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## The ESPON 2013 Programme

# The Development of the Islands – European Islands and Cohesion Policy\* (EUROISLANDS)

## Targeted Analysis 2013/2/2

### Interim Report (version 3)

\*The Outermost Regions of the EU (as defined in the Treaty of Amsterdam) are not addressed by this ESPON Project



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## 1 Executive summary

The basic assumption underlying the overall approach of this study is that areas which are not attractive for the establishment of competitive economic activities and/or keeping population their socioeconomic base will shrink along with their overall viability, and therefore they will diverge from EU and national goals for sustainable development, economic, social and territorial cohesion. External or internal socio-economic and environmental parameters can be blamed. Many European islands are such areas, not attractive for economic activities and/or residence.

Three fundamental questions will be answered within this context:

- What is the state of Europe's islands considering sustainable development goals?
- What is the cause of this state? Here, the concept of attractiveness is utilized to search for an answer.
- What policies would be appropriate for increasing the attractiveness of islands and ensure that their development meets the tenets of sustainable development?

Within this framework, the concepts of attractiveness and sustainability are integrated in a common context for analyzing the situation and revealing problems (question 1); researching the causes that have led to this situation (question 2); and supporting the processes of planning and policy formulation (question 3).

There are 362 European islands with population more than 50 inhabitants plus 228 more with population less than that are considered and concerned by this study<sup>1</sup>. The analysis is based mainly on information coming from two different entities of islands: (a) the 31 Island Regions that are European statistical units (Member states, NUTS II or NUTS III) for which some common basic data are available; and (b) the 9 case study islands, for which data is acquired with the use of local research and the assistance of local stakeholders. Information from other European islands is used.

A number of parameters are used for the estimation of sustainability, along the three pillars of sustainable development: economic efficiency, social justice /equity, and environmental conservation.

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<sup>1</sup> Islands of the outermost regions are not considered in this study.

A first outcome concerning islands sustainability shows a divergent performance of islands concerning **economic efficiency**: from islands of high performance such as Aland and Illes Balears, to those of low performance, such as Gozo, Ionia Nisia, Voreio Aigaio, Sicilia and Saaremaa. Overall, islands are not any more among the most lagging regions of EU-27, in many regions of the new Member-States GDP/per capita is lower than 75% or even below 50% of the European average; for island Regions, only the performance of Saaremaa is below 50%. However, **the majority of islands have lower performances than their national ones, with an average GDP per capita at just 79,2% of the European one.**

The islands with the best economic performance can be classified in two categories: in the first, islands with a very clear specialisation in a low added value activity such as the tourism sector (Illes Balears, Cyprus, Kyklades, Dodecanisos, Zakynthos) are included; and in the second, islands such as Aland, Shetland, Gotland and Orkney are found that are specialised in some other internationally oriented activity (e.g. transport or energy) with a very important public sector. Few islands have a significant production in agriculture, fisheries or manufacture. Long term development perspectives seem rather fragile, because of the predominance of low value added activities in an increasingly competitive international environment based on an excessive use of scarce natural resources.

The same diversity is evident for **population evolution** as well, with some islands having healthy demographics (young population, positive natural movement), while others keep on losing their active and young population. These positive results do not result from positive natural change (births – deaths) but from positive inward migration flows that have positive impacts to the evolution of the total population but also change the age pyramid as immigrants are younger and with children. Only Malta and Cyprus have a birth rate and a share of young population above the European average. Net migration –very often by people coming either from Eastern Europe or from Asia and Africa- is recorded in almost all islands.

Data relating to the **economically active population** reveal that there are differences between Nordic and Mediterranean islands that reflect differences in general between north and south Europe. Women in the south are less involved in economically active life and they are more likely than men to be unemployed. In general, activity rates on islands (the Mediterranean ones) are particularly low compared with the European mainland. Unemployment, especially of young and female, is rather high but there is no correlation with the level of GDP.

**Natural assets are very important for islands, especially for those in the Mediterranean where biodiversity and landscape quality are particularly high.** Environmental pressures are very different among European islands as population density varies from less than 1 inhabitant per km<sup>2</sup> up to more than 1000 (Malta, Italian coastal islands), but is growing with direct impact on natural landscape fragmentation. Environmental problems are also quite discernible between the north and the south: urban sprawl due to tourism and second house construction, coast artificialisation, water shortage, fires, and high soil erosion risk are the principal problems to be addressed in the south; sea eutrophication is the main problem in the north, as well as coastal erosion. A common problem seems to be fish stock collapse – more severe in the north- with direct repercussions on islands' economies and societies. **Finally, climate change is a global concern but islands are more vulnerable than the mainland.**

The findings of this analysis are summarised in a **State index that demonstrate clearly that the average of the island regions is lower than that of the EU-27, but also lower than the average of the States with island regions.** The results of the change index underline a recent dynamism as islands have better scores than the EU-27 average. But, this performance seems unable to reduce the development gap between European islands and the mainland.

For estimating attractiveness, a number of parameters (factors of attractiveness–related to Lisbon and Gothenburg strategies-) are defined and information is collected. In parallel a classification of the importance of different attractiveness factors by insular decision makers (local authorities and Chamber of Commerce), permanent population and entrepreneurs established on the islands was undertaken. Finally, three attractiveness indexes are calculated.

Insularity affects accessibility negatively regardless of the point of view of the islander or the visitor of an island. **All islands have an accessibility index lower than the European average even if sea transport is not taken into account. Cost in time and money are clearly much higher on islands than on mainland.**

The islands with at least one Functional Urban Area (FUA) of local importance are only 25; **only two islands cities –Palma (Mallorca) and Valetta (Malta) have functions that are higher than the average of European cities.** Generally, as insularity implies isolated and small markets, monopolies and oligopolies are more often the

reality than free competition; therefore, prices for transport and goods are higher compared with prices on mainland. For the same reasons (small scale, territorial discontinuity) the provision of services of public interest and of private services is very unequal; in some cases (mainly in the Nordic islands) the national state covers the extra cost by providing a minimum service.

Human capital is a major problem on the islands, mainly the Mediterranean ones: **the education level is particularly low even in the islands with high level of GDP per capita and presence of a University**; low trends of lifelong learning worsen this. On Nordic islands, human capital is better prepared to face new challenges, but even there the conversion from 'traditional' professions is challenging.

**Information Society penetration and R&D activities are following the same pattern of development**: the indicators for Mediterranean islands are even worse than the national ones that are already lagging behind the European average; Kriti and Corse are the only ones with high values.

**Social capital components** (Level of satisfaction with public issues, Interest in politics, Social trust and Social networks participation) **have a statistical significant difference between north and south in all parameters but one**: institutional trust. Safety feeling has another pattern and a diversification between big and small islands. It has to be underlined that the feeling of safety is one of the few parameters that receive a positive score.

**Islands have an important level of natural and cultural assets** (specific habitats and endemic species, monuments, sites, landscapes etc); they are under pressure as the predominant development model based on mass tourism and the construction sector does not give priority to their management.

The findings of the research to locals on the attractiveness factors reveal that islanders consider the quality of the health care system, trip frequency, job opportunities, regularity of water supply, quality of life and quality of education as the most important factors of attractiveness for living. The most important factors for businesses are: trip frequency, economic incentives, regularity of water supply, development vision of local authorities, regularity of energy supply and travel cost.



**The Direct and the Indirect Attractiveness Index confirm that islands score particularly low for all the analysed variables; this appears to be the cause of the low performance of islands.** Attractiveness and performance is even lower for small islands and archipelagos. The Attractiveness Potential Index confirms that natural and cultural assets constitute a prominent potential for a significant number of islands.

Therefore, **insularity has to be considered as a permanent, natural feature that affects negatively, directly and indirectly, islands' attractiveness** and subsequently places obstacles to their performance in terms of sustainable development creating unequal opportunities between these territories and the rest of the European Union. Furthermore, the **external threats** (climate change, globalization, etc) tend to intensify the constraints of insularity (in varying degrees) and the conditions under which insular areas "compete" in the global environment.

Therefore, an appropriate **policy framework** for the European islands has to be elaborated that should pursue the increase of their attractiveness for sustainable living and entrepreneurship so that they could keep pace (in terms of development) with the continental mainland. This framework has to: (a) **overcome their permanent handicaps** (e.g. accessibility problems due to insularity) by applying permanent measures; (b) **tackle external threats** by adapting their long-term strategy to the respective impacts; (c) **adapt their development model** by utilising their assets and looking towards an endogenous sustainable development and (d) **orient their production system** towards "safe" and high quality products and services.

A classification of islands is proposed in order to diversify the intensity of measures within an integrated insular policy according to the intensity of the constraints insularity provokes.

## 2 Outline of methodology

The goal of the current study is to analyze European Islands within the socioeconomic and environmental development context of EU-27 and to propose policy measures to achieve territorial cohesion. The basic assumption underlying the overall approach followed in this study is that areas which are no longer attractive for establishing competitive economic activities and attracting population will observe their socioeconomic base shrinking and will diverge from EU and national goals for sustainable development, economic, social and territorial cohesion. Such areas are islands, which are not very attractive places for living and/or for business today. Permanent factors due to insularity, external or internal socio-economic and environmental parameters can be blamed. Three questions will be answered: (a) what is the situation of Europe's islands; (b) what are the causes (the concept of attractiveness is used); and (c) what policies would be appropriate for increasing the attractiveness of islands.

In this study all the European islands are considered except of the islands of outermost regions. As it is presented in the Inception Report, there are 362 European islands with population more than 50 inhabitants plus 228 more with population less than 50 inhabitants. The data necessary for the analysis are in some cases either lacking or not comparable, due to the fact that the European islands correspond to different administrative territorial entities (from Member states to Local Administrative Units). So, the analysis is based on information from: (a) 31 Island regions that are European statistical units (Member States, NUTS II or NUTS III), (b) 9 case study islands, for which data is acquired with the use of local research and the assistance of local stakeholders<sup>2</sup>. Additional information has been used from other European islands (not belonging in (a) and (b) groups above) in order to have a more complete image. So, all the different types of European islands are covered within this analysis.

Within this framework, the concepts of **attractiveness** and **sustainability** are integrated within a common context (Figure 1) for analyzing the state of the islands (question 1); researching the causes that have led to this situation – attractiveness factors (question 2); and supporting the processes of planning and policy formulation (question 3) in order to address attractiveness problems and ameliorate islands' state.

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<sup>2</sup> A detailed table of these islands is included in Annex VIII (Table AVIII-1)

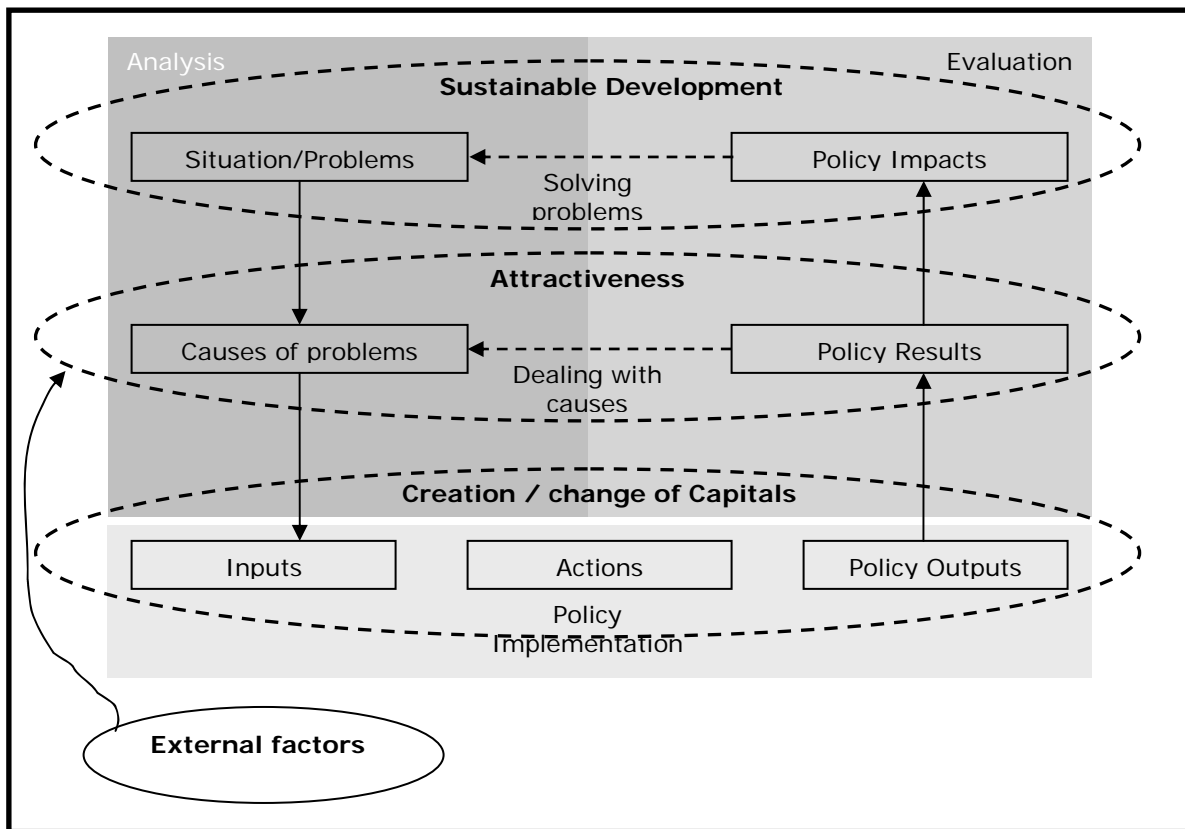
Within this approach, different types of research were conducted:

- **The methodology for the estimation of islands' state.** This estimation is based on the use of sustainability indicators that monitor differences of islands from the EU and national means for economic efficiency, social justice and equity, as well as environmental conservation (for details see Annex I). **Since the current work is not a data-collecting study but a policy oriented study, the estimation is completed with the available data and with the assistance of published work.** The parameters are combined to create composite indexes one for the **state of the islands** and one for **changes during the period 2000-6** (see Annex VII).
- **The methodology for estimating attractiveness**, including (i) the definition of the parameters used to estimate islands' attractiveness and (ii) the classification of the parameters.
  - (i) Attractiveness is estimated using variables from previous EU studies (mainly in Economic and Social Cohesion and ESPON 2006 reports). The relation between insularity and attractiveness is also analyzed. The parameters used in order to create attractiveness indexes are presented in Annex VII.
  - (ii) In parallel a classification of the importance of different attractiveness factors is undertaken for two different groups of locals: (a) companies; (b) the population. Via an initial list of variables from the literature and brainstorming with the project's team members, 25 and 24 factors were identified for residence and economic activities respectively. Therefore, a number of different researches were designed and executed by the project team: (a) insular stakeholders, (b) permanent population of the islands of the case studies and (c) companies established on the case study islands. The input from stakeholders and field research were used for a first classification of attractiveness parameters. These parameters were classified also by a group of experts using Delphi Method. The analysis of the data aims at identifying and prioritizing the factors affecting attractiveness in order to prioritise the policies that are going to be proposed. Details on the type of questionnaires used, the stakeholders contacted and the analysis are provided in Annex IX.
- **The methodology for the research on the case study islands.** The final list of the case studies includes 9 islands and the field work of the research was performed either by field trips on smaller islands, or with the assistance of local stakeholders. Regarding the questionnaires, the most important difference refers to the type of

questions regarding attractiveness: while the ones that were addressed to Regional Authorities and Chambers of Industry and Commerce sought to classify attractiveness factors regarding their *importance* for business, the ones addressed to residents and companies recorded their level of *satisfaction* regarding these factors. Details on the estimation methods are provided in Annex I.

- **The SWOT Analysis** is linked to the attractiveness parameters as they are considered key factors that have to be addressed by policy measures
- The **Typology of islands** which is based on the state index will be used for fine tuning of policy intensity between islands.

**Figure 1: Conceptual framework for analyzing islands**



### 3 Presentation of main results

The European islands included in this study (Map 1) are very diverse in terms of the size of their population and the “importance” of this population within their national entities. A quite clear geographical distribution is evident: on the one hand, islands in north Europe are rather small, mainly close to the coast, and their population is a small part of the total national population (less than 1% except for Estonia); on the other hand, in the Mediterranean, more diverse cases are encountered: there are two island-states (Cyprus and Malta<sup>3</sup>), very big island-regions such as Sicilia, Sardegna, Kriti, Mallorca and Corse, as well as archipelagos and coastal islands. The ratio of these islands’ population to the correspondent national total varies from 100% for the islands states to less than 2% for France. Greece and Italy are the non islands-states where islands have an important weight with 12% of their population living on islands.

The overall analysis is influenced and limited by the available information and data that corresponds to the islands’ administrative status: for islands-states such as Cyprus and Malta, all data are generally available; on the other hand, information on the islands at LAU 1 or lower level is not available at all at the European level. In between, for islands that are characterized as NUTS 2 and 3 regions, the available information is not homogenous and very unequal. Therefore, different units and levels of analysis are used: (a) for most indicators used, data is available only for NUTS 0 and 2 areas, which yields 11 areas; (b) in the cases where information for all the NUTS 3 islands areas is available, 20 more areas are added. However, some of these areas overlap: “Malta-state” data (NUTS 0 area) is the sum of “Malta-island” and “Gozo-Comino” (NUTS 3 areas); “Illes Balears” is the sum of the 3 newly created NUTS 3 areas of “Mallorca”, “Menorca”, “Eivissa I Formentera”; In Greece, “Notio Aigaio” (NUTS 2 area) is the sum of the 2 NUTS 3 areas “Kyklades” and “Dodecanisos”; “Voreio Aigaio” (NUTS 2 area) is divided in 3 NUTS 3 areas (“Lesvos”, “Samos” and “Chios”) and “Ionia Islands” (NUTS 2 area) in 4 NUTS 3 areas (“Zakynthos”, “Kerkyra”, “Lefkada” and “Kefallonia”). Finally, the islands of Kriti, Sicilia, Sardegna and Corse are taken into account only as entire island entities (NUTS 2 areas), even if they include NUTS 3 sub-divisions<sup>4</sup>.

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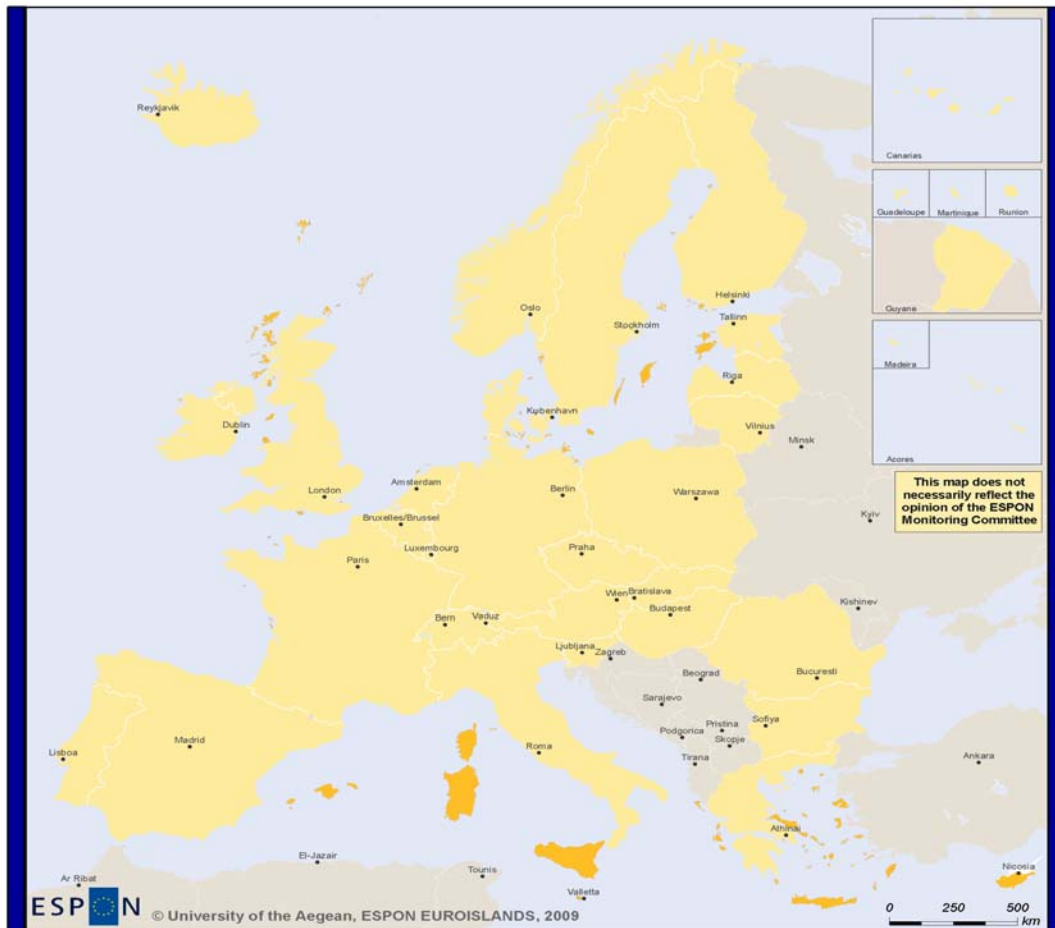
<sup>3</sup> All references to Malta concern the Malta State (NUTS 0 level); when information is provided for the island of Malta (NUTS 3 level) there is explicit reference.

<sup>4</sup> The list of islands regions and the 9 case studies of the study is presented in Annex VIII, Table AVIII-1.

The data used for the analysis (Annex VII) generally cover the period 1996-2008 and originate from the following European sources: (a) the EUROSTAT web data base; (b) the EUROSTAT Regional Yearbook 2009; (c) the 4<sup>th</sup> Report on economic and social cohesion, 2007; (d) the ESPON data base and (e) the ESPON Atlas.

**Map 1: The Study Area**

**ESPON EUROISLANDS STUDY AREA**



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 Regional level: NUTS 0 2006  
 Source: University of the Aegean  
 © EuroGeographics Association for administrative boundaries  
 © DG REGIO for island boundaries

**Legend**

- study area
- ESPON space outside study area
- Non ESPON space

### 3.1. The State of European Islands

The answer to the question “**what is the situation of European Islands within the context of sustainable development?**” rests on the goal of pointing out the differences that distinguish the islands from the EU-27 as well as from their national entities. The following analysis is structured in 3 sections that correspond to the three components of sustainable development: the efficiency of islands’ economy; social equity; and environmental conservation.

#### *3.1.1. Efficiency of Islands’ economy*

The degree of the economic success of a region is usually assessed with the use of the Gross Domestic Product (GDP) that describes the value of its output and the effectiveness of its economic system. The GDP per inhabitant (in PPS) is even more helpful to compare economic growth and the effectiveness of the economy between areas, while its change rate estimates its dynamism. However, the use of this indicator is straightforward only if all the persons involved in generating GDP are also residents of the region in question which is not the case for most of the islands<sup>5</sup>.

The majority of NUTS 2 and 3 islands (24 out of 31, island states included) have GDP per capita (in PPS) below the EU27 average (79,2 in 2006 with EU27=100), while its distribution was only at 20,3 when for the EU-27 was at 50,0 <sup>6</sup>. Only Aland, Illes Balears (NUTS 2), Shetland and Kyklades (NUTS 3) perform better than the European average (146,7, 114,1, 110,9 and 104,0 in 2006 respectively) and Aland, Illes Balears and Kyklades better than the national average. The overall figures are presented in Table 1 for NUTS 2 & 3 islands (Map 2).

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<sup>5</sup> Tourism is a typical economic activity that raises production in an area; in many cases an important part of employers and employees does not reside permanently in it. Therefore, the activity generates GDP, but part of this production ‘leaks’ out of the area along with the people that leave when the season ends. In parallel, the created GDP is divided by the number of the permanent inhabitants, giving a high GDP/capita indicator.

<sup>6</sup> EU, 2009, Territories with specific geographical features, n° 02/2009, table 3.1, p.8 and table 4.1, p.9

**Table 1: Islands Regions, Cohesion Policy objectives and GDP (2006)**

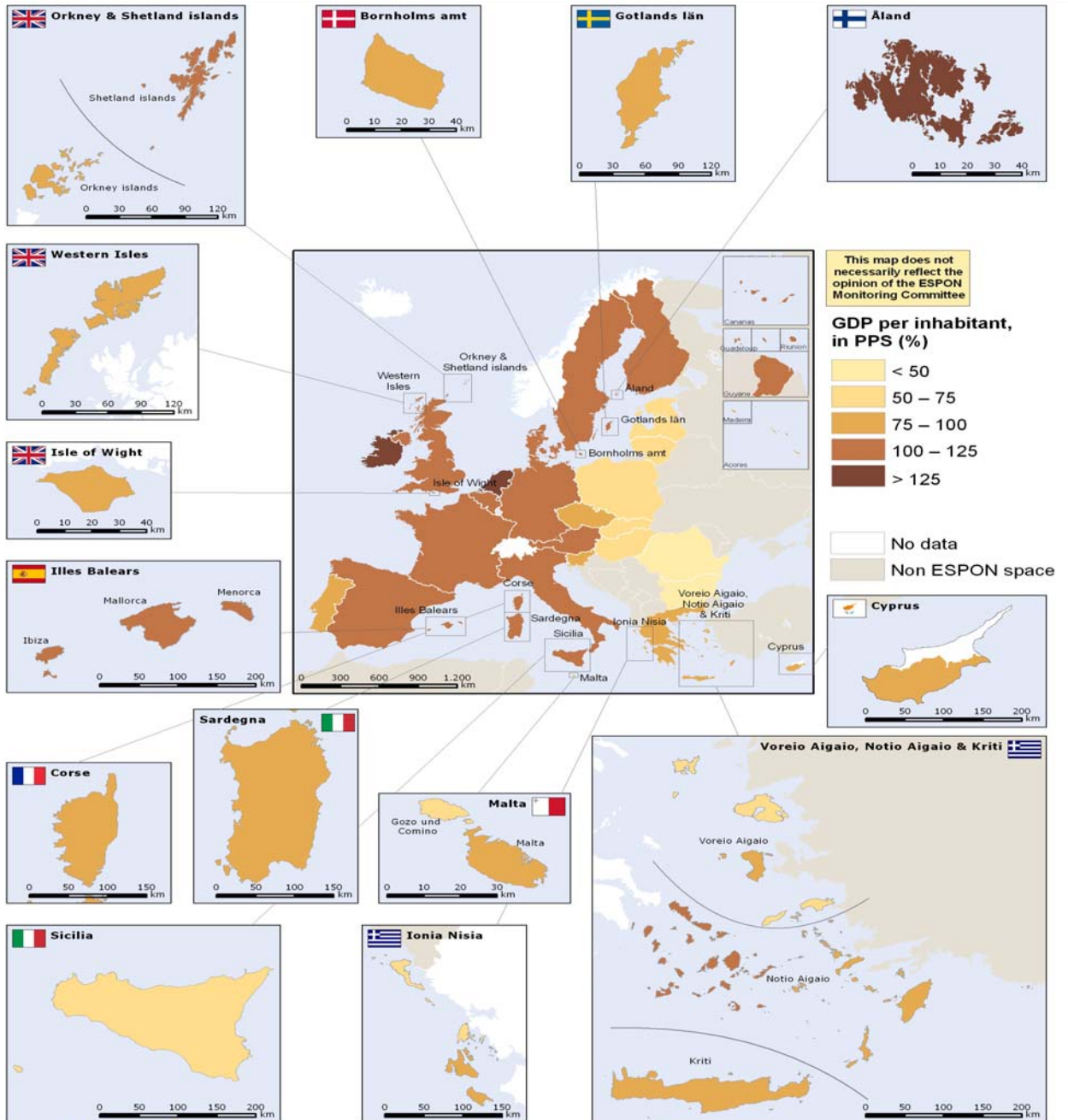
Regions	NUTS	Cohesion Policy Objective	% of EU27 average 2006	% of National average 2006
Cyprus	2	Phasing-in	90,3	100,0
Bornholm	3	Competitiveness & Employment	89,4	72,7
Illes Balears	2	Competitiveness & Employment	114,1	109,6
<i>Eivissa y Formentera</i>	3	Competitiveness & Employment	123,8	118,9
<i>Mallorca</i>	3	Competitiveness & Employment	111,5	107,1
<i>Menorca</i>	3	Competitiveness & Employment	124,2	119,3
Åland	2	Competitiveness & Employment	146,7	127,7
Corse	2	Competitiveness & Employment	85,8	78,4
Ionia Nisia	2	Convergence	73,9	78,5
<i>Zakynthos</i>	3	<i>Convergence</i>	92,3	98,1
<i>Kerkyra</i>	3	<i>Convergence</i>	67,1	71,3
<i>Kefallinia</i>	3	<i>Convergence</i>	82	87,1
<i>Lefkada</i>	3	<i>Convergence</i>	64,9	69,0
Voreio Aigaio	2	Convergence	67,4	71,6
Lesvos	3	<i>Convergence</i>	64,1	68,1
Samos	3	<i>Convergence</i>	65,4	69,5
Chios	3	<i>Convergence</i>	75,9	80,7
Notio Aigaio	2	Phasing-in	96,2	102,2
<i>Dodekanisos</i>	3	<i>Phasing-in</i>	91,7	97,4
<i>Kyklades</i>	3	<i>Phasing-in</i>	104	110,5
Kriti	2	Convergence	82,8	88,0
Sicilia	2	Convergence	66,9	64,6
Sardegna	2	Phasing-in	79,5	76,8
Malta	2	Convergence	76,9	100,0
<i>Malta island</i>	3	<i>Convergence</i>	78,4	102,0
<i>Gozo and Comino /Ghawdex</i>	3	<i>Convergence</i>	59,2	77,0
Gotlands län	3	Competitiveness & Employment	98,1	80,7
Isle of Wight	3	Phasing-out	81,1	67,4
Eilean Siar (Western Isles)	3	Phasing-out	77,7	64,5
Orkney Islands	3	Phasing-out	94	78,1
Shetland Islands	3	Phasing-out	110,9	92,1

Source: EUROSTAT, TPG calculations



Map 2: GDP per inhabitant of Member States and island regions, in PPS, 2006

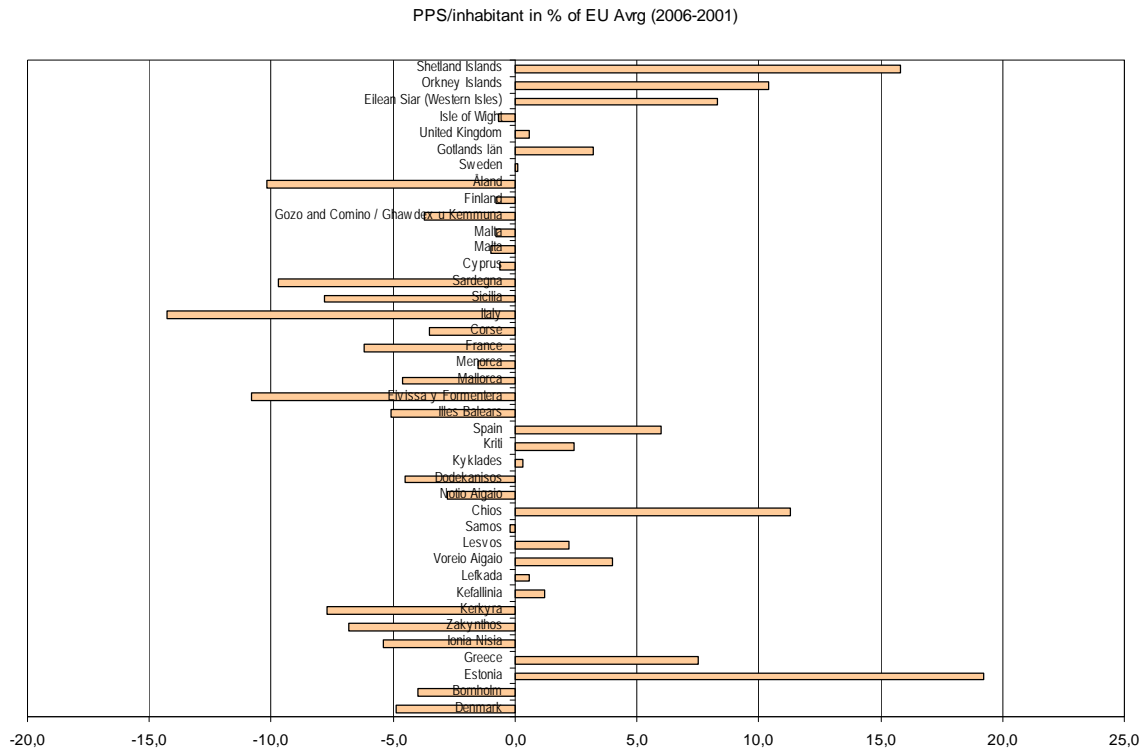
**GDP per inhabitant, in PPS, 2006**  
In percentage of EU-27 = 100



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## Graph 1: Evolution of GDP/inhabitant in PPS (2000-2006)



The economic convergence in terms of GDP of the examined NUTS 2/3 island regions with the EU27 average from 2000 to 2006 was positive for some of the NUTS2/3 regions with Western Islands, Shetland, Chios, Kefallinia having the best scores. On the contrary, Sardegna, Sicilia, Malta, Bornholm and Dodekanisos faced a net divergence compared to EU-27. One region, Ionia Nissia, fell again below the 75% limit of the European average. Consequently, in this period, the majority of the island regions has not followed the trends of the countries and diverged from the EU average (Map AIII-1).

Productivity level is also diverging<sup>7</sup>: in Corse, Sardegna, Sicilia, and Åland productivity is above the EU 27 average (in the 100 – 120 class) following the trend of their respective countries. Notio Aigaio and Illes Balears have better scores than the national ones (106,9 compared to 85,1 and 94,5 compared to 91,7 respectively). On the contrary, in Cyprus, Ionia Nisia, Voreio Aigaio and Malta productivity is very low (Table AVII-2).

### Development of the economy and long term prospects

<sup>7</sup> EU, 2007, 4<sup>th</sup> Report on Economic and Social Cohesion, Statistical annex p.178-195

The structure of the economy of the island regions per sector presents significant diversifications: services are the most important activity, but the gross value added produced by the sector fluctuates between 65% for Orkney and Shetland Islands to 85% for Åland (Table AVII-5). This is the result of the presence of an important public sector for some of the islands, e.g. Gotland (41,2%), Western Isles (37,8%), Bornholm (37,0%) and Corse (36,2%). Menorca with 15,8% and Kyklades 16,4% and generally the Illes Balears and the Greek Islands are in the other end of the spectrum. The island states Malta and Cyprus occupy the space in the middle with 26,7% and 24,4% of their GDP coming from the public sector respectively, following the trend of many other member states (e.g. Denmark 27,0%, France 25,4%, Sweden 25,3%, Greece 23,9%). **This high presence of non commercial services in some islands underlines the low performance of competitive sectors and also an explicit policy choice with developed public services.**

These differences are evident in small islands as well, with Nordic islands having an important public sector: on the islands of Lipsi and Kalymnos (Greece) the employment in the public sector is approximately 16%, whereas in Kokar it stands at 40% (39 on 98 people) and in Samsø at 36%<sup>8</sup>.

Other services, such as transport (Åland) or tourism (Illes Balears and Greek Islands) are very important in some islands with more than 40% of the GVA produced by these branches. Two Greek islands (Lesvos and Chios) and Cyprus have important financial sectors (real estate, renting and other services to companies and individuals).

The construction branch is important (more than 10%) on Illes Balears and on most of the Greek islands, and correlates with tourism and residential economy in general. The rest of the secondary sector (manufacture, mining, energy) is rather underrepresented in islands compared with the EU and the member-states (even though energy has to be produced locally for most of the islands). In Malta island the single higher value of the sector is recorded with 21,9% of the total GDP whereas in Åland the lowest value stands at 13,7%.

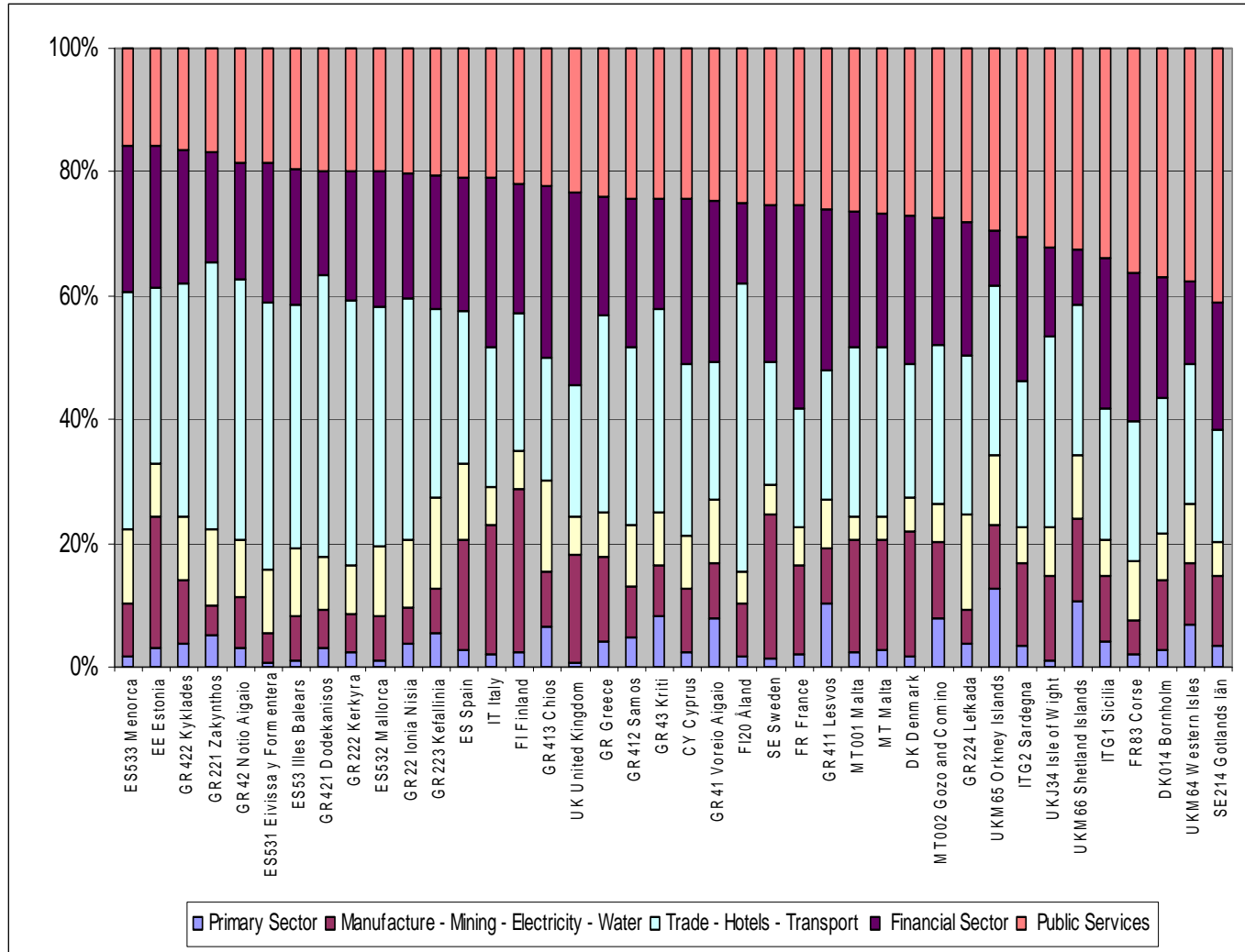
Finally, the primary sector is important compared to the EU27 average in the Scottish Islands, Kriti and Lesvos and Gozo, with more than 8% of the GVA. On the contrary, in Illes Balears, Åland and the Isle of

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<sup>8</sup> In small islands where GDP and GVA data are not available, employment data are the second best variable.

Wight the presence of the primary sector is less than 2%, the first two performing well above the average in economic terms. Farming and fisheries are also important in small islands in Brittany and in Sweden, in Lipsi and Kalymnos<sup>9</sup> either as a competitive high quality sector or for the service of the local market (graph 2).

**Graph 2: Structure of GVA for Member States and Island regions (in %, 2006)**



<sup>9</sup> Employment data are used for smaller islands: e.g. in Lipsi 20% are employed in the primary sector and 15,5% in Kalymnos.

Concerning the employment by sector, 7 NUTS 2 island regions plus Cyprus face high business concentration in one or few branches, with tourism being the branch with the single higher concentration, except for Aland where sea transport activities predominate (EUROSTAT, Regional Yearbook 2009). Iles Balears and Corse have high percentages in air transport also due to the presence of regional companies in their territory. On the contrary, "business services" (real estate, renting, computer activities, R&D, legal business services, accounting and management, advertising, architectural, engineering but also security and cleaning, secretarial, translation services, etc.) which are considered the most dynamic elements of a modern economy have a low presence on islands.

As for the profile of island specialisation within Europe, their main characteristic is the importance of market and non market personal services and construction (non competitive activities) along with tourism and/or agriculture and fisheries, two sectors characterised by low value added, excessive use of natural resources and strong competition from non European countries with low labour costs. It seems that an important part of the activities on islands are characterized by survival strategies of subsistence, mainly on small islands. Within this context, the long-term economical perspectives seem rather fragile.

Irrespective of size, this analysis indicates that islands **with better economic performance** compared to the rest and the EU27 average can be classified in two categories:

- **In the first, islands with very clear international specialisation in a low added value activity such as the tourism sector (Iles Balears, Notio Aigaio, Zakynthos, Cyprus) are found.** Monoculture is the basis of their current prosperity, which has yielded good results, but at the same time they are more vulnerable than other areas during a crisis.
- **In the second, islands such as Aland, Shetland, Orkney and Gotland are classified, with a GDP "boosted" by specific exogenous parameters.** Such parameters are the existence of a duty free area (Aland) and oil extraction (Shetland), rather than the utilization of local comparative advantages. The presence of the State is an important reason. Islands with a developed and efficient public sector are in general less vulnerable and exposed to outside influences. This public sector acts like a lever for development, creates employment and GDP, improves the attractiveness for residence (more public services), but presupposes the possibility and the

policy option of transferring public resources, human capital and know-how from the national mainland.

The evolution of employment can also be used as an indicator of the dynamism of the economy, especially when GDP is unavailable. Data for the period 2000-2006 reveal a mixed picture: in some islands such as Cyprus, Corse and Illes Balears, the increase of the employed is remarkable and higher than the EU27 average and national averages, less important in Aland, Ionia Nissia and Sardegna and lower in the rest (Table AIII-2).

*Main issues of the analysis of islands' economy:*

- Islands have an average GDP/capita lower than the EU 27 average, as only few of them perform better (Aland, Illes Balears, Shetland and Kyklades). In general the economic convergence process is slower than for the rest of the EU regions.
- Islands are lagging compared to their national entities (except Aland, Kyklades and Illes Balears)
- In a significant number of islands (Nordic islands, Corse, Sicilia and Sardegna) GDP level and employment are sustained by an important public sector.
- There is not a uniform trend of specialisation even if services are the most important activity; there are two main groups with competitive activities: (a) islands where tourism prevails, and (b) a few islands with agriculture and fisheries.
- Long term development perspectives seem rather fragile, because of the predominance of low value added activities in an increasingly competitive international environment based on an excessive use of scarce natural resources.

### *3.1.2. Social equity*

#### *Population evolution and structure*

The structure of a population and its change is affected by a number of factors, both external to the area and internal. External factors, such as economic conditions, changes in life styles, cultures and aspirations are considered as more important for shaping the demographic profile of an area. For islands, the demographic profiles have been profoundly changed by transportation and economic changes during the last decades and by new lifestyles. In this study, we focus on the differences between islands and the continental mainland and discuss some important differences between islands.

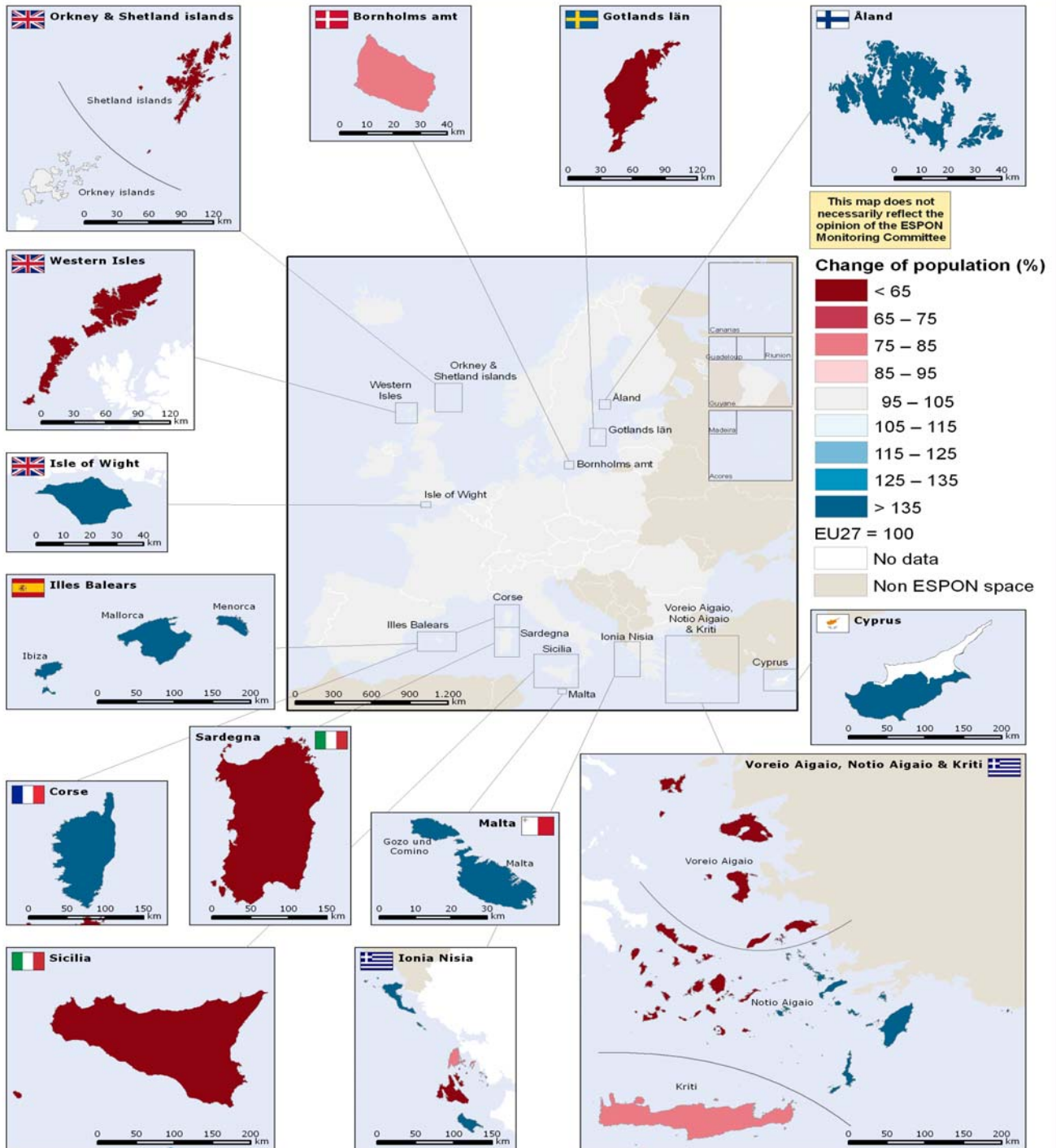
A general demographic trend of the end of the 1990s was a population decrease on a number of regions in the European periphery, but also in some of the core regions (e.g. in some regions of Germany, Italy and France). This was the result of negative natural balance or of negative migratory balance or a combination of both (ESPON Atlas, 2006, p.10). Most of the island regions considered in this study followed this trend: Sardegna, Sicilia, Voreio Aigaio recorded a significant decline of their population mainly due to a negative natural balance when Gotland, Western Isles and Shetland displayed a minor decrease. Another group of islands, including Illes Balears, Isle of Wight, Kriti, Malta, Cyprus, Notio Aigaio and Aland, recorded an increase.

During the 2000s, population projections are in general positive for Western Europe with only a limited number of regions facing population decline (Germany, many Greek regions and some Scandinavian regions), while in Eastern Europe continuing emigration caused again negative trends. For island regions, the evolution is generally positive, with Illes Balears recording the best results (2,89% per year and 4,17% for Eivissa y Formentera) followed by Cyprus (1,63%) and Corse (1,52%). In the Scottish islands, Gotland and Bornholm in the North, Sicilia and Voreio Aigaio in the South the population seems to stabilise or decrease slowly. Insights from ESPON 2013 FOCI project confirm this evolution. These positive results **seem to come from positive immigration flows and not from natural change**, as fertility rates are stable and rather low (1,3%) and the replacement level is 2,1 children per woman. This positive immigration has improved the age pyramid as well, as immigrants are younger and have more children (EUROSTAT, Regional Yearbook 2009). These migrants come either from Eastern Europe or from Asia and Africa (legally or illegally) for almost all islands.

The recent positive evolution of the population of islands (+0,85%, EU, 2009, p.8) compared to previous decades and the European average (0,37%) obscures the situation of smaller islands and especially in archipelagos. In **Aland region** the smaller islands, such as **Kokar**, lose population that moves to the capital city of Mariehamn. In **Lispi** and **Kalymnos**, as it is the case for most of the Greek islands, after a major decrease during 1950-80, there is a small population increase that does not compensate for previous population losses.

Map 3: Change of Population 2000-2006

## Change of Population (2000-2006)



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Regional level: NUTS 0/2/3 2006

Source: EUROSTAT

Origin of data: EUROSTAT

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In **Saaremaa** the negative trend observed during the soviet occupation halted in the '80s to restart again during the '90s following a national trend of out-migration and smaller families; so the population has declined by 13% (from 39.890 in 1990 to 34.723 in 2009). **Samso** and **Kokar** are facing the same trends with slower rates. In **Lipari** an increase of 6% during the period 1997-2006 was observed. In French **Ponant Islands** the trends are less optimistic as the rapid population decrease till the '80s is followed today by a slower but continuous decrease. In the small *Swedish islands* there is a stabilisation of the population mainly on account of the islands that are close to Stockholm.

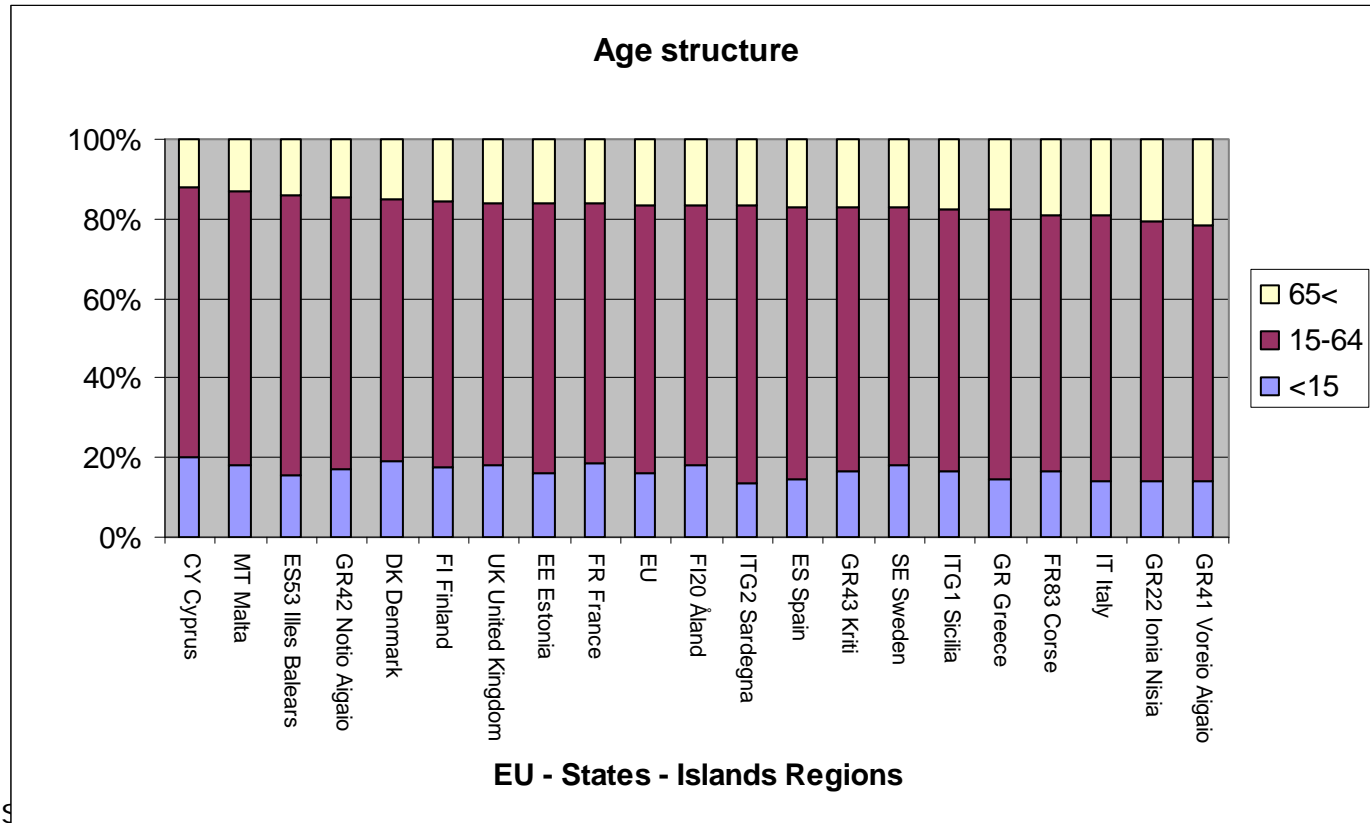
#### Age structure

Demographic trends have a strong impact on the societies of the European Union. The low fertility rates combined with an extended longevity result in demographic ageing of EU population and the share of the population aged over 65 is increasing. In 2007, the average population in the EU-27 at this age was 17%, which means an increase of 2% in the last 10 years especially in rural areas (EUROSTAT, Regional Yearbook, 2009).

According to EUROSTAT estimations for 2004 and 2007 (EUROSTAT 2004, 2009) several regions are characterized by high percentages of aged people. With an EU27 average of population older than 65 at 16,4%, in countries such as Germany, Italy, Greece, France and Spain the percentage is higher than 20%. For islands, in regions such as Voreio Aigaio and Ionia Nissia the percentages are 21,8% and 20,8% respectively, while in other island regions the percentages are closer to the average or lower, with Corse at 19%, Sicilia at 17,4%, Kriti at 17%, Sardegna at 16,7%, Aland at 16,6%, Notio Aigaio at 14,6%, Illes Balears at 14%, Malta at 13% and Cyprus at 11,9% (Map AIII-2 and Graph 3).

Data from the case studies give more extreme results: Kalymnos has only 11,1% of population over 65 due to very high fertility rate, Lipsi and Lipari 18,4%, Saaremaa 18,3% and Kokar 24,8%. For young people, the corresponding data are 16,1% for Lipari, 14,9% for Kokar, 14,4% for Saaremaa, 19,1% for Lipsi and 20,4% for Kalymnos. **This implies that the percentage of the dependant population is very high on small islands.**

**Graph 3: Population Age Structure (2006) EU average, Member states, NUTS II islands**



*Economically active Population and Employment Rate*

These two indicators are important as they give an indication of the dynamism and the competitiveness of the local economy. Demography influences the supply of labour but the economic performance creates jobs opportunities and demand for labour in terms of numbers and skills.

Economically active population rate is more influenced by demography as it reflects the percentage of the young (<15) and the old (>65) population of the area. Only 4 islands (Zakynthos, Evissa I Formentera, Åland and Gotland) out of the 28 island NUTS 0, 2 and 3 areas (EUROSTAT data base, 2006) have a score better than the EU average 54,5% (Map AIII-3).

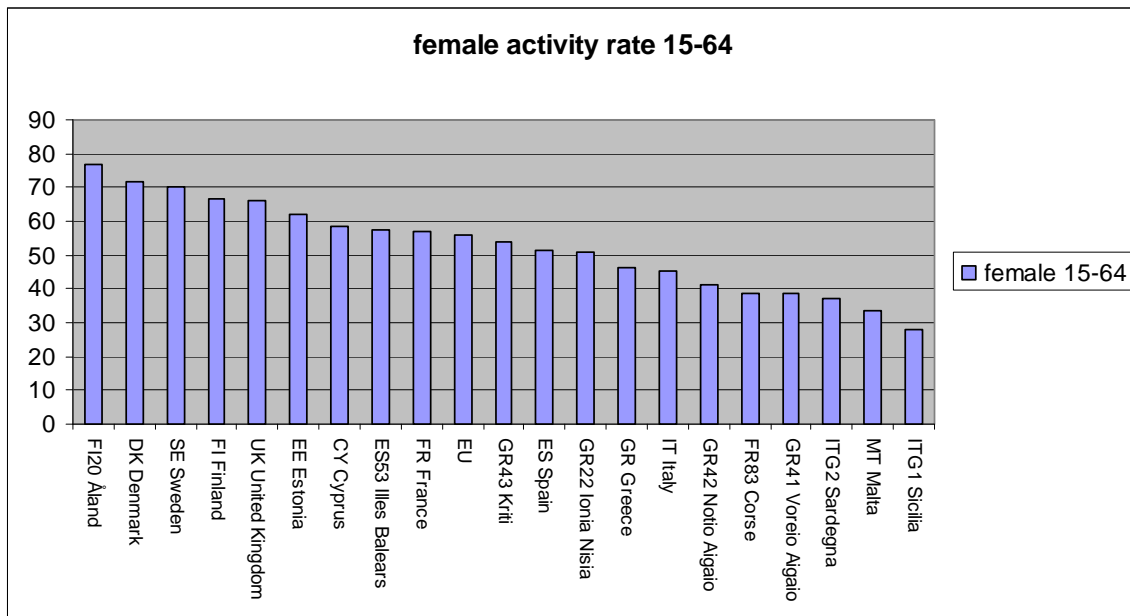
UK's and Denmark's regions, most of the Swedish, Dutch and some German regions exceed the 63,3% of European average of active population rate. Åland is among them with 77,6% (EU, 4<sup>th</sup> Report on Economic and Social Cohesion, 2005). In the Mediterranean some of

the regions with the worst performance in Europe are located, together with many regions in Eastern Europe: Malta with 53,9% Corse with 52,8%, Sardegna with 51,6% and Sicilia with 44,1%. Voreio Aigaio has also a rather low score: 56,8%. The other regions are performing better with a score around the European average: the Illes Balears Region with 67,9% is almost approaching the Lisbon target (70,0%) followed by Kriti (64,9), Cyprus (64,5%), Ionia Nissia (64,0), and Notio Aigaio 63,0.

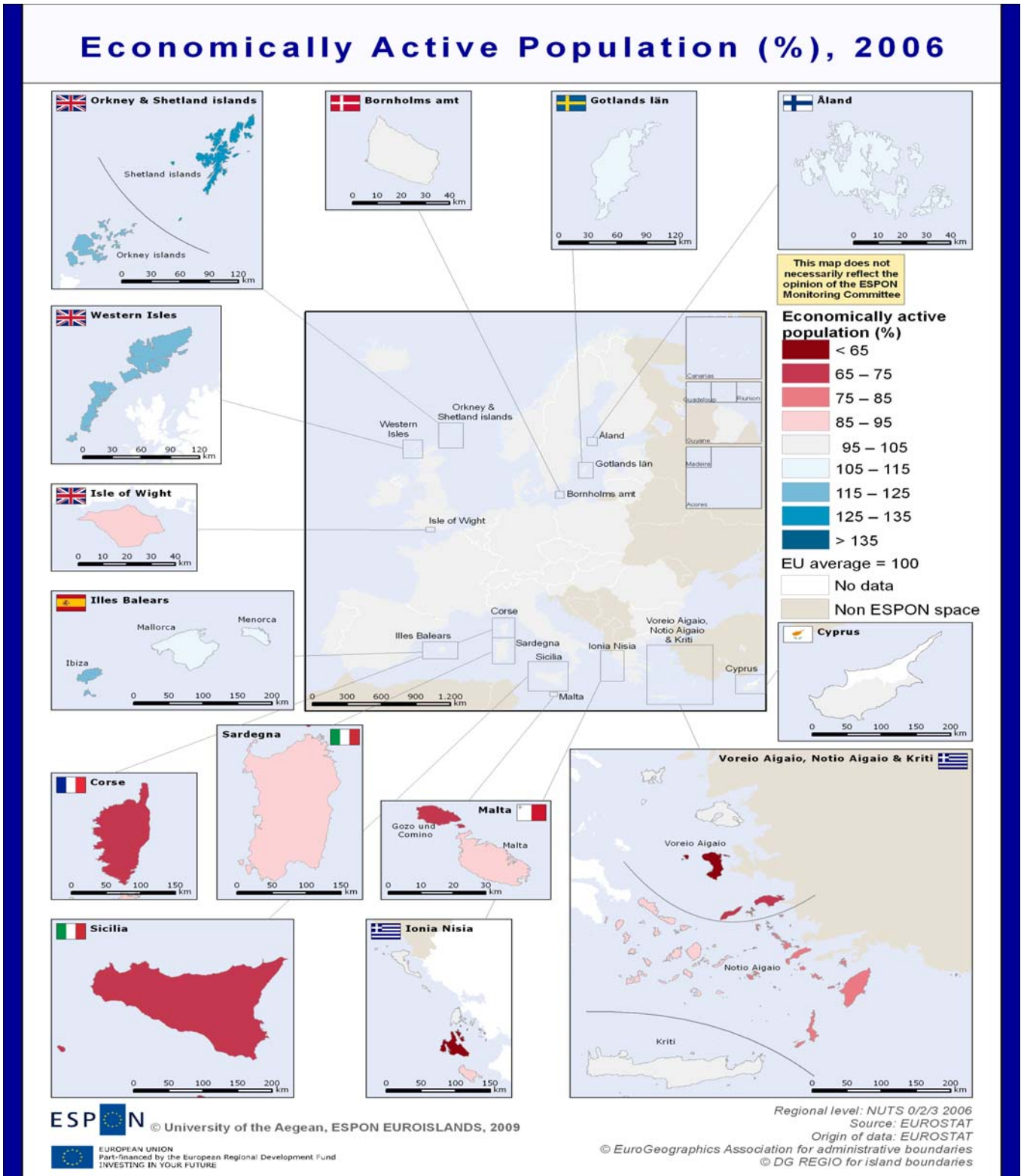
The same pattern is observed for female activity (Graph 4): with a European average at 55,9%, Aland is the leading region with 76,7% followed by Cyprus (58,4%) and Illes Balears (57,5%); while Sicilia and Malta have the lowest scores (28,1% and 32,1% respectively) (Table AVII-2).

**A first conclusion from the above data is that Aland -following Nordic trends- and the tourism influenced islands (mainly Illes Balears, Cyprus and Notio Aigaio) have employment rates higher than the EU average and the rest of the island regions.**

**Graph 4: Female Activity Rate (2005 - %) EU average, Member states, NUTS II islands**



Map 4: Economically Active Population as % of the total population



### Unemployment

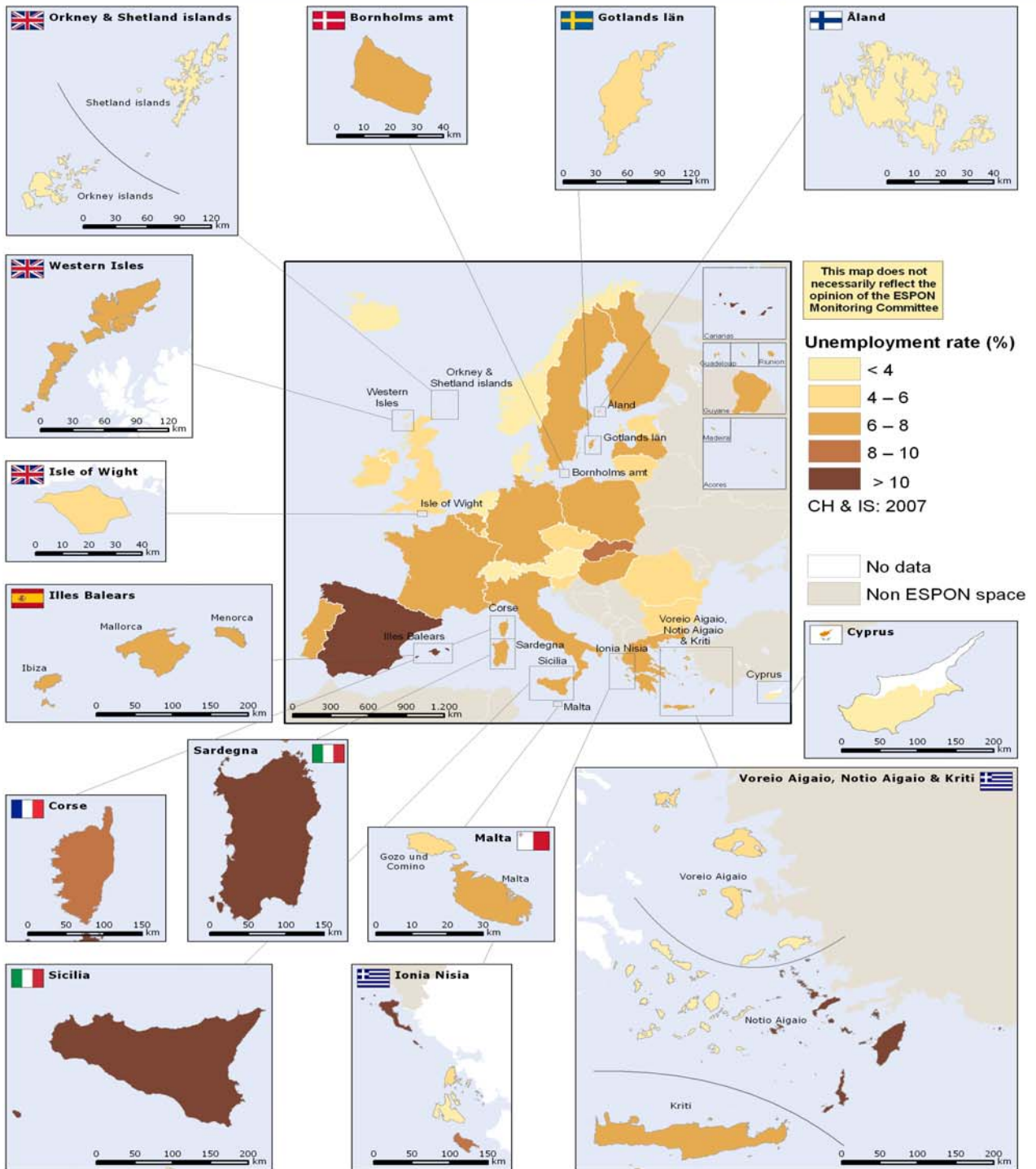
Unemployment is a very important parameter for social cohesion as it raises the risk of poverty and weakens the social fabric. It is the most visible sign of labour market imbalances, reflecting shortfall in jobs, mismatch between offered and needed skills and structural deficiencies. But, the complete picture is not always provided by the unemployment rate alone, as in areas with limited employment opportunities some choose to abandon the labour market or to emigrate. Therefore, the unemployment rate could be low, but jobs could be sparse at the same time. Such an example seems to be Malta, where the absence of job opportunities is reflected by the very low activity rate but not by the unemployment rate. Women, the young and long term unemployed provide complementary information for the labour picture of the endogenous potential of the region.

With an average EU 27 rate at 7% for 2008, East Germany, Poland, many Finish regions and a big part of the Mediterranean regions face serious unemployment problems (EUROSTAT, 2009). In 2007, this EU27 average was at 7,5% compared to 11,6% for island regions (EU, 2009, p.8). Among these regions, Sicily, Sardegna, Kerkyra, Zakynthos, the Dodecanese and Corse perform worse, while Aland and generally the Nordic islands perform better (Map 5, Table AVII-2). The changes of the unemployment rate are very diverse: e.g. in Corse it dropped from 22,2% to 8,2% from 2000 to 2007, in Voreio Aigaio from 11,5% to 4,5%, in Sardegna from 20,0% to 12,2% and in Sicilia from 24,0% to 13,8%, compared to the EU average drop of 1,7%. These changes appear to highlight **structural employment problems in these areas, rather than indicating a sharp rise of employment.**

Unemployment of the young in EU 27 is more than double of the overall unemployment rate (15,5% compared to 7% in 2008). The lowest rate is recorded in Cyprus with 9%, while the highest ones on Sicilia and Sardegna of 39,3% and 36,8% respectively (Table AVII-2, Map AIII-4). Unemployment of women is higher in the 7 NUTS 2 island regions for which data are available (no data available for Aland and Voreio Aigaio) than the EU 27 (7,5% in 2008); only Cyprus (4,2%) and Malta (6,8%) have recorded better scores, while on Sicilia, Sardegna, Notio Aigaio, Ionia Nissia and Corse rates of more than 12% are recorded (Table AVII-2, Map AIII-5). Long-term unemployment is very high in Corse, Sardegna, Sicilia, and Voreio Aigaio (more than 45%, with a EU 27 average at 37,2%, Table AVII-2).

Map 5: Unemployment rate (total, 2008)

## Unemployment Rate (%), 2008 for the 15 and over age group, total population



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Regional level: NUTS 0/2/3 2006

Source: EUROSTAT

Origin of data: EUROSTAT

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### Income

As already analyzed, the Gross Domestic Product is an index for measuring the efficiency of the economy. However owing to different interregional linkages and state interventions, the GDP generated in a given region does not always correspond to the income available to the inhabitants of the region. Therefore, in order to estimate the population's welfare it is necessary to know the income (primary and disposable) per inhabitant and its trends.

The first important issue revealed by incomes is the risk of poverty<sup>10</sup> for different groups of population. For islands, with an EU-27 average income of 16.200 € for 2006, (EUROSTAT, 2009) only in Aland (17.190 €) and Illes Balears (18.306 €) the incomes are higher. On the contrary, in Sicilia (11.372 €) and the Greek insular regions the average income per capita is very low (e.g. in Ionia Nissia 10.176 € and in Kriti 10.856 €) and close to 60% of the European average (no data for Cyprus and Malta are available). Out of these regions, in Sicilia the average income is also close to the national poverty rate (average income for Italy at 17.632 €) which means that an important part of the population of the island is living in poverty. Considering that the non active (young, women and older people) and the unemployed have a higher poverty risk and having in mind the low active population percentages in most of the island regions, these seem to tend to concentrate high percentage of population at poverty risk.

In combination with previous results, the main conclusion is that the size of the island does not seem to affect income, which is positively correlated with economic performance.

Considering the disposable income, only in Aland and the Balears there is a difference between the primary and the disposable income (the disposable stands at 78% and 84,5% of the primary respectively). For all other island regions, the variation between primary and disposable income is not important.

#### *Main issues of the analysis on the social equity:*

- *After a general population decrease in the nineties, the trend is rather positive since the 2000s, mostly due to migration flows. But*

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<sup>10</sup> The population, whose disposable income is below 60% of the national average level of income, as measured by the median (on the assumption that household income is distributed evenly between all members), is considered to be in a risk of being socially excluded.

*this is hiding an important and persistent decrease trend that characterises the smaller islands, especially in archipelagos.*

- *Activity rate is significantly higher in the Nordic and the touristic islands.*
- *Unemployment, especially of young and female, is rather high but there is no correlation with the level of GDP.*

### 3.1.3. Environmental conservation

Environmental conservation concerns the capacity of the natural capital to ensure the supply of environmental goods and services to a specific community and to preserve ecosystem functions and increase the quality of life. This capacity is endangered by the pressures inflicted by human activities. For island regions, previous ESPON studies (ESPON 2006a; 2006b) will be used to assess pressures from the population and human interventions.

Population density is used as a first approach, although it does not include seasonal pressures by non permanent residents and tourists. New constructions that are added to the existing ones increase these pressures, as the residential economy has become a very important activity in the majority of the islands.

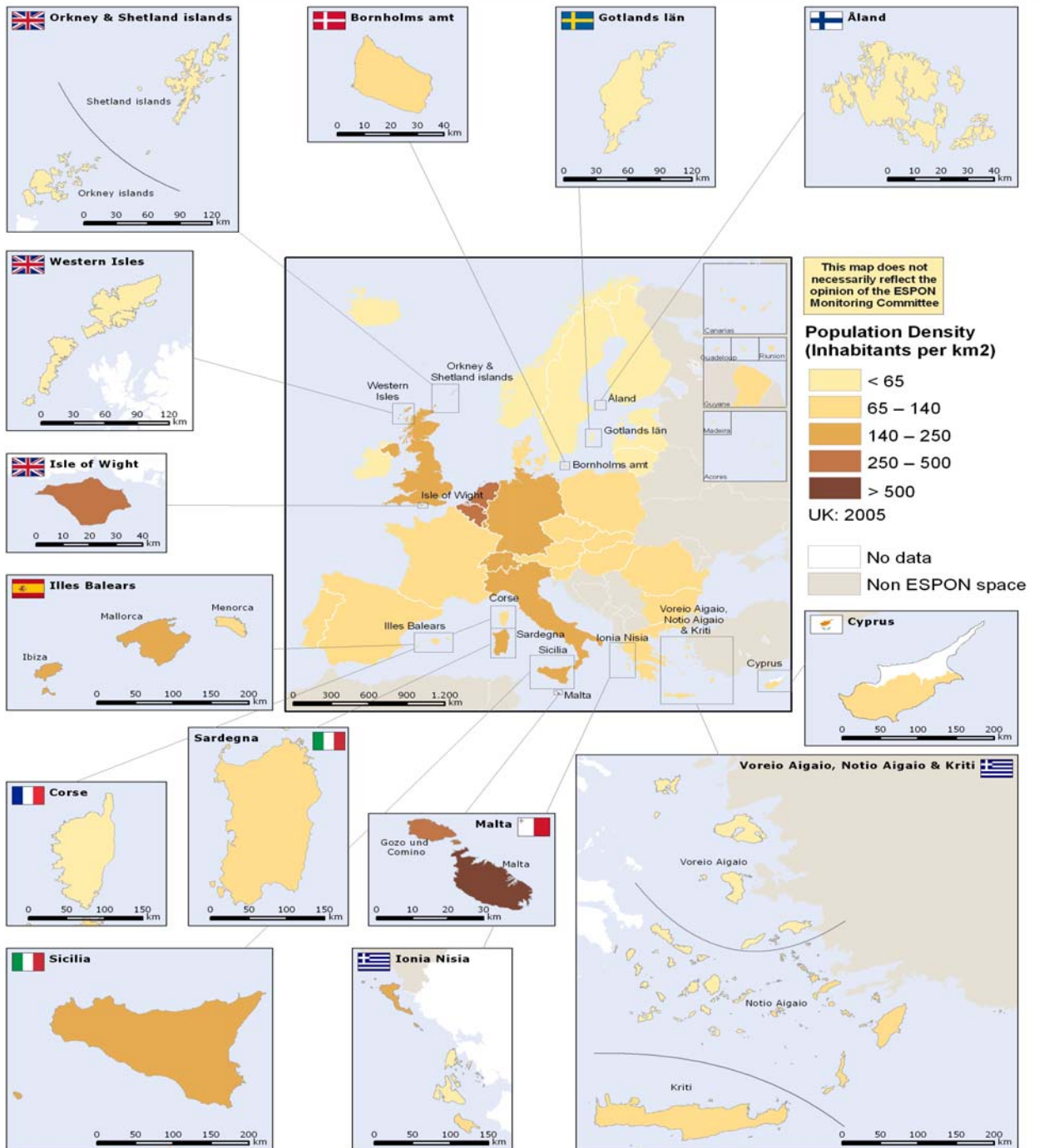
The classification of islands by their population density yields very diverse results (Map 6):

- **Very sparsely populated islands**, with less than 8 inhabitants per km<sup>2</sup> overall approximately 20.000 inhabitants. Most of these are in North Europe but there are some in the Mediterranean (Notio Aigaio). The majority (123 islands) is small islands with population less than 50 inhabitants, but there are 46 islands with population between 50 and 5895 (Uist – Western Isles).
- **Sparsely populated islands**, with density between 8 and 50 inhabitants per km<sup>2</sup>, approximately 65.000 inhabitants in total. The category includes 81 very small islands, plus 148 larger ones.
- **Islands with intermediate density**, between 50 and 114 inh./km<sup>2</sup> (the EU27 average). In this category, 12 small and 53 larger islands are included, with approximately 3,5 million people in total.
- **Densely populated islands**, with higher population density than the EU average (114 inhabitants/ km<sup>2</sup>). In this category, 5 small and 58 large islands are included. From these, 35 have more than 200 inhabitants/km<sup>2</sup> and 15 of them over 500 (Malta, 4 Italian coastal islands from which Ischia is the most densely populated one and 10 coastal islands in northern Europe are included).



Map 6: Population Density , 2006

# Population Density, 2006



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Regional level: NUTS 0/2/3 2006

Source: EUROSTAT

Origin of data: EUROSTAT

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In general, pressures on the resources of all these islands are very high and so is the **artificialization of the environment**. On the islands of this category live approximately 6,8 million islanders. A brief description of the state of island environment follows.

#### *Land use and land cover*

The part of the area under artificial cover is the first indication of existing pressures. In this study, the analysis of artificialization is limited to the nine case study islands with the use of Corine data. In three of them (Malta, Gozo and Lipari) the artificial areas are more than 10%. In Malta and Gozo, natural areas cover a limited part of the islands (18,7% and 33,8%) and the rest of the area is dedicated to agriculture. On Lipari more natural areas (57,2%) and less agricultural lands (18,6%) are found. Cyprus and Mallorca follow with artificial surfaces, with 7,5 and 5,5% respectively of their total surface. The Figures are presented in detail in Annex II.

#### *Fresh water availability*

Most of the islands, regardless their size, face overexploitation issues of their underground water, a fact that has put much stress on underground aquifers (Benoit and Comeau, 2005). The construction of dams and desalination plants has been a common response, but such interventions have created secondary environmental problems the most important of which are the prevention of the normal circulation of sediments that are vital for the preservation of beaches.

Malta is one of the islands with the most severe problems: there is no surface water and almost of all of the natural water is pumped and used for domestic purposes (72%). This had led to a rapid decrease of the annual rate of water replacement and thus increased demand for non-conventional water resources. Cyprus is another island facing serious water availability problems. In fact, a large part of the state budget is allocated to water supply and the construction of the relevant infrastructure. Illes Balears and Greek islands<sup>11</sup> face the same problem that is addressed either by desalination plants or by transfer of drinkable water by ship.

#### *Sea and coasts*

Artificial coasts are another indication of the human pressure: in Malta, the percentage of artificial coast is 41,8%, in Lipari 33,8%, in

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<sup>11</sup> In Greek islands there are 8 islands with desalination system and the government is planning to construct 16 more mainly in small islands. Dams have also been constructed to retain fresh water.

Sardegna 20,5%, in Mallorca 35,5% and in Cyprus 22,4% showing a high concentration of the human activities on the coast. On the rest of the islands the artificial coasts are less than 10% of the total coastline. In these coastal areas most of the tourism activity is concentrated and are at the same time increasingly exposed to a major risk of submersion and erosion, especially in the Eastern Mediterranean where the sea level rise is more important.

The eastern part of the Mediterranean Sea is less productive than the western part (UNEP/MAP-Blue Plan, 2009). However, over the last few decades, Mediterranean ecosystems have experienced biodiversity changes due to climatic and environmental changes or to accidental introduction of exotic species. Observed changes in nutrient concentrations and ratios in the deep waters of the Western Mediterranean suggest that shifts have occurred in the relative distribution of nutrients and therefore probably phytoplankton species in all sea waters. The most significant pollution sources are industrial emissions, municipal waste and urban waste water, responsible for up to 80% of pollution in the Mediterranean Sea. Problems of sea pollution are very important in the northern seas and especially in the Baltic Sea where eutrophication is an important problem along with the collapse of the fishing stocks.

Concerning sea pollution, problems for all islands stem mainly from the mainland and the sea transport than from the islands, as for most of them the only pressure is from household and tourism waste as sewage treatment does not cover yet all settlements. Only in a few big islands industrial activity is found along with related problems.

### *Biodiversity*

The Mediterranean region is a zone of high endemism and considered as an important place for the global biodiversity (Benoit and Comeau, 2005). One of the factors behind this fact is the high fragmentation of habitats due to its relief and its many islands. Islands such as Kriti, Mallorca, Formentera, Lesvos, Corse together with Sicilia and Cyprus are considered as particularly rich in terrestrial and marine biodiversity. In general, this is reflected to the fact that on most of the islands some sort of protected areas are found, but these areas are larger in the Mediterranean covering from 20% to over 40% of the total surface and part of the NATURA 2000 network (ESPON, 2006b). On the contrary, the only insular region in North Europe with a high percentage of protected areas is Western Isles.

Today, this natural capital is under pressure from climate change, sea level rise, urbanisation, pollution, fires, agricultural practices, exotic species invasion, excessive fishing etc (UNEP/MAP-Blue Plan, 2009). An indication of this pressure is the fragmentation of the natural and semi-natural areas. The majority of the islands have low or intermediate levels of fragmentation with scores of 2 and 3 in a scale of 0-4, except Malta (ESPON Atlas 2006, p.46). The areas with the lowest level of ecological vulnerability are mostly in Europe's mountain regions.

### *Soil*

Desertification risk is a serious problem for the Mediterranean islands, as it is an irreversible trend with severe repercussions to their capacity for food production, water retention, biodiversity and generally for the conservation of ecosystem functions and services (see maps annex VI).

### *Landscape*

The landscape of islands is in danger from different pressures such as urban sprawl for the population and tourism, big scale infrastructure, real estate, forest fires, the abandonment or intensification of agriculture (e.g. greenhouses). Mediterranean islands are facing more pressures than Nordic ones and their traditional elements are neglected or destroyed (settlements, terraces, fences, paved footpaths, agriculture and animal husbandry infrastructure, rural constructions etc., Kizos et al. 2007).

### *Air pollution*

Air pollution is not reported as a problem in island regions; the main sources of pollution are from energy plants and a restricted number of "heavy" industries as well as from urban concentration: there are only two Metropolitan European Growth Areas (MEGAs) (La Valetta and Palma) and 12 Functional Urban Areas (FUAs) of transnational and national importance located on the 7 most populated islands (Corse, Cyprus, Rodos, Eivissa, Sardegna, Kriti, Sicilia).

Environmental problems in general seem to differ between the North and the South: urban sprawl due to tourism and holiday homes construction, coast artificialisation, water shortages, fires and high soil erosion risk are the principal problems to be addressed in the South; sea eutrophication and coastal erosion are the main problems in the North. A common problem seems to be fish stock collapse – more

severe in the north- with direct repercussions on islands' economies and societies.

*Main issues of the analysis on environmental conservation:*

- *Population density varies from very low, especially in Northern Europe and some Notio Aigaio islands, to much higher than the EU average.*
- *Some islands Malta, Gozo, Isle of Wight, Sicily and Lipari, Mallorca, Minorca and Bornholm show relatively high rates of artificialization, as well as a high rate of artificial coasts, together with Sargegna, and Cyprus.*
- *Nearly all islands face more or less serious problems of fresh water availability*
- *Mediterranean islands have a very rich natural environment, but this is under severe pressure from human activities.*
- *Sea pollution (caused mainly by non island activities), desertification and landscape degradation are also serious concerns for all islands, the problems being more acute in the touristic Southern islands.*
- *Islands' environment is rich but particularly vulnerable to human and other external pressures*

### **Input from the case studies<sup>12</sup>**

The NUTS islands (Sardegna, Cyprus, Mallorca and Malta) differ from each other concerning their situation:

- **Mallorca** is the "leader" of EU islands due to its tourism industry, even if the two other Balearic Islands score higher in GDP per capita. The presence of a MEGA and of a significant university centre provides Mallorca with better perspectives compared to the other Balears. This dynamism affects the whole socio-economic system by attracting more activities and more active population. But, this tourism mono-activity increases economic, social and environmental vulnerability.
- **Cyprus** –despite that an important part of the island is still under Turkish military occupation- seems to prosper with an economy based on two pillars: business services (off-shore companies and flag of convenience) and tourism. This economic performance has a very positive impact on the demographics of the island. Its location into a geopolitically fragile area could be approached as a comparative advantage attracting activities from the neighbouring countries.

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<sup>12</sup> For more details see Annex V

- **Sardegna**, despite its magnitude, has since the '90s poor and insufficient socio-economic results to sustain convergence with the EU. Its classification by ESPON within the areas having negative migration balance, especially for young people, underlines the difficulties. Policy measures aiming at developing the secondary sector and agricultural activities have not yet had the anticipated results as GVA structure reveals, while tourism activities have not shown significant dynamism either.
- **Malta's** socio-economic performance is not as high as required for converging with the EU average. The crisis in manufacture has not been "absorbed" by the service sector (mainly tourism); but part time work (especially for women) and a low active population keep low unemployment levels.

Information for the non-NUTS islands is more disparate:

- **Kokar's** economy is based on sea activities (50% of the employed) and is shrinking, challenging the ability to continue offering basic services. Population is also declining and ageing.
- Recent trends for **Lipsi** and **Kalymnos** (1991-2001) seem to improve after a long period of economic decline due to the crisis of fishing activities (sponge, tuna) and the abandonment of agriculture. The active population rate is still very low (mainly for women) and today fisheries and construction (for second homes) are the main activities.
- On **Saaremaa** the evolution of employment was particularly negative during the 90s with a decrease of 40% and a stabilisation afterwards.
- **Lipari** has low employment (40,7%) and high unemployment rates (9,1%) and an economy oriented towards services (78,3% of the employed and 80,7% of the GVA) based on tourism. The population increase is very low (6% during 1977-2006).
- **Samsò**: The public sector is the main economic activity, employing 35% of the active population, another 12%, in telecommunications and transport. The primary sector and HORECA are also important employers (16% and 17% respectively). The population is steadily decreasing and ageing in the last 50 years, as young people migrate and the natural balance is negative. These findings lead to a mitigated image for the island's development.

## Synthesis on the State of Islands

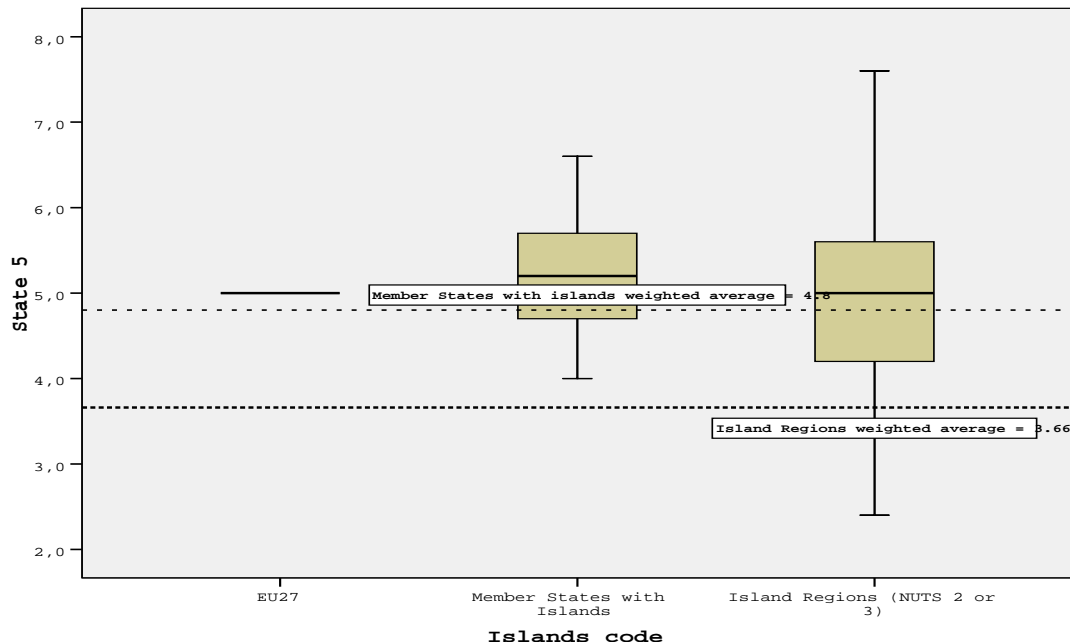
After presenting the available data for the variables defined in the methodology, two indexes are proposed to summarize these findings on island regions:

- (a) A **"State index"**, for the situation of the islands in comparison with the member states they are located in and the EU;
- (b) A **"Change index"**, capturing changes that have taken place during the last decade or so, depending on the availability over time of the series of the particular indicators used.

The **State index**<sup>13</sup> is the result of the summing of five indicators (State 5):

- (a) GDP per capita 2006 (EU27=100);
- (b) Active population rate % of the total population (2007);
- (c) Unemployment rate (2008);
- (d) Percentage of population older than 65 (2007);
- (e) Percentage of artificial area (2000).

**Graph 5a. Box Plot of the state index for the EU27 average, the Member states with islands and island NUTS 2 and 3 regions**



**The findings of the State index demonstrate clearly that the average of the island regions is lower than that of the EU-27,**

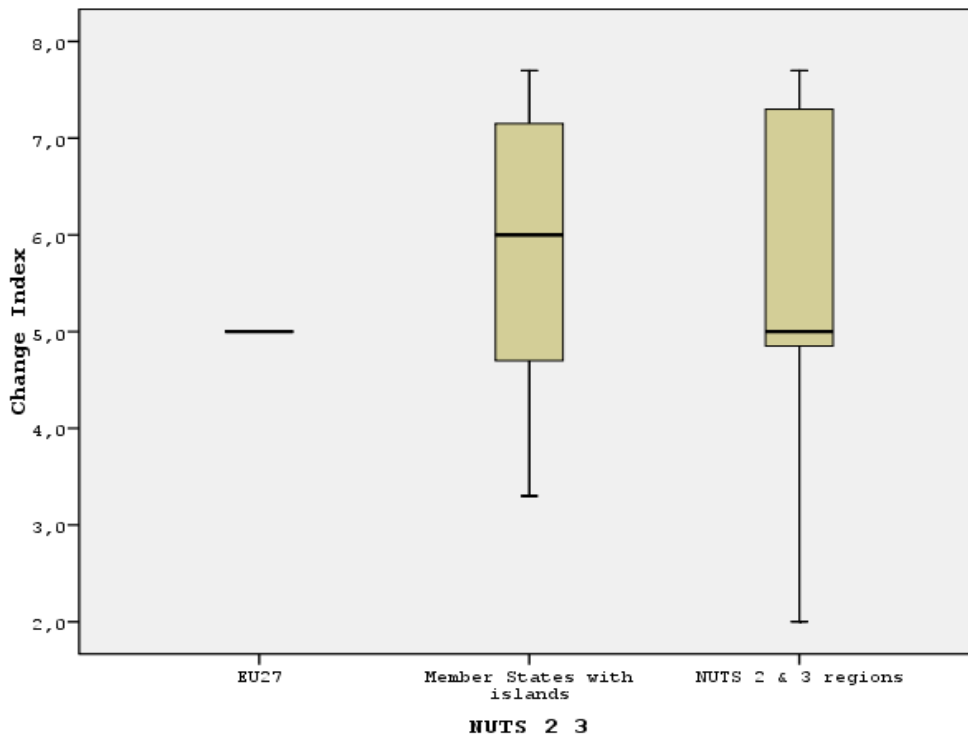
<sup>13</sup> A detailed presentation of the indexes is in Annex VII and the cartography presentation in Annex III.

but also lower than the average of the States with island regions. The variance within the island regions is higher than that of the Member States with islands, with some cases significantly higher (up to 7) and some as low as 2. The variance is higher also when we compare the State5 index with the GDP index (see Annex VII).

The **Change** index is based on the combination of three indicators for the period **2000-2006**:

- (a) Population change;
- (b) GDP per capita convergence (EU27=100);
- (c) Active population change.

**Graph 5b. Box Plot of change index for the EU27 average, the Member states with islands and island NUTS 2 and 3 regions**



These indicators are chosen from a number of indicators for which: (a) data were available for as many island regions as possible (NUTS 0, 2 and 3) and (b) they are either not correlated or their correlation is weak. For each indicator 9 classes are created, 4 with values lower than the EU27 average, 4 with values higher than the EU27 average and one around the average. The calculation of each index is based on the summing up of the values of the class of the individual indicators, assuming equal weight for each of the indicators (Graph 5A, 5B).



**The findings of the change index underline a recent dynamism –a global trend for islands- as more island regions have better scores than the EU27 average but not as high as the Member States with islands. But, this performance was not strong enough to reduce the development gap between European islands and the mainland (as islands started from a comparatively low level).**

### 3.2. Analysis of Attractiveness parameters

The second question of the analysis concerns **“the causes which have led to the current situation.”** The overall context links the existing situation of the area (representing the “effect”) with its level of attractiveness (representing the “cause”). The content of this link is examined in this section. More specifically, the impact of insularity to several attractiveness parameters is approached by distinguishing between attractiveness for businesses and attractiveness for population. Since regional attractiveness has been explored in previous EU studies a lot of parameters have already been identified (Table 2).

In the following paragraphs:

1. The relation between Insularity and Attractiveness parameters is presented;
2. The measurement of attractiveness variables is attempted;
3. The perception of the islanders about the relative importance of the different parameters of attractiveness is examined;
4. Finally, three attractiveness indexes are presented.

#### 3.2.1. *Insularity and Attractiveness*

Once the list of *Attractiveness parameters* was established, a causal relationship between them and *Insularity* was explored; it is important to identify which parameters of attractiveness are influenced **directly** and **permanently** by the characteristics of insularity and if this relation is negative or positive. Table 2 presents the relation (+ for positive and – for negative) and the intensity of this relation:

- The **Small Size** of the islands’ population (always compared with the mainland) as well as the small local market, they are influencing negatively the possibility of islands to have agglomeration economies, economies of scale and agglomeration dynamism, necessary condition in order to be competitive in the national and the global market.
- The **Small Size** of islands is also influencing the availability of resources; this increases islands’ vulnerability to natural hazards
- The limited and fragmented demand coming from the **small number of small enterprises and population** is not satisfied (or it is not satisfied at the same level as in mainland) by public services; as construction and operational cost per capita is

- significantly higher, obstructing them from providing services or lead them to provide only the basic ones. Services by private operators are not provided if it is not profitable.
- **Isolation and Remoteness** in addition with low demand are influencing negatively in a permanent way islands' accessibility.
  - **Isolation and Remoteness** has a positive relation with natural richness.
  - **Small size, isolation and remoteness** are influencing negatively crimes' proliferation and public insecurity; population feels safer in islands.

Other parameters of attractiveness are not directly influenced by insularity but they are either the indirect results of the particular historical development of different islands or the result of external global socio-economic and environmental forces.

**Table 2. Attractiveness parameters and influence of insularity**

	<b>Attractiveness Parameters</b>	<b>Direct influence by insularity</b>
1	<i>Accessibility</i>	---
2	<i>Public and Private services to business and population</i>	--
3	<i>Agglomeration economies</i>	---
4	<i>Environmental and cultural heritage</i>	+++
5	<i>Feeling of safety - Security</i>	++
6	<i>Natural and technical hazards</i>	+ / 0
7	<i>Labour qualification</i>	No direct influence
8	<i>Information society</i>	No direct influence
9	<i>Research and Innovation</i>	No direct influence
10	<i>Social capital</i>	No direct influence
11	<i>Governance Quality</i>	No direct influence
12	<i>Employment opportunities</i>	No direct influence

Source: TPG

### 3.2.2. Measurement of attractiveness parameters

The measurement of attractiveness parameters is necessary in order to assess the situation of islands in comparison to the European mainland.

#### 3.2.2.1. Accessibility

According to the ESPON study (ESPO Atlas, 2006, p. 34), "the 'core' of the European territory and the 'periphery' are concepts based on the idea of "accessibility". Under this perspective, geography and physical distance are very crucial parameters when referring to

accessibility in terms of infrastructure and transport services. This means that it is rather difficult for a European peripheral area to have a good accessibility index when far away from the European Pentagon (London-Paris-Milano-München-Hamburg). This situation may appear better when considering accessibility by air, where the existence of an airport -and particularly an international one- improves access possibilities. The accessibility of a peripheral area cannot be improved rapidly, as geographical distance and frequency of scheduled trips are also very significant parameters. Therefore, "peripherality" is considered as a permanent geographical feature and the fact that some of these peripheral regions are islands should be taken into account.

Considering islands, since most of them are located in the geographical periphery of Europe and that entails long trip durations, the lowest level of accessibility is expected for almost all of them within Europe. Additionally, on most of them and particularly on the smaller ones, airports do not exist, so they can only be accessed by sea which makes the accessibility of these islands even worse.

The evidence of the above can partially be seen in Table 3 based on the ESPON study<sup>14</sup>. Comparisons of the accessibility index between different island NUTS 2 & 3 regions and regions in the European mainland regions reveal that:

- The potential accessibility by road and by rail distorts islands' reality since neither the additional time needed to go to an island by ship is taken into account (e.g. island of Gotland and Galve region on the Swedish mainland, with the same distance from Stockholm, have the same accessibility by road) nor the fact that islands do not have railway networks and their access to a rail station requires long trips (e.g. Satakunta in West Finland with a dense railway network has the same value of accessibility by rail as the archipelago of Aland with no rail network at all).

The same holds for the potential accessibility by air where, besides the existence of an airport at a NUTS 3 area, the proximity of that area to an international airport should be taken into account (e.g. so Zakynthos (Ionia Nissia) with 2 domestic flights per day during winter has a score of 76 and Voiotia –one hour distance by car from the international airport of Athens- has 55).

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<sup>14</sup> The accessibility approach is based on the ESPON 2006 program's study "Transport services and networks" and the data are from ESPON DataBase.

**Table 3: Comparison of the ESPON multimodal accessibility index between island NUTS 2 & 3 regions and selected mainland regions**

NUTS 3 area	By Road	By Rail	By Air	Multi-modal Index
Gavleborgs Lan (SE)	12	15	47	44
Satakunta (FI)	11	11	50	46
<b>Cyprus</b>	<b>5</b>	<b>4</b>	<b>56</b>	<b>51</b>
Indre (F)	98	102	35	53
<b>Gotland (SE)</b>	<b>12</b>	<b>12</b>	<b>77</b>	<b>70</b>
<b>Gozo and Comino (MT)</b>	<b>11</b>	<b>10</b>	<b>77</b>	<b>71</b>
<b>Irakleio (GR)</b>	<b>5</b>	<b>4</b>	<b>78</b>	<b>71</b>
<b>Corse-du-Sud (F)</b>	<b>24</b>	<b>22</b>	<b>79</b>	<b>73</b>
Královehradecký (CZ)	94	82	73	73
Lungau (DE)	103	73	72	74
<b>Aland (FI)</b>	<b>12</b>	<b>12</b>	<b>82</b>	<b>76</b>
Perugia (IT)	91	65	75	76
Ille-et-Vilaine (FR)	85	100	74	77
<b>Messina (IT)</b>	<b>34</b>	<b>29</b>	<b>82</b>	<b>77</b>
<b>Dodekanisos (GR)</b>	<b>4</b>	<b>4</b>	<b>87</b>	<b>79</b>
<b>Kerkyra (GR)</b>	<b>22</b>	<b>20</b>	<b>86</b>	<b>80</b>
Bolzano-Bozen (IT)	129	113	71	80
Oost-Groningen (NL)	134	134	67	80
<b>Cagliari (IT)</b>	<b>10</b>	<b>9</b>	<b>91</b>	<b>83</b>
<b>Malta Island (MT)</b>	<b>10</b>	<b>9</b>	<b>91</b>	<b>83</b>
Elbe-Elster (DE)	127	114	82	86
<b>Bornholm (DK)</b>	<b>32</b>	<b>47</b>	<b>102</b>	<b>94</b>
Ardennes (FR)	164	145	83	94
Oostende (BE)	158	156	89	98
<b>Islas Baleares (ES)</b>	<b>19</b>	<b>17</b>	<b>108</b>	<b>99</b>

Source: ESPON Database

**In Bold type: Island NUTS 2 & 3 Regions;** Regular type: mainland regions

Using the overall multimodal accessibility index overestimates islands' accessibility since its values are 90% dependent on the air accessibility indicator. More specifically, the multimodal accessibility index does not take into account: (a) the transport of goods; (b) the inhabitants of islands that have to travel from their residence to other places (islands or mainland) for different reasons such as work, health, shopping, business, administrative affairs, education and training, entertainment etc. for which reasons the daily accessibility is very important, even not necessarily by air as not all islands have airports; (c) the rest

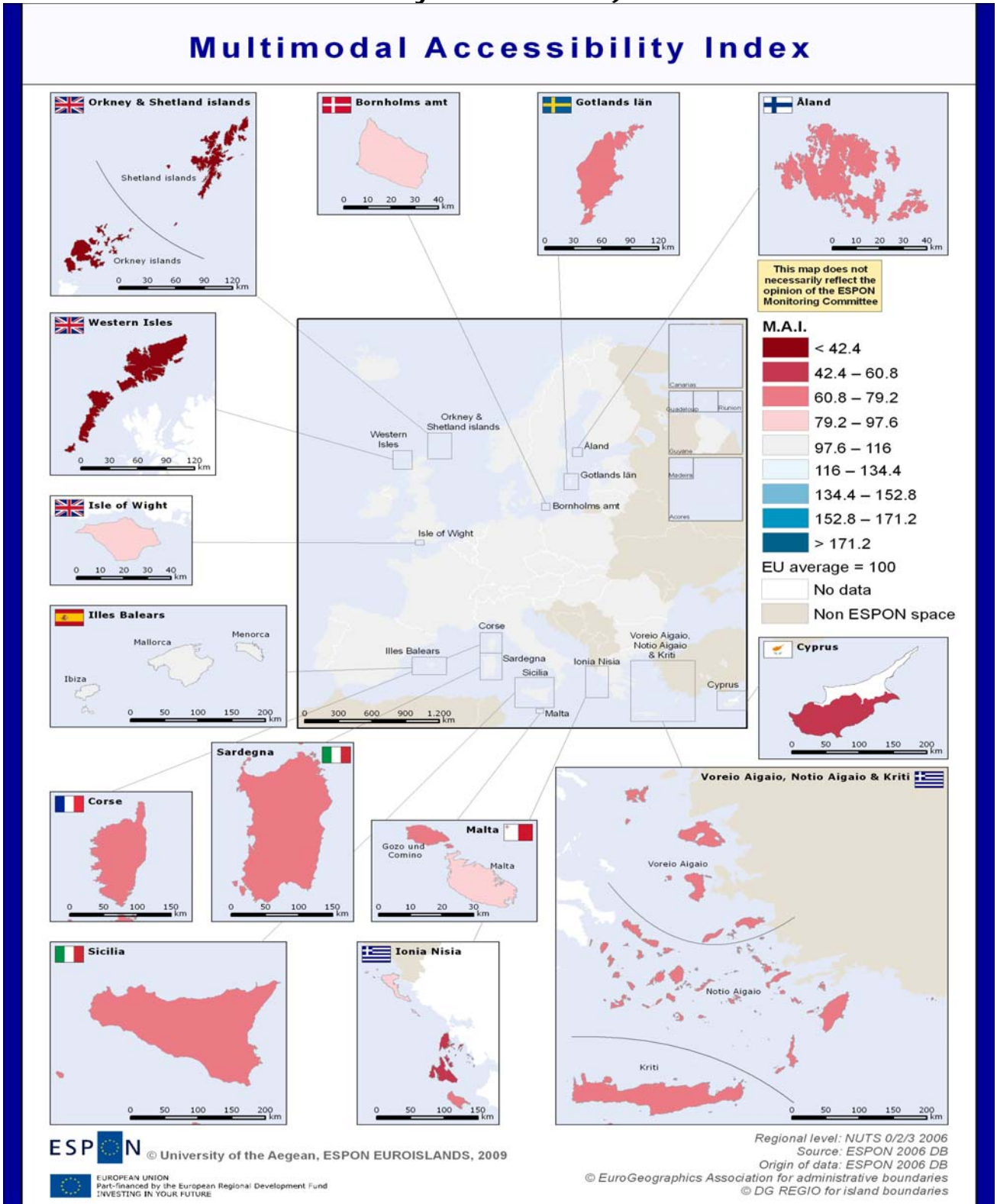
categories of population that when travelling to and from islands care more about frequency, trip duration and cost than about daily accessibility.

**Despite the above shortcomings and the subsequent fact that the multimodal accessibility index overestimates the accessibility of islands, the data demonstrate that all islands are below the European average (100);** only two of them -Illes Balears and Isle of Wight – are very close to the European average (Map 7).

Figure 2 provided by the EURISLES project is closer to the islands' reality on the European level (EURISLES, 1996 and 2002). In this approach, the assumption was that most of the passengers and goods are transferred by sea and the real time required to reach the island regions from the European centre (symbolised by Maastricht) was calculated (travel time by road, crossing time by ferry, waiting time and a frequency coefficient). This approach has to be enriched with air transport.

In general, accessibility for islands is quite high only within the limits of the island, as in this case transport is as "easy" and at approximately the same cost, as in mainland. In islands with large populations, where the majority of services mentioned previously (health, education, administration etc.) are offered locally, the necessity of "overseas" travel is less necessary and frequent. In a few cases –where an island is very close to another big island or to the mainland and the corresponding service is available- the population can commute every day even for school or job needs. This is the case for instance in the Archipelagos of Stockholm and Uppsala Counties, in Aigina and Salamina (close to the port of Athens – Piraeus), Iles aux Moines (Brittany), and Gozo among others.

Map 7: Accessibility of European Islands (ESPON Multimodal Accessibility index - 2001)



**Figure 2: Accessibility of European Islands (EURISLES) – virtual distances of the islands from the centre of the EU**



Source: EURISLES

**Table 4: Accessibility of Dodecanisos' islands (GR) 2009**

Destination port	Departure port	Distance (km)	Travel time (h)	Number of connections	Total time (h)	Travel speed (km/h)	Virtual distance	Accessibility index
Pireas	Rodos	439	14,8	10	25,2	29,7	748,44	1,70
	Kos	346	11,6	10	22,0	29,7	653,40	1,89
	Kalimnos	315	11,8	4	34,8	26,9	936,12	2,97
	Leros	298	10,0	4	33,0	26,9	888,61	2,98
	Lipsi	283	10,5	2	54,5	26,9	1466,05	5,18
Rodas	Kalimnos	121	4	17	7,5	26,9	200,96	1,66
	Lipsi	160	5,4	8	16,9	26,9	454,61	2,84
Kos	Kalimnos	26	0,5	60	1,3	26,9	33,68	1,30
	Lipsi	66	2,5	14	6,0	26,9	161,40	2,45
Leros	Lipsi	20	0,8	14	4,3	26,9	115,67	5,78



On the other hand, as analysed in detail in Annex V (p. 82), the situation of the inhabitants of the Greek islands of Lipsi and Kalymnos is very complex, as they have to travel to different destinations for different purposes (Table 4). The inhabitants of the small island of Lipsi (total 687) have to travel very often out of the island as very few services are offered locally. More complicated is for the mayor of this island to travel for example in Brussels for a meeting of the European mayors: the shorter route involves ferry to Kos, flight to Athens and flight to Brussels and it would need more than a day if there is no interruption of the service (more often the ferry services) due to bad weather.

Concerning the travel costs and durations of travel for the case study islands, some of the most important findings include:

A passenger ticket from **Lipsi** to Pireas (by ship) costs 53€<sup>15</sup> and the respective car ticket costs 111€, total 164€. For 4 persons and a car the total cost is 323€, or 80,75 €/person. The cost for covering the same distance of 283km on the mainland by car reaches 28€ assuming that the car consumes 0,10 liters/km. Adding a cost of 6€ for the tolls, makes a total of 34€<sup>16</sup>.

The comparison is revealing: **the cost for one person by ferry is 4,8 times higher than the cost of travelling by car, while for four persons is approximately 9 times higher.** In terms of the time required, **the time of travelling by ferry is 54,5 hours (table 4), while by car it is 4 hours (with an average speed of 70 km/hour) or even less.**

**Samsø** has ferry connections to Kalundborg in Zealand and to Hov in Jutland, 30 km from Aarhus, the 2<sup>nd</sup> largest city in Denmark. The journey to Jutland is normally scheduled with 7 daily departures. The journey takes one hour to Hov and the total travel time from Samsø to Aarhus amounts to two hours. The ship travel to Zealand takes almost two hours (for almost 20 nautical miles) and is scheduled with 2-3 daily departures depending on the season. The travel time to Copenhagen is around four hours.

The cost for a single journey for a person amount 11,5€ (price-list of 2009/10) and 34€ for a car on the line to Jutland. The costs to Zealand amount 15€ and 72€ respectively. Citizens of the island travel for half price.

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<sup>15</sup> There are differences in prices between a conventional and a high speed ship.

<sup>16</sup> Even if many maritime lines are subsidised in Greece with a sum of about 100million €, this is not reflected to consumer prices, as subventions are given to the companies

From **Kokar** to the Åland mainland there are 24 trips per week (from a minimum of 3 per day to a maximum of 4 per day) in the winter season; going up to 28 trips (4 per day) in the shoulder season; rising further to 32 trips in high summer (minimum of 3 trips per day on Saturday and Sunday; 6 trips on Friday and 5 trips on each of the rest of the week). The cost depends on the form of transportation: return fares from Långnäs (on the mainland of Åland) to Kokar are: 12€ (motorcycle); 23€ (car or trailer); 55€ (caravan/recreational vehicle); 65€ (car with trailer); and 110€ (coach/bus). The trip between Kökar and mainland Åland is free for passengers but not for vehicles. Residents of Kökar pay 45€/year/car, as the ticket is subsidized and the cost is financed with Åland tax revenue. Travel time takes from 2h 30 minutes to 2h 55 minutes each way, the latter being longer because of more ferry stops on other islands on the way to/from Kökar. Cruise ships going from Sweden to Finland enter the ports of Åland many times every day to benefit from the tax-free status of the Islands. Tickets are cheap since the revenue of the shipping companies mainly derives from sales and gaming on board. (e.g.: Helsinki-Mariehamn = 26€; Stockholm-Mariehamn = 11€ per passenger.)

The situation can be more extreme in very small islands like the Papa Westray Island in the archipelagos of **Orkney** (Scotland). The six teenagers that reside there take the flight every Tuesday morning from Papa Westray, stay with host families for two nights and then catch a return flight on Thursday after school. Pupils from either island choosing to study for their Highers must travel to Kirkwall, the capital of Orkney<sup>17</sup>.

The situation is completely different for Malta and Cyprus, or Corse and Mallorca, Sicily, Sardegna and Kriti, the **big islands**. First, these islands host an important number of services on their territory and second they offer frequent and quality air and sea transport services to other areas (other capitals, capital city, important commercial centres etc). But, even in these cases, the islanders have to use the public service (offered by public or private operators) with a fixed schedule and limited connectivity. In comparison, on the mainland lorries and private cars can travel any time of the day and the cost is lower.

Concerning the cost of this service, it is generally higher than an equivalent distance for a public terrestrial service (EURISLES 1996 and 2002). In some countries and in specific cases (as in Kokar and Samsø

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<sup>17</sup> Article in the Times on the 6/11/2009.

cited above but also in Corse where the principle of territorial continuity is applied), there are public policies that finance (partially or totally) the travel cost of the islanders.

Transport of commodities faces the same problems: limitation of choices, delays due to interruptions of loading and waiting time, high prices due to lack of competition, reduced and unbalanced flows (EURISLES 1996 and 2002). **From the above analysis it becomes evident that insularity affects accessibility negatively for both islanders and visitors.**

**In terms of accessibility, islands are in a less favourable situation compared to the continental mainland as far as the transport choice, travel time and costs are concerned. Accessibility is even worse for small islands as revealed by the case studies: more complex (need to use many different means of transport to travel out of the island); more costly; lengthier. The situation is aggravated in the archipelagos where the permanent population of the very small islands needs to commute every day to receive basic services such as education, health, etc.**

#### **3.2.2.2. Public, Private and Networking services to business and population**

The existence and quality of services available to population and businesses of an island is an important attractiveness issue (confirmed by the questionnaires to residents that follow). These services are linked with accessibility as already mentioned. Accessibility to appropriate public interest services like health, education, social security, administration, energy, water, telecommunications, culture, transport, etc, for the whole of the European population was underlined by the European Spatial Development Perspective as a matter of social justice and as a *sine qua non* condition in order to stop the concentration of population within the Pentagon (Nordwijk 1997). Access to banks, accounting, marketing and engineering services has equal importance for economic activities.

Previous studies (EURISLES, 2002 and PLANISTAT, 2002) have insisted on the fact that population size is a crucial factor for availability of services on an island. PLANISTAT has proved that a population of 4 to 5 thousand consists a key threshold for the provision of an important part of services locally, but there are

“superior services”<sup>18</sup> (or part of them) that are located only in a big regional city or in the capital.

In the case of small islands, the examples of the case study islands of this study demonstrate the differences of the services located on them and the extremely important role of accessibility for each island (Table 5). During the interviews with local stakeholders the necessity for a more flexible administrative system that could meet islands’ realities and population’s aspirations was underlined.

**Table 5: Existence of Public and Private Services**

	Pharmacy	Hospital	Bank	Tax service/ Social Security	Tertiary Education
Kokar	No	Only a Clinic. Need to travel to Mariehamn or Turku-Upsala	yes	No / Internet services	No. In Mariehamn-college Turku - Stockholm
Lipsi	No	Doctor + nurse. Need to travel to Rodos or Athens.	no	No / In Kalymnos	No. Anywhere in Greece
Samso	Yes	Small, threatened with closure. Need to travel to Aarhus	yes	Yes	No. Aarhus
Kalymnos	Yes	Yes	yes	Yes	No. Anywhere in Greece

Source: fieldwork data

It is useful to add information coming from archipelago with small islands. This is the case in Ponant islands (Brittany FR) where an unusual school structure was created as a middle school in order to give young islanders the opportunity to live on their small island and continue studying (Association of Ponant Islands, 2007). At the same study an inventory of 19 basic public and private services on 13 islands with a population fluctuating from 111 up to 5.027 inhabitants was also created that revealed the different coverage of the islands and the importance of good transport services to the mainland (these basic services are: Health (doctor, nurse, dentist, chemist, retirement home), education (primary, middle school), food (Bakery, butcher’s shop, supermarket), other services (post office, hairdresser, café-bar, restaurant), leisure-culture (public library, village hall) and crafts-man (builder, electrician). This inventory showed the same results with a similar study for small Swedish islands (Gles et al., 2006) that had an equivalent but smaller check list: school, shop, pharmacy, postal service, cashier service.

<sup>18</sup> Hospital, Tertiary education, Cinema, Laboratory for medical analysis

Apart from these services, the existence and the quality of services offered by the different networks such as energy supply, water supply, solid waste management, sewage management, and transport network constitute a major challenge for islands. Factors such as the lack of appropriate land, the relief and the risk of polluting the limited resources add on the already high cost of constructing, maintaining and operating such small scale infrastructures.

As shown at the paper "Territories with specific geographical features" (EU, 2009), the problem of islanders' accessibility to some key services such as hospital and university is particularly acute: for 27,8% of them a hospital is located at more than 30' from their home when the European average is only 10,4%. Moreover, for 36,8% of the islanders tertiary education is located at more than 90' distance compared with the European average that is 7,4%. The particular situation of islanders compared to "mainlanders" is that if a service is not provided **ON** an island, the cost in money and in time to access it is so disproportionally high compared to the cost on the mainland that makes islanders to migrate to the mainland, or to live on the island accepting a lower quality of life.

This problem is particularly important in the archipelagos as the existence of a service on an island has almost no effect to nearby islands as inter-island accessibility is generally low. At the same time, the existence of a service on an island does not necessarily entail the provision of good and complete services.

For instance even if in Dodecanisos (NUTS 3 area) with 188.506 inhabitants interspersed on 16 islands there are 4 hospitals on the bigger islands (Rodos, Kos, Kalymnos, Leros) and small dispensaries on all other islands, 16 ports and 8 airports, local population complains for low quality of services. The example of the case study islands of Lipsi and Kalymnos is revealing: residents have to go to Rodos and even in Athens for health services. The existence of a "mobile" dispensary sailing around the islands providing basic services to local population ameliorates the situation but it is not providing "complete" (e.g. surgical operations) and "all the time" services.

On Kalymnos in particular (16.576 inhabitants) a port and an airport are located with respectively 5 flights and 4 ship connections with Athens per week. There are also local transport services with the other islands of the archipelago by a company owned by the municipality, plus services offered by private companies (mainly during the tourism

period). Local population and local entrepreneurs are complaining (see case studies) about insufficient services as they need 34,8, 7,5 and 1,3 hours to go to Pireas, Rodos and Kos respectively, while daily accessibility is not assured even between Kalymnos and Kos that are far 26km.

The situation is worst in other smaller islands, with no airport and less maritime connections as it is the case of Lipsi. People from Kokar and Samsos face similar problems and they are also “obliged” to travel longer than 30’ minutes (2 or 3 hours) in order to find “full” hospital services and they are also obliged to spend the night there and return the following day. For details see the individual reports in Annex V.

On the other hand the cost for the state to provide infrastructures and public interest services to all the islands of an archipelago, as Notio Aigaio is very high. As the population of the whole region is 305,500 inhabitants (2007 estimation) dispersed in 48 inhabited islands, the need for infrastructure and the operational cost per capita is extremely high; if all the population was concentrated in one island, the needs are decreasing in a spectacular way (Table 6).

**Table 6: Need in Basic Infrastructures in Notio Aigaio (2002)**

Type of infrastructure	Hypothesis of one island	Actual situation
<b>Transport infrastructure</b>		
Ports	3	50
Marinas	4	12
Fishing Ports	8	15
Airports	1	14
Heliport	4	23
<b>Education infrastructure</b>		
Primary schools	90	211
Secondary schools	58	83
<b>Health infrastructure</b>		
Hospitals	1	5
Health centers	10	11
Local Dispensary	0	37
<b>Environment Infrastructure</b>		
Waste Water Treatment Installations	8	35
Installations for Solid Waste Treatment	4	18
<b>Energy Infrastructure</b>		
Energy Production Factories	1	21

Source: National Statistical Office of Greece, Rotas 2006

**In terms of access to services, islands are in a less favourable situation compared to the continental mainland as far as the distance from public and private services is concerned.**

**The size of the permanent population matters for the provision of services (reduces the per capita cost); it is much higher for small islands but even in the middle sized islands as Kalymnos it is not common for full fledged services to be provided. The same holds for the networks.**

**The problem is more acute for the archipelagos islands since the existence of a service provision on an island does not have direct positive effects for the nearby ones. Consequently, basic public investments needed are huge leaving little room for other type of investments.**

### **3.2.2.3. Agglomeration economies / Size of the market**

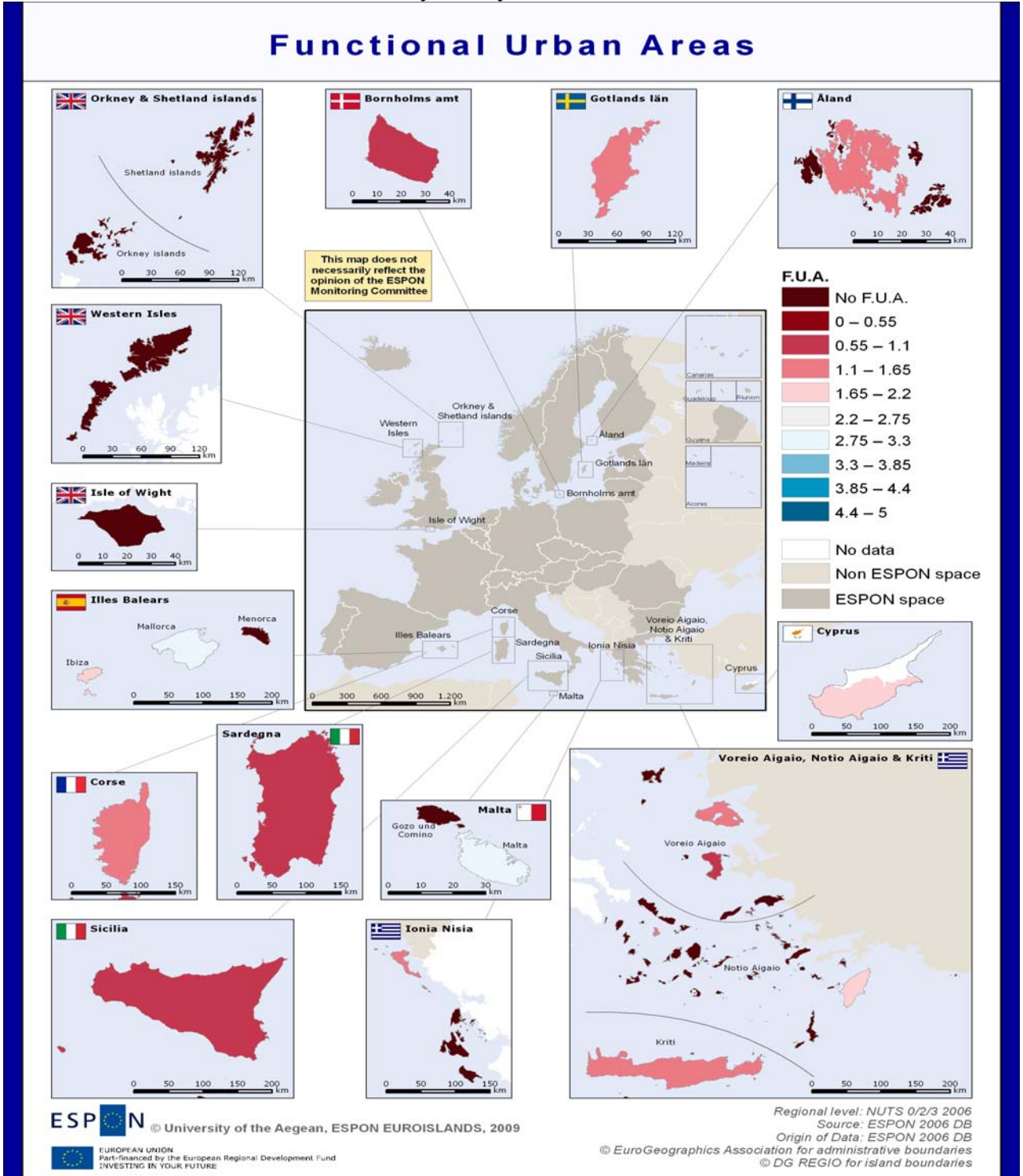
Dynamic cities and urban regions are recognised as vital assets in regional development. A total of 1595 Functional Urban Areas (FUAs) with more than 20.000 inhabitants have been identified across Europe on the basis of commuter relations and employment areas. Some of them are of trans-national importance, the Metropolitan European Growth Areas (MEGAs, more than 70 in Europe, 47 of them with more than one million people); others have a trans-national, national, regional or local importance (ESPON, 2006, Potentials for polycentric development in Europe).

The importance of towns and cities lies in the agglomeration economies and economies of scale that develop due to the concentration of different activities and population, as well as in the competition between companies that helps to innovate and to keep prices low. The attraction of diversified activities and services for enterprises and population and dynamism related to cultural and social life are other important aspects of towns as well.

On islands, La Valetta and Palma are the only two MEGAs. They are considered as "weak" MEGAs, since they have limited functions and lower competitiveness especially in the fields of knowledge and innovation. 15 more FUAs of trans-national or national importance are located on 9 more islands. Their importance in population, in tourism, as transport nodes, in manufacturing, in knowledge process, and in decision making (both private and public) at the European level is presented in the Map 8 (Table AVIII-3). The island FUAs are mostly renowned for tourism: only Valletta is an important centre for transport, knowledge and public decision making, while Cagliari and

Catania are considered as important knowledge centres for their universities.

**Map 8: Urban Dynamics: MEGA & FUA functions' importance (2001)**





**Islands are lagging behind compared to European mainland cities in terms of agglomeration economies, since due to the population size and the small size of the market, economies of scale cannot be developed, diversification of activities and services is low, cultural and social life remains limited and therefore, urban dynamism conditions that enable the creation of FUAs and MEGAs cannot be met.**

#### **3.2.2.4. Environmental and cultural heritage**

Environmental and cultural heritage are analysed as capital assets that can help the development of islands and enhance quality of life. It is a fact that many of the activities on islands rely on these resources (activities such as tourism, farming, fisheries, cattle-breeding, quarrying etc) and often constitute a mono-activity without alternatives. This results in high economic, social and environmental vulnerability.

As it is developed in paragraph 3.1.3, the environmental capital of the islands is particularly rich<sup>19</sup>, specifically this of the Mediterranean islands. The percentage of the surface under the NATURA 2000 is a good indicator for such estimation.

The analysis focuses also on **cultural heritage** (ESPON 2006c). Measurement or estimation is not easy and existing approaches place emphasis on the presence and density of cultural heritage (monuments, sites, events, landscapes etc.), **cultural infrastructures** (museums, theatres, galleries etc.), to the intellectual capital and the professionals of culture that can valorise the existing capital and produce new. Concerning the number of monuments and sites registered in islands, Gotland in the North, Sicilia, Sardegna, Illes Balears and the Greek islands in the South, have the highest numbers (Annex VI, Figures 4, 35, 37).

Culture employment is very low to all NUTS 2 Mediterranean islands, except Cyprus. Aland, following the trend of most of the Scandinavian regions have a high level of employment in **cultural professions**. Although cultural heritage is richer in the Mediterranean islands, cultural professions are more developed in the Nordic islands and in Nordic countries in general (Annex VI, Figure 6). It has to be noticed that there a positive relationship between GDP per capita and the percentage of cultural employment has been detected from ESPON

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<sup>19</sup> The same holds for mountainous areas

2006 program (Annex VI, Figures 10 & 11); an important exception has been registered: Illes Balears have a very low cultural employment.

**The existence of important cultural and natural assets specifically in the Mediterranean islands can be a very important advantage when an appropriate framework for these assets to be exploited in a sustainable way is developed; till now these assets are used as scenery for tourism development and often their preservation is considered as an obstacle for more intensive development. However their exploitation requires an adequate policy, suitable management and the corresponding human and social capital.**

#### **3.2.2.5. Feeling of safety - Security**

A final question examined the feeling of safety (e.g. in relation to crime) of the population measured on a 4 point scale question with the highest scores indicating lower levels of safety. According to the analysis, Illes Balears, Scotland and Sicily have the lowest levels (2.77, 2.27 and 2.24 respectively). The highest levels of safety were presented in North Aegean and Bornholms Amt (1.35 and 1.43 respectively). Regarding differences between North and South Europe no statistically significant differences were observed.

#### **3.2.2.6. Natural and technical hazards**

The risk for natural and technical hazards was estimated during the ESPON 2006 program (ESPON 2006d) with 15 parameters (avalanches, drought, earthquakes, extreme temperatures, floods, forest fires, landslides, storm surges, tsunamis, volcanic eruptions, winter and tropical storms, air traffic hazards, major accident hazards, nuclear power plants and oil production, storage and transportation) that were weighted using the Delphi method.

The aggregate hazard typology gave a good score for islands compared to the mainland as Corse, Cyprus, South East Sicilia and all the Greek island regions face a medium risk (25-75 percentiles) and the rest of the islands face lower risks (Annex VI, Figure 12). Important risks for these islands are emanating from droughts, forest fire, earthquakes, landslides, tsunamis, volcanic eruptions and oil transportation and storage.

#### 3.2.2.7. Labour qualifications

Education, vocational training and lifelong learning play a vital role in the economic and social strategy of the European Union within the Lisbon process. Securing education and lifelong learning opportunities in every region and for all inhabitants has to be the cornerstone for national strategies.

The percentage of the total **population within the education system** in all levels of education is a key indicator. Many regions with higher scores than the European average (21,5% in 2007) are classified as less developed, e.g. Andalusia in Spain, Latvia, different Polish regions, French outer most regions, north Ireland as well as Sicilia, Kriti and Alland. The rest of the Greek islands as well as Cyprus, Malta and Sardegna have a student population between 18-21,5% but Corse and Balearics as well as Denmark have an even smaller percentage (lower than 18%, EUROSTAT Regional Yearbook, 2009, p. 114-123).

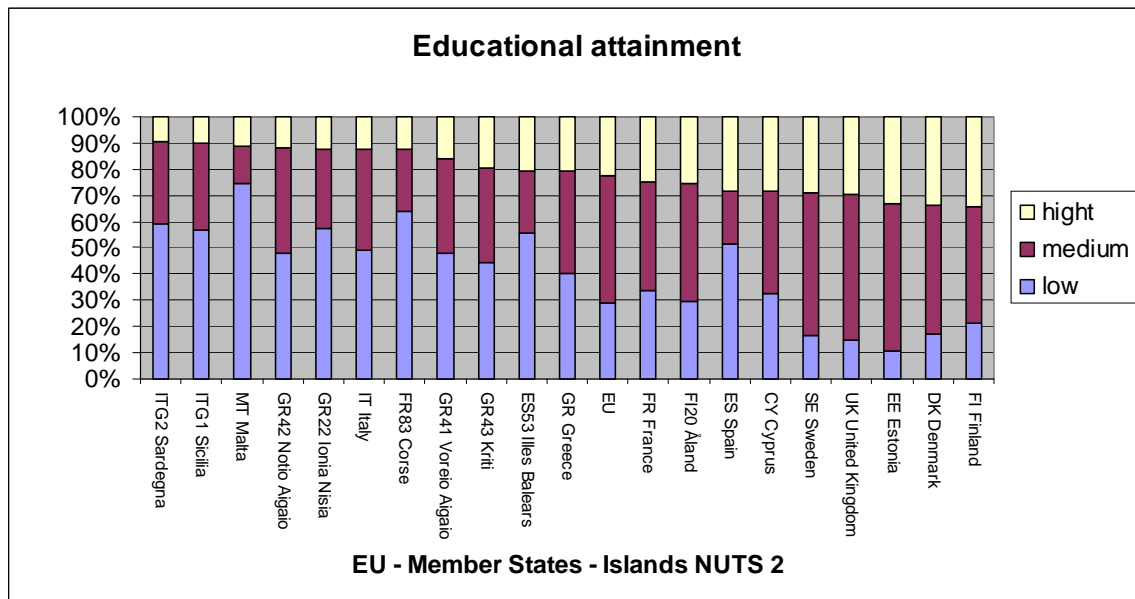
For students at **secondary and post-secondary not tertiary education** as a percent of the population aged 15-24, the situation is different: all Nordic countries (Aland included) as well as the Czech Republic, Hungary, Austria and Italy (Sardegna and Sicilia included) have a high score (more than 40% of the population aged 15 to 24); France and Greece (Corse and Greek islands included) have 30-40% and Spain (Balearics included), Malta and Cyprus less than 30%. The results are the same for tertiary education (% of students of 20-24) except for Kriti that has better results than the European average for the particular indicator.

The proportion of the population aged 25-64 years who has successfully completed **tertiary level education** is diverse across Europe, with the EU27 average at 22,4% (Graph 6): in the south, islands regions with less than 20% are found, while Sardegna, Sicilia, Notio Aigaiio, Ionia Nissia, Corse and Malta have less than 12,5%;

except Kriti and Cyprus. In the north, most of the Nordic countries and island regions have more than 25% (on Aland 25,4%) of the population with a such a diploma.

These findings for island regions correlate with the share of the **population with low educational level** (with an EU27 average at 29,1%) that is high for almost all Mediterranean regions. In Malta the ratio is extremely high at 74,7%, where the other insular regions (Kriti and Illes Balears included) have a ratio between 45% and 60%, only Cyprus scores close to the EU average (32,6%, Graph 6 and Table AVII-4).

**Graph 6: Proportion of the population aged 25-64 years by educational level (2005)<sup>20</sup>**



Source: EUROSTAT web database, 2009

Finally, concerning **lifelong learning**, northern countries and island regions present higher scores than other regions with more than 13% of the population continuing refreshing their skills. On the contrary, most of the southern countries and island regions have less than 7% of their population within lifelong learning procedures with the exception of Spain, Illes Balears and Cyprus that have better scores (EUROSTAT, 2009).

<sup>20</sup> Tertiary level education is considered as “High educational attainment”, upper secondary qualification is considered as “Medium educational attainment” and up to lower secondary qualification is considered as “Low educational attainment”

**It appears therefore that there is a shortage in the islands' human capital (e.g. competences, knowledge) mainly in the Mediterranean ones: the educational attainment level is particularly low (compared with EU27 averages and national results) even on islands with a high level of GDP per capita and despite the presence of a University (Sicilia, Sardegna, Malta). Low trends of lifelong learning make the situation worse, undermining their competitiveness. On Nordic islands, human capital is better prepared to face new challenges.**

#### **3.2.2.8. Information society**

Information society has a double role on islands: firstly, directly contributing to GDP as a productive sector and secondly, indirectly affecting local productivity and ameliorating the accessibility of the population and of local businesses to different key services, such as financial services, education and training, general or targeted information, health and cultural services, commerce, personal contacts, distance work, especially for remote areas such as islands.

ITC's penetration has two different components: access to Internet and the capacity to use it; the first is related to the existing infrastructures and the latter to people's skills needed to participate to the information society (expressing the digital divide).

The level of **Information and Communication Technologies** penetration on islands varies significantly and is directly related to the corresponding national performance. At the European level, the use of ITC is higher in denser populated areas such as capital regions. Islands in north Europe have high percentage of households with broadband connections and their population uses the internet very often. On the contrary, Cyprus, Greek and Italian islands have very low penetration of ITC's. Malta, Illes Balears and Corse are situated in between.

The same pattern is observed for **e-commerce**: more than 55% of the population in Aland use internet for shopping while people in Corse and the Balears use it as much as the European average. Malta has the lowest score while the rest of the Mediterranean islands are classified among the European regions with the lowest use of this facility (lower than the EU average 15%) (EUROSTAT, 2009, Maps 7.1 & 7.2 Annex VI).

**The findings on ITC penetration follow a similar pattern as the labour qualification results, with the Nordic islands performing**

**better than the Mediterranean ones. The “technology” gap causes lack of information and knowledge, factors that are necessary to achieve social equity and economic competitiveness.**

#### **3.2.2.9. Research and Innovation**

Knowledge and innovation constitute one of the three main areas of action in the new Lisbon partnership for growth and jobs. The performance of the different areas is assessed through R&D expenditure, patents, employment in Science and Technology and in the medium and high tech manufacture. In islands, R&D is particularly important as it has to face insularity characteristics (small scale, environmental vulnerability and remoteness) and therefore the penetration of technology in low skilled societies as well as its adaptation to insularity is necessary.

The EU as a whole dedicates 1,9% of its GDP and 1,11% of the employment to R&D. In all islands, very low expenditure and human capital dedicated to R&D are recorded in comparison with EU average (Eurostat webdata base, 2009)<sup>21</sup> and only in one case (Kriti) R&D performances are better than the national ones: 0,94 % of the GDP and 0,84% of the human capital compared to 0,59% and 0,77% (2005); from the other regions Sicilia (0,8% and 0,6% respectively 2005), Malta (0,54% and 0,56% - 2008), Voreio Aigaio (0,48% and 0,39% 2005) and Sardegna (0,58% and 0,47% - 2005) have the highest involvement. In the contrary Aland (0,16% - 0,21% -2007) and Illes Balears (0,33% – 0,31% -2007) have particularly low involvement in R&D. Considering that the part of the private sector resources dedicated to R&D is lower than 0,2% (except in Malta where it is 0,4%) the assumption that research is concentrated in the Universities and in public research institutes is unavoidable. This is typical for Sicilia and Sardegna that are considered as knowledge nodes of European significance (ESPON Atlas, 2006, p.25 – EUROSTAT, 2009, Annex V, map 8.1).

The high performing regions of competitiveness and innovation present the same concentration for the Information Society Index as well. Illes Balears, Aland and Cyprus plus Kriti are performing better than other Mediterranean islands but are below European average (ESPON Atlas, 2006, p.24-27- Table AVII-4). According to the Regional

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<sup>21</sup> EUROSTAT data base has information for 2008 only at the national level; for regional level the information of the last available year is used

Innovation Performance Index for 2002-3 (EU 4<sup>th</sup> Report on Economic & Social Cohesion, 2007, p. 79) all Mediterranean islands performed below the EU average (Illes Balears, Notio Aigaio and Voreio Aigaio recorded the poorest performance) where the Nordic Islands (or the mainland region to which these islands are attached) performed above the average.

**All islands are performing very poorly in R&D. This is due to (a) the lack of significant Research Institutions located on the islands (lack of infrastructure) and (b) the low attractiveness of islands for highly educated and skilled people as they attempt to become part of the global knowledge economy. Among the Mediterranean islands, all of which are below average, Illes Balears, Cyprus, and Kriti perform better than the rest since these islands have Universities and research institutes, which are the incubators for R&D Development**

#### 3.2.2.10. Social capital

For assessing social capital on islands, the results of the European Social Survey have been used<sup>22</sup> (2003, see the methodology presented in Annex I), with the main outcomes being:

##### *Social trust*

Three questions measuring social trust were combined in one quantitative variable. According to the results of the analysis differences of social trust between regions are statistically significant. In particular, several South European regions record the lowest, including Ionian Islands (mean score: -1.30), South Aegean (-0.87), Sicily (-0.69), Cyprus (-0.48) and Crete (-0.41). The highest levels of social trust are observed in Southern Finland and Aland (0.61), Bornholms Amt (0.59) and Illes Balears (0.42) (see Annex I). Statistically significant mean differences were also observed between South and North regions of the study. Northern regions present an average score of 0.54 whereas Southern regions have significantly lower levels of social trust (-0.43).

##### *Institutional trust*

Trust in institutions was investigated for three entities (Parliament, European Parliament, and Legal System) and was measured in one variable. One-way ANOVA tests recorded several statistically

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<sup>22</sup> This Survey was not organised on a NUTS level and didn't cover all island regions or Member States such as Malta.

significant differences of means between regions (Annex I). Differences are significant between north and south European regions, with Southern areas having higher scores (South: 0.08, North: -0.10). Mean scores for each region reveal the highest levels in the Ionian Islands (0.53) followed by South Aegean and Cyprus (0.32 and 0.25 respectively). On the other hand, Scotland (-0.65), Mediterranean (-0.47) and Illes Balears (-0.25) have significantly lower levels of institutional trust.

#### *Social networks*

Social networks were measured based on the number of organizations in which individuals are members or volunteers. One-way ANOVA tests reveal that several statistical differences between regions regarding the density of these networks. The highest mean score is presented in the area of Bornholms Amt (2.14) followed by Scotland (1.60) and Southern Finland (1.58). The majority of South European regions have significantly lower levels (Illes Balears: 0.05, Ionian Islands: 0.18, North Aegean: 0.41, Sardegna: 0.50, Sicily: 0.57, Crete: 0.59).

Similar results are observed for volunteerism, with lower scores on Balears and Ionian Islands where no respondents declared positive answers. The highest scores were noticed in Bornholms Amt (0.79) and Mediterranean (0.32). The significant difference between North and South regions is also validated by comparing the total mean scores of all South and North regions included in the study. Concerning membership, Northern regions have an average score of 1.59 whereas Southern areas present a mean score of 0.63. A similar difference is observed on volunteerism (Northern regions: 0.21, Southern regions: 0.12).

#### *Interest in politics*

Regarding the level of interest in politics, the least concerned citizens are those in Greece, Spain and Italy. In particular, respondents were asked to state their level of interest in politics on a 4 point Likert scale with lower scores indicating higher levels of interest. According to the results of the analysis, the least interested citizens are the ones of Sardegna (3.45) followed by resident of the Ionian (3.44) and Illes Balears (3.21). The most interested citizens are those of Scotland (2.60) and Southern Finland and Aland (2.61). The higher level of interest in the Northern regions is also highlighted by comparing means of all South (2.85) and North regions (2.61).



### *Level of satisfaction with public issues*

The level of satisfaction was measured for several public issues including the national government, democracy, health services, the economy and education, all included in one factor. The results indicate that the most satisfied citizens are those in Bornholms Amt and Southern Finland and Aland where mean scores of 0.48 and 0.44 were recorded respectively. It is also interesting to observe that Cyprus is ranked third among all regions of the survey (0.30). Significantly lower scores are obtained for North Aegean (-1.26), Ionian Islands (-0.96) and Sardegna (-0.87). The significant disparity between the level of satisfaction among Southern and Northern regions is also highlighted when comparing mean scores of the two large groups (North and South regions). The average mean score of the Northern areas is 0.25 whereas the mean score for the Southern regions is -0.20.

**Nordic islands present higher scores in social capital than the southern ones: higher levels of social trust and civic participation indicate more “connected” areas, therefore more enhanced productivity and level of cohesion.**

#### **3.2.2.11. Governance Quality**

Governance quality refers to the effectiveness of local authorities and the procedures used in order to involve the participation of stakeholders in planning and decision making processes- these parameters make an area more attractive than another.

A survey reveals that there are different national traditions of governance across European space and that these differences still influence practices (ESPON Atlas, 2006, p.60). A categorisation of countries in terms of their “shift towards governance” shows that countries such as France, Spain, UK, Sweden, Denmark and Finland are leaders at this process. On the other hand in Malta, Cyprus and particularly in Greece, traditional patterns of government are still dominant.

The intensity of interregional co-operation is another indirect sign of changes in government mentality; Baltic Sea regions (even Polish regions) seem to be the most active ones through the B7 network. Highlands and Islands, Kriti, Corse and Illes Balears are also active and so are North Italy, South France, coastal regions of Spain and Portugal.

Such experiences as the ones of the B7 network are rarer in the Mediterranean islands even if Illes Balears, Sicilia and Sardegna are autonomous regions. Individual efforts for introducing participative governance procedures exist in some localities, such as the island of Lipso with impressive results (as the analysis of the questionnaires of attractiveness indicate) but is not a general trend.

From previous ESPON study (ESPON 2006f, Governance of Territorial and Urban Policies from EU to local level), there is a valuation of countries and NUTS 2 regions governance performance. Even if the valuation system is different between countries and regions, it is clear Nordic countries and regions plus Spain have better performances than European average; specifically at the regional level in a scale between 1 (better performance) and 4 (worst performance), Aland, Balearics and Cyprus are graded with 1, Corse with 2, Malta with 3, when the Greek and the Italian islands are graded with 4.

**This parameter can explain some differences of the state of the islands, as governance quality influences public policy and is linked to effective development.**

#### **3.2.2.12. Employment opportunities**

The particular indicator can be approached indirectly by the percentage of the economically active population, the evolution of the employed and unemployment (total, women, young) that were presented earlier in this report (par. 3.1.2).

#### *3.2.3. Classification of Attractiveness factors by islanders*

**The perception that islanders have about the importance of the attractiveness parameters is crucial as it can influence (among other issues) policy priorities.** It has to be underlined here that "scientific objectivity" is necessary but not critical to persuade businessmen and population about islands' attractiveness and to influence their decision for location. So, the classification of attractiveness parameters by importance from the islanders is very useful information. The entire methodological approach is given in Annex I and the analysis of the information collected by questionnaires in the Annex IV.

### 3.2.3.1. Islands' attractiveness for living (Local Authorities' Responses)

In the field research, 75 local authorities from various EU insular areas participated (municipalities, prefectures, provinces) in order to provide insights on the most important factors that affect the attractiveness of an island for residence. The respondents were asked to rate twenty four different factors that could define islands' attractiveness for permanent residence on a scale from 1 to 5 (1 was the first most important factor of attractiveness, 2 the second most important factor and so on).

#### *Classification of Factors*

In Table 7 the hierarchy of attractiveness factors based on their importance is presented. Values closer to 1 denote higher importance while those closer to 5 signify lower importance and –according to the respondents- have little influence on someone's decision to live on an island. Factors not rated by the respondents are excluded. The classification of the parameters is performed in four classes according to the frequency of the values (Table 7):

- High priority factors, with importance level up to 3.5 that are considered to be those with direct influence in residence decisions.
- Intermediate priority factors, with importance level from 3.51 to 4.00 that include factors conceived as important.
- Low priority factors, with importance level from 4.01 to 4.85 that include factors which affect decisions indirectly.
- Insignificant factors with importance level from 4.86 to 5.00 that concerns factors that have very little or no importance.

**Table 7: Classification of factors influencing the attractiveness of islands for living according to their average score**

<b>High priority factors (1.00-3.50)</b>
Quality of health care system
Trip frequency
Regularity water supply
Job Opportunities
<b>Medial priority factors (3.51-4.00)</b>
Quality of life
Quality of education services.
Regularity of energy supply
<b>Low priority factors (4.01-4.85)</b>
Cost of travel
Cost of living
Quality of nature
Quality of transport
Career opportunities

Land of cost

Connection to the water waste system

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**Insignificant- complementary factors (4.86-5.00)**

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Effectiveness of solid waste collection

Linguistic, religious, racial or ethnic diversity in society

Opportunities to attend cultural events

Quality of public transport system

Quality of built environment

Networks of trust and social capital

Training opportunities

Participation in non-government collective activities

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The five most important factors are (Table 7):

**1. Quality of health care system**, in which health infrastructure (hospitals, clinics etc), equipment and sufficient qualified personnel (doctors of major specialties and nurseries) are included. Deficiencies of health care lower the quality of life on islands and increase the inequalities between islands and the mainland. The opposite is also true for islanders, as low quality of health system is a preventing factor, since the confrontation of an emergency incident usually involves transfer to another island or to the mainland.

**2. Trip frequency**, which involves accessibility of the island and regularity of scheduled trips.

**3. Regularity of water supply**, mentioned by many respondents, especially from southern countries, where this problem is acute.

**4. Job Opportunities** that increase the feeling of security and well-being. This is especially important for the younger part of the population, as the opposite –non availability of jobs- is a major reason for abandoning the island.

**5. Quality of life** that can be considered to include all the above factors among others.

**3.2.3.2. Islands' attractiveness for economic activities (Chambers and Local Authorities Responses)**

The second type of questionnaire was addressed to chambers and local authorities (municipalities, prefectures, universities) in order to investigate and define the factors that make an island attractive for setting up local economic activities. In total 55 responses were gathered, 40 of which were valid. Participants were asked: a) to prioritize the five most important factors from a list of 24 and b) to rate all factors on a scale from "very important" to "insignificant". As before, values closer to 1 indicate the most important factors and those closer to 5 are the least important ones.

**Table 8: Classification of factors influencing islands attractiveness for business according to their average score**

<b>High priority factors (1.00-3.50)</b>
Trip frequency
Economic incentives
Regularity of water supply
Development vision of local authorities
Regularity of energy supply
Travel cost
<b>Medial priority factors (3.51-4.00)</b>
Effectiveness of public administration
Labour costs
Land and construction cost
Quality of transport services
Supply of trained/ qualified human capital
Competence of local authorities to solve problem
<b>Low priority factors (4.01-4.3)</b>
Quality of local public transport
Broadband connection
Possibility to support innovation
Degree of stakeholder involvement in decision making
Support by other business
Business support agencies
<b>Insignificant- complementary factors (4.31-4.40)</b>
Security
Effectiveness of solid waste collection
Connection to the waste water system
Cooperation with other business
Threat of natural hazards
Threat of technological hazards.

The first six factors are (Table 8):

1. The **Frequency of scheduled trips** is the most important factor for the majority of the participants for business attractiveness on an island. This could be justified as islands are highly dependent from mainland suppliers.
2. **Economic Incentives** that rate the provision of economic motives that target to balance the disadvantages of islands and vary from subsidization of initial development to subsidization of operating costs among others.
3. **Regularity of water supply** was considered an important factor, since hotels and tourism businesses are important activities on islands and require constant water supply.

4. **The vision of local authorities** is considered by islanders to be of great importance if local authorities recognize the distinctiveness of the island and have a concrete plan for its development.
5. **Regularity of energy supply** is the fifth most important factor as problematic energy supply implies cost for businesses.
6. **Travel cost** is another factor that influences business decisions, since it affects the cost of products.

### Common factors

From the listed factors, ten are common (table 9). In most of them, the hierarchy ranking has small differences.

**Table 9: Commons Factors of the attractiveness of islands for living and business ranked in decreasing priority**

Factor	Business hierarchy	Population hierarchy
Trip frequency	1	2
Regularity of water supply	3	3
Regularity of energy supply	5	7
Travel cost	6	8
Land cost	9	13
Quality of transport services	10	11
Broadband connection	14	-
Effectiveness of solid waste collection	20	15
Connection to the waste water system	21	14
Quality of public transport system	13	18

Trip frequency ranks second (2) for living and first (1) for business attractiveness. Regularity of water supply, travel cost and quality of transport services have similar hierarchy rankings in both cases. Land cost is prioritized higher for business than for residence, while effectiveness of solid waste collection is ranked higher for residence compared to business attractiveness. Broadband connection is ranked 14<sup>th</sup> in the business hierarchy and was not selected at all for residence.

#### 3.2.4. The results of the Delphi workshop

The Delhi workshop included two different rounds for factors of attractiveness for both residence and economic activities.

##### a) Factors of residence attractiveness

According to the results of the first round the participants classified the attractiveness factors in descending order: The most important factor is **Job opportunities** (average rate 6.6), followed by **quality of health** (6.33), **quality of life** (6.33), **Career opportunities** (6.2), **Quality of nature** (6.2), **Regularity of water supply** (6.067),

**Frequency of scheduled trips** (5.933), **Regularity of energy supply** (5.867), **Quality of education services** (5.867), and **Training opportunities** (5.667). The rest factors received lower average rating. The three factors that received the lowest scores are: **Opportunities to attend cultural events** (4.067), **Opportunities to attend sports events** (3.6) and **Linguistic and Religious diversity** (3.333).

Comparisons with the answers of the chambers and local communities reveal that eight out of the ten first factors are common (Table 10).

**Table 10: Comparison of factors' importance for residence between experts and local authorities**

Factor of attractiveness (experts evaluation)	Factor of attractiveness (local authorities evaluation)
1. Job Opportunities	1. Quality of health care and services
2. Quality of health care and services	2. Frequency of scheduled trips
3. Quality of life	3. Regularity of water supply
4. Career Opportunities	4. Job opportunities
5. Quality of nature	5. Quality of life
6. Regularity of water supply	6. Quality of education services
7. Frequency of scheduled trips	7. Regularity of energy supply
8. Regularity of energy supply	8. Cost of travel
9. Quality of education services	9. Cost of living
10. Training opportunities	10. Quality of nature

#### b) Factors of business attractiveness

The same procedure was followed for the investigation of the factors that the group of experts considers as the most important for the development of economic activities in insular areas. The first ten factors according to the evaluation of experts and the responses of the local chambers are presented in Table 11.

Six out of the first ten factors are the same for both groups. The factors that were further included from experts are: 1) the **supply of trained human capital**; 2) **Broadband connection**; 3) **Competence of local authorities**; and 4) **Support innovation**. From the side of local chambers the four different factors are: 1) **Economic incentives**; 2) **Cost of labor**; 3) **Land and construction cost**; and 4) **Quality of transport services**.

**Table 11: Comparison of factors' importance for business between experts and local authorities**

Factor of attractiveness (experts evaluation)	Factor of attractiveness (local chambers)
1. Frequency of scheduled trips	1. Frequency of scheduled trips
2. Regularity of energy supply	2. Economic incentives
3. Supply of trained human capital	3. Regularity of water supply
4. Regularity of water supply	4. Development vision of local authorities
5. Broadband connection	5. Regularity of energy supply
6. Effectiveness of public administration	6. Cost of air and sea travel to mainland
7. Competence of local authorities	7. Effectiveness of public administration
8. Development vision of local authorities	8. Labor cost
9. Cost of air and sea travel to mainland	9. Land and construction cost
10. Support innovation to production	10. Quality of transport services

The differences in the classification between local stakeholders and experts could be attributed to the more technocratic view of the experts that express the broader (global) view concerning attractiveness and the islands development perspective based on parameters such as the human capital, ITC, innovation. The locals have a less broad view since they focus on the everyday problems and can see the solutions to the "classical" hard infrastructure and activities.

The second round of the evaluation between experts produced little differences in both of the two categories (Table 12).

**Table 12: Factors of attractiveness at the 2<sup>nd</sup> round of Delphi**

Factor of attractiveness for business	Average	Factor of attractiveness for living	Average
Regularity of energy supply	5.765	Job Opportunities	6.00
Frequency of scheduled trips	5.706	Quality of life	5.824
Supply of trained human capital	5.294	Frequency of scheduled trips	5.412
Effectiveness of public administration	5.176	Quality of nature	5.353
Broadband connection	5.176	Quality of health care and services	4.882
Competence of local authorities to solve problems	5.176	Regularity of water supply	4.824
Regularity of water supply	4.824	Career opportunities	4.353

From the classification of attractiveness parameters, some remarks can be made:

- **both stakeholders and experts give importance to the main parameters of attractiveness influenced negatively by insularity: accessibility and services of public interest (energy, water, healthcare, education)**



- **preservation of quality of life and quality of nature are seen as an asset by both the stakeholders and the experts**
- **governance is considered as an important factor influencing local development**
- **economic incentives are important for local entrepreneurs**
- **development strategy is perceived differently by locals (mass tourism and construction, traditional agriculture based on low skilled labour force) and experts (high added value products and services, with skilled labour force using new technologies).**

The results of the above analysis are going to be used in order to:

- a) choose parameters for attractiveness index,
- b) elaborate the SWOT analysis and
- c) prioritize policy actions.

### *3.2.5. Attractiveness indexes*

After the presentation of the available data for the variables proposed in the methodology and the classification of the attractiveness parameters from stakeholders and experts, three indexes for the attractiveness of islands are proposed:

- (a) A first based on issues influenced directly by insularity (Attractiveness Direct);
- (b) A second based on issues that are indirectly influenced by insularity (Attractiveness Indirect)
- (c) A third based on the natural and cultural assets of the islands (Attractiveness Assets) as an indication for quality of life and a potential for development.

The construction of the indexes is based on:

- the scientific approach developed above;
- the classification of attractiveness parameters from stakeholders and experts;
- the availability of data allowing comparisons.

A detailed presentation of the indexes and the related data is found in Annex VII and the relevant maps in Annex III. The construction of one composite index is not possible as information is not available at the same territorial level.

For the construction of the **Attractiveness Direct Index** is used:

- (a) for accessibility, the ESPON's Multimodal Accessibility Index as it is the only one covering whole Europe at NUTS 3 level,

- (b) for urban dynamism the Functional Urban Areas (FUA) concept was used, where data are available only at NUTS 3 level,

The inclusion of a variable related to Public Interest Services has no sense at the NUTS level as the problem of availability or not (and the quality of services) is raised at the island level. The "Safety" parameter cannot be included as data are not available on the NUTS level. "Natural and Technical Hazards" are not considered by the stakeholders as an important parameter. Natural and Cultural assets are considered separately, as they concern a potential that may be developed or not.

A European average is not available and the classes used for the calculation of the index had to be estimated with different methods (details Annex VII). This index is calculated only on the NUTS 3 level (as accessibility and urban dynamism on the national and the European level are irrelevant). **As already explained above, islands score particularly low for both these variables (the median value is 3 with the EU27 average at 5) except only two islands overpass the average of European NUTS3: Malta and Mallorca (Graph 7A).**

The **Attractiveness Indirect Index** is calculated with the use of the following indicators:

- (a) The percentage of population with low education level of the total population in 2007 for labour qualification;
- (b) The Research and Development expenditure as percentage of the GDP (2008);
- (c) The percentage of households with broadband access % of the total number of households for ITC evolvement;
- (d) The unemployment % of young people (15-24 years old) for jobs opportunities;
- (e) The Governance indicator (qualitative approach from ESPON 2006 f)

The above variables are considered as key ones in the Lisbon Strategy as they are driving forces for a competitive economy in a long term perspective. **The results for islands are particularly alarming with all island regions situated at a significant distance from the European and the member states average (Graph 7B).**

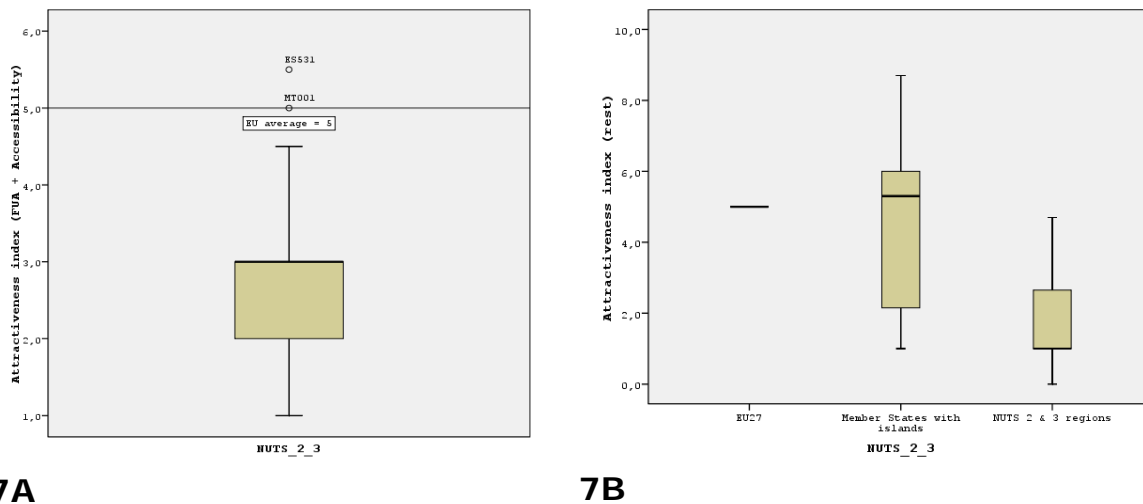
The **Attractiveness Assets Index** is calculated with the use of the following indicators:

- (a) for natural assets, the percentage of NATURA 2000 area is used;

- (b) for cultural assets, the concentration of monuments in an area is estimate.

As it has already mentioned is the only index for which a lot of islands, mainly of the Mediterranean, have a score above the average of EU regions.

**Graph 7. Box-plots of the Direct and Indirect Attractiveness indexes for islands NUTS 3 island regions (7A) and for national values and NUTS 2- 3 island regions (7B)<sup>23</sup>**



Finally, a high positive correlation is detected between a composite direct and indirect attractiveness index and the state of the islands for the 11 NUTS 0/2 island regions (0,819 for State 4 and 0,668 for State 5) (Annex VII); in order to establish a causal link between attractiveness and state a further statistical analysis with more data is necessary.

### 3.3. Typology and SWOT analysis

The analysis above makes clear that:

- The attractiveness of islands is particularly low compared to national averages and to the EU-27 average;
- The performance of the islands is generally lagging behind EU-27 considering most of the key development indicators; this low performance may be attribute to the low attractiveness of the islands;

<sup>23</sup> There is no box-plot for the Attractiveness Assets Index as there is no possibility to compare Islands' data with a European average.

- **Vulnerability is a characteristic of islands' economy and environment;**
- **Attractiveness and performance is even lower for small islands and archipelagos;**
- **Natural and cultural assets constitute a prominent potential for a significant number of islands.**

Therefore, insularity has to be considered as a permanent, natural feature that affects negatively, directly and indirectly, islands' attractiveness and subsequently places obstacles to their performance in terms of sustainable development (creating unequal opportunities between these territories and the rest of the European Union).

### 3.3.1. SWOT Analysis

The SWOT Analysis is a necessary step for approaching the 3<sup>rd</sup> initial research question **“What policies would be appropriate for increasing the attractiveness of islands and ensure that their development meets the tenets of sustainable development”**. The response to this question will be given in the Draft Final report.

Based on the previous analysis of attractiveness (both the evaluation of the parameters and their classification by the stakeholders), the strengths, the weaknesses, the opportunities and the threats of the islands are schematically described in the Table 13.

**Table 13. SWOT analysis of European islands**

<b>Strengths</b>	<b>Weaknesses</b>
<ul style="list-style-type: none"> <li>• Quality of life</li> <li>• Natural Assets</li> <li>• Cultural Assets</li> <li>• Security feeling (not in very big islands)</li> <li>• Strong cultural identity</li> </ul>	<ul style="list-style-type: none"> <li>• Isolation and low accessibility</li> <li>• Limited market size / Low urban dynamism</li> <li>• Monoculture / vulnerability of the economy</li> <li>• High cost for providing Public Interest Services</li> <li>• Low coverage of Public Interest Services in small islands</li> <li>• Lack of local qualified labour due to low opportunities for employment and educational attainment</li> <li>• Low level of innovation</li> </ul>

	<ul style="list-style-type: none"> <li>• Low use of ITC technologies</li> <li>• Low job and carrier opportunities</li> </ul>
<p><b>Opportunities</b></p> <ul style="list-style-type: none"> <li>• Liveability – Quality of life</li> <li>• Sustainability – Environmental Management</li> <li>• Accruing demand for quality and secure food products</li> <li>• Accruing demand for specific interest tourism</li> <li>• Cultural and creative economy</li> <li>• Residential Economy</li> <li>• Renewable sources of energy</li> <li>• ITC technologies</li> </ul>	<p><b>Threats</b></p> <ul style="list-style-type: none"> <li>• Climate change</li> <li>• Economic crisis / diminution of public transfers</li> <li>• Globalization / growing competition for products and services incorporating low added value (low skilled labour)</li> <li>• Energy price's raise</li> <li>• Water scarcity</li> <li>• Extinction of fishing stock</li> </ul>

Concerning the **Strengths** of the islands, the main comparative advantages are the quality of life and their natural and cultural assets. The Quality of Life (low stress life in a small scale society, quality landscape, proximity to nature, low human pressure on the environment) is one advantage that has to be preserved. As the data presented in paragraphs 3.1.3 and 3.2.2.4 demonstrate, a high density of natural and cultural capital and a strong cultural identity mainly in the Mediterranean islands is combined with the fact that islands have low nature fragmentation by artificial surfaces; but this advantage is not particularly valorised to develop new jobs (cultural professions, environmental management) or to “renovate” traditional ones by producing quality food products for example. An important limitation is that these assets are typically consumed by low added value tourism, since they are irreplaceable and non-renewable resources. The past advantage of the islands as nodes of the global maritime network can be exploited again within a different development pattern based on liveability.

Concerning **Weaknesses**, insularity affects directly and permanently some of the most important attractiveness parameters of islands: accessibility, public interest services, private services and networks, economies of scale, market organisation. All the above parameters increase investments and operational costs for companies, households and local authorities. Islands’ products and services cannot be competitive in the European and the global market since low production cost on them is unattainable. These disadvantages have to be attenuated by specific policies; specific policies are also needed to increase educational level of the labour force, information technology penetration, innovation and entrepreneurship.

The **Opportunities and Threats** parameters listed in the above table are quite common issues for all the islands independently of their size, location and development level. Opportunities have to be assessed as today the need *“involves upgrading the business environment through ‘soft infrastructure’. Less tangible assets need to be cultivated, that enhance territorial capital and enable a region to realise its own potential. The exact formula will depend on the particular region”* (ESPON 2006, p.79). These opportunities will be developed in the next section.

More explicitly the islands have to exploit:

- New technologies in the fields of communication and information diminish the negative impact of insularity (small scale and of isolation). New technologies also can be beneficial for small and medium sized companies and services such as education and research, health care services, information, cultural and other creative activities and so on.
- Other technological changes (development of new forms of energy, technologies of partial substitution of natural resources, progress in the transportation field, etc.) can have a moderating effect on the limitations caused by insularity.
- The shift of human aspirations towards quality as it is expressed by an increasing demand from different population groups (as researchers, high position entrepreneurs, artists, individuals of economic potential etc) to settle in areas with high quality natural and man-made environments; in this case the provision of a broad range of facilities (economic and social services as well as various amenities) appears to be a prerequisite.
- The increasing importance of free time activities. Again, islands that offer plenty of opportunities for leisure-oriented activities can turn themselves into attractive locales.
- The green economy, with low resource input and waste output that is a global demand, fits with islands’ low resource availability.

The **Threats** listed above have a global importance but they will affect more heavily islands that are more vulnerable than European mainland. For instance as transport is already very expensive for islands compared to the European mainland, in the case of energy prices rise, transport costs will rise in a disproportional way. This is also true with climate change: sea level rise threatens more islands than continental mainland and water availability is a crucial parameter – at least for the Mediterranean islands. Finally the increasing globalisation puts “traditional competitive activities” as tourism,

agriculture and fisheries in an additional competition with low cost countries; innovation is the only way to stay competitive.

### *3.3.2. Typology of islands*

**A typology of islands that takes account of the different island characteristics (outlining both their common characteristics and the socio-economic disparities observed) reveals the intensity of the constraints linked to insularity and will constitute the basis for the proposition of adapted policy measures according to the types of islands.**

A previous classification of European Islands proposed by Planistat (2002) was based mainly on geographical characteristics of insularity rather than socio-economic ones: population, area, total GDP, distance from the regional capital, distance to find a population 15 times bigger than the island's population, average sea level elevation, average temperature and the ratio perimeter/area of the island). The statistical analysis yielded 3 categories for NUTS 2 and 3 regions (Cyprus and Malta were not included):

- Sicilia, Sardegna, Kriti (the very big islands)
- Balears, Voreio Aigaio, Notio Aigaio, Ionia Nissia, Corsica and Shetland (the big and medium mountainous islands and archipelagos of the Mediterranean plus Shetland as a remote archipelagos)
- Gotland, Bornholm, Aland, Isle of Wight, Orkney, Western Isles (medium / small and rather flat islands situated close to the mainland).

The lack of new data for the majority of the variables identified in the methodology of this study, especially at NUTS 3 level, restricts the possibility for a more complete and thorough statistical analysis. With the amount of information available, a classification based on the size of the islands' permanent population was adopted in the current study as a starting point. The study showed that the smaller the population of an island the more acute some of the insularity impacts, direct and indirect– e.g. higher costs to maintain equitable levels of public services.

The initial classification used in the present study of NUTS 0 - NUTS 3 islands was based on population and produced the following results concerning the islands included in the analysis:

- **Very Big Islands** (more than 50.000 inhabitants): Sicilia, Sardegna, Mallorca, Cyprus, Kriti, Malta, Corse, Isle of Wight, Lesvos, Kerkyra, Gotland, Evissa-Formentera, Menorca Dodecanisos<sup>24</sup>.
- **Big Islands** (between 5000 and 50.000 inhabitants): Chios, Samos, Bornholm, Zakynthos, Western Isles, Orkney, Kefalonia, Shetland, Gozo, Aland, Kyklades<sup>25</sup>. From the case study islands Kalymnos and Saaremaa belong to this subgroup.
- **Small islands** (less than 5.000 inhabitants): Kokar, Lipsi, Lipari and Samso (case studies).

A classification of the island regions has been attempted using the 4 (except the artificailization indicator) and the 5 indicators composing the State Index. A Principal Component Analysis was firstly used to classify the islands and it was followed by a Discriminant Analysis for verification of the groups (Annex I, 1.6, Annex IX); some of the islands can be classified as belonging to either groups<sup>26</sup>. These results are associated with the islands population size with, is proposed in Table 14:

- **The performing islands:** In this first group Aland, Illes Balears, Gotland, Cyprus, Shetland and Orkney have globally a positive well balanced situation drawn by a rather performing but fragile economy. The bigger islands (Illes Balears and Cyprus) among them ought this situation to an “economic growth pattern” based on economic specialization (mass tourism-construction plus off-shore activities for Cyprus); these islands are facing a high environmental pressure due to the characteristics of the tourism. Gotland (big island) and the medium size archipelagos regions of Aland, Shetland and Orkney owe their performance to external parameters: a specific fiscal regime for Aland and an important presence of the public sector for the rest. In the case of Shetland and Orkney the presence of an important primary and manufacture sector (about 24% of the GVA) seem to make the difference from other islands with an important public sector.

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<sup>24</sup> The first seven islands belong to the subgroup of the very big islands with more than 300.000 inhabitants; Dodecanisos even if it is an archipelago, is included in this subgroup because its main island (Rodos) has more than 100.000 inhabitants, although the rest of Dodecanisos consists of medium and small islands.

<sup>25</sup> Even if the total population of Kyklades is 104.000 inhabitants, it is an archipelago with 24 inhabited islands; only seven from its islands have more than 5.000 inhabitants.

<sup>26</sup> Orkney and Zakynthos can be classified either with the performing islands or with intermediate ones; Kerkyra and Sardegna are between intermediate and lagging islands.



- **The intermediate islands:** In the second group there are ten islands with results around the average performance of all islands: some of the islands have an important tourist activity as Zakynthos, Kyklades, Dodecanisos, Kerkyra, Isle of Wight and Kriti; Malta and Sardegna have a balanced but not very performing economy; performances on Bornholm, and Western Isles together with Isle of Wight are based on important public sector.
- **The lagging islands:** Chios, Lesvos, Samos, Kefalonia, Lefkada, Gozo, Corse and Sicilia, have low attractiveness (except Corse) and a low performing economy influencing negatively all the examined parameters.

**Table 14. Classification of NUTS 2 & 3 island regions and the case study islands**

Size/state	Big islands	Medium	Small
<b>Performing islands</b>	<b>Mallorca</b> Menorca Ebissa - Formentera <b>Cyprus</b> Gotland	Aland* Shetland* Orkney*	<b>Lipari</b>
<b>Intermediate islands</b>	Kriti <b>Malta</b> <b>Sardegna</b> Isle of Wight <i>Dodecanisos*</i> (Rodos) <i>Kerkyra</i>	Bornholm Kyklades* Zakynthos Western Isles	<b>Samsø</b> <b>Kokar</b>
<b>Lagging islands</b>	<i>Corse</i> <i>Sicilia</i> Lesvos	Kefalonia Chios Samos Gozo Lefkada <b>Kalymnos</b> <b>Saaremaa</b>	<b>Lipsi</b>

Notes: - The islands in bold are the case study islands.  
 - The islands in italics are the ones with high unemployment rate.  
 - With asterisk: Archipelagos. Sicilia, Sardegna and Kerkyra are also archipelagos but the biggest island is totally dominating the region.

This classification could be used to diversify the intensity of measures within an integrated insular policy according to the intensity of the constraints insularity provokes.

### 3.4. Principles of Islands' Development

#### ***The need for an adapted Development Model***

As shown in the previous analysis, islands have **permanent features** (the characteristics of insularity) that create unequal conditions of development when compared to the continental mainland:

- Remoteness/ isolation:
  - with direct and indirect impacts on their attractiveness: limited accessibility; limited access to public and private services; difficulty in developing economies of scale; limited availability of human resources; environmental vulnerability, etc,
  - that varies in intensity and impact among islands: Small islands, Archipelagos, etc
- Small size: limited space and natural resources; small size of market; dependence from imports, etc

The above characteristics provoke on the one hand extra costs to enterprises, the public sector and the population and on the other a lower level of public services. The handicaps (obstacles) that the European islands face due to insularity hinder the increase/sustainability of their attractiveness, thus affecting negatively their developmental process.

Furthermore, the **external threats** (climate change, globalization, etc) tend to intensify the constraints of insularity (in varying degrees) and the conditions under which insular areas "compete" in the global environment.

Islands have based their development either on the specialisation in a certain economic sector or on the utilisation of exogenous parameters by following the development paradigm of their countries or in general of the continental mainland (i.e. economy of scales and/or agglomeration economies). These strategic choices adopted by the islands, despite the economic development that might have been attained in some cases (e.g. Balearic Islands), are not consistent with the principles of a sustainable development. Mass tourism, monoculture activities, etc, may provisionally contribute to the

economic prosperity of some islands; however, in the long run they exhaust their limited resources and degrade their natural, social and cultural capital and in general their specific/ unique characteristics. This may result (due to limitations of land, market, potential, etc) to an inversion of the developmental process. In parallel, the **increasingly competitive international environment puts “traditional activities” as tourism, agriculture and fisheries under pressure coming from low cost countries.**

Although insular areas suffer from permanent constraints, economic opportunities exist either related to the sustainable management of their natural and cultural assets or to the exploitation of new technologies, the shift of human preferences towards “healthy” and high quality products, the renewable energy sources, etc. Previous ESPON studies have documented that areas with “low urban influence and low human footprint” display good socio-economic performances and that regional competitiveness can be achieved through “soft infrastructure” in order to exploit local assets as quality of life, natural and cultural heritage.

Therefore, an appropriate **policy framework** for the European islands has to be elaborated that should pursue the increase of their attractiveness for sustainable living and entrepreneurship so that they could keep pace (in terms of development) with the continental mainland. In this context, the islands should:

- overcome their permanent handicaps (e.g. accessibility problems due to insularity) by applying permanent measures (e.g. through appropriate adaptation of the E.U. policies);
- tackle external threats by adapting their long-term strategy to the respective impacts;
- adapt their development model by utilising their assets and looking towards an endogenous sustainable development; and
- orient their production system towards safe and high quality products and services in order to satisfy a growing demand for environmental preservation, the preference for “healthy” non-massive production and high quality products, the growing demand for small scale diversified societies and landscapes as well as better quality of life.

### ***Principles for adopting a Policy Framework for the islands***

The proposed development framework of the European islands should be based on the following policy principles:

- Respect of the provisions of the Lisbon Treaty and mainly territorial cohesion
- Maintenance of the territorial diversity (particular physiognomy) of the European islands
- Provision of equivalent opportunities to the European islands for certain services and infrastructure (e.g. equivalent accessibility to transport, capital, energy, communication, technology, etc)
- Application of Proportionality rules
- Promotion of the endogenous development of the islands based on the exploitation of their particular assets while keeping balance between the components of sustainable development (environment, society, economy, culture)
- Adaptation of the development strategy of the islands to the long-term impacts of the external threats (developmental flexibility)
- Permanent handicaps need permanent interventions.

There are some prerequisites for the implementation of the Policy Framework as:

- The establishment of the Islands Impact Assessment for the European policy initiatives;
- The introduction of an adequate monitoring framework for the development of the islands, by including more appropriate (e.g. territorial) indicators; the establishment of a unique statistical code for islands independently their administrative situation (NUTS 0 or LAU) will facilitate data compilation and analysis;
- The adoption of better governance system at the EU level for a more efficient coordination between the E.U. policies in order to take into account the islands territorial characteristics.

## **4 Description of further proceeding towards the Draft Final Report**

According to the initial work plan in the proposal, WP2.3 assesses the impact of policies on the attractiveness of islands. This assessment will be based on the IIA tool and will include:

- (a) The ex post evaluation of existing policies (common agricultural policy, transport policy, structural policy) in relation to attractiveness;
- (b) The impact of external factors: climate change, energy prices, globalization, second house.
- (c) The pinpoint of policy recommendations and ex ante evaluation. The recommendations have to adopt the principles laid down in the previous chapter and to take into account the impact of existing policies and external factors with a possible adaptation to the different types of European islands.

This part of the project has two aims: The first priority is to develop and test an Impact Assessment (IA) tool directed toward islands; while the second is to derive some policy recommendations on the basis of the work with the IA-tool. This means that the important issue at stake in this part of the project is to thoroughly test a framework for doing impact assessment for islands.

The general applicability of recommendations highlights the importance of having an IA-tool to determine the consequences of different policy options with respect to specific situations and characteristics of islands.

The IA-tool will be developed on the basis of the elements of territorial impact assessment developed in earlier ESPON-studies. The IIA-tool will be a framework that should be accessible to policy makers on different types of islands in Europe. Because of the different contexts for European islands, the impact assessment will be based on a framework and not a single instrument of, for example, economic modelling. This requires that the user of the IA-tool has to make some well-informed decisions on which factors to give weight when assessing a specific policy on a particular island. The framework should help the policy maker to take the right decisions. Apart from territorial impact assessment work from ESPON, the major inputs to the islands

IA-tool will be the determinants of attractiveness found in the previous work of this project.

The work of this part of the project can be summed up in the following phases:

1. Incorporate the results obtained with respect to island attractiveness within an islands impact assessment (IIA) framework.
2. Analyse case studies for the impact of existing EU-policies on islands with the IIA framework.
3. Discuss the degree to which the results from the specific case studies could be generalised or extrapolated to other (types of) islands.
4. Discuss of how external factors to the specific policy (such as national context and climate) can impact on the effect of the policies.
5. Derive some general lessons for islands in the form of policy recommendations on the basis of the first steps of the analysis.
6. Conclude on the usefulness of the IIA-framework.

It is important to stress that the case studies is the only viable way to test the IIA-framework and to demonstrate how the TPG thinks the framework can be used in a proper way by policy makers.

In table below the organisation of the case studies is shown schematically. The column "Policy area" refers to the four policy areas from the project specification: natural resources, human resources, entrepreneurship and public services.

**Table: Organisation of case studies on impact assessment**

<b>Policy area (project specifications)</b>	<b>EU-Policy</b>	<b>Comparative ESPON study</b>	<b>Island</b>	<b>Responsible partner</b>
Natural resources	Environmental policies		Mallorca Cyprus	T1 (Aegean)
Human Resources	Regional policy-ESF		Lipari Mallorca	T3 (Malta)
Entrepreneurship	Competition		Malta Saaremaa	T3 (Malta)
Public services	Transport and energy		Kalymnos Samsø	T1 (CRT)

Entrepreneurship, Human resources	Regional policy – ERDF		Samsø Cyprus	T2 (CRT)
Natural resources and entrepreneurship	Rural development/CAP		Kokar Sardinia	T1 (Aegean)

Since the stakeholders expect the project to address specific European policies, six important policies have been chosen as foci for the case studies. The policies are chosen on the basis of their importance as European policies, either in terms of financial reallocation or regulatory power on important issues for business. Since the aim is primarily to test the IIA-framework and the resources are limited, the selection of policies represents a suitable sample. To ensure that the project draws on knowledge from former ESPON-studies, each case study has to use one former study in order to assign a perspective on the limits and strengths of the IIA-framework. It has not yet been decided which are the most suitable ESPON-studies to include.

In the selection of the islands for these cases studies, a pragmatic approach has been adopted. With due respect to the resources available to the project, it is our intention to have a broad range of islands analysed in the case studies, thus developing the best possible base for a valid discussion of the merits of the IIA-framework. Therefore, all the islands from the first round of case studies are included in these case studies. Secondly, every policy is analysed for two different islands.

The last important question is how the islands and policies are combined since many policies are important for all the islands. Given that the case studies are not supposed to be representative for all islands and all policies, but aim at a careful test of the IIA-framework, the only concern has been that the policy is important to the island in the case study. Because every policy is analysed with regard to two different types of islands, all the significant aspects of the impact assessment are expected to be covered. Furthermore, it is a mandate of this part of the project to demonstrate how useful the IIA-framework is and to what degree it can be used to support and inform policy recommendations.

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