0,2	0,2	3
		2	5,24	0,91	0,78	59
		3	10,85	0,67	1,56	31
		4	3,21	0,64	0,83	28
		5	0,16	0,08	0,08	4
		Total	**19,87**	**2,5**	**3,45**	**125**
DEG0	1,6%	***Thüringen***				
		3	4,01	0,48	1,2	18
		Total	**4,01**	**0,48**	**1,2**	**18**
Total	**100,0%**		**219,23**	**25,11**	**73,77**	**1.848**

Annex 7:

Landings and Catches

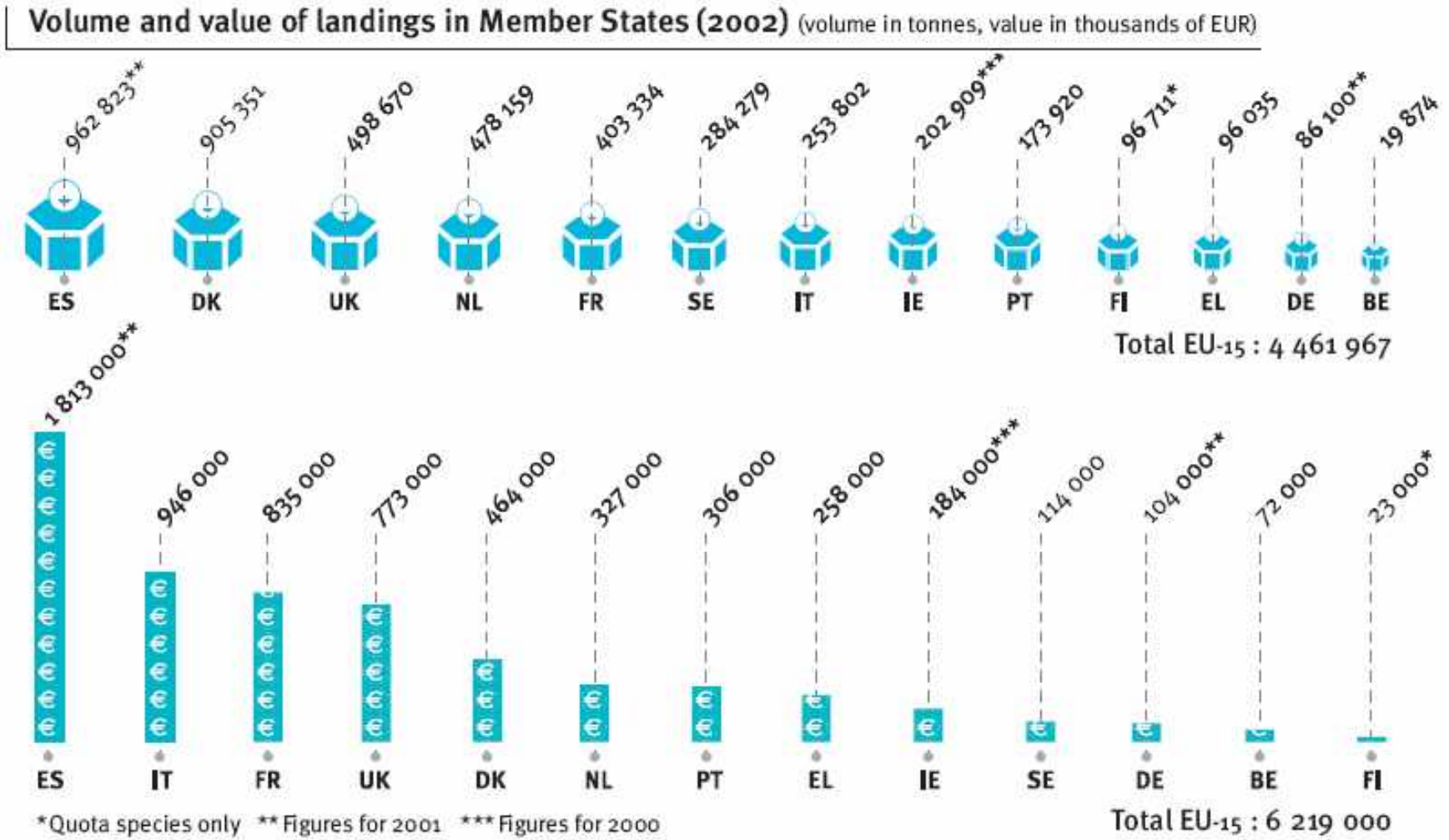
Data on landings in EU15 in 2000





Source: European Communities (2001): "Facts and figures on the CFP. Basic data on the Common Fisheries Policy", Luxembourg: Office for the Official Publications of the European Communities, http://europa.eu.int/comm/fisheries/doc_et_publ/liste_publi/facts/pcp_en.pdf

Data on Landings in EU15 in 2002



Source: European Communities (2004): "Facts and figures on the CFP. Basic data on the Common Fisheries Policy", Luxembourg: Office for the Official Publications of the European Communities, http://europa.eu.int/comm/fisheries/doc_et_publ/liste_publi/facts/pcp04_en.pdf

Catches, volume (tonnes)

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Belgium	41470	39893	37125	36109	34260	35631	30837	30508	30841	29881	29807	30217	29027	26324
Denmark	1475716	1751148	1953813	1492290	1843716	1998908	1681186	1826854	1557330	1404912	1534074	1510507	1442042	1031204
Germany	326316	235906	216894	253027	228215	238829	236526	259353	266631	238924	205249	210746	224453	260675
Greece	132381	138645	152613	159101	181125	151800	149447	157099	108591	118783	99292	94394	95642	74338
Spain	1126318	1074135	1079191	1088521	1096080	1178941	1173722	1204069	1262731	1170284	1069871	1108869	882981	840495
France	689662	649605	654947	641398	649947	675134	640573	638199	599271	664486	703267	670749	699013	694370
FR91	8600	8530	8540	8600	8800	9500	9570	10480	9084	9114	10100	10000	10100	:
FR92	3498	6294	4538	5853	5800	5300	3500	5500	5500	6000	6310	6200	6200	:
FR93	6465	7036	7617	6931	7819	8089	7377	6602	6709	6271	5237	5194	5568	:
FR94	911	887	1103	1679	2531	2500	3607	4288	4579	4043	4082	3635	3700	:
Ireland	215485	233167	248120	278047	290635	389646	332659	293019	324760	283558	276237	356413	282323	265604
Italy	371873	405874	396466	397541	398739	396797	365905	343700	306103	282795	302155	310403	269852	283218
Sweden	250985	237015	307534	341892	386821	404591	370997	357429	410885	351354	338540	311828	294963	286875
Netherl.	404816	405200	431701	461606	419927	438110	410807	451801	536631	514620	495774	518163	464036	524125
Austria	533	500	479	420	388	404	450	465	451	432	439	362	350	372
Portugal	324776	323350	296505	292892	266941	263871	263176	223831	227852	212916	191118	192704	202329	209049
Finland	123024	109356	130548	135091	151312	154529	164213	165237	155637	144520	156480	150085	144807	121956
UK	766904	790549	813085	860202	877947	909904	867633	891966	923254	840705	747570	739913	689925	635938
UK (C.I.)	2714	2523	2823	2870	2609	3269	4518	4240	4122	3618	3614	3931	3448	:
UK (Man)	4030	4563	4461	4644	2854	3734	3537	4289	2214	2609	3552	3112	3129	2985
EU15	**6250260**	**6394343**	**6719019**	**6438137**	**6826052**	**7237095**	**6688131**	**6843528**	**6710969**	**6258171**	**6149874**	**6205354**	**5721743**	**5254542**
Cyprus	2584	2921	9336	10016	9427	9320	12526	24819	19295	39638	67482	81071	1978	1733
Latvia	162827	210872	156907	142383	138105	149194	142644	105682	102331	125389	136403	128176	113677	114541
Lithuania	137598	171921	188467	117171	49162	57368	88514	44002	66578	72962	78989	150831	150146	155246
Hungary	16234	8445	8678	7886	8307	7314	7606	7406	7265	7514	7101	6638	6750	:
Estonia	131178	170908	128965	147184	123680	132030	108563	123618	118793	111797	113159	104974	102360	79083
Malta	787	773	579	838	2356	4635	9197	1036	1180	1244	1074	893	1004	1073
Poland	448292	428627	481775	395407	438032	429372	342793	348089	242011	235725	217686	225062	222439	163117
Slovenia	:	:	3905	2284	2346	2167	2367	2367	2228	2027	1856	1827	1686	1306
Slovakia	:	:	:	1185	1627	1950	1414	1364	1361	1396	1368	1531	1746	2528
Czech R.	:	:	:	3185	3955	3929	3524	3321	3952	4190	4654	4646	4983	4999

EU25	:	:	:	**7265676**	**7603049**	**8034374**	**7407279**	**7505233**	**7275963**	**6860053**	**6779647**	**6911004**	**6328513**	**5778167**
Iceland	1521877	1056695	1582751	1726788	1570636	1624100	2074339	2225401	1700134	1754398	1999980	2001085	2144617	2002180
Norway	1603073	2011895	2430723	2415009	2366110	2524355	2649549	2863162	2861214	2627559	2699365	2686965	2740413	2543699
Bulgaria	49254	50056	24016	13658	6585	8012	8854	11237	18946	10556	6998	6420	15007	12051
Romania	92784	95473	70761	13819	22251	49275	18259	8446	9061	7843	7372	7637	6989	:

Source: Eurostat database, 2 March 2005

Annex 8

FIFG 1994 to 1999

Overview of areas of assistance and connected measures of FIFG programme 1994 to 1999

AREA OF ASSISTANCE	MEASURE
1. ADJUSTMENT OF FISHING EFFORT	1. Scrapping of vessels
	2. Export of vessels/assignment to other use
	3. Joint enterprises
	4. Temporary joint ventures
2. RENEWAL AND MODERNISATION OF FISHING FLEET	1. Construction of new vessels
	2. Fitting new engines, improving safety and working conditions on board vessels, improving hygiene conditions for products, introducing new, more highly selective fishing techniques, installing equipment for monitoring fishing activities on board vessels, other investments on existing vessels
3. AQUACULTURE	1. Increasing aquaculture capacity (new production units and/or extension of existing production units)
	2. Modernisation of existing aquaculture units without increasing production capacity
4. PROTECTED MARINE AREAS	1. Development of enclosed seawater areas
5. FISHING PORT FACILITIES	1. Construction of new facilities/extension of existing facilities
	2. Modernisation of existing facilities without increasing physical capacity
6. PROCESSING/MARKETING OF PRODUCTS	1. Increasing processing capacity (new production units and/or extension of existing production units
	2. Modernisation of existing processing units without increasing production capacity
	3. Modernisation of existing marketing establishments
	4. Construction of new marketing establishments
7. PROMOTION	1. Promotion campaigns
	2. Participation in trade fairs
	3. Market studies and consumer surveys
	4. Sales advice and aid and other services to wholesalers and retailers
	5. Operations associated with quality certification and product labelling
8. OTHER MEASURES	1. Studies, pilot projects, technical assistance and other specific measures
	2. Operations by members of the trade

	3. Temporary cessation of fishing activities
	4. Specific compensation measures for fishermen (ad hoc Council decisions)
	5. Other
9. SOCIO-ECONOMIC MEASURES	1. Early retirement
	2. Flat-rate individual cessation premium
10. ERDF	1. Projects
11. ESF	1. Training
	2. Other projects

Source: DG Fish website: http://europa.eu.int/comm/fisheries/structures/domaines_en.htm (1 March 2005)

Data on the financial implementation of the FIFG programme 1994 to 1999 by area and measure[2]

Domaine	Répartition Aide UE	Mesure	Coût total M€	Aide État membre M€	Aide UE M€	Nombre de projets
1	27,1%	1	625,11	256,78	376,64	5.550
		2	26,27	10,18	16,09	110
		3	214,47	63,17	151,18	196
		4	44,82	12,69	32,13	85
		Total	**910,67**	**342,82**	**576,04**	**5.941**
2	26,3%	1	904,53	112,30	367,57	2.486
		2	607,51	62,34	191,71	9.075
		3	0,22	0,06	0,17	5
		Total	**1.512,26**	**174,70**	**559,45**	**11.566**
3	8,0%	1	287,06	33,73	102,30	1.345
		2	177,79	22,72	66,77	2.295
		Total	**464,85**	**56,45**	**169,07**	**3.640**
4	0,9%	1	26,54	8,74	18,41	237
		Total	**26,54**	**8,74**	**18,41**	**237**
5	6,0%	1	180,19	39,45	79,84	672
		2	76,39	15,48	47,38	376
		Total	**256,58**	**54,93**	**127,23**	**1.048**
6	22,1%	1	906,68	109,12	267,95	1.475
		2	331,60	43,21	110,87	1.384
		3	151,09	30,82	46,94	806
		4	112,47	14,47	44,93	210
		Total	**1.501,84**	**197,62**	**470,69**	**3.875**
7	2,8%	1	92,53	37,46	49,26	571
		2	7,04	2,18	4,10	364
		3	2,76	0,73	1,35	39
		4	5,80	2,28	3,34	76
		5	2,37	0,68	1,70	57
		Total	**110,49**	**43,33**	**59,75**	**1.107**
8	6,5%	1	34,88	14,36	19,62	328
		2	18,40	8,85	8,85	6
		3	53,85	15,80	38,06	757
		4	114,16	51,70	61,93	776
		5	15,15	4,64	8,94	49
		Total	**236,44**	**95,35**	**137,40**	**1.916**
9	0,4%	1	2,73	1,10	1,64	63
		2	8,61	2,53	6,08	1.219
		Total	**11,35**	**3,63**	**7,72**	**1.282**
Total	**100,0%**		**5.031,03**	**977,56**	**2.125,74**	**30.612**

Source: DG Fish website: http://europa.eu.int/comm/fisheries/structures/pdf/exec_dom_em.pdf (1 March 2005)

[2] Area of assistance ('Domaine'), the area's share of the total EU aid given ('Répartition Aide UE'), specific measure under area of assistance ('Mesure'), total costs in million € ('Côut total M€'), the national financial aid in million € ('Aide État membre M€'), EU financial aid in million € ('Aide UE M€'), number of projects ('Nombre de projects').

Data on the financial implementation of the FIFG programme 1994 to 1999 by member state[3]

	Répartition Aide UE	Coût total M€	Aide État membre M€	Aide UE M€	Nombre de projets
Belgique-België	0,8%	85,04	13,02	17,20	180
Danmark	4,5%	305,57	48,44	95,25	2.528
Deutschland	5,6%	392,35	51,70	118,24	1.469
Ellas	4,9%	221,78	35,25	104,82	2.422
España	49,5%	2.098,73	376,22	1.051,69	9.555
France	5,7%	499,13	104,34	121,16	3.491
Ireland	2,0%	120,93	13,53	43,33	895
Italia	11,2%	528,13	177,90	238,41	1.873
Luxembourg	0,0%	0,29	0,03	0,09	3
Nederland	0,8%	33,63	22,41	17,03	90
Österreich	0,1%	15,58	3,56	1,80	361
Portugal	7,7%	260,13	45,68	163,98	3.194
Suomi-Finland	1,0%	72,77	15,85	22,29	1.855
Sverige	1,6%	129,68	16,95	34,59	1.203
United Kingdom	4,5%	267,27	52,67	95,86	1.493
Total	**100,0%**	**5.031,03**	**977,56**	**2.125,74**	**30.612**

Source: DG Fish website: http://europa.eu.int/comm/fisheries/structures/pdf/exec_em.pdf (1 March 2005)

[3] Area of assistance ('Domaine'), the member state's share of the total EU aid given ('Répartition Aide UE'), total costs in million € ('Côut total M€'), the national financial aid in million € ('Aide État membre M€'), EU financial aid in million € ('Aide UE M€'), number of projects ('Nombre de projects').

Annex 9

FIFG 2000 to 2006

Data on distribution of EU and national aid by member state and area of assistance

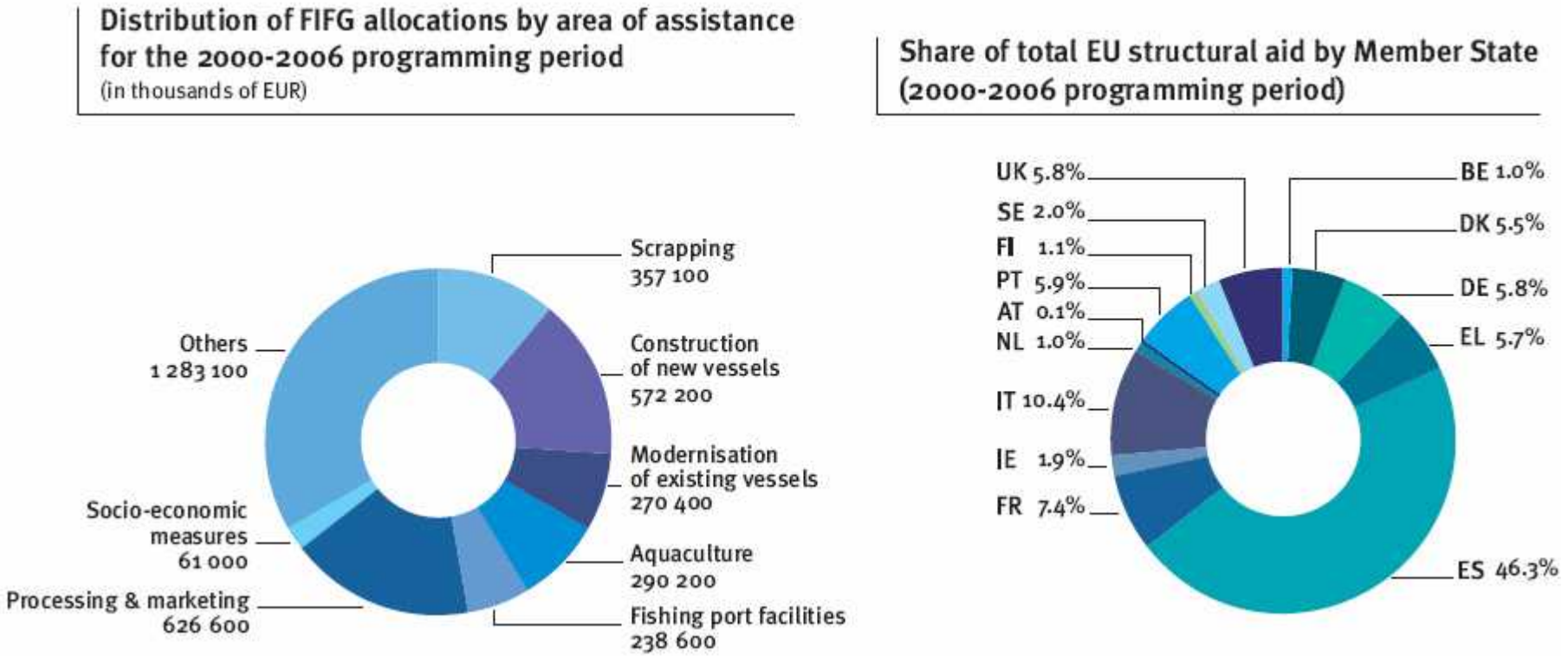
EU and national aid to the fisheries sector
Distribution by Member State for the 2000-2006 programming period (in thousands of EUR)

	Total public aid			Scrapping		Construction of new vessels		Modernisation of existing vessels	
	Total	EU	National	EU	National	EU	National	EU	National
BE	68 756	36 946	31 810	-	-	3 730	4 970	6 000	6 000
DK	310 000	204 500	105 500	19 900	19 900	27 200	9 100	40 300	13 400
DE	289 368	216 478	72 890	6 700	6 330	16 239	2 970	15 817	2 890
EL	286 060	211 100	74 960	46 412	15 470	17 093	2 440	15 195	2 170
ES	2 362 560	1 712 100	650 460	69 564	28 750	366 548	112 520	101 270	35 060
FR	552 221	274 481	277 740	11 144	10 380	35 264	56 910	22 191	33 660
IE	89 290	71 260	18 030	4 760	1 720	19 700	4 260	-	-
IT	757 533	385 923	371 610	106 143	106 100	19 190	8 840	28 785	13 260
NL	86 000	38 100	47 900	5 068	11 070	-	-	6 850	6 850
AT	10 676	4 556	6 120	-	-	-	-	-	-
PT	283 254	217 694	65 560	19 114	6 370	57 112	10 190	8 234	1 590
FI	89 083	38 953	50 130	2 500	2 500	1 000	1 730	2 000	3 470
SE	114 147	74 067	40 080	5 514	5 440	8 000	2 670	8 000	2 670
UK	322 708	214 858	107 850	61 898	52 390	1 100	350	15 750	3 850
EU-15	5 621 657	3 701 017	1 920 640	358 717	266 420	572 176	216 950	270 391	124 870

	Aquaculture		Fishing port facilities		Processing & marketing		Socio-economic measures		Others	
	EU	National	EU	National	EU	National	EU	National	EU	National
BE	2 780	3 400	1 850	1 150	10 081	3 830	250	250	12 256	12 210
DK	10 600	3 500	36 200	27 300	35 250	11 750	-	-	35 050	20 550
DE	30 616	8 760	33 858	14 480	82 648	21 730	200	200	30 400	15 530
EL	36 738	16 930	6 155	2 110	39 113	18 410	18 423	6 140	31 970	11 290
ES	123 020	59 920	77 828	28 510	287 256	159 970	22 757	8 100	663 858	217 630
FR	18 799	13 000	8 755	8 150	60 285	50 680	10 300	9 840	107 743	95 120
IE	25 680	5 010	-	-	-	-	1 310	440	19 810	6 600
IT	8 880	14 880	5 925	9 740	10 114	15 060	481	480	206 405	203 250
NL	540	900	-	-	3 000	3 000	1 000	1 000	21 642	25 080
AT	2 230	3 200	-	-	1 580	2 250	-	-	746	670
PT	8 480	2 800	32 279	14 580	28 439	9 400	4 743	1 540	59 293	19 090
FI	3 000	5 200	4 000	4 000	8 750	14 330	550	550	17 153	18 350
SE	4 000	1 330	5 000	4 330	15 000	5 000	1 000	1 000	27 553	17 640
UK	14 827	2 570	26 728	8 390	45 047	12 780	-	-	49 508	27 520
EU-15	290 190	141 400	238 579	122 740	626 563	328 190	61 014	29 540	1 283 387	690 530

Source: European Communities (2004): "Facts and figures on the CFP. Basic data on the Common Fisheries Policy", Luxembourg: Office for the Official Publications of the European Communities, http://europa.eu.int/comm/fisheries/doc_et_publ/liste_publi/facts/pcp04_en.pdf

Data on the projected allocation of EU FIFG support 2000 to 2006 divided on respectively area of assistance and member state



Source: European Communities (2004): "Facts and figures on the CFP. Basic data on the Common Fisheries Policy", Luxembourg: Office for the Official Publications of the European Communities, http://europa.eu.int/comm/fisheries/doc_et_publ/liste_publi/facts/pcp04_en.pdf

Data on the available EU FIFG support 2004 to 2006 for the 10 new member states (million €)

Member State	Total FIFG allocation
Cyprus	3.41
Czech Republic	7.25
Estonia	12.46
Hungary	4.38
Latvia	24.33
Lithuania	12.11
Malta	2.83
Poland	201.83
Slovakia	1.82
Slovenia	1.78

Source: DG Fish website, European Fisheries and Enlargement: http://europa.eu.int/comm/fisheries/enlargement/note_en.pdf (1 March 2005)

Annex 10

The Fishing Fleet

Fishing fleet, numbers

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Belgium	216	217	198	185	170	155	146	147	139	128	127	130	130	125
Denmark	3810	3725	3523	3303	5304	5184	4835	4585	4376	4224	4144	4021	3823	3581
Germany	1238	1845	1684	2478	2458	2392	2370	2337	2305	2313	2315	2282	2247	2212
Greece	:	21763	21167	20365	20444	20712	20662	20697	20701	20065	19962	20044	19468	19048
Spain	20868	20588	20275	20190	19011	18338	18104	17932	17527	17308	16669	15415	14904	14379
France	8745	7702	7274	7021	6828	6598	6481	8819	8526	8305	8182	7987	8158	8082
Ireland	1411	1422	1427	1435	1417	1993	1859	1798	1698	1640	1567	1534	1542	1490
Italy	17916	16887	16757	16670	16484	19051	18927	18858	18634	18205	17338	16432	15792	15666
Netherl.	1109	1466	1533	1610	993	1053	1095	1076	1094	1125	1104	994	952	949
Portugal	16176	14818	14168	13131	12600	11745	11517	11352	11089	10847	10701	10459	10300	10264
Finland	:	:	:	:	:	4106	4019	3989	3881	3764	3662	3611	3571	3494
Sweden	:	:	:	:	:	2512	2433	2263	2133	1974	1953	1849	1819	1714
UK	11158	10904	10924	11055	10532	9794	8693	8210	8030	7853	7657	7570	7423	7118
EU15	**:**	**:**	**:**	**:**	**:**	**103633**	**101141**	**102063**	**100133**	**97751**	**95381**	**92328**	**90129**	**88122**
Slovenia	:	:	:	:	:	:	:	:	:	:	75	110	:	:
Malta	:	:	:	:	:	:	:	:	:	:	:	1752	:	:
Iceland	:	:	:	:	:	:	:	:	1932	1970	1997	2016	1939	1876
Norway	:	:	:	:	:	:	:	13645	13251	13196	13014	11951	10651	9933

Source: Eurostat database, 2 March 2005

Fishing fleet, gross tonnage (tonnes)

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Belgium	26022	27445	25798	24769	24439	22822	22349	23012	22767	22838	23054	24091	24276	23794
Denmark	122046	117695	109907	96270	99347	98654	97975	98448	98807	99223	102578	100590	99714	96222
Germany	106401	76702	72951	83543	79139	76925	73364	68577	67701	69803	71452	71273	69227	66002
Greece	:	120094	118671	122387	119979	110745	111263	111699	110463	108498	108060	109505	103020	99598
Spain	678930	656391	627601	586040	703847	598735	564154	572314	551492	533849	522073	525775	519181	486501
France	209590	198631	191288	187750	182843	179194	198449	210356	210900	214382	222825	230632	229937	228048
Ireland	51824	52561	54595	55266	56136	60797	59515	60285	61175	63968	67344	71625	82591	86450
Italy	270418	269449	270332	266095	262526	246604	247958	254633	251584	244274	231294	220472	216203	219407
Netherl.	175906	172517	171591	173260	180222	181498	180508	176039	179938	192505	213035	204313	201068	200507
Portugal	186220	183156	167541	147328	131114	123610	121197	120768	117702	116548	115319	116513	115170	114238
Finland	:	:	:	:	:	24646	23529	24347	22750	21499	20796	19955	19872	19531
Sweden	:	:	:	:	:	52058	50002	48816	48082	47868	48926	46059	44807	43918
UK	207386	211290	210287	249733	245605	222103	234854	251390	252251	259395	260506	264962	240418	227480
EU15	**:**	**:**	**:**	**:**	**:**	**1998391**	**1985117**	**2020684**	**1995612**	**1994650**	**2007262**	**2005765**	**1965484**	**1911696**
Slovenia	:	:	:	:	:	:	:	:	:	:	2512	965	:	:
Malta	:	:	:	:	:	:	:	:	:	:	:	5033	:	:
Iceland	:	:	:	:	:	:	:	:	187098	180821	180203	191487	191629	183773
Norway	:	:	:	:	:	:	:	358705	372169	384881	392281	407010	394482	395327

Source: Eurostat database, 2 March 2005

Fishing fleet, power (kilowatt)

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Belgium	79238	81317	75862	71586	69260	65965	63540	64675	63941	63453	63355	66347	67774	66869
Denmark	513125	495757	459330	409666	418196	407760	393219	377641	370874	368616	372609	363670	346140	324957
Germany	204114	177480	165556	175855	172278	169182	167958	161614	159829	163720	167716	167594	163862	160248
Greece	:	705674	694409	668056	666459	669272	667090	667909	659031	630974	621658	625123	597039	572228
Spain	2025791	1978351	1921892	1837093	1714569	1631818	1537995	1469247	1407657	1380785	1332387	1300675	1259848	1176727
France	1155803	1088361	1054460	1034079	1010644	990784	988407	1145661	1125521	1108602	1107789	1102672	1115592	1108446
Ireland	179412	181836	191109	191092	193447	210662	204196	205986	200564	206650	210362	213808	228331	227041
Italy	1503303	1515556	1526007	1530198	1520751	1494088	1495885	1513127	1510236	1471193	1397197	1324322	1284940	1291249
Netherl.	553138	540059	533336	537935	512398	521193	513990	494550	494016	506142	524428	494091	471985	470202
Portugal	495913	493175	473374	449808	416364	394749	391920	391966	387643	392948	396505	401694	397204	393614
Finland	:	:	:	:	:	224742	217809	220553	211220	203752	197519	191374	190000	187696
Sweden	:	:	:	:	:	268072	256453	247848	239732	231192	240198	229338	224590	220845
UK	1178572	1191878	1200025	1202421	1163059	1138663	1059286	1012188	993004	973797	969372	991473	927090	906720
EU15	**:**	**:**	**:**	**:**	**:**	**8186950**	**7957748**	**7972965**	**7823268**	**7701824**	**7601095**	**7472181**	**7274395**	**7106842**
Slovenia	:	:	:	:	:	:	:	:	:	:	5984	7523	:	:
Malta	:	:	:	:	:	:	:	:	:	:	:	74292	:	:
Iceland	:	:	:	:	:	:	:	:	502563	513774	528711	555030	548769	538442
Norway	:	:	:	:	:	:	:	1202438	1237842	1286024	1321060	1361749	1350959	

Source: Eurostat database, 2 March 2005, and Directorate of Fisheries, Norway, for Norwegian data from 1997 to 2002.

Distribution of vessels in 2003 according to length, numbers

	Total	0 - 5.9 m	6 - 11.9 m	Total under 12 m	12 - 17.9 m	18 - 23.9 m	24 - 29.9 m	30 - 35.9 m	36 - 41.9 m	42 m +	Total 12 m +	Unknown
Belgium	**125**	0	0	**0**	9	43	13	28	32	0	**125**	0
Denmark	**3581**	1204	1515	**2719**	498	180	41	65	52	26	**862**	0
Germany	**2212**	928	867	**1795**	252	83	40	17	12	13	**417**	0
Greece	**19048**	7259	10585	**17844**	663	309	185	30	7	10	**1204**	0
Spain	**14379**	5681	4655	**10336**	1615	1015	542	289	125	140	**3726**	317
France	**8082**	1169	5183	**6352**	908	528	169	50	18	57	**1730**	0
Ireland	**1490**	264	796	**1060**	126	156	77	47	10	14	**430**	0
Italy	**15666**	3468	7237	**10705**	3163	1161	494	94	13	24	**4949**	12
Netherl.	**949**	132	148	**280**	106	193	85	66	137	82	**669**	0
Portugal	**10264**	5510	3810	**9320**	479	193	159	73	8	31	**943**	1
Finland	**3494**	1637	1662	**3299**	102	16	9	8	0	0	**135**	60
Sweden	**1714**	219	1157	**1376**	193	61	24	29	20	11	**338**	0
UK	**7118**	1751	4102	**5853**	584	314	177	64	70	55	**1264**	1
EU15	**88122**	**29222**	**41717**	**70939**	**8698**	**4252**	**2015**	**860**	**504**	**463**	**16792**	**391**
Iceland	**1876**	6	1378	**1384**	129	68	61	53	43	120	**474**	18
Norway	**9933**	1731	6435	**8166**	1027	321	131	48	52	188	**1767**	0

Source: Eurostat database, 2 March 2005

Distribution of vessels in 2003 according to length, gross tonnage (tonnes)

	Total	0 - 5.9 m	6 - 11.9 m	Total under 12 m	12 - 17.9 m	18 - 23.9 m	24 - 29.9 m	30 - 35.9 m	36 - 41.9 m	42 m +	Total 12 m +	Unknown
Belgium	**23794**	0	0	**0**	271	3458	1479	6655	11931	0	**23794**	0
Denmark	**96214**	724	7036	**7760**	12736	14036	7303	15496	18769	20114	**88454**	0
Germany	**66002**	932	3170	**4102**	7290	5601	5906	3780	3826	35497	**61900**	0
Greece	**99587**	4905	30839	**35744**	12233	16918	20516	6048	2862	5266	**63843**	0
Spain	**486501**	3763	15795	**19558**	34532	64434	79769	75472	45088	161833	**461128**	5815
France	**228039**	1187	21200	**22387**	31754	56166	24426	12937	5384	74985	**205652**	0
Ireland	**86448**	304	4124	**4428**	4542	17540	12631	11890	4333	31084	**82020**	0
Italy	**219409**	3548	17986	**21534**	48614	60644	54699	17719	3750	11908	**197334**	541
Netherl.	**200507**	162	608	**770**	2188	10815	9037	10286	43005	124406	**199737**	0
Portugal	**114238**	3326	9293	**12619**	9631	12458	25047	17025	2858	34598	**101617**	2
Finland	**19529**	1469	6921	**8390**	2508	958	1265	1891	0	0	**6622**	4517
Sweden	**43918**	101	5558	**5659**	5801	5924	3541	7303	8230	7460	**38259**	0
UK	**227485**	1828	23291	**25119**	22130	35397	34297	16215	25076	69251	**202366**	0
EU15	**1911671**	**22249**	**145821**	**168070**	**194230**	**304349**	**279916**	**202717**	**175112**	**576402**	**1732726**	**10875**
Iceland	**183773**	10	8048	**8058**	3131	4482	10457	12961	16300	128315	**175646**	69
Norway	**395327**	0	38033	**38033**	21505	27356	28098	16609	25724	238002	**357294**	0

Source: Eurostat database, 2 March 2005

Distribution of vessels in 2003 according to length, power (kilowatt)

	Total	0 - 5.9 m	6 - 11.9 m	Total under 12 m	12 - 17.9 m	18 - 23.9 m	24 - 29.9 m	30 - 35.9 m	36 - 41.9 m	42 m +	Total 12 m +	Unknown
Belgium	**66869**	0	0	**0**	2105	9290	3610	22109	29755	0	**66869**	0
Denmark	**324957**	15021	62307	**77328**	74120	45364	19366	36300	37387	35092	**247629**	0
Germany	**160248**	7281	27498	**34779**	41972	17965	12718	10098	9235	33481	**125469**	0
Greece	**572225**	61499	283795	**345294**	71876	73349	56301	11675	5501	8229	**226931**	0
Spain	**1176724**	38488	139363	**177851**	162673	216574	172922	135315	78128	214451	**980063**	18810
France	**1108446**	32406	440152	**472558**	197648	195579	69356	30920	17208	125177	**635888**	0
Ireland	**227044**	2615	31821	**34436**	18904	47954	37488	33339	12341	42582	**192608**	0
Italy	**1291234**	24750	277226	**301976**	411694	293178	192588	50313	11143	28824	**987740**	1518
Netherl.	**470201**	2006	6733	**8739**	12577	37547	21488	32576	148422	208852	**461462**	0
Portugal	**393614**	37377	93037	**130414**	55596	49633	64459	45618	5584	42304	**263194**	6
Finland	**187694**	29643	102008	**131651**	19539	5418	4843	4848	0	0	**34648**	21395
Sweden	**220849**	4776	73689	**78465**	39087	22198	12581	21151	24262	23105	**142384**	0
UK	**906709**	31176	302555	**333731**	107109	102473	91828	40523	74604	156418	**572955**	23
EU15	**7106814**	**287038**	**1840184**	**2127222**	**1214900**	**1116522**	**759548**	**474785**	**453570**	**918515**	**4937840**	**41752**
Iceland	**538442**	194	151849	**152043**	23534	21193	29680	29792	31509	250360	**386068**	331
Norway[4]												

Source: Eurostat database, 2 March 2005

[4] Norway is not included because of incorrect data in Eurostat database.

Annex 11

Dissimilarity, specialisation and concentration indexes

Chapter 8 (WP4)

Indexes used in the specialisation and concentration analysis are of three types:
1) dissimilarity index (IDS);
2) specialisation index (ISP);
3) concentration index (ICO).

IDS satisfies the need to assess the similarity of a given phenomenon observed in a set **I** of n elements. The dissimilarity index used in the present analysis is based on composition ratios which define the localization coefficients. The latter give the possibility to make a comparison between the percentage of vessels, for each enrolment office (or another administrative area), having the license for a certain type of fishing gear and the whole set of elements (in this case, the enrolment offices considered as a whole). Thus, the IDS is defined as follows:

$$IDS = \frac{1}{2}\sum_{a=1}^{h}\left|\frac{B_{au}}{\sum_{a=1}^{h}B_{au}} - \frac{\sum_{u=1}^{s}B_{ua}}{\sum_{a=1}^{h}\sum_{u=1}^{s}B_{au}}\right|$$

where:

B_{au} = number of vessels having gear a in the enrollment office u

$\sum_{a=1}^{h} B_{au}$ = total number of vessels in the enrollment office u

$\sum_{u=1}^{s} B_{ua}$ = total number of vessels having gear a for all the enrollment offices

$\sum_{a=1}^{h}\sum_{u=1}^{s} B_{ua}$ = total number of vessels $f$or all the enrollment offices

On the other hand, the ISP is based on a matrix whose data are order so to have the enrolment offices in rows and gears in columns.

$$M_1 = \begin{vmatrix} B_{11} & B_{1a} & B_{1h} \\ B_{u1} & B_{ua} & B_{uh} \\ B_{s1} & B_{sa} & B_{sh} \end{vmatrix},$$

where the generic element B_{ua} represents the number of vessels in the enrolment office u having the fishing gear a. Moreover, given that:

$$q_x = \frac{B_{ua}}{\sum_{a=1}^{h} B_{ua}}, \text{ and } q_y = \frac{\sum_{u=1}^{s} B_{ua}}{\sum_{u=1}^{s}\sum_{a=1}^{h} B_{ua}}$$

we obtain another matrix, $\mathbf{M_2}$ defined as follow:

$$M_2 = \begin{vmatrix} ISP_{11} & ISP_{1a} & ISP_{1h} \\ ISP_{u1} & ISP_{ua} & ISP_{uh} \\ ISP_{s1} & ISP_{sa} & ISP_{sh} \end{vmatrix},$$

where the generic element ISP_{ua} represents the specialisation index of the enrolment office u for the fishing gear a. This is because:

q_x = the share of vessels having the license for fishing gear a on total vessels enrolled in the office u.
q_y = the share of vessels having the license for fishing gear a on total vessels.

Thus, the specialisation index is defined as follow:

$$ISP = \frac{q_x - q_y}{(1 - q_y)q_x + (1 - q_x)q_y}.$$

The concentration index is obtained by the same procedure used for the specialisation index but the matrix $\mathbf{M_2}$ must be read not by rows but by columns. Thus, the generic element ICO_{ua} represents the concentration index of the fishing gear a for the enrolment office u. Moreover, the meaning of q_x and q_y is different as follow:

q_x = the share of vessels having the license for fishing gear a in the enrolment office u on total vessels having this fishing gear;
q_y = the share of vessels enrolled in the office u on total vessels.

As a consequence, the concentration index is defined as follow:

$$ICO = \frac{q_x - q_y}{(1 - q_y)q_x + (1 - q_x)q_y}.$$

Annex 12

Statistical tables

Chapter 8 (WP4)

Table 1.a - FIFG 1994-99 funds allocation for demolition (measure 1.1) by NUTS 3 Ob. 1, Italy, updated at 31.12.2002. Measure unit: Euro

NUTS 2	NUTS 3 Code 1999	Name of NUTS 3	Payments	State Aid	FIFG Aid	Commitments
Abruzzo	IT712	Teramo	1.320.384,04	660.192,02	660.192,02	1.357.093,79
	IT714	Chieti	215.393,51	107.696,76	107.696,76	215.393,51
Calabria	IT931	Cosenza	701.196,11	350.598,06	350.598,06	701.196,11
	IT932	Crotone	1.797.623,78	898.811,89	898.811,89	1.808.585,58
	IT933	Catanzaro	52.585,64	26.292,82	26.292,82	52.585,64
	IT934	Vibo Valentia	365.496,55	182.748,27	182.748,27	369.803,80
	IT935	Reggio di Calabria	4.155.974,61	2.032.514,82	2.123.459,78	4.257.435,69
Campania	IT803	Napoli	3.419.174,50	1.706.257,13	1.712.917,36	3.441.981,23
	IT805	Salerno	1.800.268,04	875.448,03	924.820,01	1.815.098,10
Molise	IT722	Campobasso	2.599.588,38	1.299.794,19	1.299.794,19	2.599.588,38
Puglia	IT911	Foggia	4.951.592,49	2.461.190,85	2.490.401,65	5.010.378,20
	IT912	Bari	11.160.853,08	5.513.835,36	5.647.017,72	11.237.794,83
	IT914	Brindisi	836.058,50	418.029,25	418.029,25	836.058,50
	IT915	Lecce	2.426.203,47	1.213.101,74	1.213.101,74	2.428.269,30
Sardegna	ITB01	Sassari	1.060.748,24	530.374,12	530.374,12	1.724.199,10
	ITB02	Nuoro	279.901,56	126.437,04	153.464,52	279.901,56
	ITB03	Oristano	366.885,82	183.442,91	183.442,91	366.885,82
	ITB04	Cagliari	361.093,75	180.546,88	180.546,88	361.093,75
Sicilia	ITA01	Trapani	23.382.495,72	11.202.254,59	12.180.241,13	23.819.250,41
	ITA02	Palermo	4.374.389,95	2.187.194,98	2.187.194,98	4.386.320,09
	ITA03	Messina	6.209.172,79	3.088.609,80	3.120.562,99	6.858.341,04
	ITA04	Agrigento	5.049.832,93	2.503.796,48	2.546.036,45	5.146.567,89
	ITA05	Caltanissetta	30.163,67	15.081,83	15.081,83	30.163,67
	ITA07	Catania	3.786.374,83	1.894.181,60	1.892.193,24	4.296.025,35
	ITA08	Ragusa	706.442,28	353.221,14	353.221,14	706.742,86
	ITA09	Siracusa	3.933.805,72	1.914.164,86	2.019.640,86	4.276.162,42
Total			**85.343.699,99**	**41.925.817,42**	**43.417.882,57**	**88.382.916,63**

Source: Irepa processing on data from Ministry for Agriculture and Forestry Policies, General Direction Fishery and Aquaculture

Table 1.b - FIFG 1994-99 funds allocation for demolition (measure 1.1) by NUTS 3 Ob. 5a, Italy, updated at 31.12.2002. Measure unit: Euro

NUTS 2	NUTS 3 Code 1999	Name of NUTS 3	Payments	State Aid	FIFG Aid	Commitments
Abruzzo	IT712	Teramo	5.899.689,61	2.950.748,86	2.948.940,75	5.945.379,52
	IT713	Pescara	2.547.847,15	1.273.923,57	1.273.923,57	2.547.847,15
	IT714	Chieti	1.615.890,35	807.945,17	807.945,17	1.615.890,35
Emilia-Romagna	IT406	Ferrara	4.857.953,69	2.420.451,69	2.437.502,00	4.885.646,11
	IT407	Ravenna	160.964,12	80.482,06	80.482,06	167.497,30
	IT408	Forlì-Cesena	187.814,72	93.907,36	93.907,36	190.443,48
	IT409	Rimini	1.068.936,67	513.386,56	555.550,10	1.068.967,65
Friuli-Venezia Giulia	IT332	Udine	1.031.733,93	480.380,18	551.353,75	1.033.249,50
	IT333	Gorizia	323.340,75	161.670,38	161.670,38	295.550,21
	IT334	Trieste	351.632,26	163.560,09	188.072,17	353.468,27
Lazio	IT603	Roma	1.342.398,01	664.207,21	678.190,80	2.692.039,33
	IT604	Latina	3.336.667,45	1.658.707,92	1.677.959,53	3.413.207,09
Liguria	IT131	Imperia	698.629,32	349.314,66	349.314,66	698.629,32
	IT132	Savona	1.817.822,42	893.943,26	923.879,17	1.829.218,03
	IT133	Genova	1.423.610,86	711.805,43	711.805,43	1.452.767,43
	IT134	La Spezia	13.678,36	6.839,18	6.839,18	13.678,36
Marche	IT531	Pesaro e Urbino	1.458.110,18	712.208,78	745.901,40	1.463.613,03
	IT532	Ancona	6.536.921,50	3.150.916,19	3.386.005,31	6.556.422,92
	IT533	Macerata	3.099.364,81	1.553.700,67	1.545.664,14	3.123.887,68
	IT534	Ascoli Piceno	7.106.797,30	3.540.774,84	3.566.022,46	7.148.517,51
Toscana	IT511	Massa-Carrara	47.155,10	23.577,55	23.577,55	47.155,10
	IT512	Lucca	785.675,03	392.837,52	392.837,52	785.675,55
	IT516	Livorno	2.697.782,30	1.341.134,87	1.356.647,43	2.736.511,44
	IT517	Pisa	17.402,02	8.701,01	8.701,01	17.402,02
	IT51A	Grosseto	1.333.538,19	627.422,31	706.115,88	1.333.538,19
Veneto	IT325	Venezia	1.466.151,41	647.211,13	818.940,28	1.466.151,41
	IT327	Rovigo	281.969,97	140.984,99	140.984,99	281.969,97
Total			**51.509.477,49**	**25.370.743,46**	**26.138.734,03**	**53.164.323,93**

Source: Irepa processing on data from Ministry for Agriculture and Forestry Policies, General Direction Fishery and Aquaculture

Table 2 - Number of vessels, power and tonnage by NUTS 3, Italy, 1997.

NUTS 2	NUTS 3 Code 1999	Name of NUTS 3	Numbers of vessels operating in:		Power (KW)	TONNAGE (GRT)
			Eu waters	Third country fisheries		
Abruzzo	IT712	Teramo	343	0	31141,96	6669,31
	IT714	Chieti	199	0	14772,1	2603,95
Calabria	IT931	Cosenza	190	0	16989,16	1905,08
	IT932	Crotone	103	0	9551,16	1353,97
	IT933	Catanzaro	41	0	2315,88	311,67
	IT934	Vibo Valentia	118	0	7594,46	953,52
	IT935	Reggio Calabria	401	0	21526,4	2476,2
Campania	IT803	Napoli	739	2	51025,582	8056,61
	IT805	Salerno	594	1	40176,088	6305,9
Molise	IT722	Campobasso	69	0	13101,18	2775,83
Puglia	IT911	Foggia	630	0	68534,22	10019,68
	IT912	Bari	652	2	102892,68	19996,18
	IT914	Brindisi	143	0	8266,14	824,83
	IT915	Lecce	486	0	27660,98	3126,02
Sardegna	ITB01	Sassari	442	1	30726,8	4172,16
	ITB02	Nuoro	126	0	10064,28	1447,81
	ITB03	Oristano	146	0	9644,54	943,78
	ITB04	Cagliari	332	0	28408,54	4374,91
Sicilia	ITA01	Trapani	828	16	126000,662	38530,25
	ITA02	Palermo	753	1	46316,6038	8968,65
	ITA03	Messina	726	0	34882,4	4517,61
	ITA04	Agrigento	512	0	51949,4	10766,23
	ITA05	Caltanissetta	32	0	1869,74	439,5
	ITA07	Catania	417	0	55710,854	7677,04
	ITA08	Ragusa	188	0	8841,82	1348,93
	ITA09	Siracusa	434	0	38412,26	5546,76
Total			**9644**	**23**	**858375,8898**	**156112,38**

Source: Regional Socio-Economic Studies on Employment and the level of Dependency on Fishing, 1999. Italy, Lots 1.2, 1.3, 1.4.

Table 3 - Population density by NUTS 3, Italy, 1995-1999.Measure unit: number of people/square km.

NUTS 2	Nuts 3 Code 1999	Name of NUTS 3	1995	1996	1997	1998	1999	Average 1995-99
Abruzzo	IT712	Teramo	146,7	147,4	148,1	148,6	149,1	147,98
	IT714	Chieti	149,8	150,2	150,5	150,6	150,7	150,36
Molise	IT722	Campobasso	82,3	82,1	81,9	81,7	81,4	81,88
Campania	IT803	Napoli	2642,1	2651,1	2659,1	2659	2651,4	2652,54
	IT805	Salerno	220,2	221	221,5	221,8	221,8	221,26
Puglia	IT911	Foggia	97,3	97,3	97,2	97	96,7	97,1
	IT912	Bari	303,1	304,2	305,1	305,6	306,3	304,86
	IT914	Brindisi	224,9	224,7	225,2	225,2	224,3	224,86
	IT915	Lecce	296,1	296,4	296,5	296,3	295,9	296,24
Calabria	IT931	Cosenza	113,3	113,3	113,1	112,9	112,4	113
	IT932	Crotone	104,7	104,2	103,7	103,2	102,2	103,6
	IT933	Catanzaro	160,7	160,8	160,8	160,6	160,1	160,6
	IT934	Vibo Valentia	157,5	157,2	157,1	156,5	155,5	156,76
	IT935	Reggio di Calabria	181,9	181,9	181,8	181,4	180,5	181,5
Sicilia	ITA01	Trapani	176,1	176,7	176,9	176,8	176,5	176,6
	ITA02	Palermo	248,5	248,6	249	249,1	248,4	248,72
	ITA03	Messina	210,5	210,3	210,1	209,7	208,9	209,9
	ITA04	Agrigento	156,6	156,2	155,9	155,5	154,8	155,8
	ITA05	Caltanissetta	132,8	133,2	133,5	133,4	132,9	133,16
	ITA07	Catania	304,7	307	308,3	309	309,3	307,66
	ITA08	Ragusa	183,9	184,9	186	186,5	186,8	185,62
	ITA09	Siracusa	192,9	192,6	192,4	192,1	191,7	192,34
Sardegna	ITB01	Sassari	61,1	61,1	61,2	61,1	61	61,1
	ITB02	Nuoro	38,8	38,7	38,6	38,5	38,3	38,58
	ITB03	Oristano	22,9	23	23	23	22,9	22,96
	ITB04	Cagliari	292,6	293	293,1	292,2	291,4	292,46

Source: ESPON database

Table 4.a - FIFG 1994-99 funds allocation by NUTS 3 Ob. 1, Italy, updated at 31.12.2002. Measure unit: Euro

NUTS 2	NUTS 3 Code 1999	Name of NUTS 3	Payments	State Aid	FIFG Aid	Commitments
Abruzzo	IT712	Teramo	6.306.286,05	1.870.012,94	3.021.146,28	9.298.894,36
	IT713	Pescara	1.905.734,96	204.485,91	889.958,37	2.269.918,97
	IT714	Chieti	3.176.365,75	1.009.975,05	2.016.499,66	4.688.191,85
Basilicata	IT921	Potenza	938.128,08	93.812,92	469.064,06	959.325,19
	IT922	Matera	4.856.601,11	895.789,25	2.200.433,03	4.902.336,76
Calabria	IT931	Cosenza	4.632.553,07	1.493.394,21	1.972.883,03	5.473.654,35
	IT932	Crotone	2.911.516,04	1.028.181,77	1.409.262,57	3.120.191,92
	IT933	Catanzaro	3.243.663,43	721.800,16	1.621.831,72	3.344.951,27
	IT934	Vibo Valentia	1.982.113,91	344.409,74	991.056,95	2.712.775,95
	IT935	Reggio di Calabria	7.835.813,68	2.811.411,26	3.549.957,35	7.973.686,00
Campania	IT801	Caserta	-	-	-	1.740.380,59
	IT802	Benevento	4.458.172,86	880.055,47	1.760.110,93	4.564.558,89
	IT803	Napoli	10.474.993,77	3.015.882,13	5.072.174,83	11.785.851,38
	IT804	Avellino	2.210.826,49	552.686,35	1.105.372,70	2.210.826,49
	IT805	Salerno	13.009.542,52	3.613.680,14	6.290.889,98	14.285.071,25
Lazio	IT603	Roma	28.094.722,78	13.990.592,73	14.040.432,74	28.192.600,50
	IT604	Latina	54.894,20	13.723,55	16.468,26	55.973,60
Marche	IT531	Pesaro e Urbino	50.819,36	5.081,94	25.409,68	50.819,36
	IT532	Ancona	229.461,80	22.625,98	113.129,88	232.663,83
	IT533	Macerata	252.497,33	61.386,22	126.623,09	343.133,96
	IT534	Ascoli Piceno	2.650.440,75	662.610,07	1.325.220,37	3.300.413,17
Molise	IT721	Isernia	1.235.339,72	123.476,27	617.669,86	1.803.099,77
	IT722	Campobasso	6.490.972,10	1.899.235,24	3.074.143,24	6.519.019,04
Puglia	IT911	Foggia	17.320.992,40	4.210.383,09	8.397.220,69	24.548.890,94
	IT912	Bari	35.095.298,30	10.150.075,11	17.985.363,01	39.517.116,89
	IT913	Taranto	4.784.110,10	863.893,55	2.324.157,69	4.816.687,36
	IT914	Brindisi	3.611.561,62	1.112.145,79	1.747.521,43	4.726.874,28
	IT915	Lecce	5.626.354,76	2.049.216,74	2.777.622,22	9.440.854,85
Sardegna	ITB01	Sassari	7.306.989,32	1.887.183,69	3.457.267,51	8.421.984,57
	ITB02	Nuoro	4.432.197,62	1.547.323,60	2.144.915,75	4.460.608,39
	ITB03	Oristano	1.375.961,71	279.199,44	662.297,25	2.601.759,67
	ITB04	Cagliari	2.186.430,26	737.718,27	1.039.602,82	2.799.044,30
Sicilia	ITA01	Trapani	70.361.489,02	23.003.652,14	37.235.061,88	74.594.318,36
	ITA02	Palermo	9.520.942,60	3.133.909,43	4.849.258,43	11.069.295,25
	ITA03	Messina	12.356.408,04	4.158.897,92	6.035.071,03	17.406.768,53
	ITA04	Agrigento	13.041.362,91	4.239.512,31	6.949.402,76	14.627.658,13
	ITA05	Caltanissetta	2.599.173,91	849.497,29	1.810.401,31	4.553.522,72
	ITA07	Catania	5.877.433,48	2.147.768,92	2.853.483,60	7.072.941,27
	ITA08	Ragusa	3.002.375,54	786.115,59	1.373.547,55	3.226.035,25
	ITA09	Siracusa	6.675.953,51	2.224.859,44	3.371.496,07	7.498.101,52
Toscana	IT516	Livorno	49.692,71	4.969,27	24.846,35	70.548,01
Veneto	IT321	Verona	147.840,18	73.920,09	73.920,09	147.840,18
	IT325	Venezia	1.952.624,09	730.414,33	1.045.134,45	2.687.736,23
	IT327	Rovigo	2.465.856,65	739.756,90	986.342,62	3.063.410,09
Total			**316.792.508,51**	**100.244.722,22**	**158.853.673,15**	**367.180.335,23**

Source: Irepa processing on data from Ministry for Agriculture and Forestry Policies, General Direction Fishery and Aquaculture. Note: Data do not consider funds destined to Piano Spadare.

Table 4.b - FIFG 1994-99 funds allocation by NUTS 3 Ob. 5a, Italy, updated at 31.12.2002. Measure unit: Euro

NUTS 2	NUTS 3 Code 1999	Name of NUTS 3	Payments	State Aid	FIFG Aid	Commitments
Abruzzo	IT712	Teramo	17.607.194,47	5.276.013,84	6.689.965,68	22.829.962,38
	IT713	Pescara	8.501.906,55	2.888.780,25	3.666.914,29	12.107.733,69
	IT714	Chieti	2.617.415,21	1.008.250,15	1.108.402,63	4.698.519,36
Campania	IT805	Salerno	2.211.007,25	1.060.675,58	1.083.089,60	2.230.220,48
Emilia-Romagna	IT402	Parma	877.976,73	219.494,18	219.494,18	877.976,73
	IT404	Modena	651.203,21	65.120,32	195.360,96	768.188,32
	IT405	Bologna	7.542.816,61	1.119.837,68	1.903.418,71	8.695.643,69
	IT406	Ferrara	13.903.603,26	4.616.288,84	5.399.124,88	14.804.180,82
	IT407	Ravenna	1.775.387,94	645.402,04	645.402,04	4.045.834,30
	IT408	Forlì-Cesena	700.248,19	154.544,02	247.637,40	1.197.870,26
	IT409	Rimini	8.637.016,49	1.947.553,56	2.713.167,52	12.262.315,62
Friuli-Venezia Giulia	IT326	Padova	529.374,84	52.937,35	158.812,05	594.051,50
	IT331	Pordenone	393.153,56	60.264,78	117.946,07	454.017,85
	IT332	Udine	5.440.901,04	1.202.400,40	1.653.905,20	5.673.815,12
	IT333	Gorizia	1.533.187,10	650.420,50	719.648,79	1.549.963,61
	IT334	Trieste	378.488,02	166.245,67	196.128,90	380.427,32
Lazio	IT601	Viterbo	2.313.133,00	463.878,39	627.950,40	2.912.830,56
	IT603	Roma	27.641.255,46	10.978.883,40	11.785.422,03	30.306.001,65
	IT604	Latina	7.622.641,41	2.297.941,76	2.543.943,46	12.031.666,69
	IT605	Frosinone	1.207.617,24	301.904,31	301.904,31	1.207.617,25
Liguria	IT131	Imperia	748.289,75	354.280,39	364.212,38	751.256,28
	IT132	Savona	2.012.216,54	913.382,67	982.197,40	2.059.867,68
	IT133	Genova	5.850.746,07	1.412.747,34	1.804.557,68	7.762.163,85
	IT134	La Spezia	1.731.422,34	340.162,75	522.162,37	1.896.102,30
Lombardia	IT201	Varese	2.993.585,61	556.474,33	834.719,25	2.993.585,61
	IT202	Como	2.412.132,61	482.426,52	723.639,78	2.412.132,61
	IT205	Milano	4.223.237,69	680.552,21	1.020.828,33	8.460.194,08
	IT206	Bergamo	1.258.863,48	251.772,70	377.659,05	1.487.251,78
	IT207	Brescia	2.809.222,82	244.852,41	684.185,55	3.182.236,98
	IT208	Pavia	1.931.032,95	192.896,65	578.689,96	1.931.032,95
	IT20A	Cremona	404.071,70	67.345,28	202.035,85	1.546.537,41
	IT20B	Mantova	1.534.772,32	219.334,94	563.062,99	2.840.767,11
Marche	IT531	Pesaro e Urbino	5.456.552,42	1.274.838,75	1.919.605,12	6.210.760,33
	IT532	Ancona	17.623.870,37	5.827.765,07	6.897.564,98	21.223.804,10
	IT533	Macerata	4.893.232,58	1.790.744,81	2.060.790,56	5.273.639,21
	IT534	Ascoli Piceno	23.265.829,81	6.893.262,38	8.342.853,63	29.013.769,26
Piemonte	IT111	Torino	-	-	-	1.512.178,40
	IT116	Cuneo	431.780,82	107.945,20	107.945,20	675.913,34
Puglia	IT912	Bari	1.171.728,12	562.420,79	574.142,29	1.201.022,07
Sardegna	ITB01	Sassari	207.543,37	20.754,34	62.263,01	207.543,37
Sicilia	ITA02	Palermo	660.224,48	292.563,89	277.544,55	660.224,86
	ITA04	Agrigento	49.941,48	12.485,37	7.491,22	110.047,67
	ITA07	Catania	181.224,73	17.937,57	53.812,70	181.224,73
Toscana	IT511	Massa-Carrara	287.531,18	143.765,59	143.765,59	295.294,28
	IT512	Lucca	1.786.925,00	804.569,94	849.016,22	1.807.377,21
	IT513	Pistoia	3.911.257,21	1.243.499,10	1.243.499,10	4.973.996,40
	IT516	Livorno	8.394.540,01	2.229.819,33	2.906.298,01	8.684.231,02
	IT517	Pisa	17.402,02	8.701,01	8.701,01	17.402,02
	IT51A	Grosseto	6.536.351,84	1.363.941,61	2.282.097,89	7.851.679,05
Trentino-Alto Adige	IT312	Trento	6.178.627,05	617.862,21	1.853.587,78	6.384.136,47
Umbria	IT521	Perugia	822.574,34	131.006,76	256.521,82	829.610,25
Veneto	IT321	Verona	483.795,39	141.126,62	174.706,65	483.795,39
	IT322	Vicenza	459.035,06	91.807,01	137.710,52	695.515,09
	IT324	Treviso	5.829.560,90	807.670,63	1.710.881,48	7.234.651,65
	IT325	Venezia	24.953.093,70	5.130.456,28	7.314.600,47	26.488.362,77
	IT326	Padova	4.261.253,94	758.062,98	1.137.094,47	8.734.323,76
	IT327	Rovigo	11.846.517,82	2.396.949,19	3.145.386,97	12.206.715,28
Total			**269.705.515,10**	**73.563.021,64**	**94.103.470,92**	**329.909.183,80**

Source: Irepa processing on data from Ministry for Agriculture and Forestry Policies, General Direction Fishery and Aquaculture. Note: Data do not consider funds destined to Piano Spadare.

Table 5 - Gross Domestic Product by NUTS 3, Italy, 1995-2000. Measure unit: Euro/inhabitant

NUTS 2	NUTS 3 Code 1999	Name of NUTS 3	1995	1996	1997	1998	1999	2000	Average 1995-00
Piemonte	IT111	Torino	17.904,60	20.551,10	22.110,30	22.628,60	237.643,00	24.776,90	57.602,42
	IT112	Vercelli	16.380,30	18.867,40	19.713,70	20.145,10	207.553,00	21.639,70	50.716,53
	IT113	Biella	17.060,40	19.305,60	20.430,90	20.768,50	216.207,00	22.541,90	52.719,05
	IT114	Verbano-Cusio-Ossola	13.806,60	15.937,00	16.801,50	17.490,60	182.343,00	19.011,20	44.231,65
	IT115	Novara	17.295,60	19.692,00	20.785,80	21.697,30	224.463,00	23.402,70	54.556,07
	IT116	Cuneo	17.851,60	20.268,40	20.661,60	21.672,00	225.617,00	23.523,00	54.932,27
	IT117	Asti	14.394,00	16.566,60	17.343,10	18.081,50	189.454,00	19.752,70	45.931,98
	IT118	Alessandria	15.920,30	18.477,60	19.109,90	19.883,90	209.444,00	21.836,80	50.778,75
Valle d'Aosta	IT12	Valle d'Aosta	19.791,90	22.685,00	23.126,30	23.662,60	242.683,00	24.139,20	59.348,00
Liguria	IT131	Imperia	16.258,40	18.921,80	19.513,20	20.118,60	208.390,00	21.865,70	50.844,62
	IT132	Savona	15.929,50	18.377,70	19.467,70	20.337,60	206.552,00	21.672,80	50.389,55
	IT133	Genova	14.562,20	17.075,10	18.477,90	19.186,70	198.833,00	20.862,80	48.166,28
	IT134	La Spezia	15.372,20	17.789,80	18.566,60	19.573,30	200.817,00	21.071,00	48.864,98
Lombardia	IT201	Varese	16.553,10	19.216,40	20.471,00	21.149,60	216.807,00	22.597,20	52.799,05
	IT202	Como	16.708,70	19.401,00	20.368,00	20.879,50	211.369,00	22.030,40	51.792,77
	IT203	Lecco	17.196,60	19.773,00	21.073,20	21.596,40	218.935,00	22.818,90	53.565,52
	IT204	Sondrio	15.289,20	17.695,50	18.577,60	19.386,40	203.545,00	21.214,90	49.284,77
	IT205	Milano	22.808,40	26.346,90	28.030,60	29.356,40	305.684,00	31.860,50	74.014,47
	IT206	Bergamo	17.698,60	20.426,60	21.491,30	22.028,30	225.103,00	23.461,80	55.034,93
	IT207	Brescia	18.275,30	21.175,50	21.807,90	22.481,00	230.784,00	24.053,90	56.429,60
	IT208	Pavia	14.959,90	17.593,30	18.397,60	18.908,30	194.683,00	20.291,20	47.472,22
	IT209	Lodi	15.614,90	18.100,10	19.494,90	19.974,60	206.042,00	21.475,20	50.116,95
	IT20A	Cremona	16.645,10	19.434,70	20.353,30	20.805,70	214.194,00	22.324,80	52.292,93
	IT20B	Mantova	18.951,70	21.904,30	23.105,40	23.692,70	241.502,00	25.171,10	59.054,53
Trentino-Alto Adige	IT311	Bolzano-Bozen	20.700,90	24.402,20	25.333,40	26.781,10	271.987,00	28.806,40	66.335,17
	IT312	Trento	18.206,50	21.425,50	22.041,70	23.021,10	238.170,00	25.224,80	58.014,93
Veneto	IT321	Verona	17.535,70	20.299,60	21.199,10	21.653,60	224.994,00	23.755,80	54.906,30
	IT322	Vicenza	18.740,30	21.574,90	22.839,50	23.330,90	242.177,00	25.569,90	59.038,75
	IT323	Belluno	17.244,60	19.849,70	21.044,70	21.736,50	223.651,00	23.613,90	54.523,40
	IT324	Treviso	17.584,40	20.249,80	21.366,30	21.933,40	225.734,00	23.833,80	55.116,95
	IT325	Venezia	16.900,60	19.463,20	20.670,10	21.389,40	220.730,00	23.305,50	53.743,13
	IT326	Padova	16.562,30	19.388,50	20.967,40	21.297,90	219.917,00	23.219,60	53.558,78
	IT327	Rovigo	14.323,80	16.859,70	17.827,70	18.151,70	188.210,00	19.871,90	45.874,13
Friuli-Venezia Giulia	IT331	Pordenone	17.861,20	20.349,20	21.710,70	22.333,80	232.815,00	24.368,90	56.573,13
	IT332	Udine	16.828,10	19.218,00	20.075,40	20.187,70	209.617,00	21.940,60	51.311,13
	IT333	Gorizia	15.995,60	18.373,60	19.260,90	19.730,40	206.544,00	21.619,00	50.253,92
	IT334	Trieste	16.218,00	18.972,30	19.661,50	20.335,70	214.190,00	22.419,30	51.966,13
Emilia-Romagna	IT401	Piacenza	16.527,40	19.311,10	20.561,80	21.146,90	217.648,00	23.021,50	53.036,12
	IT402	Parma	19.686,90	22.860,00	23.624,50	24.914,40	257.646,00	27.252,30	62.664,02
	IT403	Reggio nell'Emilia	19.560,80	22.157,90	23.629,50	24.097,10	247.309,00	26.158,90	60.485,53
	IT404	Modena	20.657,00	23.858,40	24.771,20	25.511,60	261.484,00	27.658,30	63.990,08
	IT405	Bologna	20.327,60	23.695,80	25.181,30	25.670,80	265.054,00	28.035,80	64.660,88
	IT406	Ferrara	15.435,80	18.030,30	18.841,30	19.301,00	200.096,00	21.165,00	48.811,57
	IT407	Ravenna	16.597,70	19.419,00	20.089,30	20.930,90	216.008,00	22.848,00	52.648,82
	IT408	Forlì-Cesena	17.225,60	20.162,60	20.999,30	21.790,20	226.400,00	23.947,30	55.087,50
	IT409	Rimini	18.152,50	21.287,60	21.696,00	22.553,00	230.917,00	24.425,10	56.505,20
Toscana	IT511	Massa-Carrara	12.254,40	13.981,10	15.130,30	15.437,40	162.304,00	17.221,30	39.388,08
	IT512	Lucca	15.086,60	17.504,20	18.186,10	19.004,30	196.290,00	20.827,30	47.816,42
	IT513	Pistoia	14.642,20	16.888,20	18.013,70	18.937,80	194.642,00	20.652,40	47.296,05
	IT514	Firenze	18.095,10	20.968,80	22.239,30	23.219,90	242.993,00	25.782,60	58.883,12
	IT515	Prato	18.958,30	21.492,30	22.602,40	23.004,20	232.996,00	24.722,00	57.295,87
	IT516	Livorno	15.158,70	17.551,60	18.301,90	18.933,60	202.338,00	21.469,00	48.958,80
	IT517	Pisa	16.164,40	18.970,30	19.993,40	20.831,50	215.369,00	22.851,60	52.363,37
	IT518	Arezzo	15.306,60	17.585,20	18.411,40	19.037,30	196.872,00	20.889,10	48.016,93
	IT519	Siena	15.319,10	17.815,80	19.140,00	20.029,00	211.599,00	22.451,70	51.059,10
	IT51A	Grosseto	12.482,20	14.452,20	15.612,90	16.185,40	170.337,00	18.073,50	41.190,53
Umbria	IT521	Perugia	14.650,90	16.687,00	17.882,80	18.397,60	192.684,00	20.364,90	46.777,87
	IT522	Terni	13.684,10	15.488,40	16.320,40	16.720,70	175.720,00	18.571,90	42.750,92
Marche	IT531	Pesaro e Urbino	14.380,30	16.805,70	17.882,10	18.247,10	192.759,00	20.223,80	46.716,33
	IT532	Ancona	15.930,00	18.503,40	19.422,10	19.564,20	205.461,00	21.556,40	50.072,85
	IT533	Macerata	14.071,20	16.575,50	17.620,20	17.593,80	185.633,00	19.476,10	45.161,63
	IT534	Ascoli Piceno	13.645,50	15.868,20	17.105,50	17.415,40	181.974,00	19.092,30	44.183,48
Lazio	IT601	Viterbo	12.969,40	14.691,80	15.678,50	16.154,40	164.551,00	17.176,80	40.203,65
	IT602	Rieti	12.538,10	14.307,60	15.376,20	16.448,40	167.747,00	17.510,40	40.654,62
	IT603	Roma	17.887,20	20.543,90	21.531,90	22.871,00	233.836,00	24.409,20	56.846,53
	IT604	Latina	13.687,90	15.699,10	16.400,80	17.356,80	173.778,00	18.140,00	42.510,43
	IT605	Frosinone	12.795,10	14.829,30	16.081,30	16.748,00	169.846,00	17.729,60	41.338,22
Abruzzo	IT711	L'Aquila	12.363,10	14.173,90	14.517,60	14.775,70	150.722,00	15.923,80	37.079,35
	IT712	Teramo	12.484,60	14.437,20	15.268,10	15.610,00	160.232,00	16.928,50	39.160,07
	IT713	Pescara	12.549,70	14.715,30	15.069,00	15.614,00	160.161,00	16.921,10	39.171,68
	IT714	Chieti	12.579,90	14.144,80	15.125,60	15.096,60	155.114,00	16.387,80	38.074,78
Molise	IT721	Isernia	12.656,10	15.142,80	16.377,60	16.057,80	165.455,00	17.663,40	40.558,78
	IT722	Campobasso	10.311,50	12.027,60	13.408,60	13.508,80	137.598,00	14.689,50	33.590,67

Campania	IT801	Caserta	9.405,30	10.790,90	11.448,10	11.809,80	121.289,00	12.723,90	29.577,83
	IT802	Benevento	9.243,60	10.643,10	11.422,40	11.757,10	121.129,00	12.707,10	29.483,72
	IT803	Napoli	8.874,00	10.137,90	11.114,90	11.642,40	119.922,00	12.580,50	29.045,28
	IT804	Avellino	9.790,60	11.040,70	11.824,70	12.263,20	127.192,00	13.343,20	30.909,07
	IT805	Salerno	10.000,00	11.405,30	12.215,20	12.750,70	132.767,00	13.928,00	32.177,70
Puglia	IT911	Foggia	8.825,10	10.366,40	10.667,50	11.481,70	118.876,00	12.613,40	28.805,02
	IT912	Bari	10.062,40	11.720,50	12.333,70	12.691,30	134.293,00	14.249,20	32.558,35
	IT913	Taranto	9.586,80	10.888,90	11.369,80	11.738,00	124.181,00	13.176,30	30.156,80
	IT914	Brindisi	9.981,20	11.569,80	12.089,60	12.496,80	127.725,00	13.552,30	31.235,78
	IT915	Lecce	8.434,20	9.872,90	10.215,10	10.651,80	112.343,00	11.920,20	27.239,53
Basilicata	IT921	Potenza	9.988,80	11.824,60	12.691,70	12.974,00	135.634,00	13.983,60	32.849,45
	IT922	Matera	9.949,40	11.910,30	12.541,70	13.562,40	147.866,00	15.244,60	35.179,07
Calabria	IT931	Cosenza	8.624,70	9.860,60	10.639,20	11.053,40	118.082,00	12.221,30	28.413,53
	IT932	Crotone	7.209,40	8.453,40	9.189,50	9.708,50	101.739,00	10.529,70	24.471,58
	IT933	Catanzaro	9.617,00	11.155,80	11.691,00	11.781,80	124.262,00	12.860,80	30.228,07
	IT934	Vibo Valentia	7.488,50	8.656,10	9.625,80	9.855,40	106.444,00	11.016,80	25.514,43
	IT935	Reggio di Calabria	8.923,80	10.176,00	11.082,60	11.482,20	119.692,00	12.387,90	28.957,42
Sicilia	ITA01	Trapani	9.166,80	10.658,30	11.174,40	11.655,80	120.319,00	12.603,50	29.262,97
	ITA02	Palermo	9.367,70	10.782,30	11.504,70	11.936,00	121.012,00	12.676,10	29.546,47
	ITA03	Messina	9.754,20	11.781,80	12.372,60	12.877,70	134.334,00	14.071,50	32.531,97
	ITA04	Agrigento	8.004,70	9.277,30	10.083,90	10.172,20	106.436,00	11.149,30	25.853,90
	ITA05	Caltanissetta	8.771,20	10.034,60	10.774,40	11.415,60	114.640,00	12.008,60	27.940,73
	ITA06	Enna	7.663,50	8.893,50	9.829,60	10.034,30	103.324,00	10.823,20	25.094,68
	ITA07	Catania	9.061,40	10.367,30	11.034,20	11.323,70	120.395,00	12.611,40	29.132,17
	ITA08	Ragusa	10.180,60	11.754,10	12.654,50	13.022,70	134.050,00	14.041,80	32.617,28
	ITA09	Siracusa	11.448,10	13.250,70	14.195,10	14.659,50	146.087,00	15.302,70	35.823,85
Sardegna	ITB01	Sassari	11.073,20	12.895,80	13.863,90	14.549,30	149.253,00	15.345,10	36.163,38
	ITB02	Nuoro	10.316,80	11.914,40	12.788,10	13.444,00	137.482,00	14.134,80	33.346,68
	ITB03	Oristano	10.121,10	11.807,40	12.751,50	12.853,90	140.185,00	14.412,80	33.688,62
	ITB04	Cagliari	10.855,00	12.399,80	13.400,20	13.703,40	144.056,00	14.810,80	34.870,87

Source: ESPON database

Table 6 - Average Population by NUTS 3, Italy, 1995-2000. Measure unit: average yearly number of people.

NUTS 2	NUTS 3 Code 1999	Name of NUTS 3	2000	1999	1998	1997	1996	1995	Average 1995-00	Var. % 95/00
Piemonte	IT111	Torino	2214,9	2215,4	2218,3	2221,1	2221,5	2224,5	2219,3	-0,43
	IT112	Vercelli	180,7	180,7	181	181,5	182,1	182,6	181,4	-1,04
	IT113	Biella	189,2	189,5	189,7	190,2	190,6	190,8	190,0	-0,84
	IT114	Verbano-Cusio-Ossola	160,7	160,9	161,1	161,3	161,3	161,4	161,1	-0,43
	IT115	Novara	345	343	341,9	341	340	339,1	341,7	1,74
	IT116	Cuneo	558,9	556,4	554,9	553,7	552,2	551	554,5	1,43
	IT117	Asti	210,6	210,3	210,1	210,1	210	209,9	210,2	0,33
	IT118	Alessandria	429,8	431,5	432,6	433,9	433,9	434,2	432,7	-1,01
Valle d'Aosta	IT12	Valle d'Aosta	120,6	120,2	119,8	119,4	119	118,6	119,6	1,69
Liguria	IT131	Imperia	216,4	216,5	216,7	216,9	217	217,3	216,8	-0,41
	IT132	Savona	279,7	280,1	280,7	281,6	282,6	283,6	281,4	-1,38
	IT133	Genova	903,4	910,4	916,9	923,8	930,1	934,4	919,8	-3,32
	IT134	La Spezia	221,6	222,3	222,9	223,9	224,9	225,7	223,6	-1,82
Lombardia	IT201	Varese	820,6	814,9	812,7	811,2	808,9	806,2	812,4	1,79
	IT202	Como	542,6	538,3	536,3	534,5	532,3	530,6	535,8	2,26
	IT203	Lecco	311,7	308,5	306,7	305,3	303,6	301,7	306,3	3,31
	IT204	Sondrio	177,6	177,4	177,4	177,3	177,2	177	177,3	0,34
	IT205	Milano	3773,9	3755,3	3745,1	3732,7	3724,4	3723,2	3742,4	1,36
	IT206	Bergamo	974,4	960,7	953	946,6	940	933,7	951,4	4,36
	IT207	Brescia	1112,6	1093,4	1084,3	1076,4	1068,9	1062,6	1083,0	4,71
	IT208	Pavia	499,2	497	495,9	495,5	495,1	493,7	496,1	1,11
	IT209	Lodi	197,3	195	193,7	192,4	190,9	189,5	193,1	4,12
	IT20A	Cremona	335,7	333,7	332,6	331,8	331,2	330,7	332,6	1,51
	IT20B	Mantova	376,2	373	371,3	370,3	369,3	368,7	371,5	2,03
Trentino-Alto Adige	IT311	Bolzano-Bozen	465,3	461,1	458,5	455,9	452,9	450,3	457,3	3,33
	IT312	Trento	477,9	471,8	468,4	465,7	463	460,6	467,9	3,76
Veneto	IT321	Verona	829,5	818,5	813,1	808,5	803,8	799,9	812,2	3,70
	IT322	Vicenza	794,8	783,9	777,8	772,5	766,9	762,5	776,4	4,24
	IT323	Belluno	211,1	211,2	211,5	211,8	212	212	211,6	-0,42
	IT324	Treviso	793,6	780,1	772,7	766,5	760,8	756	771,6	4,97
	IT325	Venezia	815,2	814,8	815,4	816,3	817,2	818,2	816,2	-0,37
	IT326	Padova	853,4	847,3	843,5	840,5	837	833,3	842,5	2,41
	IT327	Rovigo	243,3	243,8	244,3	244,8	245,2	245,7	244,5	-0,98
Friuli-Venezia Giulia	IT331	Pordenone	282,8	279,4	277,8	276,8	276,2	276,1	278,2	2,43
	IT332	Udine	520,5	518,7	518,7	519,1	519,7	520,3	519,5	0,04
	IT333	Gorizia	138,8	138,1	137,9	137,8	137,9	138,1	138,1	0,51
	IT334	Trieste	246,5	248,4	249,9	251,8	253,7	255,6	251,0	-3,56
Emilia-Romagna	IT401	Piacenza	267	265,9	265,8	266,1	266,3	267	266,4	0,00
	IT402	Parma	400	396	394,4	393,8	392,8	391,9	394,8	2,07
	IT403	Reggio nell'Emilia	456	446,4	441	436,6	432,2	428,7	440,2	6,37
	IT404	Modena	632,6	623,1	618,6	615,2	611,7	608,8	618,3	3,91
	IT405	Bologna	921,9	915,1	911,9	909,6	907,2	906	912,0	1,75
	IT406	Ferrara	347,6	349,5	351	352,8	354,6	356,2	352,0	-2,41
	IT407	Ravenna	352,2	350,4	350,1	350	350	350,1	350,5	0,60
	IT408	Forlì-Cesena	356,7	353,5	352	351,4	350,6	350,2	352,4	1,86
	IT409	Rimini	274,7	270,6	268,5	267,1	265,7	264,6	268,5	3,82
Toscana	IT511	Massa-Carrara	199,4	199,7	200	200,6	201,1	200,9	200,3	-0,75
	IT512	Lucca	375,7	375,1	375,3	375,6	375,6	375,9	375,5	-0,05
	IT513	Pistoia	270,7	268,6	267,6	267,1	266,4	265,7	267,7	1,88
	IT514	Firenze	956,5	952,7	951,8	951,7	952	954,7	953,2	0,19
	IT515	Prato	230,4	227,1	225,3	223,6	222,2	220,6	224,9	4,44
	IT516	Livorno	334	334,5	335,1	336	336,6	337,1	335,6	-0,92
	IT517	Pisa	387,7	385,9	385,2	384,9	384,7	384,7	385,5	0,78
	IT518	Arezzo	323,7	320,9	319,5	318,4	317,3	316,6	319,4	2,24
	IT519	Siena	254,1	252,4	252	251,8	251,5	251,2	252,2	1,15
	IT51A	Grosseto	215,6	215,6	216	216,3	216,6	217,2	216,2	-0,74
Umbria	IT521	Perugia	617,4	611,2	609,1	607,3	604,3	600,3	608,3	2,85
	IT522	Terni	223,1	222,9	223,1	223,5	223,6	223,9	223,4	-0,36
Marche	IT531	Pesaro e Urbino	347,4	343,6	341,7	340,5	339,4	338,5	341,9	2,63
	IT532	Ancona	446,5	443,4	442,2	441,5	440,7	440	442,4	1,48
	IT533	Macerata	304,4	302	300,8	299,7	298,8	298,1	300,6	2,11
	IT534	Ascoli Piceno	370,9	369,3	368,4	367,6	366,5	365,5	368,0	1,48
Lazio	IT601	Viterbo	293,8	292,1	291,6	290,9	289,9	288,5	291,1	1,84
	IT602	Rieti	151,2	150,6	150,6	150,6	150,5	150,1	150,6	0,73
	IT603	Roma	3849,5	3813,5	3806,3	3792,3	3778,4	3773,8	3802,3	2,01
	IT604	Latina	513,5	509,1	506,9	504,6	500,4	495,9	505,1	3,55
	IT605	Frosinone	494,3	494,3	493,3	491,5	490,4	489,5	492,2	0,98
Abruzzo	IT711	L'Aquila	303,5	303,8	304	304,3	304,1	303,4	303,9	0,03
	IT712	Teramo	292,1	290,3	289,4	288,3	286,9	285,7	288,8	2,24
	IT713	Pescara	295,1	294	293,5	292,8	292,4	292,3	293,4	0,96
	IT714	Chieti	390,5	390,1	389,8	389,4	388,7	387,8	389,4	0,70
Molise	IT721	Isernia	91,4	91,7	91,9	92,1	92,2	92,3	91,9	-0,98
	IT722	Campobasso	235,8	236,8	237,5	238,2	238,9	239,5	237,8	-1,54

Campania	IT801	Caserta	856,9	855,1	853,4	849,7	843,9	838,4	849,6	2,21
	IT802	Benevento	292,8	293,8	294,5	295,2	295,7	295,9	294,7	-1,05
	IT803	Napoli	3099,9	3105,2	3114	3114,1	3104,8	3094,2	3105,4	0,18
	IT804	Avellino	440,2	440,7	441,2	441,8	441,9	441,6	441,2	-0,32
	IT805	Salerno	1092,5	1092	1091,6	1090,3	1087,7	1084	1089,7	0,78
Puglia	IT911	Foggia	692,4	694,8	696,6	698,3	699,1	699,3	696,8	-0,99
	IT912	Bari	1580,5	1573,6	1570,2	1567,5	1563,1	1557,3	1568,7	1,49
	IT913	Taranto	587	588,4	589,6	591,1	592,1	592,4	590,1	-0,91
	IT914	Brindisi	411,1	412,4	414,1	414	413,2	413,5	413,1	-0,58
	IT915	Lecce	815,7	816,6	817,7	818	817,8	816,9	817,1	-0,15
Basilicata	IT921	Potenza	398,9	400,6	402,1	401,6	400,6	401,6	400,9	-0,67
	IT922	Matera	205,9	206,5	207	207,5	207,9	208,4	207,2	-1,20
Calabria	IT931	Cosenza	742,8	747,6	750,9	752,4	753,3	753,5	750,1	-1,42
	IT932	Crotone	173,2	175,4	177,1	177,9	178,8	179,8	177,0	-3,67
	IT933	Catanzaro	381,7	382,8	384,1	384,5	384,5	384,3	383,7	-0,68
	IT934	Vibo Valentia	175,5	177,2	178,3	179	179,2	179,5	178,1	-2,23
	IT935	Reggio di Calabria	570,1	574,6	577,4	578,7	579,1	578,9	576,5	-1,52
Sicilia	ITA01	Trapani	432,9	434,2	434,9	435,3	434,7	433,1	434,2	-0,05
	ITA02	Palermo	1233,8	1240,1	1243,3	1243,3	1241,1	1240,7	1240,4	-0,56
	ITA03	Messina	674,1	678,4	680,9	682,2	682,9	683,7	680,4	-1,40
	ITA04	Agrigento	466,6	470,7	473,1	474,3	475,1	476,3	472,7	-2,04
	ITA05	Caltanissetta	282,5	282,8	284	284,2	283,4	282,6	283,3	-0,04
	ITA06	Enna	180,2	182,3	183,2	184,2	185,5	186,4	183,6	-3,33
	ITA07	Catania	1101,9	1098,8	1097,6	1095,1	1090,4	1082,3	1094,4	1,81
	ITA08	Ragusa	302,9	301,5	301	300,2	298,5	296,8	300,2	2,06
	ITA09	Siracusa	401,8	404,2	405,2	405,7	406,3	406,7	405,0	-1,20
Sardegna	ITB01	Sassari	459,1	459	459,8	460,4	459,8	459,4	459,6	-0,07
	ITB02	Nuoro	268	270	271,2	272,2	272,7	273,1	271,2	-1,87
	ITB03	Oristano	156,6	157,6	158,2	158,6	158,4	157,9	157,9	-0,82
	ITB04	Cagliari	764,3	766,6	768,6	770,9	770,9	769,7	768,5	-0,70

Source: ESPON database

Table 7 - Fishery dependence indicators in terms of value added (RVA), employes (REM) and CFP (RCFPQ and RCFPR) by NUTS 3, Italy, 1997

NUTS 2	NUTS 3 Code 1999	Name of NUTS 3	RVA	REM	RCFPQ (production under effort limitation)	RCFPR (tuna production under quota)
Piemonte	IT111	Torino	0,00	0,05	0,00	0,00
	IT112	Vercelli	0,01	0,11	0,00	0,00
	IT113	Biella	0,00	0,03	0,00	0,00
	IT114	Verbania	0,00	0,01	0,00	0,00
	IT115	Novara	0,00	0,08	0,00	0,00
	IT116	Cuneo	0,01	0,07	0,00	0,00
	IT117	Asti	0,01	0,01	0,00	0,00
	IT118	Alessandria	0,01	0,03	0,00	0,00
Valle d'Aosta	IT12	Aosta	0,00	0,13	0,00	0,00
Liguria	IT131	Imperia	0,57	0,93	60,20	0,71
	IT132	Savona	0,49	0,87	31,73	1,63
	IT133	Genova	0,17	0,72	50,46	0,00
	IT134	La Spezia	0,33	1,14	61,13	0,00
Lombardia	IT201	Varese	0,00	0,07	0,00	0,00
	IT202	Como	0,00	0,32	0,00	0,00
	IT203	Lecco	0,00	0,09	0,00	0,00
	IT204	Sondrio	0,00	0,31	0,00	0,00
	IT205	Milano	0,00	0,07	0,00	0,00
	IT206	Bergamo	0,00	0,19	0,00	0,00
	IT207	Brescia	0,00	0,18	0,00	0,00
	IT208	Pavia	0,01	0,05	0,00	0,00
	IT209	Lodi	0,00	0,05	0,00	0,00
	IT20A	Cremona	0,01	0,06	0,00	0,00
	IT20B	Mantova	0,01	0,18	0,00	0,00
Trentino Alto Adige	IT311	Bolzano	0,01	0,04	0,00	0,00
	IT312	Trento	0,00	0,21	0,00	0,00
Veneto	IT321	Verona	0,02	0,20	0,00	0,00
	IT322	Vicenza	0,01	0,10	0,00	0,00
	IT323	Belluno	0,00	0,18	0,00	0,00
	IT324	Treviso	0,01	0,19	0,00	0,00
	IT325	Venezia	0,86	1,87	86,13	0,00
	IT326	Padova	0,00	0,14	0,00	0,00
	IT327	Rovigo	0,38	1,60	58,35	0,00
Friuli Venezia Giulia	IT331	Pordenone	0,00	0,32	0,00	0,00
	IT332	Udine	0,33	0,57	56,35	0,00
	IT333	Gorizia	1,04	1,47	66,06	0,00
	IT334	Trieste	0,32	1,50	45,63	0,00
Emilia Romagna	IT401	Piacenza	0,01	0,02	0,00	0,00
	IT402	Parma	0,00	0,11	0,00	0,00
	IT403	Reggio Emilia	0,00	0,05	0,00	0,00
	IT404	Modena	0,00	0,04	0,00	0,00
	IT405	Bologna	0,00	0,08	0,00	0,00
	IT406	Ferrara	1,01	1,59	89,43	0,00
	IT407	Ravenna	0,16	1,87	87,25	0,00
	IT408	Forlì	0,21	0,35	95,25	0,00
	IT409	Rimini	1,37	1,62	91,36	1,58
Toscana	IT511	Massa-Carrara	0,10	0,33	44,65	0,00
	IT512	Lucca	0,45	0,63	77,73	0,00
	IT513	Pistoia	0,00	0,06	0,00	0,00
	IT514	Firenze	0,00	0,09	0,00	0,00
	IT515	Prato	0,00	0,43	0,00	0,00
	IT516	Livorno	0,97	1,48	43,54	0,00
	IT517	Pisa	0,02	0,12	63,89	0,00
	IT518	Arezzo	0,00	0,10	0,00	0,00
	IT519	Siena	0,01	0,07	0,00	0,00
	IT51A	Grosseto	1,00	1,11	73,92	0,00
Umbria	IT521	Perugia	0,01	0,11	0,00	0,00
	IT522	Terni	0,00	0,16	0,00	0,00
Marche	IT531	Pesaro e Urbino	0,46	1,02	87,80	0,39
	IT532	Ancona	0,46	1,07	92,93	0,02
	IT533	Macerata	0,31	0,70	96,31	0,00
	IT534	Ascoli Piceno	0,59	1,34	95,01	0,09
Lazio	IT601	Viterbo	0,01	0,15	0,00	0,00
	IT602	Rieti	0,01	0,11	0,00	0,00
	IT603	Roma	0,07	0,19	66,90	0,00
	IT604	Latina	0,68	1,24	62,88	0,00
	IT605	Frosinone	0,00	0,06	0,00	0,00
Abruzzo	IT711	L'Aquila	0,02	0,10	0,00	0,00
	IT712	Teramo	2,21	1,62	45,43	0,00
	IT713	Pescara	0,73	0,91	92,41	4,96
	IT714	Chieti	0,81	0,55	89,02	0,00
Molise	IT721	Isernia	0,00	0,04	0,00	0,00

	IT722	Campobasso	1,06	0,60	98,43	0,00
Campania	IT801	Caserta	0,01	0,14	26,60	0,00
	IT802	Benevento	0,01	0,13	0,00	0,00
	IT803	Napoli	0,12	0,56	50,48	3,06
	IT804	Avellino	0,01	0,06	0,00	0,00
	IT805	Salerno	0,26	0,71	54,51	7,62
Puglia	IT911	Foggia	1,13	1,93	86,96	0,00
	IT912	Bari	1,01	1,02	85,24	0,00
	IT913	Taranto	0,69	1,29	78,29	0,00
	IT914	Brindisi	1,95	0,73	29,69	0,00
	IT915	Lecce	0,44	1,02	56,00	0,36
Basilicata	IT921	Potenza	0,01	0,07	59,57	0,00
	IT922	Matera	0,00	0,14	0,00	0,00
Calabria	IT931	Cosenza	0,17	0,65	88,98	0,00
	IT932	Crotone	0,41	1,48	84,27	9,25
	IT933	Catanzaro	0,04	0,26	72,02	0,00
	IT934	Vibo Valentia	0,31	1,13	73,60	0,00
	IT935	Reggio di Calabria	0,23	1,00	66,14	0,00
Sicilia	ITA01	Trapani	2,83	5,25	89,68	0,89
	ITA02	Palermo	0,55	1,35	68,95	0,00
	ITA03	Messina	1,05	1,51	65,48	0,51
	ITA04	Agrigento	1,78	3,36	86,66	0,42
	ITA05	Caltanissetta	0,07	0,26	50,92	0,00
	ITA06	Enna	0,01	0,04	0,00	0,00
	ITA07	Catania	0,67	1,03	80,46	1,09
	ITA08	Ragusa	0,26	0,88	79,28	0,00
	ITA09	Siracusa	1,81	2,00	80,54	1,16
Sardegna	ITB01	Sassari	0,60	2,24	50,63	0,00
	ITB02	Nuoro	0,26	0,78	67,47	0,00
	ITB03	Oristano	0,44	1,67	62,45	0,00
	ITB04	Cagliari	0,32	1,08	69,96	0,00

Source: Regional Socio-Economic Studies on Employment and the level of Dependency on Fishing, 1999. Italy, Lots 1.2, 1.3, 1.4.

Table 8 - Gross Domestic Product by NUTS 3, Italy, 1995-2000. Measure unit: Million Euro

NUTS 2	NUTS 3 Code 1999	Name of NUTS 3	1995	1996	1997	1998	1999	2000	Var. % 95/00
Piemonte	IT111	Torino	39.828,00	45.654,30	49.109,40	50.196,60	52.648,00	55.001,80	38,10
	IT112	Vercelli	2.991,40	3.435,60	3.578,90	3.646,40	3.750,50	3.918,20	30,98
	IT113	Biella	3.254,90	3.679,50	3.885,90	3.940,40	4.097,50	4.280,70	31,52
	IT114	Verbano-Cusio-Ossola	2.228,80	2.570,50	2.709,50	2.817,90	2.933,60	3.064,70	37,50
	IT115	Novara	5.864,40	6.694,50	7.087,40	7.419,00	7.699,20	8.043,40	37,16
	IT116	Cuneo	9.835,50	11.192,00	11.439,80	12.025,70	12.554,10	13.115,40	33,35
	IT117	Asti	3.021,80	3.478,40	3.643,70	3.799,80	3.984,10	4.162,20	37,74
	IT118	Alessandria	6.912,50	8.017,70	8.292,00	8.602,60	9.037,20	9.441,20	36,58
Valle d'Aosta	IT12	Valle d'Aosta	2.347,10	2.698,90	2.761,70	2.834,80	2.916,30	2.906,60	23,84
Liguria	IT131	Imperia	3.533,30	4.106,60	4.232,90	4.359,20	4.511,10	4.742,80	34,23
	IT132	Savona	4.518,00	5.193,40	5.481,90	5.709,70	5.785,10	6.082,30	34,62
	IT133	Genova	13.607,40	15.882,10	17.070,60	17.592,00	18.101,70	19.031,60	39,86
	IT134	La Spezia	3.470,00	4.000,30	4.157,50	4.362,50	4.463,20	4.692,50	35,23
Lombardia	IT201	Varese	13.345,90	15.544,20	16.606,10	17.187,90	17.668,20	18.452,10	38,26
	IT202	Como	8.865,30	10.327,90	10.886,60	11.197,30	11.377,60	11.882,40	34,03
	IT203	Lecco	5.188,30	6.002,30	6.432,60	6.624,40	6.754,00	7.053,70	35,95
	IT204	Sondrio	2.706,90	3.135,30	3.293,60	3.438,80	3.611,20	3.771,40	39,33
	IT205	Milano	84.920,50	98.125,90	104.630,70	109.942,90	114.792,30	119.885,40	41,17
	IT206	Bergamo	16.525,50	19.200,40	20.343,00	20.993,40	21.624,60	22.584,00	36,66
	IT207	Brescia	19.419,00	22.633,80	23.473,70	24.375,70	25.234,10	26.353,70	35,71
	IT208	Pavia	7.386,10	8.709,90	9.115,10	9.376,80	9.675,50	10.104,80	36,81
	IT209	Lodi	2.958,40	3.456,20	3.750,20	3.868,20	4.017,70	4.196,00	41,83
	IT20A	Cremona	5.504,20	6.437,00	6.752,40	6.919,10	7.147,60	7.464,70	35,62
	IT20B	Mantova	6.988,40	8.090,30	8.556,00	8.797,80	9.008,40	9.408,00	34,62
Trentino Alto Adige	IT311	Bolzano-Bozen	9.321,80	11.052,90	11.548,20	12.279,90	12.541,70	13.309,70	42,78
	IT312	Trento	8.386,10	9.920,00	10.263,80	10.783,00	11.236,80	11.925,00	42,20
Veneto	IT321	Verona	14.027,70	16.317,70	17.139,50	17.606,10	18.416,10	19.483,50	38,89
	IT322	Vicenza	14.288,70	16.545,40	17.642,70	18.146,70	18.985,10	20.085,60	40,57
	IT323	Belluno	3.655,60	4.208,60	4.457,20	4.596,20	4.723,50	4.997,30	36,70
	IT324	Treviso	13.294,10	15.406,00	16.378,20	16.949,00	17.609,20	18.629,90	40,14
	IT325	Venezia	13.828,60	15.905,80	16.873,60	17.441,10	17.984,90	19.027,30	37,59
	IT326	Padova	13.802,10	16.228,30	17.623,80	17.965,70	18.633,40	19.713,40	42,83
	IT327	Rovigo	3.519,40	4.133,20	4.364,10	4.435,10	4.588,50	4.854,40	37,93
Friuli Venezia Giulia	IT331	Pordenone	4.930,90	5.620,70	6.009,30	6.203,80	6.503,70	6.821,20	38,34
	IT332	Udine	8.755,90	9.988,10	10.421,10	10.472,20	10.873,30	11.404,00	30,24
	IT333	Gorizia	2.208,40	2.534,10	2.654,20	2.719,90	2.852,50	2.991,70	35,47
	IT334	Trieste	4.145,90	4.813,50	4.949,90	5.082,20	5.319,60	5.579,30	34,57
Emilia Romagna	IT401	Piacenza	4.413,30	5.143,00	5.471,20	5.621,30	5.787,60	6.134,10	38,99
	IT402	Parma	7.715,70	8.979,00	9.302,30	9.827,30	10.202,80	10.813,70	40,15
	IT403	Reggio nell'Emilia	8.384,90	9.577,50	10.316,90	10.627,50	11.039,00	11.699,90	39,54
	IT404	Modena	12.576,60	14.594,70	15.239,00	15.780,40	16.293,20	17.268,60	37,31
	IT405	Bologna	18.417,80	21.497,70	22.905,10	23.408,00	24.255,40	25.707,50	39,58
	IT406	Ferrara	5.497,80	6.392,90	6.647,60	6.775,30	6.992,40	7.411,10	34,80
	IT407	Ravenna	5.811,20	6.795,70	7.030,50	7.328,30	7.569,60	8.022,80	38,06
	IT408	Forlì-Cesena	6.032,30	7.070,00	7.378,50	7.671,10	8.002,10	8.481,20	40,60
	IT409	Rimini	4.802,60	5.656,80	5.794,80	6.056,30	6.248,90	6.623,00	37,90
Toscana	IT511	Massa-Carrara	2.461,40	2.811,10	3.034,80	3.088,20	3.240,90	3.445,70	39,99
	IT512	Lucca	5.670,80	6.575,20	6.830,40	7.133,10	7.363,70	7.828,90	38,06
	IT513	Pistoia	3.891,20	4.499,10	4.811,30	5.068,00	5.227,30	5.557,60	42,82
	IT514	Firenze	17.275,90	19.963,00	21.165,70	22.101,00	23.148,60	24.611,20	42,46
	IT515	Prato	4.182,60	4.775,60	5.054,50	5.182,70	5.291,70	5.626,00	34,51
	IT516	Livorno	5.109,90	5.907,90	6.149,50	6.345,50	6.767,80	7.195,40	40,81
	IT517	Pisa	6.219,30	7.297,20	7.694,80	8.024,30	8.310,40	8.835,50	42,07
	IT518	Arezzo	4.845,90	5.579,40	5.861,30	6.082,30	6.317,90	6.717,10	38,61
	IT519	Siena	3.848,20	4.480,70	4.820,20	5.046,90	5.341,50	5.678,90	47,57
	IT51A	Grosseto	2.710,90	3.129,90	3.377,30	3.496,20	3.672,90	3.904,90	44,04
Umbria	IT521	Perugia	8.795,60	10.083,70	10.861,00	11.205,80	11.776,90	12.472,10	41,80
	IT522	Terni	3.063,30	3.463,70	3.647,10	3.730,50	3.916,40	4.147,60	35,40
Marche	IT531	Pesaro e Urbino	4.868,30	5.704,60	6.087,90	6.235,70	6.622,60	6.962,20	43,01
	IT532	Ancona	7.009,20	8.154,10	8.574,20	8.652,00	9.109,20	9.576,40	36,63
	IT533	Macerata	4.194,10	4.952,20	5.281,20	5.292,50	5.606,70	5.894,30	40,54
	IT534	Ascoli Piceno	4.987,60	5.815,70	6.288,00	6.415,40	6.719,50	7.064,20	41,64
Lazio	IT601	Viterbo	3.742,00	4.259,50	4.561,40	4.711,30	4.806,80	5.027,70	34,36
	IT602	Rieti	1.881,50	2.153,60	2.316,20	2.477,00	2.526,60	2.642,70	40,46
	IT603	Roma	67.502,40	77.622,70	81.656,00	87.055,00	89.172,40	93.271,00	38,17
	IT604	Latina	6.787,30	7.856,50	8.275,00	8.799,00	8.846,60	9.253,20	36,33
	IT605	Frosinone	6.262,80	7.271,70	7.903,80	8.262,50	8.394,70	8.780,60	40,20
Abruzzo	IT711	L'Aquila	3.751,00	4.310,80	4.417,80	4.491,70	4.578,90	4.847,40	29,23
	IT712	Teramo	3.566,90	4.141,70	4.401,20	4.517,10	4.651,70	4.924,40	38,06
	IT713	Pescara	3.667,70	4.302,70	4.412,80	4.582,30	4.708,90	4.985,00	35,92
	IT714	Chieti	4.878,40	5.498,40	5.890,60	5.885,30	6.050,20	6.404,90	31,29
Molise	IT721	Isernia	1.167,80	1.396,00	1.508,10	1.476,00	1.517,20	1.622,90	38,97
	IT722	Campobasso	2.469,90	2.873,20	3.194,10	3.208,60	3.258,10	3.485,30	41,11

Campania	IT801	Caserta	7.885,30	9.106,70	9.727,10	10.078,60	10.372,00	10.902,70	38,27
	IT802	Benevento	2.735,40	3.146,70	3.372,20	3.462,60	3.558,40	3.740,50	36,74
	IT803	Napoli	27.458,30	31.475,70	34.613,00	36.254,70	37.237,60	39.143,00	42,55
	IT804	Avellino	4.323,40	4.878,60	5.224,00	5.410,50	5.605,20	5.892,00	36,28
	IT805	Salerno	10.840,30	12.405,80	13.318,70	13.918,50	14.498,10	15.239,90	40,59
Puglia	IT911	Foggia	6.171,50	7.247,30	7.449,30	7.998,60	8.259,10	8.781,00	42,28
	IT912	Bari	15.669,80	18.320,40	19.333,10	19.927,60	21.132,70	22.468,10	43,38
	IT913	Taranto	5.679,40	6.447,70	6.720,10	6.921,10	7.306,60	7.768,30	36,78
	IT914	Brindisi	4.126,80	4.780,40	5.004,60	5.174,60	5.267,40	5.600,20	35,70
	IT915	Lecce	6.890,20	8.073,90	8.356,40	8.710,20	9.174,20	9.753,90	41,56
Basilicata	IT921	Potenza	4.011,50	4.737,00	5.096,70	5.216,60	5.433,00	5.612,60	39,91
	IT922	Matera	2.073,10	2.476,60	2.602,60	2.807,60	3.052,70	3.153,60	52,12
Calabria	IT931	Cosenza	6.499,00	7.428,30	8.004,80	8.299,70	8.828,00	9.155,20	40,87
	IT932	Crotone	1.296,00	1.511,80	1.635,20	1.719,40	1.784,50	1.850,70	42,80
	IT933	Catanzaro	3.695,90	4.289,80	4.495,60	4.525,70	4.756,20	4.932,40	33,46
	IT934	Vibo Valentia	1.343,90	1.550,80	1.722,80	1.757,50	1.886,60	1.956,50	45,58
	IT935	Reggio di Calabria	5.166,10	5.893,20	6.413,90	6.630,10	6.877,20	7.132,10	38,06
Sicilia	ITA01	Trapani	3.970,10	4.633,00	4.863,90	5.068,60	5.224,50	5.483,70	38,12
	ITA02	Palermo	11.622,50	13.381,80	14.303,50	14.840,60	15.006,20	15.750,70	35,52
	ITA03	Messina	6.669,10	8.045,80	8.440,00	8.768,10	9.113,20	9.565,30	43,43
	ITA04	Agrigento	3.812,40	4.407,50	4.782,40	4.812,60	5.010,40	5.259,00	37,94
	ITA05	Caltanissetta	2.478,90	2.844,20	3.062,00	3.241,70	3.242,50	3.403,40	37,29
	ITA06	Enna	1.428,90	1.649,50	1.810,80	1.838,50	1.883,30	1.976,70	38,34
	ITA07	Catania	9.807,30	11.304,10	12.083,80	12.429,00	13.228,80	13.885,10	41,58
	ITA08	Ragusa	3.021,90	3.508,70	3.798,90	3.919,60	4.042,00	4.242,50	40,39
	ITA09	Siracusa	4.656,40	5.383,20	5.759,30	5.939,50	5.904,10	6.197,00	33,09
Sardegna	ITB01	Sassari	5.087,40	5.929,50	6.383,60	6.690,40	6.850,50	7.057,40	38,72
	ITB02	Nuoro	2.817,20	3.249,60	3.480,70	3.646,30	3.712,00	3.824,10	35,74
	ITB03	Oristano	1.598,50	1.870,60	2.023,00	2.034,10	2.208,90	2.275,60	42,36
	ITB04	Cagliari	8.354,70	9.558,50	10.330,30	10.532,90	11.043,60	11.377,00	36,17

Source: ESPON database

Table 9 - Potential accessibility by road by NUTS 3, Italy, 2001

NUTS 2	NUTS_3	Name of NUTS 3	Potential accessibility road, ESPON space = 100	Potential accessibility road, EU27 = 100	Potential accessibility road, EU25 = 100	Potential accessibility road, EU15 = 100	Potential accessibility road, 12 Accession countries = 100
Piemonte	IT111	Torino	126	126	121	115	190
	IT112	Vercelli	139	139	134	127	209
	IT113	Biella	130	129	125	118	195
	IT114	Verbano-Cusio-Ossola	127	127	122	116	191
	IT115	Novara	137	137	132	125	206
	IT116	Cuneo	98	97	94	89	146
	IT117	Asti	134	133	128	121	200
	IT118	Alessandria	137	137	132	125	206
Valle d'Aosta	IT12	Valle d'Aosta	129	128	124	117	193
Liguria	IT131	Imperia	94	94	91	86	141
	IT132	Savona	110	109	106	100	165
	IT133	Genova	122	121	117	111	183
	IT134	La Spezia	111	110	106	101	166
Lombardia	IT201	Varese	137	136	131	124	205
	IT202	Como	140	140	135	128	210
	IT203	Lecco	132	131	127	120	198
	IT204	Sondrio	103	103	99	94	155
	IT205	Milano	147	147	142	134	221
	IT206	Bergamo	141	140	135	128	211
	IT207	Brescia	142	141	136	129	213
	IT208	Pavia	134	133	129	122	201
	IT209	Lodi	140	139	134	127	210
	IT20A	Cremona	138	138	133	126	207
	IT20B	Mantova	137	137	132	125	206
Trentino Alto Adige	IT311	Bolzano-Bozen	130	129	125	118	195
	IT312	Trento	131	130	126	119	196
Veneto	IT321	Verona	140	140	135	127	210
	IT322	Vicenza	130	130	125	119	196
	IT323	Belluno	104	104	100	95	157
	IT324	Treviso	110	110	106	100	165
	IT325	Venezia	113	113	109	103	170
	IT326	Padova	122	122	118	111	184
	IT327	Rovigo	114	113	109	104	171
Friuli Venezia Giulia	IT331	Pordenone	107	106	102	97	160
	IT332	Udine	107	106	103	97	160
	IT333	Gorizia	102	102	98	93	153
	IT334	Trieste	89	89	86	81	134
Emilia Romagna	IT401	Piacenza	144	143	138	131	216
	IT402	Parma	138	138	133	126	207
	IT403	Reggio nell'Emilia	129	128	124	117	193
	IT404	Modena	138	138	133	126	207
	IT405	Bologna	134	133	129	122	201
	IT406	Ferrara	123	123	118	112	185
	IT407	Ravenna	112	111	108	102	168
	IT408	Forlì-Cesena	107	106	103	97	160
	IT409	Rimini	102	102	99	93	154
Toscana	IT511	Massa-Carrara	104	103	100	94	155
	IT512	Lucca	113	112	108	102	169
	IT513	Pistoia	113	113	109	103	170
	IT514	Firenze	116	115	111	105	174
	IT515	Prato	117	116	112	106	175
	IT516	Livorno	99	99	96	90	149
	IT517	Pisa	103	103	99	94	155
	IT518	Arezzo	104	103	100	94	155
	IT519	Siena	100	99	96	91	149
	IT51A	Grosseto	77	77	74	70	115
Umbria	IT521	Perugia	91	91	88	83	137
	IT522	Terni	86	86	83	78	129
Marche	IT531	Pesaro e Urbino	90	90	87	82	135
	IT532	Ancona	85	85	82	77	128
	IT533	Macerata	81	80	77	73	121
	IT534	Ascoli Piceno	78	78	75	71	117

Lazio	IT601	Viterbo	83	83	80	75	124
	IT602	Rieti	82	82	79	75	123
	IT603	Roma	87	87	84	79	131
	IT604	Latina	67	66	64	60	100
	IT605	Frosinone	77	77	74	70	116
Abruzzo	IT711	L'Aquila	77	77	74	70	115
	IT712	Teramo	78	78	75	71	118
	IT713	Pescara	77	77	74	70	116
	IT714	Chieti	79	79	76	72	119
Molise	IT721	Isernia	69	69	66	63	103
	IT722	Campobasso	66	66	64	60	100
Campania	IT801	Caserta	76	76	73	69	114
	IT802	Benevento	68	68	65	62	102
	IT803	Napoli	74	74	71	67	111
	IT804	Avellino	70	70	67	64	105
	IT805	Salerno	68	68	66	62	102
Puglia	IT911	Foggia	68	68	65	62	102
	IT912	Bari	62	62	60	56	93
	IT913	Taranto	53	53	51	48	79
	IT914	Brindisi	47	47	46	43	71
	IT915	Lecce	42	42	41	39	64
Basilicata	IT921	Potenza	59	59	57	54	88
	IT922	Matera	53	53	51	48	79
Calabria	IT931	Cosenza	44	44	42	40	66
	IT932	Crotone	32	32	31	30	49
	IT933	Catanzaro	37	37	36	34	56
	IT934	Vibo Valentia	35	35	33	32	52
	IT935	Reggio di Calabria	36	36	34	32	54
Sicilia	ITA01	Trapani	19	18	18	17	28
	ITA02	Palermo	24	24	23	22	36
	ITA03	Messina	34	34	33	31	51
	ITA04	Agrigento	19	19	19	18	29
	ITA05	Caltanissetta	25	24	24	22	37
	ITA06	Enna	25	25	24	23	38
	ITA07	Catania	30	30	29	27	45
	ITA08	Ragusa	20	20	20	19	31
	ITA09	Siracusa	25	25	24	23	37
Sardegna	ITB01	Sassari	14	14	14	13	22
	ITB02	Nuoro	14	14	13	13	21
	ITB03	Oristano	12	11	11	10	17
	ITB04	Cagliari	10	10	10	9	16

Source: ESPON database

Table 10 - Accessibility indicators of population to market by car by NUTS 3, Italy.

NUTS 2	NUTS_3	Name of NUTS 3	Daily population accessible by car, 1999	Daily market accessible by car in terms of GDP, 1999 (MIO EUR/inhabitants*1000000)
Piemonte	IT111	Torino	21273	922840
	IT112	Vercelli	24708	1265921
	IT113	Biella	21448	1079041
	IT114	Verbano-Cusio-Ossola	22496	1332893
	IT115	Novara	27080	1397528
	IT116	Cuneo	15503	645399
	IT117	Asti	22254	974727
	IT118	Alessandria	25795	1256239
Valle d'Aosta	IT12	Valle d'Aosta	20948	890162
Liguria	IT131	Imperia	18839	685526
	IT132	Savona	21860	873068
	IT133	Genova	22973	964669
	IT134	La Spezia	25749	1078279
Lombardia	IT201	Varese	26869	1659778
	IT202	Como	28708	1726789
	IT203	Lecco	26049	1310741
	IT204	Sondrio	16457	713727
	IT205	Milano	34430	1628523
	IT206	Bergamo	24963	1397241
	IT207	Brescia	27382	1363436
	IT208	Pavia	27535	1360282
	IT209	Lodi	26841	1369723
	IT20A	Cremona	28167	1356017
	IT20B	Mantova	28388	1300534
Trentino Alto Adige	IT311	Bolzano-Bozen	20895	1474080
	IT312	Trento	22927	1246520
Veneto	IT321	Verona	28038	1302753
	IT322	Vicenza	25516	1217057
	IT323	Belluno	16888	695207
	IT324	Treviso	20586	970152
	IT325	Venezia	21426	1013846
	IT326	Padova	24806	1216265
	IT327	Rovigo	23219	1101310
Friuli Venezia Giulia	IT331	Pordenone	18925	842145
	IT332	Udine	15142	865167
	IT333	Gorizia	12621	664118
	IT334	Trieste	11380	582829
Emilia Romagna	IT401	Piacenza	27940	1401571
	IT402	Parma	27500	1200618
	IT403	Reggio nell'Emilia	27150	1179569
	IT404	Modena	28537	1269128
	IT405	Bologna	27223	1302682
	IT406	Ferrara	26087	1213387
	IT407	Ravenna	22402	1002193
	IT408	Forlì-Cesena	23300	1053831
	IT409	Rimini	16850	876415
Toscana	IT511	Massa-Carrara	25277	1053054
	IT512	Lucca	22650	1019612
	IT513	Pistoia	22433	1016369
	IT514	Firenze	26303	1022498
	IT515	Prato	26530	1022498
	IT516	Livorno	15500	861123
	IT517	Pisa	20884	953901
	IT518	Arezzo	18353	806813
	IT519	Siena	18185	792686
	IT51A	Grosseto	11705	470721
Umbria	IT521	Perugia	15062	664504
	IT522	Terni	15539	501204
Marche	IT531	Pesaro e Urbino	15191	772698
	IT532	Ancona	9409	538548
	IT533	Macerata	12287	480930
	IT534	Ascoli Piceno	11235	406495

Lazio	IT601	Viterbo	16752	544646
	IT602	Rieti	15571	483984
	IT603	Roma	16170	468839
	IT604	Latina	14025	336662
	IT605	Frosinone	15742	404803
Abruzzo	IT711	L'Aquila	16214	434002
	IT712	Teramo	10829	396599
	IT713	Pescara	17098	462203
	IT714	Chieti	17840	453283
Molise	IT721	Isernia	16661	378306
	IT722	Campobasso	15909	336245
Campania	IT801	Caserta	16211	328718
	IT802	Benevento	16133	288636
	IT803	Napoli	16211	328718
	IT804	Avellino	16576	323323
	IT805	Salerno	15839	271714
Puglia	IT911	Foggia	12435	302914
	IT912	Bari	11493	225684
	IT913	Taranto	6520	134718
	IT914	Brindisi	4292	80756
	IT915	Lecce	3597	68143
Basilicata	IT921	Potenza	10822	196854
	IT922	Matera	10717	174712
Calabria	IT931	Cosenza	8749	152354
	IT932	Crotone	2058	59017
	IT933	Catanzaro	2561	73088
	IT934	Vibo Valentia	3660	85699
	IT935	Reggio di Calabria	4125	108531
Sicilia	ITA01	Trapani	3709	71872
	ITA02	Palermo	4689	99985
	ITA03	Messina	6542	151171
	ITA04	Agrigento	5093	115288
	ITA05	Caltanissetta	5668	127676
	ITA06	Enna	5668	127676
	ITA07	Catania	5845	138693
	ITA08	Ragusa	4659	102685
	ITA09	Siracusa	3419	90009
Sardegna	ITB01	Sassari	1654	58704
	ITB02	Nuoro	1654	58704
	ITB03	Oristano	1654	58704
	ITB04	Cagliari	1654	58704

Source: ESPON database

Table 11 - Main fishery dependent regions as defined by Ratio 1, Ratio 2 and Ratio 3.

NUTS 3 Code 1999	Name of NUTS 3	Ratio 1	Ratio 2	Ratio 3
		Value added	Employment	CFP quota management measures
BE255	Oostende	X	X	
DE502	Bremerhaven, Kreisfreie Stadt			X
DE932	Cuxhaven	X	X	
DK003	Frederiksborg Amt			X
DK007	Bornholm		X	X
DK00C	Ringkøbing Amt			X
DK00F	Nordjyllands Amt			X
ES114	Pontevedra	X	X	
ES615	Huelva		X	
FI176	Kymenlaakso			X
FI2	Åland – Ahvenanmaa	X	X	
FR252	Manche	X	X	
FR522	Finistère	X	X	
FR813	Herault		X	
FR832	Haute Corse	X		
FR91	Guadeloupe	X		
FR93	Guyane		X	
GR411	Lesvos		X	
GR412	Samos	X		
IE013	West	X	X	
IT408	Forlì			X
IT409	Rimini			X
IT51A	Grosseto	X		
IT532	Ancona			
IT533	Macerata			
IT534	Ascoli Piceno			X
IT712	Teramo	X		
IT713	Pescara			X
IT722	Campobasso			X
IT911	Foggia		X	
IT932	Crotone		X	
ITA01	Trapani	X	X	X
PT15	Algarve	X	X	
PT2	Azores	X	X	
SE041	Blekinge			
SE044	Skane			X
SE093	Kalmar			X
SE094	Gotland		X	X
UKE12	East Riding	X	X	
UKF3	Lincolnshire	X	X	

Source: Regional Socio-economic Studies on Employment and the Level of Dependency on Fishing. Final Report, 2000.

Table 12 - Gross Domestic Product (GDP) per Inhabitants in Purchasing Power Standards (PPS), 1995-2000

NUTS 3 Code 1999	Name of NUTS 3	1995	1996	1997	1998	1999	2000
BE255	Oostende	14948,6	15345,7	15235,8	16340,4	16616,4	17438,4
DE502	Bremerhaven, Kreisfreie Stadt	20756,2	21678,8	22620,5	23270,6	23953,9	24661,5
DE932	Cuxhaven	11740,3	11980,4	12622,9	12847,8	12822,2	13319,7
DK003	Frederiksborg amt	16380,5	17659,7	18409	19235,4	20328,1	20886,4
DK007	Bornholms amt	15717,1	16436,2	17111	18025,7	19346,6	19621,7
DK00C	Ringkøbing amt	20386,9	22045,7	23137,2	24681,7	26569,1	27759,1
DK00F	Nordjyllands amt	18417,1	19964,2	20527,8	21734,8	22783	23822,3
ES114	Pontevedra	10674,9	11272,7	12053,8	12566,2	13890	14662,8
ES615	Huelva	10727	11226,7	11784,9	11653	12989,2	13711,9
FI176	Kymenlaakso	17508,8	18510,6	18904,8	20586,3	21424,3	23371,3
FI2	Åland	21043,8	23141,7	23974,6	26487	29340	31507,7
FR252	Manche	15893,6	16233	16622,1	17030,9	18186,6	19320,9
FR522	Finistère	15721,3	16170,2	16882,6	17544,7	18501,6	20087,8
FR813	Hérault	14867,1	15090,4	15524	16116,4	17106,8	18234,4
FR832	Haute Corse	13242,4	13289,8	14075	14988,7	16236,2	16538,6
FR91	Guadeloupe (FR)	9815	10203,5	10839,7	11415,7	11952,3	12877,3
FR93	Guyane (FR)	10432,4	9682,1	10138,4	10809,1	11089,8	11948,1
GR411	Lesvos	11638,1	12590,2	13206,3	14060,8	15338,3	15952
GR412	Samos	9853,1	10622,1	11928,3	12665,4	13497,7	14036,9
IE013	West	12311	13193,4	14497,3	15685,6	17157,1	18943,9
IT408	Forlì-Cesena	21472	23001,2	23212,8	24629,4	25883,3	28012,9
IT409	Rimini	22627,4	24284,5	23982,9	25491,6	26399,7	28571,8
IT51A	Grosseto	15559,2	16486,9	17258,6	18294,3	19473,8	21141,9
IT532	Ancona	19857	21108,5	21469,3	22113,4	23489,3	25216,1
IT533	Macerata	17540	18909,1	19477,5	19886,3	21222,5	22782,6
IT534	Ascoli Piceno	17009,4	18102,2	18908,5	19684,6	20804,2	22333,6
IT712	Teramo	15562,2	16469,8	16877,5	17643,9	18318,5	19802,5
IT713	Pescara	15643,4	16787,1	16657,4	17648,5	18310,5	19793,8
IT722	Campobasso	12853,4	13720,9	14822	15268,9	15730,9	17183,4
IT911	Foggia	11000,6	11825,9	11791,9	12977,7	13590,5	14754,8
IT932	Crotone	8986,7	9643,5	10158,1	10973,5	11631,3	12317,4
ITA01	Trapani	11426,6	12158,8	12352,3	13174,6	13755,5	14743,2
PT15	Algarve	11981	12335,1	13401,1	14246	14632,9	15118,7
PT2	Azores	8768,6	9095,2	9936,1	10571,7	11180,3	12006
SE041	Blekinge län	16306,7	17598,6	20830,4	19407,7	20099,2	21223,6
SE044	Skåne län	16490,7	17182,5	18033,2	18581,1	19721,8	20825,1
SE093	Kalmar län	16922	17539,8	18140,2	18829,4	19294,1	20375,3
SE094	Gotlands län	16037	16925,3	16113,8	17107,7	17237	18202,9
UKE12	East Riding of Yorkshire	14013,7	16256,1	16746,4	16774,2	17045,8	17936,2
UKF3	Lincolnshire	14479,4	16148,6	17287,8	17945,1	18112,6	19058,7

Source: ESPON database

Table 13 - Evolution of Gross Domestic Product (GDP) per Inhabitants in Euro, 1995-2000

NUTS 3 Code 1999	Name of NUTS 3	Var. 1996/95 %	Var. 1997/96%	Var. 1998/97 %	Var. 1999/98 %	Var. 2000/99 %
BE255	Oostende	-0,64	-4,14	6,73	5,92	3,40
DE502	Bremerhaven, Kreisfreie Stadt	1,46	-1,68	2,90	0,99	0,28
DE932	Cuxhaven	-0,87	-0,72	1,81	-2,09	1,18
DK003	Frederiksborg amt	4,56	2,94	4,61	5,16	2,90
DK007	Bornholms amt	1,42	2,80	5,47	6,80	1,58
DK00C	Ringkøbing amt	4,88	3,64	6,80	7,12	4,64
DK00F	Nordjyllands amt	5,13	1,54	6,01	4,31	4,72
ES114	Pontevedra	6,79	4,01	6,42	8,86	6,85
ES615	Huelva	5,83	2,11	0,94	9,77	6,85
FI176	Kymenlaakso	2,36	1,69	8,77	3,66	8,32
FI2	Åland	6,47	3,16	10,36	10,33	6,64
FR252	Manche	2,77	0,66	2,31	5,02	3,24
FR522	Finistère	3,49	2,64	3,77	3,71	5,51
FR813	Hérault	2,13	1,13	3,66	4,39	3,59
FR832	Haute Corse	0,98	4,12	6,33	6,53	-1,01
FR91	Guadeloupe (FR)	4,60	4,44	5,16	2,97	4,70
FR93	Guyane (FR)	-6,61	2,94	6,46	0,90	4,70
GR411	Lesvos	11,21	10,17	1,97	10,14	3,94
GR412	Samos	10,82	17,95	1,69	7,60	3,93
IE013	West	14,89	14,61	9,68	12,60	14,93
IT408	Forlì-Cesena	17,05	4,15	3,77	3,90	5,77
IT409	Rimini	17,27	1,92	3,95	2,39	5,77
IT51A	Grosseto	15,78	8,03	3,67	5,24	6,10
IT532	Ancona	16,15	4,97	0,73	5,02	4,92
IT533	Macerata	17,80	6,30	-0,15	5,51	4,92
IT534	Ascoli Piceno	16,29	7,80	1,81	4,49	4,92
IT712	Teramo	15,64	5,76	2,24	2,65	5,65
IT713	Pescara	17,26	2,40	3,62	2,58	5,65
IT722	Campobasso	16,64	11,48	0,75	1,86	6,76
IT911	Foggia	17,46	2,90	7,63	3,54	6,11
IT932	Crotone	17,26	8,71	5,65	4,79	3,50
ITA01	Trapani	16,27	4,84	4,31	3,23	4,75
PT15	Algarve	4,35	4,67	10,09	4,96	3,75
PT2	Açores (PT)	5,12	5,26	10,18	8,07	7,83
SE041	Blekinge län	15,79	15,36	-9,04	5,28	8,81
SE044	Skåne län	11,79	2,29	0,59	7,90	8,81
SE093	Kalmar län	11,21	0,80	1,33	4,17	8,82
SE094	Gotlands län	13,23	-7,21	3,65	2,43	8,82
UKE12	East Riding of Yorkshire	14,53	19,74	2,67	6,87	13,21
UKF3	Lincolnshire	10,12	24,43	6,40	6,15	13,21

Source: ESPON database

Table 14 - Gross Domestic Product (GDP) per active person in Euro, 1995-2000

NUTS 3 Code 1999	Name of NUTS 3	1995	1996	1997	1998	1999	2000
BE255	Oostende	40.010,83	39.992,74	38.609,49	40.345,81	42.010,51	41.994,93
DE502	Bremerhaven, Kreisfreie Stadt	54.612,90	55.367,52	54.837,70	55.329,27	55.694,89	56.122,12
DE932	Cuxhaven	31.938,59	31.361,87	32.956,73	31.347,10	30.875,28	30.766,70
DK003	Frederiksborg amt	36.318,39	38.046,98	39.288,10	41.549,48	43.472,30	45.097,17
DK007	Bornholms amt	37.004,13	37.254,10	37.987,76	39.877,55	41.955,65	42.927,13
DK00C	Ringkøbing amt	46.138,80	48.209,46	49.777,78	53.525,59	56.834,63	59.933,55
DK00F	Nordjyllands amt	43.240,99	45.352,81	45.932,88	48.955,25	50.531,03	53.324,37
ES114	Pontevedra	21.190,35	23.021,16	23.910,32	24.925,73	26.522,01	27.832,41
ES615	Huelva	23.828,23	25.104,60	24.429,95	25.977,22	26.657,53	26.808,68
FI176	Kymenlaakso	42.110,25	43.542,51	45.347,53	46.991,19	49.056,86	53.914,22
FI2	Åland	47.984,00	52.442,62	54.752,07	60.352,46	70.465,52	66.679,39
FR252	Manche	47.201,81	47.403,65	47.164,48	46.372,51	49.664,89	54.744,46
FR522	Finistère	40.433,69	41.880,83	43.243,64	44.513,55	44.481,25	48.905,71
FR813	Hérault	43.358,64	44.355,58	46.747,22	46.490,23	50.700,53	53.039,96
FR832	Haute-Corse	39.308,59	39.472,97	42.406,75	42.930,45	47.456,31	47.391,81
FR91	Guadeloupe (FR)	25.795,75	27.115,67	27.641,66	28.300,77	29.163,95	29.423,22
FR93	Guyane (FR)	32.148,70	30.195,38	29.028,91	29.178,40	31.969,02	33.123,73
GR411	Lesvos	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
GR412	Samos	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
IE013	West	26.859,75	31.277,98	33.899,66	36.849,33	38.931,93	42.560,54
IT408	Forlì-Cesena	38.422,29	44.242,80	46.000,62	48.367,59	48.585,91	52.941,32
IT409	Rimini	41.294,93	50.870,50	47.890,91	52.435,50	51.601,16	53.540,82
IT51A	Grosseto	33.675,78	37.260,71	40.205,95	41.083,43	41.832,57	43.581,47
IT532	Ancona	38.155,69	46.356,45	48.115,60	49.271,07	50.606,67	50.803,18
IT533	Macerata	34.748,14	37.262,60	41.617,02	42.340,00	43.665,89	46.669,04
IT534	Ascoli Piceno	32.074,60	37.280,13	40.256,08	41.098,01	42.049,44	44.966,26
IT712	Teramo	30.564,70	36.014,78	39.296,43	38.806,70	39.354,48	42.160,96
IT713	Pescara	31.782,50	35.707,05	37.878,11	39.776,91	40.911,38	44.588,55
IT722	Campobasso	27.171,62	31.818,38	34.015,97	34.876,09	35.568,78	37.638,23
IT911	Foggia	26.902,79	31.037,69	32.276,00	34.867,48	34.412,92	35.378,73
IT932	Crotone	22.383,42	27.190,65	32.000,00	32.938,70	36.567,62	36.431,10
ITA01	Trapani	29.716,32	32.557,98	33.314,38	34.433,42	37.532,33	38.401,26
PT15	Algarve	17.845,50	18.454,60	19.575,56	20.426,69	21.350,03	23.565,32
PT2	Açores (PT)	15.036,29	15.624,74	16.215,26	17.303,86	18.360,44	19.332,67
SE041	Blekinge län	38.215,24	44.005,34	53.222,69	46.687,42	47.753,30	53.810,37
SE044	Skåne län	38.757,23	43.336,64	44.536,02	45.576,74	48.743,26	52.821,45
SE093	Kalmar län	40.468,32	44.499,57	44.978,60	45.611,40	48.062,50	52.469,14
SE094	Gotlands län	35.775,92	39.516,34	38.249,15	40.500,00	43.007,27	45.221,05
UKE12	East Riding of Yorkshire	n.a.	n.a.	35.222,00	36.381,69	38.050,66	42.971,93
UKF3	Lincolnshire	n.a.	27.431,93	35.307,87	37.098,28	38.479,25	43.214,71

Source: ESPON database. Note: Data on active people for Lesvos and Samos are not available.

Annex 13

Iceland FUA

Iceland is a NUTS 3 region

Number of municipalities	101
Total of inhabitants	293 291
In average	2 904
Total area Sq. Km	103 000
Inhabit. Pr. Sq km.	2,8
Number of Functional Urban Areas	2
Municipalities within FUA´s	69
Inhabitants within FUA´s	240 298
Inhabitants within FUA´s as %	81,9
Municipalities outside FUA´s	69
Inhabitants outside FUA´s	52 993
Inhabitants outside FUA´s as %	18,1

Municipality	Inhabit 2004	Sq km	Inhabit. Sq km	Fisheries Fj. eða % Staðgr.skrá?	Fishprocessing Fj. eða % Hagst.	FUA Class
Reykjavik	113 730	268	424,4			MEGA-4
Kópavogur	25 784	80	322,3			MEGA-4
Hafnarfjörður	21 942	143	153,4			MEGA-4
Reykjanesbær	10 954	145	75,5			MEGA-4
Garðabær	9 036	71	127,3			MEGA-4
Mosfellsbær	6 782	189	35,9			MEGA-4
Árborg	6 522	158	41,3			MEGA-4
Akranes	5 655	9	628,3			MEGA-4
Seltjarnarnes	4 547	2	2 273,5			MEGA-4
Grindavík	2 479	425	5,8			MEGA-4
Álftanes	2 024	5	404,8			MEGA-4
Hveragerði	2 021	8	252,6			MEGA-4
Ölfus	1 725	738	2,3			MEGA-4
Sandgerði	1 398	62	22,5			MEGA-4
Garður	1 322	21	63,0			MEGA-4
Vatnsleysustrandarhreppur	939	165	5,7			MEGA-4
Hraungerðishreppur	196	96	2,0			MEGA-4
Skilmannahreppur	167	55	3,0			MEGA-4
Hvalfjarðarstrandarhreppur	147	270	0,5			MEGA-4
Kjósarhreppur	145	284	0,5			MEGA-4
Gaulverjabæjarhreppur	138	80	1,7			MEGA-4
Leirár- og Melahreppur	130	132	1,0			MEGA-4
Innri-Akraneshreppur	117	25	4,7			MEGA-4
Reykjavík area total	217 900	3 431	63,5			
Number of municipalities	23					

Municipality	Inhabit 2004	Sq km	Inhabit. Sq km	% in fishery	% in fish processing	FUA Class
Akureyri	16 450	133	123,7			FUA-3
Dalvíkurbyggð	1 946	598	3,3			FUA-3
Eyjafjarðarsveit	993	1 775	0,6			FUA-3
Ólafsfjarðarbær	980	209	4,7			FUA-3
Þingeyjarsveit	698	5 424	0,1			FUA-3
Grýtubakkahreppur	393	431	0,9			FUA-3
Hörgárbyggð	390	805	0,5			FUA-3
Svalbarðsstrandarhreppur	365	55	6,6			FUA-3
Arnarneshreppur	183	89	2,1			FUA-3
Akureyi area total	22 398	9 519	2,4			
Number of municipalities	9					