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The increase of processes that allow the production and distribution of commodities and services - worldwide globalization - requires a reflection on the interdisciplinary nature of the planning contents that policies, programs and projects must acquire to respond to the demand of cohesive, competitive development of regions and territories[1].

In this view, economy and territory - the critical issues of an organization based on the circulation and exchange of human resources, information and knowledge - direct the decisions for planning and organizing a large area (national and regional decisions). This led to various interpretations, to which the European territorial aggregates responded with specific models (i.e., fordist and post-fordist, cohesive, *civitas* and citizenship, etc.). Today these models need to be reviewed in light of the new and more precise geopolitical trends dictated by the European Union enlargement, based on cohesion, sustainability and subsidiarity for competitiveness (Lisbon-Gothenburg strategies).

Given its direct, formal and substantial relationship with the possible model of future European economy (i.e. in relation with the new Structural Funds reform), the territorial dimension of these strategies is the place for experimentation and can still be planned. To do this, a series of diverse and priority actions for knowledge need to be put in place. The nature of these actions varies according to content (environmental, territorial, economic and social), sector (settlements, transportation, services), purpose (conservation, management, development), geographical-political scale (urban, periurban, regional large area, political-administrative area).

1.1 Indications by the European Union

Planning as process and territory as reserve/product: these are the fundamental elements in the European Union structural framework 2000/2006.

The results obtained by the European Commission in 1998[2] with Sustainable Urban Development in the European Union, completed in 1999 with the European Spatial Development Perspective (ESDP) for country planning in metropolitan areas, led to the first tools for the management model of

[1] Territory is an artificial concept, a synthetic entity of reference to physical reality, to indicate the projection of a given space into a terrestrial surface, geographically and historically identifiable. Natural and artificial forces act upon it designing, managing and organizing this space (Prezioso, 2003).
[2] Through the collaboration of Ministries and Agencies.

persistency and transformations of economy, as to achieve a shared model of sustainable development[3], with the following objectives:

balanced competitiveness

social cohesion

urban redevelopment and restructuring

good governance

This vision, still innovative in many contexts (particularly, in the new 10 EU countries), considers the environment an internality of the economic-territorial system. It aims at achieving a continuous qualitative improvement, and it implies the acceptance of social and natural values. It also aims at guaranteeing the equilibrium of reference ecosystems, conserving the general equilibrium (natural and anthropic) and socio-cultural and economic values (the milieu and the heritage, broadly speaking), redefining instruments and intervention procedures; inserting monitoring techniques and preventive assessment of policies, programmes and projects[4].

Because the planning process can be referred to policies and programmes (indirect), as well as projects (direct), competitive planning requires a redefinition of objectives, contents, techniques, starting from the ordering principle of sustainability.

While the historic polycentrism of the EU is already undergoing a crisis, the enlargement and peculiarity of diffusive processes of environmental sustainability become evident in territories between areas of cooperation (cross-border areas, thanks to the bottom-up development of economic activities that consume free spaces and join settlements).

Therefore, the research for environmental integration is intensified not through institutional solutions, but aiming at governing the complexity of the environment on a national and trans-national scale through “top-down” and “bottom-up” relationships[5].

The model is both interactive and diagonal, in order to integrate the central policies with those of regional (and local) systems, to safeguard the specificities carrying out the great options, already achieved in France, the Netherlands and Great Britain.

To this aim, the Final Communication (2002/C 48/26), by the Economic and Social Committee about ‘Sustainable Europe’ released in view of the Laeken

[3] Referring in this case to the concept of *Sustainable Development* (from limits to growth in 1970, to the Commission in 1987, to the Rio Summit in 1992) as a “development that meets the needs of the present without compromising the ability of future generations to meet their own needs”.

[4] From the Dublin Declaration in 1990, through international conventions like the one in Rio in 1992, in Kyoto in 1996, and the macro-regional one of Maastricht in 1992-93, to the adoption of political programmes, like the one of the European Union, in favour of sustainable development (*VI° Framework Programme and Agenda 2000-2006*).

[5] It’s even more true after the Russian signing of Kyoto Protocol, with certain effects on the Eastern Countries economic planning choices.

European Council, is enlightening. Sustainable development becomes one of the most important tasks of the EU, to be pursued by adopting a more "radical" approach, as to induce profound changes in the life of citizens.

Through solidarity, governance and responsibility, sustainable development is no more linked solely to an environmental solution, but also social and economic. It becomes a global ethical value.

New concrete elements are now added to the main themes of sustainability (climate, energy production, long-term solutions to transportation) (2002/C 54/03) discussed in the preceding Lisbon and Göteborg Councils (2000-2001). New indicators are introduced to sanction the indissoluble relationship between knowledge and practice of sustainability. The permanent consultation with stakeholders (the environment's and territory's clients) is used to measure intergenerationally the policies for sustainability. National, regional (and local) governments are recognised as being promoters of endogenous solutions.

1.1.1 Subsidiarity and Sustainability: the binomial of new European policy

The term subsidiarity[6] begins to be debated in Europe, implicitly or explicitly, in the seventies, realizing that it could provide a contrasting force to "europessimist" attitudes or "eurosclerosis" judgements.

The former European Economic Community foresees in subsidiarity[7] an instrument through the Commission can exercise its control over the Member States. The latter have responded to the problem institutionally, by including subsidiarity in the dictates of their constitutions and imposing its application to the powers of the Commission.

Only at the beginning of the eighties subsidiarity becomes an indicator of the complexity of the European decisional process (1982 Draft Treaty), and when the Single European Act (1986)[8] comes into force, the power of the Community is still centralised. Member States carry out a review process of government practices and of individual norms that regulate the life of regions (in terms of decentralisation and/or regionalism), reallocating clear limitations to the subsidiary powers of the Community in the art. 130 of the Single Act that deals with environmental issues.

[6] Meant as the principle that privileges, in entrusting tasks, functions and powers, the level of government and administration closer to the citizen. This allows the government to provide an appropriate offer to the demand expressed by the citizen. In practice, subsidiarity represents the most suitable way to achieve flexibility in the supply and management of services. The EU uses this principle to strengthen the unitary systems called *regions,* as to create a form of local government capable of achieving integration.

[7] European Community's Commission (1975), *Report on European Union*, CEC, Suppl. 5/75 - Bull. EC; European Community's Commission (1975), *Tindermans Report*, CEC, Suppl. 1/76 – Bull. EC

[8] The act was signed on 17 February 1986. With this act the Treaty of Rome was revised and the current European Union scheme was born.

In this moment subsidiarity and sustainability meet and are established as the ethical principles unifying the policies of the States at a global level[9], with Europe as the guarantor of this choice[10].

It is not a coincidence that the two principles of subsidiarity and sustainability begin together their path of acceptance and application in Europe. In fact, to be operative, both require a voluntary act by the collectivity, that claims their paternity "from the bottom", as an expression of a concrete demand of environment and government.

Therefore, the political terms of the European environmental issue are highlighted, and can be oriented towards sustainable solutions only by eliminating the democratic deficit, as defined by the Union in the European Parliament Resolution of 1990.

Subsidiarity and sustainability are, in fact, democratic principles, and the Report by David Martin at the Intergovernmental Conference in 1990, as well as the Edinburgh Summit (1992), have revealed that both principles are present in very few regional contexts[11].

From a theoretical point of view, sustainability has not met many difficulties in being adopted as guiding principle of the Community's actions, while for subsidiarity it has been more difficult, the problem being the increase in number of authorities and levels of power to attribute to the Union. Germany, where the principle is already in the constitution, and France, that uses it as a method, have expressed their support for this increase, facing the opposition of Great Britain. The latter ascertains that subsidiarity has always been applied in Great Britain through the action of the local government, and from that experience a reduction of the number of levels of power has been decided.

During the Great Britain Presidency of 1992, subsidiarity becomes the pressing theme of the European debate, in view of the Treaty of Maastricht that seems to represent the basis for the construction of a Europe beyond the States. In that same period subsidiarity is used by the Union as an instrument to give pressure to Denmark to convince it to ratify the Treaty, to which it was opposed by referendum vote. In Federal Germany, the länder strongly opposed this way of applying the subsidiarity principle to the Union. It was too different to the one that allowed them to dictate the rules of the regional market and, therefore, to set up the historic negotiation between Bonn and

[9] The 1987 *Brundtland Report,* followed by the 1993 *Rio Conference* that produced *Agenda 21,* by the Conferences of *Kyoto* in 1997, *São Paolo* in 1998, and *Johannesburg* in 2002.
[10] At the time Gro Harlem Brundtland was the Norwegian Minister of the Environment.
[11] The Report uses as assessment indicators: monetary and economic integration; social and environmental homogeneity areas; the Union's Foreign Affairs; european population. D. Martin (1990), *Interim Report on the Intergovernmental Conference in the context of Parliament's Strategy for European Union*, Luxembourg, European Parliament.

Bruxelles, perceiving the threat of a transformation in their consolidated regional competences[12].

Subsidiarity has obtained full consensus, even though in some cases its sense and confines have been erased, forgetting that in the Treaty of Maastricht subsidiarity has been clearly defined in relation to the aims of the Union:

in art. A[13], where it is defined as a substantial principle through which citizens can orient all their political decisions;

in art. 3B, where it is defined as a procedural criteria to determine how and when the Unions acts.

On the constitutional level subsidiarity represents the level of government most suitable to respond to the problems raised by the population; therefore, the definition contained in the Treaty must be considered an applicative consequence of this definition. It is measured in terms of efficiency of the organization that promotes and manages the policies (the response), because the organization acts at various levels, one for each structure of government capable of achieving the objectives posed by the most efficient policy.

The European Commission has decided to consider subsidiarity fundamental in the preparing actions for integration. This decision depends on the various competences that regions have in Europe and on the different solutions that each region requires in facing environmental problems.

Subsidiarity has become a procedure that maintains its value as useful principle within the limits of proportionality, i.e. as long as the Union's interventions are acceptable to both the Member States and the regions. In short, subsidiarity is useful to the Union in the case of far-reaching policies (environment, unemployment, culture, education); but it does not work when these common policies have to be transferred to a lower level, and be applied locally, in other words, when the directives become norms (environmental taxes, unemployment subsidies, provision of services, etc.).

The Intergovernmental Conference of 1996 has admonished the Commission to apply more correctly the principle of subsidiarity. Harmonization rules have to be imposed to obtain positive results from the use of subsidiarity, redefining the roles that the various levels of government have traditionally carried out in the territories of their competence.

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[12] Jeffery Ch. and Yates J. (1993), "Unification and Maastricht: The response of the Lander Governments", in Jeffery Ch. and Sturm R. (Eds), *Federalism. Unification and European Integration*, London, Frank Cass, pp. 59-71.

[13] Treaty of Maastricht, Title I art. A: "By this Treaty, the High Contracting Parties establish among themselves a European Union, hereinafter called 'the Union'. This Treaty marks a new stage in the process of creating an ever closer union among the peoples of Europe, in which decisions are taken as closely as possible to the citizen. The Union shall be founded on the European Communities, supplemented by the policies and forms of cooperation established by this Treaty. Its task shall be to organize, in a manner demonstrating consistency and solidarity, relations between the Member States and between their peoples.".

However, by formally including the principle of subsidiarity in the Treaty, the competences between the sovra-national institutions (the Commission) and the Member States governments have been outlined. Everyone agrees that Europe must take a more flexible position in the policy-making and decision-taking processes, and also that flexibility is to be found again within the Member States.

Subsidiarity becomes the main instrument to carry out a flexible integration, even if it is clear from the premises that subsidiarity does not represent the only possible interpretation of cohesion to achieve integration.

The Commission's attitude towards this purpose is pragmatic, so that the knot of powers, and the levels that exercise those powers, is loosened. To this aim, in 1997 the Commission has led a new phase of institutional interest for sustainable development policies, related to constitutional discourse. Formerly, in the first phase, only cultural-scientific and pre-political documents were produced (Tab. 1.1).

Tab. 1.1 European documents and initiatives for the application phase I and II of sustainability to territorial policies

PHASE I	
1990	Green Paper on the Urban Environment
1992	Document by the *Europe 2000* Committee on the European urban structure
1993-97	Indications by the European Council, the Committee of the Regions, the Spatial Development Committee
1994	URBAN initiative promoted by the European Parliament (not by the Commission)
1994	Document by the *Europe 2000* Committee on the new European urban structure
1994	Leipzig: informal meeting of the territorial Ministers under the German presidency
1995 (pubbl. 1997)	*European Sustainable Cities* document
1996	Venice: informal meeting of the territorial Ministers under the Italian presidency
1997	Towards an Urban Agenda in the European Union
1998	Noordwijk: informal meeting of the territorial Ministers and formal presentation of the *European Spatial Development Perspective (ESDP)* draft.
1999	First Structural Funds Reform
PHASE II	
2000	Lisbon Council (ten-years strategy)
2000	Nizza Treaty
2001	Göteborg Council
2001	*White Paper on European Governance*
2002	Laeken Declaration
2003	Intergovernmental Conference
2004	III European Cohesion Report

2004	New European Constitution

At the end of the first phase, the institutional binomial sustainability/subsidiarity can be found in three specific points:

The declaration of common European interest for the maintenance of a balanced and sustainable territorial development, based on a human settlement organization that is careful with regards to land consumption, and to balanced urban-rural relationships;

The city and the overall urban structure are considered the new instruments of competition/cooperation between territorial systems;

The urban networks are the territorial organization model. This allows for a system of medium-sized cities to achieve high levels of competitiveness, through synergy and complementarity relationships, and through network and specialization economies.

This is the condition for a balanced development and for the overall objectives of territorial equity and cohesion (integration), by intervening in areas of exclusion and poverty, as well as in competitive areas, to improve efficiency and sustainability.

This approach is almost a declaration of environmental cohesion, and, as a consequence, the prospective horizon changes: no more do we have a geographical and economic-political space with the city or region as administrative centre (defined by the "cage" of physical contiguities and environmental limits), but a broad, dilated territory designed by the system of external relationships. A territory that coincides more and more with the environment and the "variable geometry" economic space.

1.1.2 Citizens and citizenships participation: a way to realize a social and economic cohesion

The release of the White Paper on European Governance in August 2001, by the Commission of the European Union, marks a decisive turn for sustainable territorial management, because it formally codifies a new relation between the territorial management (in terms of planning) and its stakeholders: the citizens and citizenships.

It has been a long time since this relation has intensified and has thus been discussed, becoming over and over essential to realize a total participation of citizens in the decisional processes.

Without digging on the origins of this relation, it must be noted that, recently, private enterprises, and not public institutions, can claim its paternity. This paternity was brought about by the necessity of giving credible solutions to shareholders, clients, suppliers, stakeholders, in order to reduce uncertainty for investments in production and distribution of market goods.

Enterprises have called this process "strategic management" since the seventies, and have acquired appropriate tools to govern it, among which corporate governance.

Public institutions also manage their interventions, but, as the OECD had implicitly observed in 1998, in time they have been deprived of (or they have given up) a unified management process, abdicating the role of promoters of shared principles to merely exercise their functions.

The Union has followed, like for subsidiarity and sustainability, the path of voluntary adherence to this renewal, outlining an integration process between policies, tools for action and non-legislative tools.

Increased knowledge and interaction at local level are the starting points to redesign the territorial management process, as to continuously improve policies, norms and results, and at the same time considering the regional and local specificities.

In this way, the Union outlines some regulations that have a strong impact in changing the behaviour of public institutions, and the general conception of sustainable development:

- demand must be considered before the offer; the demand must be "bottom-up" and, consequently, the congruent offer must be measured "bottom-up";
- policies, programmes, projects represent the offer and must respond to the demand;
- the intersection demand/offer establishes the price, i.e. the equilibrium point where the State/citizen pact is completely fulfilled;
- demands can be many and they can be expressed in different ways, because they refer to different markets according to the geographic scale. The same goes for the offers;
- the geographic scale of the demand must correspond to the subsidiary level of the offer;
- there are as many institutional levels as there are geographic scales in subsidiarity.

It would be desirable for the Union to definitively assume these conditions, by redefining the institutional levels in view of the growing federalism and in relation to subsidiary competences: policies for EU-State-regions, programmes for provinces, projects for towns and cities.

Anyway, the influence of the White Paper on the conception of sustainable development is evident. By contributing to the world's debate on governance, the Union undertakes the global task of sustainability and promotes it as a shared principle, to be managed by applying the regulations of good governance, thus meeting its global responsibilities and strengthening the efficacy of the executive powers of international institutions (the Kyoto Protocol, for instance).

In this perspective, the institutions of the Union and of Member States need to redefine the subsidiary role and to elaborate a common, global, political

strategy, and to promote initiatives that guarantee the coherence of policies, programmes and projects to sustainable management.

The demand for sustainability does not necessarily refer to any organization, because it deals with ethical problems that regard subjective and institutional responsibility.

Consequently, if governance is used towards sustainable development, it cannot be internal anymore, but also external, transforming itself in urban, metropolitan/provincial, regional governance. In other words: territorial governance strengthens the cohesive culture of continuous consultation and dialogue, as well as the precaution principle, that supports public institutions in their role of risk manager, and of disinterested mediator of sustainable policies, programmes and projects.

From the territorial point of view, governance has been treated like the evolution of the current form of local government, or as strategic economic tool; that is, as an expression of the active (rather than reactive) behaviour of actors and institutions in this transition phase towards the decentralization of powers, thanks to the position they have adopted within the administrative decentralization. Therefore the use of governance makes sense if it is capable of increasing the participation and diversity of the actors (public or private), encouraging the agreements system and enlarged participation in urban policies. It must be noted that territory is the place where horizontal relations originate and grow, as well as the massive intervention by the population in State decisions for sustainability.

Governance, by its entrepreneurial application does not pertain only to public/private local relations and decisions, but it is also an indispensable tool to manage a complex territorial structure.

The notion of Governance has, thus, been recently redefined to reflect the current territorial transformations (in urban and metropolitan cases). This allows to overcome two typical behaviours: scarce participation in public local policies (in France this only happens in Nancy, while in Germany at all levels), and weak involvement of private actors.

Governance so intended, is an important element of territorial competitiveness. in many countries, integrating the participation of “key actors” (mayors, presidents of administrations, experts, etc) with citizenships and stakeholders.

This highlighted, among citizenships, the relevance of political actors, which is expressed by creating political ‘arenas’ for sustainability, in a specific geographic scale perspective (Blatter, 1996):

a) cross-border arena on sub-national level

b) the international/continental arena

c) the vertical intergovernmental area

d) the intra-state horizontal arena

e) the intra-borderlands (or interlocal) arena

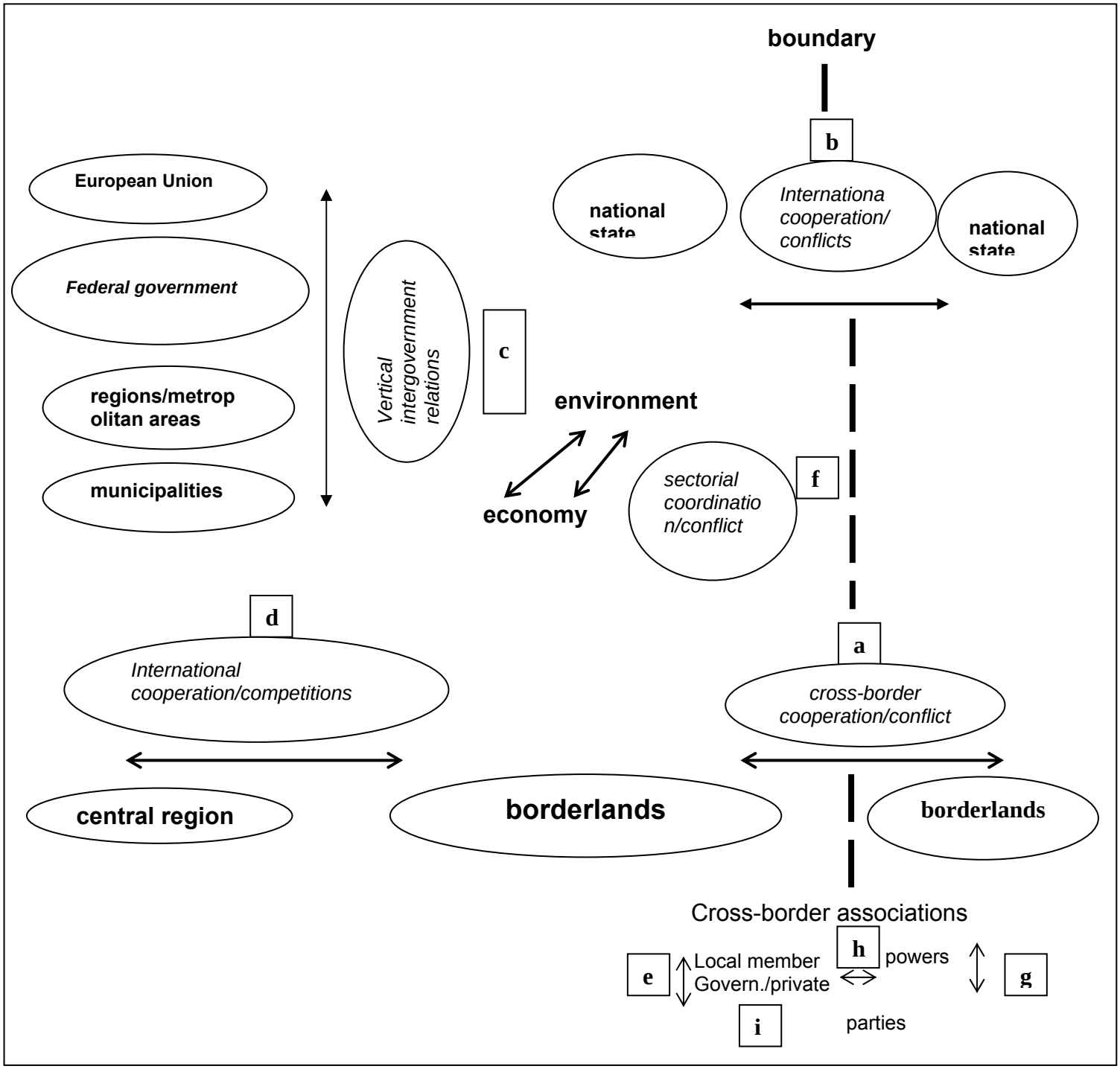
f) the intersectoral arena

g) the relations between executive and legislative powers

h) the ideological/partisan competition

i) the public/private relations

Fig. 1.1 Political arenas in the context of cross-border cooperation between systems



Source: elaboration by Prezioso, 1999 adapted to the Italian situation on the basis of Blatter, 1996

1.1.3 Reinterpreting the EU indications for the sustainable government of the territory

The EU has only recently defined a common vision for territorial managing. It has been possible by the fact that similarities have increased in the last two decades, as a result of: the increased level of knowledge and its diffusion, thanks also to new information technologies, the environmental matrix of plans, and especially projects, supported by the VI Framework and III Cohesion Report.

Within the European Union, cities are the right scale of discussion to tackle the problem of sustainable development. They are able to maintain their own values and identities (III Cohesion Report, 2004) and, simultaneously, to be competitive in terms of a compatible lifestyle, because of their development capability - not just in terms of growth - for future generations.

The driving themes of economic-territorial development has changed. These are informed by the research on strategies to achieve sustainable places, where the national and regional level of intervention and observation has to put into practice the principle of subsidiarity and achieve a position in the trans-national context (network or system) through effective social-economic cooperation to be competitive with the global system.

Diverting the attention towards *governance*, in other words towards methods and procedures of local government (regulations), the EU had in fact precluded the possibility of a direct intervention on single planning procedures, delegating to regional authorities the choice between different approaches:

- cooperative/institutionalist with direct forms of government, influenced by the interests of individual communes or groups of municipalities;
- argumentative/participative more open to trans-border cooperation in the periphery.

An initial review of the application of the *European Spatial Development Perspective*, reveals that, for large-scale planning, the European programmatic framework seems to resume three principles:

1. the common European interest in maintaining a balanced and sustainable territorial development, based on the institutionalised respect of sensitive areas and of areas of great cultural value, and on a human settlement organization that is watchful of soil consumption and that maintains urban-rural relations
2. the adherence to a *policy-making* European culture to respond to two important questions and concepts of scientific interest:
    - the large area (not urban) planning framework is the instrument of competition between territorial systems in this time of globalisation;
    - the networks of urban and periurban systems are the models of territorial organization, that allow a medium-sized city to achieve

high levels of competitiveness through synergy and complementarity relations and network of bottom-up economies;

3. both in the case of regional networks of cities and large metropolis, the connection to the main trans-European transport and communication networks and the construction of an *equipotential polycentric system* (the ESDP model) are viewed as the necessary conditions for a balanced development, and for the achievement of the global objectives of territorial equity and cohesion (through interventions in excluded and poor areas), of competitiveness (improving the efficiency and accessibility of investors external to the city), and of sustainability (improving the energy network and the use of scarce resources like soil and natural areas).

Nonetheless, this hypothesis has to be improved because of the reductive use of the concept of environmental sustainability, the application of which is limited to saving scarce energy and resources and because of the incentives to deregulate methodologies of intervention, notwithstanding the statements of principle they derive from.

With respect to the two "main trends" proposed by the EU to solve the problem of sustainability and competitiveness:

- *spatial polarization*
- *functional specialization*

the possibilities that they mature within the 25 EU countries - measured in terms of admissible policies and carrying capacity of urban systems - are few, given the emerging scenarios dominated by phenomena like:

- the dominance of large polycentric metropolitan systems rather than conurbations;
- the polarization along the transport network, with the exception of medium-sized coast settlements;
- a new hierarchy without internal borders;
- the urban-rural integration through the diffusion of the periurban phenomenology;
- further pressures on the "entrance gates" (that partly coincide with port cities).

Only now the EU is facing the effects of this experimentation and its integration in prescriptive terms (through the *European Spatial Planning Observation Network - ESPON 2006* Programme), from which – we hope- the II European Spatial Development Perspective will originate.

If sustainability is the new element of scientific debate[14], it must be accepted as common point of view that the places that have been traditionally seen as carriers of the European compactness, must be assumed as ideal forms; their permanence depends on the permanence of a sustainable quality of life,

[14] Especially after the release of the *Green Book* by the European Commission.

supported also by investments material goods, where non-renewable resources are used within the limits of development.

In this view, a criticism to the binomial *sustainability=high density*[15] is implicit, considering that the political and technological innovations have accelerated the internalisation of regional economies, thus weakening or strengthening the position of some territory, without creating a stable trend towards general economic equilibrium.

Putting aside, for the moment, definitions made according to rigid hierarchical visions, it can be stated that the socio-economic and physical structures of European areas have adapted their configuration to specific local situations, ignoring for a long time any request to accept the indications for an environmental organization that is prescriptive rather than coercive. In fact, this prescriptive type of organization is considered too distant to the compact lifestyle, the limitation of which is mainly its inadequacy to undergo the attention of 'different' cultures only because of the functionality principle.

Comparing the problems within the European countries, it emerges that territorial systems, do not present common conditions in terms of environmental and socio-economic culture as to point out relevant differences in regional organization, other than some morphological affinities and the effects produced by high levels of pollution.

According to EU directives, the activities of territorial government must progressively refer to sustainable development, at whichever scale they are exercised, in the following directions:

- to safeguard the integrity and interaction of ecosystems, viewed as the capacity of maintaining the physiological reproduction conditions of the relations between natural and human elements;
- to pursue a model of economic efficiency, viewed as the constitution of production and consumption regulations that account for negative externalities and, in particular, aim at avoiding the destruction of non-renewable resources;
- to achieve territorial equity, intended as a guarantee of accessibility to opportunities for all the population, including future generations.

Therefore, it appears necessary to proceed to the definition of a new conception of policies and decisions that involve plans and programmes (as well as individual projects) by Structural Funds, coherently to the objectives of a development that, although is already in action (territorial offer/demand), must be transformed in conformity with the principles of sustainability, accepting that the environmental theme should not be a priority aspect in plans (like in the preceding strategic generation experience), but it must assume *the role of primary collector of the set of actions with transversal characteristics in the various sectors of investment involved in the development planning process.*

[15] Binomial that is the paradigm of the Green Book

In those conditions it does not seem possible to regardless from the following planning tasks/objectives:

a) to prioritise the levels of sustainability ex ante as demand for territorial development;
b) to consequently provide the admissible development planning offer according to the demand;
c) to design a new management subdivision of the existing one, organized in cohesive sub-systems oriented towards the maintenance of their initial environmental value (trans-national and cross-border cooperation);
d) to redesign the division into compartments of local units starting from the problems and the appropriate scales to give aimed solutions (subsidiarity and self-centred model);
e) to measure the interaction by applying integrated and systemic preventive assessment procedures (Strategic Environmental Assessment and Environmental Impact Assessment);
f) to establish a stable link between sustainability and economic-financial compatibility.

1.1.4 A territorial dimension for the strategy of Lisbon and Gothenburg

By the Lisbon (2000), Nice (2000), Göteborg (2001) agreements, as well as by the draft text of the new Constitution, the European Union faces the topic of the enlargement, also through the adoption of instruments and common procedures, made more flexible after the Amsterdam Treaty of 1999.

The full subsidiarity for making a sustainable Europe in front of citizenships and institutions, and the "proximity" (Committee of the Regions, 2000 and 2002; III Cohesion Report, 2004), are the principles able to support (not to refrain) the action of the local authorities within the limits set up from the sustainable principles (Laeken Declaration, 2003).

The numerous suggestions and exhortations towards changes and structural innovation in this direction have evidenced, above all in the Göteborg meeting, the necessity to plan political-organizational models useful to State and regional integration. The thesis finds foundation also in Italy, above all within studies and experimentations involving geopolitical and geo-economic contributions in matter of economic-territorial planning towards federalism.

The EU highlighted some inner clear-cut differences (ESPON Programme 2006; Prezioso, 2004), stating that also NUTs 3, in addition to the regions and the cities, are independent units of reference for planning and sustainable development in the competitive arena. In fact, if not political areas, they are administrative zones, constituting the local socio-spatial condition through which communities manifest themselves, their local development and social cohesion, beyond the cultural divisions and the dominant strategic economic models.

This knowledge is the base of the vision that some of these zones carry in Europe today. The assertion the existence of a geographic type between State and regions (as in the case of Italy, Germany, Austria, Belgium, Czech and Slovak Republics, Slovenia, etc.) is the possible base of the new structural and economic European policy (Structural Funds new vision, in III Cohesion report 2004), able to manage the transition from a city vision to a territorial one, in relation to the growing strategic weight assigned to: a) the border areas/regions in the political-territorial assessment that the Union makes of the sustainable development in the short period; b) the not traditionally perceived regions, that represent a new and innovative organization of metropolitan city/area; c) the areas of a new geography for the European integration, that oppose to the peripheral/core theorem a model of integrated and cohesive, `bottom up', equipotential, polynuclear development.

Inserting the topic of integration (both vertical and horizontal concentration of proximity) in a systemic and complex vision, the project will inquire on the territorial assumption (by case studies) of all the stages that allow the sustainable qualification of the spaces, coordinating them towards an univocal aim by institutional governance and the use of appropriate instruments that regulate the behaviors of the private and public actors.

This formulation is found again also in the most recent governmental and enterprise strategies (Multi-stakeholder CSR Forum, 2001; European Commission and Italian Welfare and Job Ministry, 2003), that can more usefully orient the laws regarding both the sustainable development and the welfare in the competitiveness (Prezioso, 2003a), into the geographical pictures of the national, regional and local diversities of the new Europe.

The topic is not yet studied, so it is linked more to a new and balanced behaviour in the complex of the territorial government – in order to provide, therefore, new external economies of scale to the multitude of institutions that take part into European spatial development.

The project will look at the formula suggested in Europe by the so-called "Rhenanian Capitalism" experience, but will be based on the new and fundamental role that the European Public and Private Institutions can play for the wide and diffuse participation of the enterprises to the competitive model, following an experimental approach to define the development, called "Sustainable Territorial Management" (STeM Approach by Prezioso 2003 e 2004a).

1.1.5 Competitive territorial structures and cooperative multilevel programmes: new conditions of the environmental partnership in Europe

The debate about the reform of the cohesion policies after 2006 shows how the greater part of the European institutions support the EU participation to favour the entire community territory, offering a wide support to the centralized action on strategic topics: knowledge society's innovation and development, employment, social cohesion, sustainable development, competitiveness'

improvement for the social and economic re-development; concentration of the investments on the less favoured regions of the new member-states.

The community structural instruments offer a lot of possibilities in order to overwhelm the regional differences, tying them to a policy of deep financing tout-court and a philosophy of the structural funds, to promote subsidiarity and governance. The private public/partnership, the medium-term programming linked to a careful analysis of the regional potentialities, the decentralized management and the exchange of the best practice guarantees the effectiveness of the European strategies, supplying flexible answers in function of the regional necessities.

The full coherence with the dictates of Lisbon (2000) requires that European Union points to reach, within 2010, "the most competitive and dynamic knowledge-based economy in the world", full employment, equipping itself of a method "of open coordination"; where the economic and social increase becomes a fly for a sustainable policy of cohesion towards integration of the environmental dimension (Council of Göteborg, 2001).

However, there is still an urge to define the real territorial context of the sustainable development to plan the allotment procedure of the structural investments, even if the Commission has pushed, since the 80's, to the collaboration within regional networks for the exchange of good practice above all of trans-border cooperation and cohesion (Interreg III, Urban II, Equal and Leader plus).

The regional competitiveness promoted by the cooperation has favoured strong progresses in the economic and social field, strengthening the social cohesion, contributing in meaningful way to improve the quality of life into peripheral and less favoured regions.

In such regions, some territorial factors slow down the development, for example the distance from the main centres and advanced areas, the persisting of elevate unemployment rates, the disadvantages of natural character, etc.; they transform the regions in places where new and necessary proximities should be built, to strengthen borderline participations, coordinated to the already existing instruments of cooperation (Interreg, Phare, Tacis, Cards and Meda).

The UE enlargement has emphasized the differences in matter of economic development, redefining the geographic borders of the disparities and the employment disadvantages.

The new cohesive policy has an unquestionable impact on the structural planning instruments, that guarantee political and economic integration, developing, for example, some infrastructure networks and the institutional abilities in matter of political thinking and performance, cultural heritage assessment, transparency and exchange of best practices to favour the institutional subsidiary governance.

A definition of the concept of competitiveness, is at this point unavoidable for the definition of a new competitive territorial structure.

1.2 Project Overview

1.2.1 WP1: Concepts and definitions of competitiveness in the international framework

Workpackage 1 provides a review of the competitiveness literature, including definitions, key issues, indicators and indicators, from both the theoretical/academic literature as well as policy/programming literature. The workpackage will analyse the role of the territorial context in the international competition (cohesion and cohesive milieu) at the national and regional level, the determining factors (e.g. governance, ICT, human capital, efficient use of resources) in improving the territorial performance and competitiveness at different geographical scales (states, regions, cities, metropolitan areas).

This work-package provides an updated definition of competitiveness sprung up from international comparisons and from the strategy deriving from Lisbon and Gothenburg councils. It must take into consideration each target focused with a medium-long term vision to allow a facilitated three-yearly agreement of the Commission

According to the guidelines of the Lisbon/Gothenburg strategy, this work-package compares and assess the critical contribution of the literature including both theoretical/academic and policy/programming documents) on the theme of the territorial competitiveness, particularly those studies concerning environment as internality of the economic-territorial system useful to achievement of a competitive advantage.

The regional and national territory is not treated as undifferentiated space of the social and economic action but as physical place where receive and check the territorial capability of the competitiveness. The ESPON 3.1. project results had already shown the territory as real expression of the R&D's, innovation and education demand and supply regard to production and employment market. The territory becomes so parameter to measure virtuous solutions supporting the regional entrepreneurial structure in terms both of environmental sustainability and of improvement of cohesion and integration levels between different territorial actors (institutional and not institutional).

The various stages in this workpackage include:

1. the review and comparison of existing relevant theoretical/academic and policy/programming literature to identify key concepts, definitions and indicators
2. the definition and identification of key general concepts (e.g. sustainability, subsidiarity, cohesion, institutional governance, competitiveness, bottom-up participation)
3. the definition and identification of policy concepts linked to territorial categories (metropolitan and polycentric areas, urban, urban-rural)
4. the definition and identification of different analysis scales (regional, trans-regional, trans-national, super-regional)

5. close collaboration with the other ESPON projects (particularly 3.2, 2.3.2 and 2.3.2) in order to ensure coherence
6. the compilation of a glossary that will used both for coordination and communication

1.2.2 WP2: Individuation and measure of synthesis indicators

This work-package consists of 1) study of all structural indicators individuated in the past 3 years, their increase and complication, the Eurostat updating till the process of simplifying that carried to the individuation of 14's short list; 2) definition of few territorial macro-indicators able for a monitoring of territorial trends and impacts in relation to the Lisbon/Gothenburg strategy; 3) data collection for the macro-indicators construction; 4) individuation of a common measure of synthesis structural indicators individuated.

Aims and objectives to be pursued by the development of indicators and data collection are clearly state in the terms reference. For the project team the most relevant objectives are:

developing territorial indicators capable of identifying and measuring development trends as well as monitoring the political aim of a better balanced and polycentric EU territory; in particular identification, gathering of existing and proposition of new territorial indicators (and map-making methods) to measure and display the state, trends and impacts of Lisbon/Gothenburg strategy;

developing tools supporting the diagnosis of principal structural difficulties as well as potentialities, in particular with regard to sustainable development;

investigating territorial impacts of sectoral and structural policies;

further operationalisation and territorial diversification of the policy aims and options adopted and the ESDP.

Indicators always have to refer to theoretically based concepts and models, otherwise they would be arbitrary. To be useful for improving the knowledge base of EU policy making, they also need to stick to the underlying policy aims. In order to ensure these connections, work conducted in WP2 will be closely connected to the discussions and outputs of:

WP1, dealing with conceptual approaches and developing a common understanding of the current economic, social and environmental trends in support of the Lisbon/Gothenburg strategy.

WP3, analysing samples of regions with different potential and handicaps.

WP5, developing policy recommendations for EU policies to ensure a positive contribution from a territorial dimension in carrying through the Lisbon/Gothenburg strategy.

On the other hand, the choice of indicators checks in parallel with the data availability. The study starts this check from data based covering all member states (e.g. Eurostat, EEA) and national statistical offices. The study serves as identification of data gaps.

For mid and long term considerations it is necessary to indicate the need for additional data to be collected by European and National statistical offices. If necessary and feasible, the data base of this project will be complimented by additional national or regional data.

Consequently main focus of this work package is the definition of a method to measure the synthesis indicators (defined in the previous steps) starting from the "base" indicators existing and feasible and, if necessary, defining new ones.

1.2.3 WP3: Check of synthesis indicators and sectoral policies through case studies

In this work-package each project partner involved test the efficiency of new synthesis indicators and their measure in the respective origin countries and assess the territorial impacts of different sectoral policies relevant for implementing the Lisbon/Gothenburg strategy. The result of this test could give rise to a confirm of the guidelines proposed, to a revision or to an improvement of them. This is the moment in which synthesis indicators, and their further specification, are definitively individuate.

The proposed methodology teste on a sample of the regional typologies integrating those already developed from the ESPON projects 1.1.1 and 1.1.2 (FUA, MEGA, urban-rural typologies) and will lead to definition of a management approach of policies, programs and projects in a sustainable way. The WP2 is articulated on several case studies related to the different origin countries of the partners and subcontractors (Italy, Spain, Slovenia, Portugal, United Kingdom, Netherlands, Finland). This territorial range offers a exhaustive view of the regional European typologies as listed below.

1.2.4 WP4: Geographical Information System and Mapping

The WP4 provides the creation of a Geographical Information System to elaborate the macro-indicators and the relationships between them and to produce maps (of the whole European area) as support for policy makings. The realization of a web site to diffuse data and information about the project is previewed.

Basing on territorial analysis, WP4 provides prevision and assessment of the environmental impacts of the human actions. By the crucial importance of analysis level for the definition of the policies recommendations and by the fact indicators change corresponding to geographical scale, the coherence between data set and geographical scale of the study must be analysed carefully. This WP starts with the definition of the indicators needful to grant the correct representation of the economic, social and territorial trends (work packages 1,2,3) and ends with the construction of Geographical Information System (GIS). GIS is regarded as a real planning philosophy based on use of basic and thematic cartography and on their overlay mapping. The analysis of the correlation between the different indicators chosen becomes background for the diagnosis of principal structural difficulties as well as potentialities.

1.2.5 WP5: Policy recommendations

This work package provides recommendations concerning policies and defines proper instruments that may ensure a positive contribution from a territorial dimension in carrying through the Lisbon/Gothenburg strategy.

1. to provide policy options for strengthening Lisbon/Gothenburg strategy with specific reference to the structural policies of the EU concerning the post 2006 period.
   - these options will be differentiated in the context of:

   a) different types of territorial competitiveness which will be examined in the project
   b) multiple territorial dimension (regional, inter-regional, supra-regional and trans-national)
   c) various historical and cultural tradition as well as different institutional, procedural and administrative practices in Europe.
      - these work will involve:

   a) critical review comparison and assessment of existing policies
   b) identification of innovative policies developments at different territorial scales
   c) recommendations for policy options that strengthen the internal (within European territory) territorial co-operation and the external competitiveness according to the Lisbon/Gothenburg strategy to achieve a more balanced and polycentric European territory.
      - the work requires close liaison with other relevant projects as listed below
2. to provide proposals for integrated policy measures
   - these proposals will be target at improving territorial component of structural and sectoral policies in such a way that they support a more integrated and sustainable territorial development.
   - The focus will be on developing proposals for:

   a) improvement of the current programming period of structural funds as well as inputs into the development of the post 2006 programme
   b) articulating a territorial dimensions in future policy instruments to VI Framework Programme
      - this work involves a review and assessment of territorial dimension of structural and sectoral policies with regard to Lisbon/Gothenburg strategy. Emphasis will be placed on the relationships between cohesion (III Cohesion Report) policy and territorial development policy (aimed at a development of a competitive European territory)
      - the work requires close liaison with other relevant project as listed below
3. to formulate policy recommendations for building effective territorial competitiveness of the European territory

- this proposals will be differentiated for different territorial scales and will take into account the multiplicity of current institutional and administrative arrangements in Europe
- this work involves

a) critical review comparison and assessment of current institutional and administrative structures
b) identification of barriers and opportunities for partnerships building at different territorial scales
c) identification and analysis of innovative examples of co-operation between municipalities and other actors at different territorial scales

- this work provides inputs for the achievement of the ESPON horizontal projects under priority 3 including a framework for self assessment of policy options for improving territorial competitiveness and cohesion.

Approach to undertaking WP5

- a combination of the following methodologies:

a) literature review including both academic and policy documents as well as relevant project reports
b) selected interviews with key territorial actors at EUand national level

- an expert workshop with professionals and practitioners will be held to test the framework for self-assessment of policy options for territorial competitiveness

2. CONCEPTS AND DEFINITIONS OF COMPETITIVENESS

This first interim report focuses on the review and comparison of existing relevant theoretical/academic and policy/programming literature to identify key concepts and definitions. The material is presented under two main headings:

theoretical/academic literature review (section 2.1)

policy/programming literature review (section 2.2)

2.1 Theoretical/academic literature review

2.1.1 The analysis of the competitiveness concept

The Theory of international exchange shifts the study of the behaviour and strategy of the enterprise in an international context, trying to define the reasons of the international commerce.

In this way, the basic causes of the competitiveness are to be researched in the different starting resources and the different technological level, in the scale performances, in the change of the prices of the factors and assets, etc. As said above, it's correspondingly important to find synthetic indicators that might capture and measure the behaviour of the enterprise in a competitiveness international context.

The literature on the determinants of performance concerning the enterprises (Prezioso, 1993) considers the different form of access into foreign markets as one of the main competitive factor. The positive relationship between enterprise efficiency and exportations (Aw - Hwang, 1995; Clerides – Lach - Tybout, 1998) is explained by two approaches not mutually excluding: i) the exportations are a process of learning that improve the productivity of the enterprises; ii) the exportation markets select the most effective enterprises (Delgado - Farinas, 1999). Many other works focus the analysis on more actual forms of internationalisation and analyse the factors orienting the FDI (Graham, 1995; Graham-Krugman, 1993; Onida, 1989), or of the choice between FDI and alternative forms of the internationalisation, like licensing (Kumar, 1985; Saggi, 1996) o *joint-ventures* (Cleeve, 1997; Kogut-Chang, 1991).

The relationship between exportations and performance depends first of all on the higher exposition of the exporting enterprises to the competition. The competition should have, in turn, a positive effect on the effectiveness in three different manners (Short, 1994; Nickell, 1995; Vickers, 1995).

Through international competitiveness, it becomes more simple for the owners of the enterprise to compare the management performances to their competitors' one, that should reduce the possibility of the management to appropriate a share of the enterprise profits "playing" on position stocks. Moreover the competition should reduce the incidence of the production and

the distribution costs in favour of the increase of the enterprise efficiency that determines an increase of profit in those sectors where the flexibility of the demand is higher. Finally, a competitive system increases the probability of failure and urges the management of the enterprise to additional efforts (Schmidt, 1996; Aghion-Howitt, 1996).

A few works only, extend the analysis to *the role of the access procedures of access to foreign markets*, that are very important in Italian regional economies, that are based on small and middle enterprise (Prezioso, 1993, 2000 e 2001; Wagner - Schnabel, 1994; Duarte, 1994;). For example, the decision to create a foreign structure sale (CSSA), trough a direct control or trough local trade agreements or creating new participated enterprises, has been dealt with in the literature to a quite little extent, although it represents the more advanced form of internationalisation for small entrepreneur and constitutes the first step toward the creation of a foreign branch.

The investments of CSSA show the interesting theoretical character of being a decision of choice made under conditions of uncertainty that include a certain degree of irreversibility, given the presence of *sunk costs*.

Dixit (1998a e 1998b) analyse this structure of choice in the frame of the "real option theory". The access to the foreign markets, even if represented exclusively by exportations, has significant *sunk costs* (information costs and opportunity costs). Such costs are substantially higher for small enterprises because, for example, the incidence of travel costs of the human resources are higher.

It should be noticed that, when an enterprise belongs to a group or a society, the *sunk costs* can be shared among the group , so as to significantly reduce the value of the " wait option " of the investment for the single enterprise.

However, the internationalisation of the enterprises is only one of the components influencing the firm's competitiveness and its role can be estimated only in comparison to that of other traditional competitiveness factors.

In the microeconomic analysis of competitiveness, the level of efficiency of the enterprise plays a major role; in fact, other than the competition, the efficiency can be considered directly correlated to the level of ownership concentration, as Short says (1994) in several empirical papers.

The idea that ownership concentration has a different impact on the firm's performances as a function of its dimension, is supported by recent empirical evidences: Mc Connel - Servaes (1990) finds a positive relationship in a large statistical sample of listed and not listed companies, while Leech – Leahy - Leahy (1991) find a negative one on a small statistical sample of big listed companies.

It must also be taken into account that there are huge differences in the various countries across Europe in this respect. A balanced structure of companies is a buffer against rapid changes in the economy caused by

cyclical changes (ordinary business cycles) and structural changes (causing altered competitive advantages) of the economy as a whole.

In the literature is underlined the relationship between performance, financial structure of the firm and market of access to source of funding (financial pressure).

The main hypothesis is that “financial pressure” causes improvements in the management accuracy (Jensen, 1986; 1988; Aghion, 1995) in those firms where the development of the corporate governance is bigger (separation between owner and controller, market and controller, informative asymmetry etc.).

It could therefore be interesting to estimate if the positive relationship between financial pressure and firm’s performance has any economic effects: a high financial pressure leads to firms with less performance.

In the international context, the literature on this topic focuses the attention on middle-big firms, listed companies, (Prezioso, 1993a), and can be subdivided in six main branches, through theoretical models that try to explain the determinants of the capital structure and its influence on the process of management decision: i) tax shield, ii) conflict of interests and informative asymmetry costs between shareholders and creditors (Jensen-Meckling, 1976; Jensen, 1986 and Grossman-Hart, 1982), iii) informative asymmetry costs between managers and shareholders, iv) financing strategies as a “signal” of the expected profitability in a context of informative asymmetry (Ross, 1977; Leland-Pyle 1977; Brennan-Kraus, 1987; Noe, 1988; Costantinides-Grundy, 1989; Stein, 1992); v) financial choices oriented by strategic decisions taken in the oligopolies contexts (Brander-Lewis, 1986; Titman, 1984; Maksimovic, 1988); vi) financial choices taken in contest of share raids (Harris-Raviv, 1988; Stultz, 1988: Israel, 1991).

In a situation of market failure, the choice of financing a plan of investment for an enterprise is correlated to the positive gap existing between costs of the internal and external finance (Fazzari-Hubbard-Petersen, 1988). From that, it comes out that the firms with a higher profitability rate and with an high level of liquidity would have to be those with a lower debt/assets ratio. However, the existence of asymmetric information should give rise to a trade-off between the financing strategies to the short and long period. Moreover, information asymmetry finds an explicit realization in the estimation of the risk of the investment plan, such appraisal directly influences the financing choices.

One of the direct consequences of the information asymmetry on the credit market is the equilibriums with rationing. The rationing is the cause of the market failure.

That could be connected to an insufficiency in the structure of information that the enterprise sends to the market (Besanko e Thakor, 1993), so the asymmetric information it’s bigger than the firm’s efforts to reduce it.

The asymmetric information generates rationing also because it modifies the distribution risk-return of the projects, that could lead the credit system to

refuse the supply of capital and generate a divergence between the supply and the demand (Stiglitz e Weiss, 1981).

That of competitiveness it's a typical economic concept. From this point of view it's usually measured as the advantage of the firms as compared to their competitors on both the domestic and international markets, focusing the interest on the macroeconomic level. (World Economic Forum, 1995; Markusen, 1992 and Porter, 1990).

Within the macroeconomic analysis, authors like Lipschitz and McDonald measured the competitiveness of a system in terms of real exchange rate. Helleiner (1989) and Krugman (1994) criticize the assertion of the economy-wide competitiveness, pointing out that a country cannot be competitive in absolute terms but exclusively in average. That should involve an increase of the exchange rate, even if in some sectors the country is not competitive. So, fluctuation in the exchange rates will be compensated by the balance of payments (Lafay,1987).

Anyway, the "*economic-wide competitiveness*" includes the concept of competitiveness as measurable by *cross-countries* performance analysis. Therefore it's important to choose variables able to measure performance in quantitative or qualitative terms. A possibility, generally used, is to analyse the growth of GDP, under the hypothesis of a causal relation between competitiveness and economic growth.

The alternative is to use the concept of competitiveness finalized to understand the competitive relations between firms and industries. It's clear that the macroeconomic conditions, as high level of education, high attitude to competitive market conditions, high level of optimization in the use of natural resources, can influence the competitiveness of specific industrial sectors.

The competitive relations established at micro level essentially manifest themselves through actions tending to offer on the market high quality products and services at the lowest prices as possible.

In this way, the concept of competitiveness is strictly linked to the economic theory; the understanding of the sale abilities is the first objective in at least two fields of the theory: production and exchange.

The theory of the production analyses the process of choice of the enterprises presupposing that they tend to maximize the desired profit according to the technological constraints expressed by the production phase.

The maximization process determines the quantity of goods and services to be sold; as the production will go on until profit conditions exist on the market, then an enterprise will be competitive if it will have an increase of profit. Such definition does not lose effectiveness even if the goal of the firm is to increase the market shares instead of the profit maximization.

In synthesis, the theory says that the profit maximization is correlated to the increase of market shares; so a firm that wants to sell the greatest number of products at the lower price as possible must have an optimal cost structure, or a cost structure below the market prices.

Credit rationing decreases the financial resource of the firm and it can't do new investments, included investments in new occupation (Nickell e Nicolitsas, 1999).

From the microeconomic point of view has a big importance the study of industrial district, and like this typology of territorial aggregation can help the competitiveness of the firms (Prezioso, 1993).

The study of the industrial district has been, always, an eclectic argument of search.

A number of regions have been appointed as industrial districts, mainly because of their growth, competitiveness and agglomeration patterns and certain similarities to the model of industrial district provided by Marshall.

Most references to the origin of industrial districts go back to the economist Alfred Marshall. In Principles of Economics (1922) the development and features of industrial districts, or as the author label the phenomenon "the concentration of specialised industries in particular localities" is discussed. Marshall (1922) stressed not only the business relationships instituted in a local environment but also the importance of undertaking other socio-cultural aspects of this phenomenon.

In his original formulation of the industrial district, Marshall envisioned a region where the business structure is comprised of small locally owned firms that make investment and production decisions locally. Scale economies are relatively low, forestalling the rise of large firms. Within the district, substantial trade is transacted between buyers and sellers, often entailing long -term contracts or commitments. Reading through the lines in the seminal work by Marshall (1922) linkages and co-operation with firms outside the industrial district appears to be minimal. What makes the industrial district model so special, in Marshall's account, is the nature and quality of the local labour market, which is internal to the district and highly flexible. Individuals move from firm to firm, and owners as well as workers live in the same community, where they benefit from the fact that "the secret of industry are in the air", i.e. there is an industrial atmosphere, as he defines it. Workers appear to be committed to the district rather than to the firm, and moreover labour out-migration is assumed to minimal. The district is seen as a relatively stable community which enables the evolution of strong local cultural identity and shared industrial expertise.

All of these features depicted by Marshall in the model of industrial district are subsumable under the notion of agglomeration, which suggests that the stickiness of a place resides not in the individual locational calculus of firms or workers, but in the external economies available to each firm from its spatial conjunction with other firms and suppliers of services.

It is therefore not surprising, after this overview of the industrial model, as elaborated by Marshall (1922), that many disciplines, from economics to sociology and geography, have investigated the topic of industrial districts both in general terms and specific ones.

Many authors don't think that it's important to study the concept of the district beyond the traditional microeconomic approach, that study the dynamic of production units separated from their positioning in the geographic space (the territory) (Prezioso and Renzetti, 1999; Prezioso, 2000). So, the main critical issues are two fundamental questions: i) the distinctive structural characteristics (economic and institutional specialization, relations, organization of firm,) that make of some territorial areas some industrial district; ii) the effects on the firms that make part of the industrial district.

The characteristics that can identify the industrial district (starting to the Marshall concept) are:

- the presence of cooperation and competition elements that reduce the costs of the market transactions;
- the great horizontal and vertical mobility of the workers;
- the presence of opportunity of "exiting" generated from the productive relations and the interactions between the enterprises and the subjects pertaining to the inside of the district;
- the abundance of not material factors of local production (entrepreneurial culture, know how);
- the presence of "social network" in a position to facilitating the flow of exchanges informed to the inside of the borders of the districts.

The presence of these communities that work like a "system" (Prezioso 2000), it would favour as intermediate output the creation of common institutions and cooperatives that can generate a climate of mutual confidence (social capital) whose importance to the ends of the development (Knack-Kiefer, 1997).

The ability to incorporate these characteristics key of the district in models forms them has been until to rather limited in the past years.

In order to completely comprise the topic of the competitiveness, turns out fundamental the contribution of the "empirical literature" that verification the many reflections fate from the cases study to the aim to estimate if valid conclusions for some particular areas can have generality character.

Between the main ones it turns out obtained there are:

- positive effect of the district on the export performance and the foreign market access;
- a negative effect on expenses in research and development of the single enterprises to parity of innovative performance;
- a positive effect on ROE and measured productive efficiency through the methodology of the *stochastic frontiers*;
- a easier access to the credit.

An ulterior aspect of the microeconomic analysis of the competitiveness is that relative to the dimensional impacts, so it is attempted to comprise which relations exist between competitiveness and dimension. Some recent

contributions in topic of industrial economy assert as the peculiar characteristics of the territorial systems can influence in important way on occupational and productive dynamics of the enterprises, in fact, they favour both a greater flexibility and productive and occupational increase of the enterprises.

From the first half of the 70's we assist to a progressive increase of the small enterprise in all the greater industrializes Countries with a deep impact on the structure and organization of the productive system. The under-dimensioning allows to the enterprise not to have support of the "transparency costs" and the "upsizing costs"

By analysing the competition of the productive systems fundamental it is the contribution in literature of Porter. The competitive advantage of an enterprise is described from Michael Porter (1982 and 1991), marking one abrupt breach with the theoretical instruments of the traditional planning and with the methodology of the transition costs. The work of Porter sets the attention on the importance of the territorial dimension in the development.

The true origin of the competitive advantage of an enterprise is the local dimension (or milieu) in which the enterprise is placed. The territory next to the enterprise will define many of the markets of input from which the enterprise must be re-supplied, the information that guide the strategic choices, and the incentives and the pressures on the enterprises in order to innovate and accumulate "know how" or resources in the time. The competitive advantage can reside both in the territory both in the single enterprise (Porter, 1982).

Porter denies the hypothesis of the mutual extraneousness between enterprise and territory, in order to make to emerge one dialectic much more complex: the territory/environment stops of being an objective data, in order to become the "product" of the strategic action of the enterprise.

In his approach Porter places the enterprise and the productive, defining two concepts: the chain of the value and the competitive environment.

An enterprise is something more of the simple sum of its activities. The chain of the value of a company is a system of interdependences, a net of activities, connected from connections.

The generation of the economic value is not a phenomenon that can be determined in an isolated ring of the chain, but demands the coordination and the competition of all the activities, which produce a competitive advantage in force of their complementariness. The economic competition does not happen therefore opposing isolated enterprises, but chains of the value alternatives. The best enterprises create and support the through their ability to improve continuously. The advance for Porter is the process of movement along the chain of the value towards types of advantage more sophisticated .

So the competitiveness it is not limited to the single contenders but it extends to many actors (concurrent effectives, suppliers, contenders upgrades them, etc.) that are situated along the chain of the value and exactly define the

extension of the activities that the enterprise carries out to compete in a specific field.

With the competitive environmental notion Porter recovers in the economic analysis two fundamental elements: history and geography. The history is fundamental in order to comprise dynamics of the forces in game and their development. The competitive atmosphere of an enterprise has changes in the time: changing and intensifying the competitive games and growing the technological complexity, the enterprise if it wants to remain competitive, it must continuously renew the own abilities to control and coordination. Geographically, the competitive environmental has the tendency to extend, integrating and differing themselves, so that the localization strategy is an integrating part of the competitive action of the enterprises.

Porter asserts that the competitive advantage depends by the internal factors of the enterprises, and by the territory where the enterprises are inserted., so the search of the competitive advantage does not have to be separated interacting with the local systems and their actors.

This assertion leads to analyse a fundamental point for Porter: if the advantage the advantage is achieved and maintained through a localized process (Porter, 1982), the reasons of the success of some competitors must be searched in the localize contexts (states, regions) where they operate.

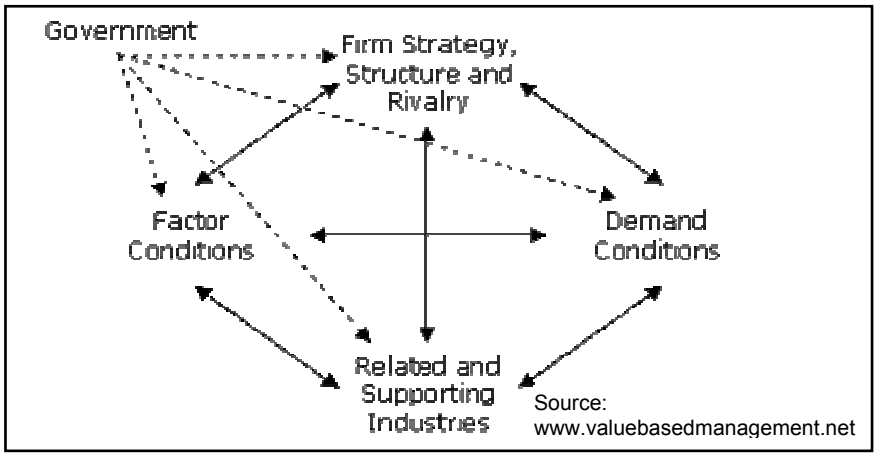


Fig. 2.1: Porter's Diamond Model for the competitive Advantage of Nations

In Porter's studies, this greater role for the territory which competitive element it's emerged from a great champion of industries in ten countries leader in the commercialization. The ability to an enterprise to innovate and to grow depends on four characteristics of the territory (from which the famous "diamond"), geographically not common:

- Strategic localization
- Local demand
- Integration with regional *cluster.*
- Human Resource

Passing from the competitiveness of the enterprises to the national competitiveness Porter transforms its diamond (fig. 2.1) where the fundamental elements are:

a. factor conditions (i.e. the nation's position in factors of production, such as skilled labour and infrastructure);
b. demand conditions (i.e. sophisticated customers in home market);
c. related and supporting industries;
d. firm strategy, structure and rivalry (i.e. conditions for organization of companies, and the nature of domestic rivalry).

a. *Factor Conditions*

Factor conditions refer to inputs used as factors of production - such as labour, land, natural resources, capital and infrastructure. This sounds similar to standard economic theory, but Porter argues that the "key" factors of production (or specialized factors) are *created*, not inherited. Specialized factors of production are skilled labour, capital and infrastructure. "Non-key" factors or general use factors, such as unskilled labour and raw materials, can be obtained by any company and, hence, do not generate sustained competitive advantage. However, specialized factors involve heavy, sustained investment. They are more difficult to duplicate. This leads to a competitive advantage, because if other firms cannot easily duplicate these factors, they are valuable. Porter argues that a lack of resources often actually helps countries to become competitive (call it selected factor disadvantage). Abundance generates waste and scarcity generates an innovative mindset. Such countries are forced to innovate to overcome their problem of scarce resources.

b. Demand Conditions

Porter argues that a sophisticated domestic market is an important element to producing national competitiveness. Firms that face a sophisticated domestic market are likely to sell superior products because the market demands high quality and a close proximity to such consumers enables the firm to better understand the needs and desires of the customers If the nation's discriminating values spread to other countries, then the local firms will be competitive in the global market.

c. Related and Supporting Industries

Porter also argues that a set of strong related and supporting industries is important to the competitiveness of firms and their nationals. This includes suppliers and related industries. This usually occurs at a regional level as opposed to a national level.

The phenomenon of competitors (and upstream and/or downstream industries) locating in the same area is known as clustering or agglomeration. The advantages to locating close to rivals are: potential technology knowledge spillovers, an association of a region on the part of consumers with a product and high quality and therefore some market power, or an association of a

region on the part of applicable labour force. Some disadvantages to locating close to your rivals are: potential poaching of your employees by rival companies and obvious increase in competition possibly decreasing mark-ups.

d. Firm Strategy, Structure and Rivalry

Domestic capital markets affect the strategy of firms. Some countries' capital markets have a long-run outlook, while others have a short-run one. Industries vary in how long the long-run is. Countries with a short-run outlook (like the U.S.) will tend to be more competitive in industries where investment is short-term (like the computer industry).

Porter argues that the best management styles vary among industries. Some countries may be oriented toward a particular style of management. Those countries will tend to be more competitive in industries for which that style of management is suited. Moreover Porter argues that intense competition spurs innovation. Competition is particularly fierce in Japan, where many companies compete vigorously in most industries. International competition is not as intense and motivating. With international competition, there are enough differences between companies and their environments to provide handy excuses to managers who were outperformed by their competitors.

2.2 Policy/programming literature review

2.2.1 Introduction

There is already a wealth of policy-related documentation at the EU level related to the Lisbon and Gothenburg Strategies. This part of the interim report sets out a preliminary overview of some of the most important relevant policy-related documents including the Presidency Conclusions of the Lisbon (2000) and Gothenburg (2001) European Council Meetings, the annual European Competitiveness Report, the most recent report on Economic and Social Cohesion (2004) and the European Sustainable Development Strategy (see Appendix A for a full list of documents reviewed to date). The main focus of the review is competitiveness. This part of the interim report summarises the various definitions, key concepts and indicators to be found in these documents. First, however, is a short outline concerning the significance of competitiveness for spatial development in Europe.

Competitiveness is a fundamental goal of European policy and central to the aims of spatial development policies in Europe. According to the European Spatial Development Perspective, or ESDP (1999), the aim of spatial development policies is to work towards a balanced and sustainable development of the territory of the European Union according to three fundamental goals of European policy, namely:

economic and social cohesion

conservation and management of natural resources and the cultural heritage

more balanced competitiveness of the European territory

The ESDP identifies a variety of ways in which different aspects of territorial development can influence competitiveness. Examples include transport policy, research, training and development (RTD), monetary union and telecommunications. On transport policy, for example, the ESDP states that rising traffic levels, particularly on road and air networks, are threatening the competitiveness of some central areas in the EU.[16] Concerning RTD, the ESDP states that multi-annual Framework Programmes promote co-operation with and between companies, research centres and universities with a view to reinforcing the scientific and technological foundations of industry and its competitiveness on the world stage. On monetary union, the ESDP argues that this will trigger further intensification of EU domestic trade and further specialisation within the EU and will enhance the competitiveness of the EU in the world market. In terms of telecommunication policy, the ESDP states that the development of information and telecommunications networks is an important potential force for closer integration and the promotion of enhanced competitiveness for cities and regions in the EU.

Competitiveness is similarly important for the guiding principles for sustainable spatial development of the European continent agreed by the European Conference of Ministers responsible for Regional Planning, or CEMAT (CEMAT, 2002). According to the document, the development of a sustainable spatial development policy for the territory of the Council of Europe should be based on ten principles relating to more regionally balanced development. The first of these principles relates specifically to competitiveness: development should promote of territorial cohesion through a more balanced social and economic development of regions and improved competitiveness (CEMAT, 2002: p12).

2.2.2 Definitions

According to the Seventh Competitiveness Report published in 2003, competitiveness can be defined in many ways (CEC, 2003a: p130). Thus, there is no single definition of competitiveness: a variety of different definitions exist in the policy/programming literature. Of these various definitions, the most up to date comes from the 2003 European Competitiveness Report. According to this document, competitiveness is understood to mean *"**high and rising standards of living of a nation with the lowest possible level of involuntary unemployment, on a sustainable basis**"* (CEC, 2003a: p6). The 2002 Communication from the European Commission to the European Council and European Parliament concerning productivity ('Productivity: the key to competitiveness of European economies and enterprises') contains a similar (but not identical) definition, stating that competitiveness is understood to mean *"**a sustained increase in real incomes and in the standards of living of regions or nations, with jobs available for all those who wish to***

[16] The 2001 European Transport White Paper states that the Trans-European transport Network (TEN) is an important factor in promoting European competitiveness and improving links between the European Union's outlying regions and its central markets (CEC, 2001: p50)

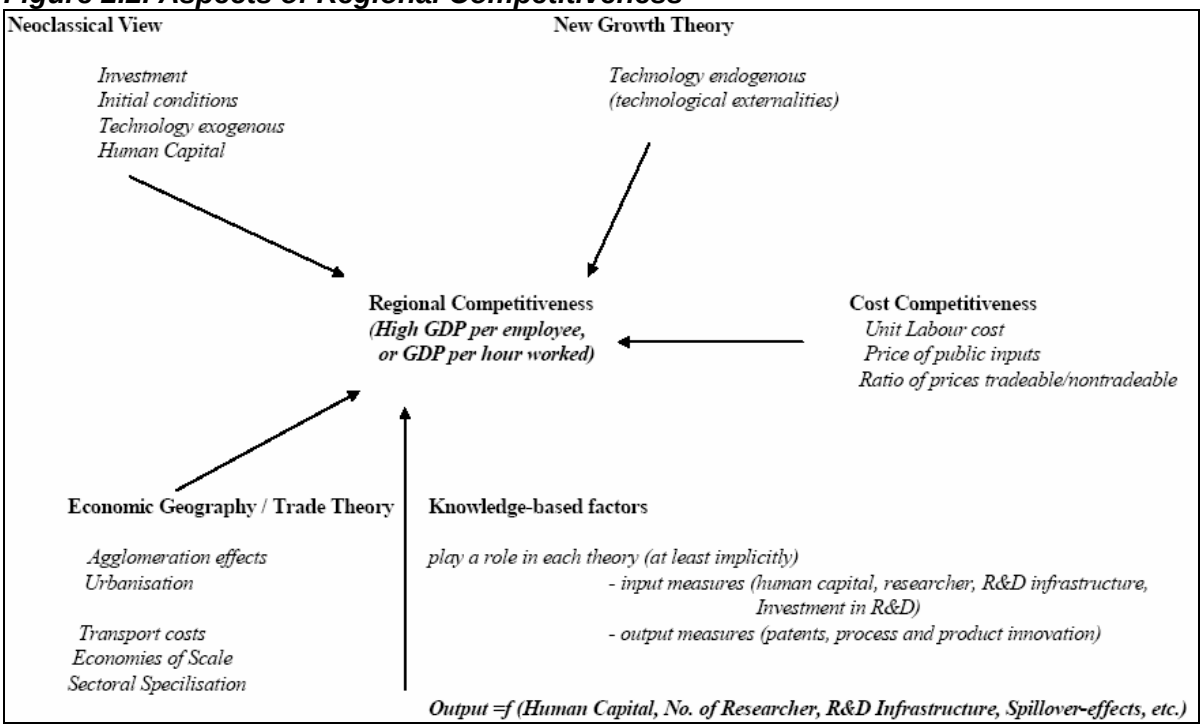
find employment" (CEC, 2002: p.4). This definition, we read, was in fact based on the definition from the earlier 2001 European Competitiveness Report (European Commission, 2001). More importantly, however, it is noted in the 2002 Communication concerning productivity that this concept of competitiveness is different from the narrower concept applying to the *competitiveness of enterprises*: domestic factors are less dominant determinants of the competitiveness of enterprises (see for example Krugman, 1994 for a discussion of these concepts).

The third chapter of the 2003 Competitiveness Report focuses on the *regional aspects* of competitiveness, which is of key interest to ESPON project 3.3 in view of the territorial nature of the project. It defines regional competitiveness for the purposes of the Competitiveness Report in terms of productivity (regional GDP per hours worked), work-leisure balance (total hours worked per employee), the rate of employment and demographic factors (the ratio of the population of working age). The Competitiveness Report identifies many parallels with the study of national competitiveness and certain indicators are likely to be common to both country-level and regional analyses. However, it asserts that regions are different from countries in some key respects. Sub-national regions are part of the national monetary union and subject to common rules governing their international trade, and the degree of price and wage flexibility is generally less than across nations, whereas generally there is full and unrestricted capital and labour mobility. Regions do not have the same set of adjustment mechanisms as countries, and therefore the concept of macro-economic competitiveness cannot be fully applied to the regional level; on the other hand, as part of a national fiscal system, regions enjoy substantial benefits related to fiscal transfers that constitute an important adjustment mechanism (CEC, 2003a: p130). As regional competitiveness shares many features with its national counterpart (competitiveness between nations), according to the report, most theoretical approaches are usually present in both areas of work. Figure 2.2 gives an overview of the theoretical foundations and of the array of factors that can be considered to play a role in determining regional competitiveness. The concepts from neo-classical, new growth theory and cost competitiveness apply equally well to regions as to nations. On the other hand, knowledge and innovation, and localisation/specialisation effects are critical factors in regional competitiveness. These concepts and issues are reviewed in some detail in the 2003 Competitiveness Report and summarised in Box 2.1 below.

According to the 2003 Competitiveness Report, the EU is characterised by substantial regional diversity in wealth, and competitiveness conditions differ substantially across regions. Whilst a process of convergence has taken place, assisted by the contribution of the Structural Funds, this process has been slow and fostering regional cohesion remains a critical policy challenge. The report attempts to analyse regional competitiveness empirically both across regions and across time, although data constraints limit the number of available indicators and the depth of analysis. However, sufficient indicators were available to measure productivity in 15 sectors across the NUTS-2 regions between 1980 and 2000. Similarly, proxies were identified to measure

the importance of knowledge in the regional economy. This analysis suggested a positive correlation of productivity with research and development intensity, specialisation in high-tech activities and the number of students in tertiary education (CEC, 2003a: p11).

Figure 2.2. Aspects of Regional Competitiveness



source: CEC (2003a), p131.

Box 2.1. Summary of theoretical foundations and factors that can play a role in determining regional competitiveness

A variety of general factors affecting competitiveness are suggested by the literature. Neoclassical theory points to physical and human capital as key influences, while technology remained largely exogenous, whereas new growth theory brought technology within the system, suggesting that the accumulation of knowledge could generate increasing returns. Knowledge could be measured as the skills of the workforce, such as education levels or spending on education, or through measures such as R&D expenditure. Theories more in tune with regional economics, such as new economic geography, look at the effects of localisation on productivity. A number of studies link spill-over effects, in particular knowledge spill-overs, with productivity gains. This links ideas from new growth theory with the concept of knowledge spill-overs as important sources of externalities. Work on knowledge and innovation has suggested a variety of relevant indicators. While it is recognised that many of the indicators will be related/correlated with each other, it is necessary to respect a basic idea of causality, i.e. not to explain one output indicator with another. A variety of indicators can be linked to productivity to assess bivariate relationships over time and across regions. Econometric approaches such as the Barro regression rely on explaining productivity growth by a list of factors, including the concept of catch-up suggested originally by neo-classical theory. The list of other factors has gradually been added to by more recent theoretical advances. In addition, new growth theory suggests it is important to test for, and take account of, spill-over effects across regions. Clearly, there are factors suggested by theory as having an effect on competitiveness for which there is no quantifiable approximation. Much of government policy falls into this category, as do indicators measuring the extent of venture capital activity, business registration rates, and the presence of high-tech clusters. Such features can be examined to see whether they are present in the characteristics of those regions which display productivity growth in excess of what would be expected when taking account of the more measurable influences.

Source: CEC (2003a), p137-138

2.2.3 Key themes and issues

Regional development is strongly linked to national and regional competitiveness. According to the Third report on economic and social cohesion, regional development requires favourable national conditions such as a macro-economic environment conducive to growth, employment and stability and a tax and regulatory system which encourages business and job creation. Two complimentary sets of conditions at the regional level also need to be satisfied (European Commission, 2004). The first concerns physical and human capital or infrastructure: material infrastructure in the form of transport, telecommunications and energy networks, and water supplies, for example, and human capital in the form of a labour force with appropriate levels of skills and training. The second set of conditions concerns *regional competitiveness* factors, which includes issues such as innovation, information and communication technologies (ICT), and environmental protection. This set of conditions largely relates to 'intangible' factors that are also related to business competitiveness. They include, inter alia, the capacity of a regional economy to generate, diffuse and utilise knowledge and maintain an effective regional innovation system; a business culture that encourages entrepreneurship; and the existence of cooperation networks and clusters of particular activities. These two sets of conditions are interrelated. The precise focus and the mix of factors which are targeted will depend on the starting

position, the characteristics of the region concerned, the prevailing circumstances, the development path being followed and so on. There is, therefore, neither a unique nor fixed recipe for successful regional development. Regions must to find the right policy mix for their own development path according to their particular economic, social, cultural and institutional features. The importance of good governance for regional competitiveness is also recognised elsewhere in the document (European Commission, 2004: p. xiii).

Reviewing policy literature and assessment reports concerning the Lisbon Strategy helps to identify key themes associated with competitiveness. The two European Council documents produced in 2003 entitled 'Lisbon Strategy Conclusions (Lisbon to Thessaloniki) by theme' and 'Lisbon Strategy Conclusions (Lisbon to Brussels) by theme' provide one source of material to identify key themes associated with competitiveness. These two reports review progress towards the goals of the Lisbon Strategy according to the various themes developed from the structure of the original Lisbon conclusions of 2000 (European Commission, 2003a and b). These main themes include:

- establishing a European area of research and innovation
- economic reforms for a complete and fully operational internal market
- more and better jobs for Europe
- the social policy agenda
- a strategy for sustainable development
- putting decisions into practice: a more coherent and systematic approach

The key issues under each of the above themes are summarized in Box 2.2. Another recent assessment of the Lisbon Strategy, the Centre for Economic Reform's 2004 annual review of progress towards the goals of the Lisbon Strategy, 'The Lisbon Scorecard IV' (Murray, 2004), is a second useful source of material to help identify key themes associated with competitiveness. This report is also based around similar main headings as the two European Council documents produced in 2003 (see above), with the exception of the theme of policy implementation or governance, to which the Centre for Economic Reform's report pays less attention.[17] The five main headings of the Centre for Economic Reform's report are:

1. innovation
2. liberalization
3. enterprise
4. employment and social exclusion
5. sustainable development

[17] 'putting decisions into practice' is the heading used in the two European Council documents to refer to the theme of policy implementation or governance

Box 2.2. Key issues according to some of the main themes in the European Council's review of progress towards the goals of the Lisbon Strategy

Establishing a European area of research and innovation

- the European research area
- the 6th framework programme for research and development
- frontier technologies and biotechnology
- clean and environmental technologies
- defence R&D
- increasing investment in research and innovation
- the Community patent/intellectual property protection
- space policy

Economic reforms for a complete and fully operational internal market

- completing the internal market
- implementation deficit
- energy networks
- postal services
- single European sky
- Galileo
- railways, ports and trans-European networks
- internal market for services
- competition rules and state aid
- procurement
- better regulation / impact assessment
- consumer policy

More and better jobs for Europe: developing an active employment policy

- overall objectives
- employment targets – towards full employment
- high level employment task force

The social policy agenda

- the European social policy agenda
- improving quality in work
- reinforcing social cohesion: the social agenda
- role of the social partners
- corporate social responsibility
- modernising social protection (ageing population / pensions / healthcare)
- promoting social inclusion
- immigration
- equal opportunities

A strategy for sustainable development

- a new approach to policy-making
- the global dimension - Johannesburg
- environmental priorities for sustainability
- combating climate change / Kyoto
- ensuring sustainable transport
- addressing threats to public health
- managing natural resources more responsibly
- maritime safety

Putting decisions into practice: a more coherent and systematic approach

- improving the existing processes and role of the spring European council
- structural indicators
- implementing a new open method of coordination
- broad economic policy guidelines
- employment guidelines
- structural changes – the Cardiff economic process

Adapted from European Commission (2003b)

2.3 From the concept of economic competitiveness to that of territorial competitiveness

According to the guidelines of the Lisbon/Gothenburg strategy, in this work will be compared and assessed the critical contribution of the literature including both theoretical/academic and policy/programming documents) on the theme of the territorial competitiveness, particularly those studies concerning environment as internality of the economic-territorial system useful to the achievement of a competitive advantage.

The regional and national territory is not treated as undifferentiated space of the social and economic action but as a physical place where receive and check the territorial capability of the competitiveness. The ESPON 3.1. project results had already shown the territory as real expression of the R&D's, innovation and education demand and supply regard to production and employment market. Therefore, the territory becomes a parameter to measure virtuous solutions supporting the regional entrepreneurial structure in terms both of environmental sustainability and of improvement of cohesion and integration levels between different territorial actors (institutional and not institutional).

In this framework this work will analyse:

- the role of the territorial context in the international competition at national and regional level;
- the determining factors (as quality, governance, ICT, human capital, efficient use of resources) in improving the territorial performance and competitiveness at different geographical scales (states, regions, cities, metropolitan areas).

A wide variety of forces can contribute to improve the attractiveness and competitiveness degree of a territory in relation to Lisbon/Gothenburg strategy. The main concepts are:

- continuous qualitative improvement
- cultural and social heritage valorisation
- sustainable use of resources (natural, economic, human)
- preventive assessment of policies, programs and projects

The EU Member States need a new territorial competitiveness point of view, that requires a revision of the Porter's diamond.

In such reference context, the research of new structural indicators able to put objectively in comparison European Member States from a territorial competitiveness viewpoint, requires a revision of the Porter's diamond. The diamond's model needs to be updated according to the recent indications from new economics and social models for a new EU respecting Lisbon 2000 and Gothenburg 2001 strategy. On this way it's possible to insert a further star in Porter's diamond, crossing the first, which increase interaction elements to be considered. In adding to the classics elements of Porter's diamond:

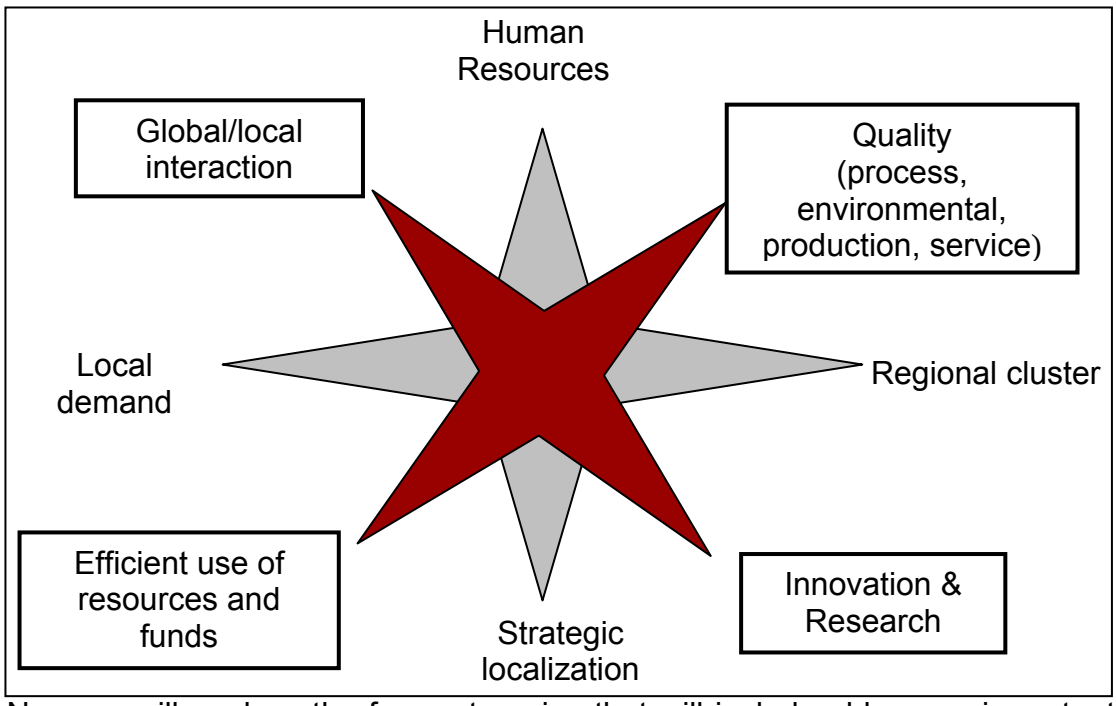
- Strategic localization
- Local demand
- Integration with regional *cluster*
- Human Resource

we can list four additional categories of elements that will include the classic elements, too:

- Global/local integration
- Quality (process, environmental, production, service ones)
- Innovation Technology
- Efficient use of resources and funds

The new scheme deriving from the concepts above is the following:

Fig. 2.1: Modified Porter's Diamond Model



Now we will analyse the four categories that will include old e new important elements for the definition of territorial competitiveness. These categories can be considered like four big containers which arrange in the right way the different elements that concur to the overall definition of a territorial area.

2.3.1 Innovation & Research

Key element in the field of firm competitiveness, the *innovation & research* area is today a capital point in the territorial competitiveness dynamics and, in the common vision, is associated with the technological change process. From this point of view it could be seen as a Schumpeterian process with three moments, not strictly delimited in several cases: invention, R&D and innovation. The model of innovation suggested through some time that only one direction of knowledge exists from research centres to productive sector. Nevertheless, there are other forms of knowledge diffusion and innovation that require more importance to relationship grade between agents besides their ability to capture information and knowledge.

This articulation between agents, and between agents and institutions, becomes an important element to create dynamic competitive advantages, in the formation, transmission and evolution knowledge. This implies that the essential support of productive system is not only this system, but the institutions leagued to available knowledge for firms, the entrepreneurial environment and the productive framework where they insert and act. Thus, the specific location becomes a knowledge generator factor, beginning the local institutions to play a more active role connected to regional impact activities. A new strategy become relevant: that of decentralized politics, with a principal role played to local authority and agents, without forget the interaction with central administration. This space that constitutes an analysis object as a policy target, depends on historical aspects such as preceding linkages, or type of agents and institutions acting with.

Is in this sense initial conditions such as evolution of this space impose conditions to the possibility of actions to perfect the productive environment and the previous relationship system. These actions must consider aspects such as the impulse enterprise and institutions networks and the improvement of entrepreneurial links with universities and technological centres, in the search of forming a local system of entrepreneurs. In short, it must search a system driven by capacity to accede and absorb knowledge to get and improve private or connected activities. Innovation is understood as evolution in learning, where the consolidation of previous knowledge or incorporation of new concepts allows the driving to new competences.

In general terms different types of innovation can be identified, *technical innovation*, related to products and services, technical productive process and service operations. Of another side, the *administrative innovation* related to the structure and administrative direction of the organization, processes and human resources. From another angle it is possible to spoken of *innovations in process*, restricted to the specific type of company in which it takes place and the new *product innovations* that allow to satisfy demand and to expand therefore the market share of the company.

In addition we can define an innovation as *radical* if fundamental changes can be realized in the activities of the firm, but innovation would be denominated *gradual* when those changes are marginal with respect to habitual practices.

Overcoming these various and sectoral definitions the Information and Communications Technology (ICT) can be seen as the contemporary and cross-border expression of the *innovation & research* field.

The Information and Communication Technologies are generating a new cultural revolutions important and driving as those of the past centuries. It's a revolution based on the information, that is expression of the human knowledge. Technological progress today allow to elaborate, store, find and communicate information regardless their format (oral, written or audio-visual) without distance, time and volume limits. It's a revolutions that allows to the collectivity to gain new capacities.

The fast development of the Information and Communication Technology (ICT) has brought about deep changes in our way of working and living, as the widespread diffusion of ICT is accompanied by organisational, commercial, social and legal innovations (Mundula, 2004). Our society is now defined as the "Information Society", a society in which low-cost information and ICT are in general use, or as the "Knowledge(-based) Society", to stress the fact that the most valuable asset is investment in intangible, human and social capital and that the key factors are knowledge and creativity. This new society presents great opportunities: it can mean new employment possibilities, more fulfilling jobs, new tools for education and training, easier access to public services, increased inclusion of disadvantaged people or regions.

So today, the Information and Communication Economy and the connected technologies are considered more and more a positive development engine. Analyzing the ICT impacts in relation to its potentialities in supporting and favouring the territorial development, a wide typological variety of use, access, production, technologies between different territories emerges. These differences are found between customers when income, instruction, sex and nationalities are different, but it is particularly important between developed and less developed regions (Zook, 2000) generating the so-called *digital divide*.

According to this vision, the European situation is not homogenous, neither of unambiguous interpretation analyzing both the upgrades benefits by the new computer technologies and the risks connected with their use in a sustainable territorial development vision.

Looking at indirect effects and productive gain deriving from the use of these technologies, less developed regions appear in a unfavourable position, starting from the issue of the network access. While the technological change is making the network access and the computer use cheaper and cheaper for the populations of the more developed regions, the service is decidedly more expensive for the populations of less developed ones.

Physical access is another constraint to successful and spread of the new technologies. This clue comes from the low rate of Internet use in the less developed regions, also where the physical access is available (Pigato, 2001). The access is bound rather with the high costs (it's necessary to hold a computer), from the contents inadequacy (as example the lack of contents in

the local language), from the lack of familiarity with the means (Nanthikesan, 2000) and from a not really dynamic institutional atmosphere. Moving the attention to relationships between the various regions a further element is to be considered: technologies (alias knowledge) transfer and its possible protection. If we are looking to the relationship between regions with different development degrees it must be pointed out the issue of the so-called Intellectual Property Rights (IPRs), whose adoption has been strongly seeked during the last decade from many developed regions through bilateral, regional and multilateral (TRIPs Agreements) actions.

Such a regulation has opened a burning debate between who thinks that this could lead to a distributive conflict between the “knowledge innovators and producers” and “knowledge and technology consumers” and who, instead, considering the possibility that all the regions may also become -sooner or later- producers of innovation, consider useful for today's less developed regions to protect the own future innovations. If one looks instead to the relationship between regions with similar degree of development, an ICT supplying opportunities of closer cooperation stimulates the mutual learning, so that they concur to realize economies of scale thanks to common investments.

However, if in the past the cooperation asked, in a substantially necessary way, that there were also a geographic proximity, so that the collaboration naturally led to constitute regional and countries groups, today the information and knowledge economy alters the concept of proximity and distance: in place of the geographic distance it’s now relevant how much cohesion exists between regions in terms of development level, professional capabilities, social integration and participation.

The information and communication technologies development allows a growing split-up between spatial proximity and carrying out daily tasks such as work, shopping, leisure, wealth, education, public services, corporate governance, etc.. Consequently some authors foresee a future without cities – at least the cities we know – as they lose their functional meaning.

A common view was that the advanced telecommunications would allow an offices’ ubiquitous localization generating a firm headquarters pullout from the expensive, congested and polluted financial quarters towards more attracting places around the world. However the empirical analysis of Mitchell Moss (1987) about the telecommunication impact on the Manhattan firms already highlighted that these new and advanced telecommunication infrastructures were one of the slowdown causes of the firm transferring far from New York. Adding to this another example related to a different social sphere, it has been thought that electronic communication from home would generate the decline of the high social density urban forms and the decrease of spatially defined social interaction. Despite that, the first communication system by computer with mass diffusion, the French Minitel, was born in the 80’s in a lively and highly populated urban environment and the vitality and face to face interaction of the latter have almost not been modified at all by the new media but contrary improved the social interaction as such as French students used

Minitel to successfully organize protests against the Government. In the first 90's tele-work – that is online work from home – appeared as work way for the future able to support the management of the work activity in flexible time and spaces according to the emergence of the network enterprise overcoming the regional and national borders.

From this point of view one of the most important changes in the telecommunications network market in Europe in the last decade was the movement of the service delivery from the national network towards new carriers that have build a great number of alternative infrastructure at "pan-European" scale. The result is the capability to offer the most part of the services *up to date* directly connecting the greater cities, the financial hubs, the customers and the offices in real time. These pan-European telecommunication networks was become the main road of the information society in Europe and are the infrastructural foundations to deliver competitive services across the Europe.

As the *majors* tend to prefer quick accessibility, high quality and low costs, the localization and extension of these kind of infrastructure have a significant implication for the economic development and for the competitive advantage of the regions and of the European urban centres. Unlikely, for example, a region without accessibility to the infrastructural pan-European network is able to attract economic investments, because unlikely the majors are interested to localize in a such region.

The presence of multiple networks and then a higher competition level in the delivering of the service offers to the enterprises direct access to globally integrated services, higher quality, more protected infrastructure, quicker data communications and (in absence of market bias as cartels, transversal agreements) price decreasing for the service fruition.

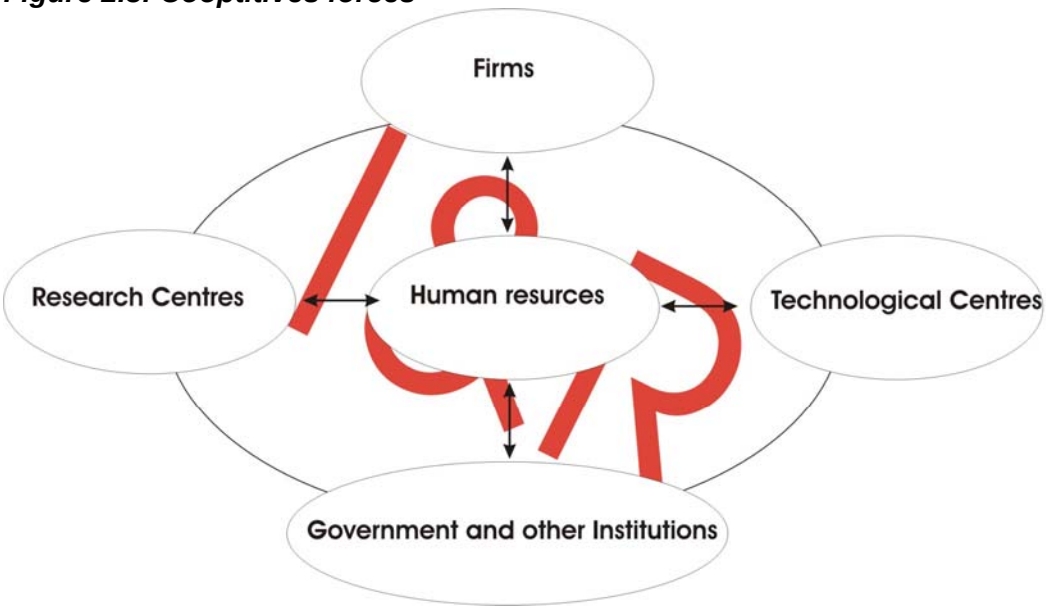
Investment in telecommunication network infrastructures can be seen both regional and urban economic development engine and extremely affordable indicator about the economic development models, so that an analysis of its geographies can be very useful in order to examine the dynamics of the urban and regional development in Europe.

Examining the territorial models linked to the telecommunications it's important to analyze a range of telecommunication technologies and services both to understand the different territorial implications and because these technologies are strictly correlated. Revolutionary systems as the wireless one or the satellite systems, for example, depend on previous investments in fixed network backbone.

These trends highlight new strategies of competitive development of regions that have their centre of interest in the creation of networks of innovators, where institutions, companies and societies related by knowledge influence. In that context, dynamic flows are characterized by their cooperative character as far as the contribution of knowledge. This would constitute a new frame of analysis in the style of the competitive forces of Porter, that in an extended rivalry scheme allow the regions to obtain a favourable or disfavourable result.

In the new frame of analysis the forces are cooperative internally to obtain greater competitiveness externally, which can be denominated cooperative-competitive or cooptitives forces (Fig.2.3).

Figure 2.3: Cooptitives forces



In this scheme of analysis four characteristics can be emphasized at least. In the first place, a normative question of how would have to be those relations. This means that the technological centres and of investigation would have to develop entailments of technical attendance and formation, whereas is necessary that in the companies a disposition exists to generate a new form to act in interdependence with its pairs and the institutions. But in addition, it is necessary that the state generates a frame suitable so that these relations are fulfilled, it is not only say contributing the legal frame adapted but offering stimulus to incorporate and to develop the innovations, reinforcing or generating bonds. Really, we need a state that stimulates the cooptitive relations among other parts of the system besides to generate the own ones.

A second characteristic of the scheme enunciated in Figure 1 is that those relations already are marked by a culture shared between the participants, in addition to the history and the previous entailments generated by the actors. Therefore, the cooptitive forces have a scheme of repeated game in which the participants know history, are had somehow tie in the past and these joints have a particular scheme in each locality or region. So that, if it is had to develop a cooptitive strategy this one cannot be general: it must respect the previous scheme but with conditions that allow the system to evolve, to innovate and to learn.

The third key element in this scheme that arises from the previous ones, is the institutional frame in which these cooptitives forces are developed, that must allow to manage a suitable management of the knowledge that is to be integrated. So that, when we think about the force of the government, one can be asked if the government is the national, provincial or municipal. In fact, the lines of policy arise from the greatest structures. Therefore, if we speech of

financing in great scale, the necessary resources will not be able to arise in general of local governments. But when we speech of management and control of resources, the capacity of action and the local experience become invaluable assets. This means that two levels of institutions exist, one of macro type and one of micro level, where the formal or informal institutions are integrated allowing the integration of all the relations of the scheme.

The fourth fundamental characteristics is the skill level of the human resources available.

The changes in the structure of professions may be a better (more immediate!) indicator of structural changes of the economy than the changes between economic sectors. E.g. the ICT-sector was in its initial phase more easily recognisable through changes in the professional set-up than through sector indicators.

Since early twentieth-century, Max Weber highlighted the central role of social networks as driving forces to information circulation and trust improvement with relevant economic consequences in terms of development because of their capacity to promote exchanges.

Even if Weber did not use the term *social capital*, actually he used the idea of "social networks" as tool able to influence the economic development of a region. Social capital can be regarded as the social relations set at single or collective subject' disposal in a certain time (Trigilia, 1999) .

Through social capital a region improves its knowledge resources such as informations, skill, trust that allow to the different players to realize targets otherwise not accessible. Moving from individual to aggregate level it's possible to say that a certain territorial context appears rich of social capital depending on individual or collective resident subjects involvement in relationship nets. "Social networks" is so composed from a range of relationships between structural variables and immaterial-relational variables that together concur to define human resources quality.

This link with human resources quality implies sharing of a common language and basic knowledge that allow to best exploit technologies and codified organizational structures (Becattini e Rullani, 1993).

From this point of view *social capital* can be regarded as local resource able to favour local development and, compared with the past, improves the possibility of territorial players to pro-actively influence the development process.

The latter does not depend on incentive forms or other costs advantages attracting foreign enterprises but on the capacity to use social capital to develop a knowledge and skill set as guarantee for the future of the region. Social capital is so able to improves specialization external economies and to root knowledge in a certain local context.

In terms of competitiveness social capital quality of each territorial system is a strong driving force. Enterprises will be actually more attracted from region

where cooperation forces had produced a strong concentration of skills, sub-furniture networks and other specialized resources.

Interventions supporting social capital within UE, such as FSE, becomes over and over strategically important so that most competitive regions at international level are those supported by a strong cooperation between social actors, by a high education level and by a balanced employment structure.

The picture of UE we are facing (by 2025) is a scenery of population mostly composed by people aged between 50 and 65, with higher level in Italy, Germany, Austria, Greece and Spain.

This trend necessary involve a widespread decline in working-age population accompanied by a marked shift in age composition, so that population aged 50 to 64, many of whom are no longer working, will account for a growing share and young people coming into the labour market for a declining one[18]. From a certain point of view, in order to face this situation, it becomes necessary, both economically and socially, to increase long time employment (for instance reducing early retiring and enforcing older people training); from the other, it becomes essential to invest more widely in physical and human capital, in innovation and ICT to boost education, productivity and employment.

As a matter of facts, it is not possible to increase younger population in short term; the stability among people age bands, that may assure individual primary needs to be satisfied, will be obtained by achieving a high level of employment in future years, supported by economic growth. This is the solution even to avoid the arising of social tensions in a scenery where young people are working to support older population in a ratio of 1 to 4 and, by 2025, of 1 to 3.

We even have not to ignore that a wide disparity in output, productivity and employment persists between countries and regions, so the previously described situation would probably exacerbate more firmly in such already disadvantaged peripheral regions.

The quality of human resource so meant, must be obtained both in vertical than horizontal direction, including different age classes and different regional origin of population: people need to be able to access education and training, and in consequence employment, in order to develop their capabilities wherever they live equitably.

Strengthening regional competitiveness throughout the Union and helping people to fulfil their capabilities will boost the growth potential of the EU economy towards the common benefit of all population. Guaranteeing a more

[18] By 2025, those aged 50 to 64 will account for 35% of population of working age in the EU15 as against 26% in 2000. In Italy, the share will rise to 40% and in Germany, Austria, Greece and Spain, to 36–37%.
In the accession countries, the increase is projected to be smaller but still significant, the average share rising from around 26% to some 31%, but to 34% in the Czech Republic and 36% in Slovenia (Third Social Cohesion report).

balanced spread of economic activity will reduce the risk of bottlenecks when growth occurs and lessen possibility of inflationary pressure to cause a premature stop of growth. It will equally make it easier to sustain the European model of society and to cope with the growing number of people above retirement age consequently maintaining social cohesion.

In order to prevent unemployment (and support the integration of the unemployed into work, too), there is a need to offer personalised services to job seekers in the form of guidance, training and new job opportunities. The '**Education and Training 2010**' programme tries to answer this requirement. It must even be stressed that in the accession countries skills obtained from further education and initial vocational training are not necessarily in line with labour market needs and curricula and teaching structures are not well adapted to the modern economy: it have especially to be taken into consideration in a revision more focused of European education system.

A high level of education and the provision of a high standard of training, which is accessible to people throughout their working lives, are keys to strengthening innovative capacity throughout the EU and to the attainment of the Lisbon objective of making the Union the most dynamic knowledge-based economy in the world.

Education and employment can be reinforced even through the wider recourse and diffusion of new technologies, like e-learning and working from home for instance. This is tightly connected to infrastructural endowment and connection costs (that seems to be becoming more accessible in short terms by the **e-Europe** programme that provides competition in internet access services and diffused use of e-government, e-learning, e-business and e-health by 2005), as well as basic educational of PC use. The example of last years United States economic and production growth due to a larger use of ICT seems to encourage this kind of politics in EU too and seems to be the key factor of economic recovery and competitiveness.

2.3.2 Global/local interaction

The appearance, on the international scenario, of broad competitive templates among urban areas, or of smaller territories, represents an important phenomenon of the actual socio-economic development of the modern competition. States, at all different territorial levels and at all dimensions, are trying with a growing attention, to achieve some strategies aimed at exalting the present and potential inclinations of the above-mentioned territories, as well as strategies, that can lead to the diversification of the competitor areas.

If the will is that the local does not turn into localism but becomes a success factor to the territorial competitiveness, many efforts must be paid in order to create the best conditions of attractiveness of economic activities that bring new wealth or that support the development of the existing ones.

The ability of the local dimension to get linked –without disappearing because of that– to the system of the global relationships implies the necessity to recognise and safeguard the local differences and peculiarities as an answer

to the globalisation processes. The territory, along with the precise analysis of the indissoluble bonds between the geo-morphologic characteristics of the locality, the settlement models, the systems of relationships, the production specialisations, is now the starting point to relaunch development processes where “how” be not necessarily placed before “where”, which should, instead, be based on an original mix of both concepts.

What is now happening in the typical productions sector, above all where the concept of “intrinsic quality” –related to the production place, the productive cycle and its results in terms of marketable goods– certainly prefigures an alternative to the undifferentiated universality of mass production, even though at this moment this seems to get winning only in particular market niches. Niches that are probably destined to grow, rewarding, though, only those production places that were able to early show up to the attention of the public, thanks to the availability of particular material or cultural resources.

The dynamism of the territorial competition is fostered by actions that tend to build a revised environment, starting from the peculiarities and resources of each territory. New actions are set up and combine economic and social dimensions, attention to growth and sustainable development, public with private domain, technologies with knowledge. Their strength precisely lies on that mix that fits for different formulas in different countries.

This implies, on one hand, the engagement to fertilize the territory, increasing the value of the relations system of the area, on the other hand, to turn that system into a platform that involves greater openings towards the global dimension.

Therefore the territorial competition lies on the connection between local territory and global market that is supposed to foster the implementation process of the Lisbon strategy, but without “blocking” it on the common belongings of the local stakeholders, and also without overlapping their paths with the adoption of models pre-constituted far from the internal characteristics of their territorial systems.

The continuous reference to local dimension and global dimension constitute the background for one of the matter that draws the competitive development of a territorial system, that is to say the link between the endogenous knowledge, that rises from the direct experience of the relevant stakeholders, and the “codified” knowledge, that allows the access to the global networks and the exploitation of its languages. It is clear that the two forms of knowledge do not correspond exactly and may clash in terms of contents and professional/training experiences. The point, instead, is that they must get used to coexisting, because, on one hand, the implied knowledge of experience is not only a surviving of the past and, on the other hand, the codified knowledge is not only something that standardises language and communication. Each one is, on the contrary, necessary to the other because:

The knowledge coming from experience exploits resources available “for free” in loco, like traditions, local culture, relationship based on personal familiarity

and mutual trust, and that is what makes the local dimension being distinct and recognizable;

The codified knowledge allows leaving the local system and interacting with external persons since it turns communication into well-known codes, independently from the background

The connection global/local is given a clear-cut role within the model of a European Area, and for this reason the abovementioned systems within the European debate are considered as (Prezioso, 2003):

place of cohesion and development;

motor for the definition of a shared model of sustainable growth;

points of benchmarking for the setting of integration tools

As for the territorial systems, the threat is to interact with the networks of the global economy without prejudice to the experience acquired at local level. So the degree of local/global integration depends on several factors that vary from the possibility of physic and virtual accessibility, to the level of exchanges of goods and services (import/export) and cultural exchanges. Measuring the degree of local/global integration will involve a multi-factor analysis relevant to the following links: Society, Firm Internationalization, Strategic Localization.

The globalisation of the economy can also be grasped by two pairs of concepts: *intangible/tangible* and *immobile/mobile goods*. The production of mobile goods are escaping from high cost countries to low cost countries, which means that the share of the immobile sector grows in relative importance in accordance with the advancement of the economy. E.g. the land –related sector has reached a 40 percent share of the GDP in the economically most advanced countries. Thus the share of the immobile sector could be taken as a sign of economic advancement.

Intangible goods constitute an increasing share of the GDP in advanced economies, and the value added by intangible goods to the imported tangible goods from low-cost countries forms a major part of advanced economies. This reflects of course a deepening division of labour (and wealth) between advanced and less advanced countries and regions. Low cost countries produce tangible goods, which are valorised by intangible measures in the advanced high cost countries. Thus the share of the intangible part of the economy may indicate economic advancement.

The global/local connection at social level aims at measuring the social aptitude for the development of interchanging materials and/or virtual relations towards the outside. A closer connection of the local society with the global dimension will be brought out from counting an increasing number of Erasmus students, an increasing number of immigrants, having a major opening to the cultural exchanges in general. From a virtual point of view, the more internet users will be and the more internet contacts people will have, the more the social interaction will grow (number of contacts internet sites/overall contacts).

Since the internationalisation of the enterprises represents a bridge between local economy and external markets, it fosters the productive coordination of both enterprises and territorial system of which they are a part. Increasing the number of goods produced and sold (beyond local and national boundaries), comparing it with external competitors, brings, on one hand, a revitalization of the economic and financial cycle and of the territorial system and, on the hand, a growth in the efficiency of management and in the quality in the production.

The internationalisation becomes, by consequence, one of the essential key for competition.

Even though we should remind that the economic-manufacturing system, often oriented towards the internal and local demand, is often much characterized by a small entrepreneurial size, measuring internationalisation means investigating and evaluating the signs/efforts made by the Small and Medium Enterprises (SME) system aimed at optimising and exploiting the existing production in the global market.

Therefore the global/local connection at enterprises level will be measured by their recorded degree of internationalization, the market quotas they acquire, the structural financial system (types of financing) they refer to.

2.3.3 Quality

The present socio-economic framework shows that the term “quality” is employed as index of assessment of life aspects which people has to face day by day: from the products they buy, to the environment they live in, as far as to the job they do. The widespread use of this word in the current language is important to understand how the concept of “quality” has become part of the common knowledge.

“Quality”, in fact, has always been playing a key role towards the achievement of an effective competitiveness within the economic system, also by involving “playgrounds” sensible to any possible changes as, for example, public administrations and services to the citizens.

Despite the concept of “quality” represents the main objective of all present socio-economic activities, there seems to be a little uncertainty on its actual meaning. To this end, international provisions play an important role either for terminology, or for models to be adopted to implement quality at the different scales that constitute the basic elements of the territorial system.

The European Union has contributed to the territorial policies by paying particular attention to quality: from the quality of the environment, to the quality of the production processes and from the quality of life, to the quality of cities.

While in the 40’s and 50’s the environmental concerns were concentrated on the negative impact of the demographic growth (non-renewable natural resources and food production), in the 60’s and 70’s (Conference of Stockholm, 1972) the attention spread out to the production and consumption sectors (air and water pollution, waste disposal, use of plant protection

products and radioactive waste removal). Finally, in the 80's and 90's, the new dimension of global change came forward, including earth warming, ozone layer reduction, biodiversity, deforestation, migration fluxes and new and emerging diseases (Conference of Mexico City, 1984; Conference of Rio de Janeiro, 1992; Conference of Cairo, 1994; Habitat II, Istanbul, 1996; Conference of Kyoto, 97; Johannesburg, 2002).

In this context, Europe should strongly reaffirm its commitment in the environmental matters, with particular attention to those big issues and environmental factors usually generating a bad effect on the poorest countries and on the weaker segment of population such as air pollution, illegal export, waste disposal, water pollution, depletion of natural resources, health and quality of life, security and wellness of people.

The recent review of the environmental policy, which has been examined in the framework of the European Council at top policy levels and included in the Lisbon strategy of the EU, has contributed to a rebalancing of the social and economic policy gap.

In the Spring 2003, the European Council itself stressed the need of an unbiased compromise between economical and environmental interests in order to offer favourable conditions to both these factors since "stronger environmental provisions can help generate new economic opportunities and encourage the development of new technologies".

The review also highlights the three main cross-cutting objectives of the environmental policy: integration of the environmental criteria in other countries, implementation and information. For better governance and an effective implementation of policy initiatives, information on the environment should, in fact, be more accessible to the public and all interested parties should get involved in the elaboration of policies.

The environmental policy must face important challenges, such as climatic changes and the loss of biodiversity (transnational issues), which cannot be met globally by means of multilateral cooperation agreements. At the same time, a better quality of the environment in the industrialized countries should not be achieved to the detriment of the developing countries, by the delocalisation of polluting industrial works in countries lacking of a strong political and governmental control. This should be pursued in order to avoid further environmental damages as well as a concrete menace to the health of workers (environmental dumping).

The connection between environmental degradation and poverty also arouses strong interest. In this context, a sustainable management of natural resources should be indispensable in order to avoid a spiral of poverty.

The categories taking greater advantage from environmental policies usually are represented by the poorest segments of the population living in areas affected by quality air problems and by a clear degradation of the landscape.

The scientific debate in response to the environmental issues lays emphasis on topics related to poverty, health and security as a consequence of the environment degradation.

The big urban areas represent the critical point of any strategy aimed at achieving objectives of sustainable development, as they present the widest range of environmental problems with obvious side effects on people's health and quality of life. Big cities are not self-sustainable and depend on the surrounding territory also for watering and energy. Moreover, they increase their dependence by increasing consumption and waste and by an irrational use of resources.

Waste management and noise pollution represent the main environmental emergencies of big urban areas, even though the worst problem seems to be represented by air pollution as a result of traffic congestion.

The need for an homogeneous response to the big themes involving the relations between infrastructures, environment, health and security of the population seems to grow stronger and stronger (exposure to electromagnetic fields, noise pollution, new technologies integrated in mobile phones and electric energy supply).

In particular, the negative effects of noise pollution on the population exceed all standard levels accepted by OMS.

Environmental problems are the result of human actions directly connected to the people's dimension, growth and distribution. A particular type of pollution, for example, can be ascribed to the growth of population or, in the richest economies, to the expenditure per capita. Other types of pollution instead, such as the emission of chlorofluorocarbons damaging the ozone layer of the planet, can derive from particular technologies rather than to an overall demographic or economic growth.

Environmental problems, concentrated in those countries characterized by a fast growing population, are not necessarily the result of such increase; on the contrary, the deterioration of the environment is more often brought by social and technological driving factors.

Environmental topics therefore represent an important matter discussed at national and worldwide level as they involve complex and manifold situations "*Resources of common property form that precious natural heritage that cannot be [...] reduced to a private property. The atmosphere, waterstreams, complex ecological systems, vast landscapes and the electromagnetic spectrum represent a concrete example"*(Knesee, 1977).

At the same time, the development of a concept of "quality of life", should be intended not only as an economic process, but also as a human process, and should lead to the definition of policies, actions and guidelines for a competitive development of the territory not only for the New Member States, but also for those already belonging to the EU.

The unit of measurement of the progress of society is usually given by its potential and effective capacity of generating economic wealth, a concept

hardly ever facing the problem of the distribution of such wealth to the entire community.

The significance, assessment and evaluation of the quality of life leads then to a radical change and to a definitely wider idea of development.

A definition for “global development” is an essential element to carry out an analysis on the “quality of life” which cannot exclude crucial and deep considerations on human values, on the nature of people, on the distribution of wealth, income, power and security. Unfortunately these ideas not always fall into economic considerations.

In this context, scientific and technological innovations ensure the presence of an efficient and effective economic system (solidarity, creativity and high quality standards of life).

By estimating and evaluating all the elements required to “qualify” life standards we are able to obtain a fundamental contribution towards the completion and integration of a sustainable development perspective.

Everyday experience teaches how some human factors are essential to the implementation of social and economic relations. Among these, it is important to stress the role of solidarity in the implementation of many economic activities carried out on a voluntary, disinterested basis or simply for a sense o loyalty towards specific groups of people.

Such means are used to highlight the causes of discrepancy between economic and social wealth so that an increase in the GDP product does not necessarily correspond to the same growth in the social wellness. The most paradoxical result of the assessment of the quality of life leads to the fact that economic growth, in terms of GDP, incomes and costs, compared to social wellness, employment/unemployment, justice/injustice, corruption, criminality and discrimination, are almost never the same thing. This statement could be advantageous for the business and economic sectors as well.

The indicators for the quality of life can play an important role in the political debate, above all for what concerns the validity, efficiency and effectiveness of the same political actions aimed at development.

They can therefore act within a wide spectrum as a critical element both in the planning, implementation and operation phases. In this way it is possible to consider the consequences of the actions taken in the economic sector, in the territorial planning and in the social policies and, at the same time, also consider the effects on the social and environmental domains as a result of the activity of policy makers.

This has to be considered as an essential element in the framework of a global vision of sustainable and competitive development.

It should be stressed that a mere “knowledge” is not a sufficient requirement able to guarantee an effective progress and increase of the quality of life. Without this “knowledge”, somehow institutionalized and included in the decisional processes, in fact, the construction of the bridge combining

economic and social progress, which is at the basis of a global development, seems impossible.

From the enterprise point of view the topic of quality has been highlights as crucial element in terms of competitiveness achievement. In the last years this topic is moved from the "simple" certification (as ISO or EMAS) obtainment towards the social responsibility field and *Corporate Social Responsibility* (CSR) today has seen an useful instrument for the achievement of cohesion and competitiveness discussed, above all in the EU, starting up the Lisbon and Nice conferences in 2000. Thanks to the initiatives of the European Council, UE found in the *Corporate* and sustainable development. In particular, the interest shown by the European Council has been put into practice with the drawing up, on July 2001, of the Green Book: "To promote an European framework for the enterprises social responsibility" (COM 2001/366) with the aim to centralize the dichotomic debate between ethics and economy on the topic of the enterprises social responsibility. The Green Book defines the CSR as "the integration on voluntary base of the social and environmental problems of the enterprises in their business activities and relations with the other subjects".

Therefore, the social responsibility is a determining factor to meet, within 2010, the already cited strategic aim fixed by the European Council of Lisbon: to make the European Union "the most competitive and dynamic knowledge-based economy in the world, capable of sustainable economic growth with more and better jobs and greater social cohesion".

From a survey carried out by the European Commission, it emerged that, for many stakeholders, an ethically responsible behaviour of the enterprise is the only condition to obtain a "social acknowledgment", concurring to obtain a durable business success with the enterprises that have invested in the social responsibility.

The SME's, are also aware that an operational management carried out in such way as to strengthen the economic increase and their competitiveness without damaging the environment, without escaping from the own social responsibilities and without neglecting the interests of the consumers, can contribute to the sustainable development catching up therefore a durable competitive advantage.

The issue of the CSR, and more generally of Social Responsibility, is therefore strongly integrated to the process of sustainable development. But it is necessary to characterize some guide-lines in order to guarantee the coherence of the social responsibility with the principles that control sustainable development.

In fact, ethical principles as subsidiarity, cohesion and integration constitute valid support instruments for the community political development as well as inspiration sources towards innovation, improvement of the employment quality, safety of the workers and workplaces, integration of social and economic development, transfer of best practices and mainstreaming policies

(Communication by European Commission to the enterprises social responsibility, Brussels, 2.7.2002, 347 Com 2002 Def.).

In conclusion, there is an increasing attention to the topic of the Social Responsibility both in addresses supplied to European level, and in requirements of citizens and enterprises, but only relegated to the business field.

So, it seems that the hypothesis of a (re)interpretation in territorial terms of the Corporate Social Responsibility, so transformed in a Territorial Social Responsibility, is a good one, that also highlights the relationship with a particular approach to sustainable territorial planning.

2.3.4 Efficient use of resources

The concern that an inadequate management of resources is going to become one of the main hindrances to the sustainable development in the next decades, is spreading more and more. Resource shortage is a problem which is shared by several territorial systems. The diverging necessities towards available resources are the object of conflicts between human, economic and environmental needs.

In the last 50 years, world population has almost doubled, with a considerable increase in the world consumption of resources which, for some of them as in the case of water, has quadrupled.

In OECD countries, the amount of consumption of many natural resources does not meet the standard quality criteria, so that the resources undergo a continuous deterioration[19]. In the past years, the economic growth paradigm brought about an increase in overexploitation of resources and pollution, while the lack of suitable financings represented an hindrance to the maintenance, improvement and increase of use of renewable resources, against non-renewable ones.

By changing the paradigm –from growth to sustainable development– many OECD countries have now to face issues of expenditures sustainability and of effective use of resources.

The European Union is already on the way towards sustainable development since a long time, realizing that this goal is not an unattainable one at all; indeed, there should already be present the potentialities to turn into this road, in some countries more easily than in others. As the concept of sustainable development is connected to that of the efficient use of available resources, it is obvious that the former cannot be pursued regardless of the way the latter are managed and used. Within territorial competitiveness, an important role will be played by those territorial systems that earlier and better than others, actually steer towards sustainable development through an effective policy in the use of resources (natural, economic and human).

[19] As an example, water bodies are more and more exposed to pollution from fertilizers and pesticides, as well as to contamination from heavy metals and persisting organic pollutants

In the last decade there have been improvements, even significant, but not yet sufficient in order to abandon the old-fashioned and un-sustainable way of the mere economic growth; improvements not yet sufficient, either for the economic-social quality, or for the environmental one and of the consumption of resources.

Notwithstanding the progresses made, elements of resistance against the perspective of sustainability do emerge in some territories, which threatens the positive changes undertaken by the UE policies. Therefore territorial competitiveness also moves along the " environmental policies- efficient use of resources" axis, which has become a key factor for the development in UE quality as a product of the integration of economic-social and environmental policies.

This integration shows rather relevant difficulties in instrumentation and implementation. However, it represents, the only proposable horizon for a fairer development and a higher economic-social welfare level of the collectivity.

Sustainable development promotes an equitable access to the resources, a high quality of welfare, decreasing the pollution within the carrying capacity of the ecosystem, reducing the consumption of resources within the limits of renewability and long term availability.

It is clear that our planet does not have the physical capacity to support the levels of consumption of the past. Amount and quality of consumptions in the more industrialized countries, are, on the average, much too high, both in terms of energy consumptions, and of materials consumption, producing excessive wastes and too much pollution.

For this basic reason, the efficient use of the economic, social and environmental resources, end up, by now, with being strongly interlaced. The quality in the use of resources is fundamental. A development that damages the environment and consumes too many natural resources cannot be durable. A development that does not have a perspective of durability, or that is not founded on an efficient use of limited resources is a low quality development both economic and social, therefore not sustainable.

Such three "efficiencies" in the use of resources: social, economic and natural, that operate separately and sometimes in contrast between them, must, instead, operate in synergy, catching up the best performance in an integrated way.

In this work, the three typologies (use of the economic, social and natural resources) and their synergies constitute the base for an indicator of sustainable development, as well as of territorial competitiveness. Measuring the competitiveness of a territorial system / country system along the axis of the efficient use of resources, is not an easy task; we must, in fact, take into account that the management of resources is a complex one, where many factors come into play. The resources to be managed, as already stated, are manifold and belong to the three macro categories defined above.

What should be meant by "efficient use of the resources"? If on one hand the measurement turns out to be simpler for the natural resources because an "efficient use" of them is linked to consumption or –better– to its reduction (consumption of oil, water, forests, etc), the story gets complicated when passing from the natural resources to the economic and human ones.

What does "efficient use of the human resources for the territorial competitiveness" mean? For sure, in a company, the efficient use of human resources means their best possible arrangement in the productive staff, that is to say the allocation which maximizes the productivity of the single resources. Passing from the enterprise to the territory, the efficiency in the use of the own resources and its measurement is not trivial, first of all because we risk to link the quality of the use to quantitative variables. The use of quantitative indicators turns out to be useful but not sufficient in order to measure the degree of use of human resources in the productive territorial fabric, so that we must take into account other indicators (productivity for worker) or combinations between two or more quantitative indicators, in order to obtain a more reliable estimation of the quality of use of "human capital" in the production processes of a territory.

Moreover, territorial competitiveness cannot leave out from consideration the degree of efficiency in the use of economic resources; this measurement requires an analysis of the economic/financial situation of the territorial system under study. Indicators like public deficit, the ratio debt/GDP, the inflation, are generally used as a measure of the level of "good practice" of the government of a Country, but if one stops the attention only on these indicators (of economic/financial stability) the result will not be exhaustive at all, aiming at a measure of the "good use" of the economic resources in the frame of competitiveness growth. In addition to that on these indicators, the argument must be oriented towards a quali/quantitative measurement of the phenomenon. At the UE level, since several years, surveying and statistics on the use of the Structural Funds in terms of effectiveness, build up a path of study/analysis that can be run through again and with a wider approach, in order to reach an evaluation of the contribution of the economic/financial resources (National Funds, Structural Funds, Cohesion Fund, etc) aimed at the sustainable territorial development and the growth of competitiveness.

The 2000-2006 European financing of programming documents (e.g. in Italian objective 2 regions) and operative plans (e.g. in Italian objective 1 regions) have already been engaged with different modalities and times in the various European regions since two years from the aims of the VI UE Framework.

Concerning the structural funds, in the field of productive activities - that represent the triggering factors for local territorial development (industry, handicraft, business, tourism, technological innovation, industrial search and advanced services to the enterprises) - investments and projects for the territorial restructuring have been activated: infrastructures to support cultural goods development, tourism and business; projects for the traditional and transitional productive areas; infrastructures for the social transports, services and employment services, information society.

Those investments are different in the European regions, but the objective is common – in addition to the infrastructure demand for the less favoured zones - to win the challenge of the European competitiveness, creating the favourable conditions and environment to the birth and the development of the local identities, cultural heritage, local enterprises, heading for the control of the environmental risk factors, the quality of the products and the processes, not forgetting the territorial sustainable development. Considering that European regional development policy doesn't allow any localisms, it needs to look at the endogenous competitiveness factors, stressing the use of the technological innovation and the environmental certifications (UNI EN ISO 14000).

In the communication Com. 2003 n.26, the European Commission characterized and pointed out the main measures that the European Union will have to adopt in order to improve the competitiveness of the local productive systems and the SME's. Particularly, the small firms will have to act on international markets considering the recently occurred enlargement (10 new countries):

to intensify the exchange of the best practices;

to instil in the young people the entrepreneurial spirit (spin-off);

to create one entrepreneurial culture in the new income countries;

to place small and medium firms development in "pole position" in every UE policy.

The project intends to inquire into the state of the art in "old" and "new" EU countries (particularly objective 1 ones), in order to understand if and how it is possible to promote a local "bottom-up" development that watches to a "global" competition through the community financial instruments for the regional enterprise competitive development (FESR).

The project also intends to put into evidence how the enterprise value line (Porter, 1986, 1990 and 1998) can be assimilated to an interdependence system planned following the principles orienting European policy The strict relation that links competitiveness and environment cannot be limited to a single competitive enterprise in a general market, but it extends to the territory, that supports and delimits the domain of activities that the firm carries out to compete in a given productive sector (Prezioso, 2000).

3. REVIEW OF INDICATORS AND DATA NEEDED

The main indicators for monitoring the Lisbon and Gothenburg Strategies presented in the 2004 report from the Commission to the Spring European Council (CEC, 2004), are also grouped according to five similar themes, namely:

1. employment
2. innovation and research
3. economic reform
4. social cohesion
5. environment

3.1 Examples of indicators

The subject of indicators concerning the Lisbon and Gothenburg Strategies, and competitiveness in particular, has been intensely discussed since the agreement of the Lisbon and Gothenburg Strategies in 2000 and 2001. At the European Council meeting in Lisbon in March 2000, the European Council invited the Commission to draw up "*an annual synthesis report on progress on the basis of structural indicators to be agreed relating to employment, innovation, economic reform and social cohesion*" (Council of the European Union, 2000: para36). At the end of 2000 at the meeting of the European Council in Nice (December 2000), the Council welcomed the list of structural indicators to be used to draw up the synthesis report. A small number of indicators were to be selected by the Council before the European Council meeting in Stockholm (March 2001). In June 2001, at the meeting of the European Council in Gothenburg, the council welcomed the adoption of various key environmental indicators as a supplement the social and economic structural indicators. At the meeting of the European Council in Laeken in December 2001 it was agreed that the structural indicators were used to assess progress and focus activity relating to the Lisbon and Gothenburg Strategies. According to the report of the Laeken meeting, the adoption of these structural indicators "*will make it possible to see more clearly how each Member State is performing*" (Council of the European Union, 2001: para22).

In the statistical annex to the 2004 report from the Commission to the Spring European Council (CEC, 2004), indicators for monitoring the Lisbon Strategy are presented according to five main themes and summarised in Box 3.1 below. The 'Enterprise Policy Scoreboard', a monitoring instrument within the framework of the open method of co-ordination adopted at the Lisbon European Council in 2000 (CEC, 2003b). The Scoreboard provides information about the performance of countries in specific areas and the data allow comparisons across countries and relative to the EU average. Through its annual publications, the Scoreboard facilitates assessment of progress towards the Lisbon Strategy's goal of improving Europe's competitiveness by

2010. Values of indicators are normalised by calculating indexes, whereby the EU-15 index is 100. Indicators are grouped according to 8 main themes (see Box 3.2 for the list of indicators):

1. Access to finance
2. The regulatory and administrative environment
3. Open and well–functioning market
4. Entrepreneurship
5. Human resources
6. Innovation and knowledge diffusion
7. Information and communication technologies (ICT)
8. Sustainable development

Box 3.1. Indicators for the Lisbon and Gothenburg Strategies from the 2004 report from the Commission to the Spring European Council

Employment

- Employment and productivity development in the EU
- Total employment rate
- Employment rate – females
- Employment rate – males
- Total employment rate of older workers
- Employment rate of older workers – females
- Employment rate of older workers – males

Innovation and Research

- GERD (Gross domestic expenditure on R&D)
- Evolution of R&D spending
- Youth educational attainment level - total
- Youth educational attainment level - females
- Youth educational attainment level – males
- Evolution of youth educational attainment level

Economic Reform

- Comparative price levels
- Business investment
- Evolution of business investment

Social Cohesion

- At-risk-of-poverty rate after social transfers – total
- At-risk-of-poverty rate after social transfers – females
- At-risk-of-poverty rate after social transfers – males
- Evolution of the at risk of poverty rate
- Dispersion of regional employment rates – total
- Dispersion of regional employment rates – females
- Dispersion of regional employment rates – males
- Total long-term unemployment rate
- Long-term unemployment rate – females
- Long-term unemployment rate – males

Environment

- Total greenhouse gas emissions
- Energy intensity of the economy
- Transport – Volume of freight transport relative to GDP
- Relative performance of the 15 Member States according to the Structural Indicators on the shortlist
- Relative improvement of the performance of the 15 Member States accordingto the Structural Indicators on the shortlist

Source: CEC (2004)

Box 3.2. Indicators of the 'Enterprise Policy Scoreboard'

Access to Finance

- market capitalisation in percent of GDP
- newly listed companies in percent of already listed companies
- venture capital (early and later stage) as percent of GDP
- number of business angel networks

The regulatory and administrative environment

- percentage of SMEs identifying administrative burden as a major business constraint
- impact assessment
- on-line presence of government services

Open and Well-functioning Markets

- trade integration
- state aid, in percent of GDP

Entrepreneurship

- gross-birth rates of enterprises
- net-change of enterprise population, (birth-rate minus death-rate)
- volatility of enterprise population, (birth-rate plus death rate),
- female self-employment in industry and services, in percent of total self-employment

Human resources

- tertiary graduates (ISCED 5 and 6) per 1000 population aged 20 to 29
- graduates in science and technology per 1000 population aged 20 to 29
- population (aged 25-64 years) participating in education and training

Innovation and knowledge diffusion

- R&D expenditure as a percentage of GDP
- number of patents / high tech patents per million inhabitants
- co-operation for innovation

ICT

- ICT expenditure as percent of GDP
- business use of internet
- internet users per 10 000 inhabitants
- commercial use of the internet
- broadband penetration rate
- telephone charges

Sustainable development

- development of eco-efficiency for energy consumption (million € per ktoe), absolute and change in percent
- development of eco-efficiency for greenhouse gases (million € per ktonne CO2 equivalent), absolute and change in percent
- development of eco-efficiency for acidifying gases (million € per ktonne acid equivalent), absolute and change in percent
- development of eco-efficiency for ozone precursors (million € per ktonne ozone forming potential), absolute and change in percent
- number of ISO 14001 and EMAS certifications per 1000 enterprises

Source: CEC (2003b)

The 2003 Competitiveness Report uses a variety of regional indicators of competitiveness to produce a number of tables and a series of cross-plots with productivity to examine the evidence for some of the relationships suggested by economic theory (CEC, 2003a). These indicators comprise:

- productivity growth (%pa)
- R&D intensity
- high-tech location quotient
- students per capita in tertiary education
- productivity spillover effect

According to the analysis of the pattern of regional competitiveness by means of indicators, the 2003 Competitiveness Report concludes that productivity differences across the regions of the EU are diminishing over time (CEC, 2003a: p164). The report states that the disparities remain substantial, however, and the pace of convergence remains very slow. This justifies an active policy stance, according to the report. The report concludes that the fastest-growing regions have firms that have most successfully integrated into the international competitive system. This is thought to allow them to harness the human knowledge resources of their regions and raise their competitive edge.

The role of public policy is thought to have been subtle but critical in the success of these regions, providing a policy infrastructure that supports business innovation. Policies that remove barriers to trade and open up regions to competition across the single EU market are considered crucial. According to the report's conclusions, problems of peripheral regions need to be specifically addressed through improved transport and communications, especially telecommunications. It asserts that case studies confirm these as important influences in those regions that have generated a better productivity performance. It reports that evidence for the importance of human knowledge in boosting regional competitiveness is varied, often difficult to tie down but ultimately compelling in its message.

The fastest growing regions appear to be those with firms that are better at harnessing human knowledge, both in the cross-regional statistical analysis and in the case study analysis. The report states that the success of clustering in the high technology areas, especially in the case of biotechnology, is

strongly linked to human knowledge factors. Clusters may not only confer advantages through common access to knowledge resources, such as the science and research base of higher education, or indeed capital resources, but also may facilitate inter-firm communication and entrepreneurial activity in those sectors that generate the highest value-added outcomes.

The message for policy, according to the report, is that the agglomeration forces generating such human resourcefulness should be actively supported and the processes that build such human capital should be encouraged. The implications to be drawn are that active public support for improved competitiveness will come from concerted programmes operating at different levels, such as those co-financed by structural and cohesion funds, pan-European through to regional, and covering associated physical and non-physical infrastructure requirements. This will support better transport and communications infrastructure and better support the regional entrepreneurial culture that allows businesses to build close links with well-funded and well-organised networks of, especially science-based, higher education institutions. Policy support at regional level appears critical in the better-performing regions and this corresponds to regional stakeholders subscribing to a common vision, facilitated by public-private partnerships to take this vision forward.

3.2 The methodological proposal

As seen in previous chapters that of defining territorial competitiveness in an objective and univocal way is a difficult one, both because it pertains to several different dimensions and it is continuously transforming in time.

Therefore, we can say that it is a **multidimensional concept, changing in time and space**. Moreover, the choice of a definition and, therefore, of a measure invests a political-social dimension (non-competitiveness may become a cause of exclusion from the mechanisms of setting-up collective decisions). The approach that seems the more appropriate one is therefore an **approach** of **territorial-multidimensional** type that revolves around three key objectives/principles:

- sustainability
- cohesion
- integration

that on one hand, constitute the foundations for the activities of the various actors who interact on a given territory and on the other hand, define their inter-relations with the other territorial dimensions.

The main goal is to construct a **composite indicator** of territorial competitiveness.

In order to reach that, it becomes fundamental to understand which is the answer that is brought about by the indicator (aiming at a best possible significance) or, in other words, to define exactly the phenomenon that is to be explained. In the specific case, we want to build-up an indicator that might

answer to the question if the given territory is able to generate/develop competitiveness, not in absolute terms but relatively to what Amartya Sen calls **"capabilities".** In our case, they become **territorial capabilities**. This type of approach has two fundamental strength points:

- initial resources play a role such that a lesser handicap is imposed on those countries that have a lesser amount of them
- the concept of capability can be connected to the one of "use function" (that allows to estimate the realizations achieved and to carry out also a monitoring in time).

Following this approach, the concept of territorial competitiveness can be decomposed in some **determining factors** or **determinants** (see the modified Porter diamond) that can be further decomposed in **categories**. The latter ones are finally "explained" by basic indicators. It is obvious that while determinants are composite elements, categories are, instead, synthetic, *i.e.* they are explained by indicators that are homogenous regarding the considered phenomenon.

The territorial approach places some questions.

1. **How to (territorially) contextualize the measurement or, in statistical terms, how to normalize/standardize it in order to compare the different territories?**

   This type of problem can be resolved in two different ways: in the beginning of the process (standardizing the single indicators) or in the end of the process (standardizing the final composite indicator). Perhaps, a mix of the two previous ones would be the more valid solution. The basic indicators could in fact be standardized (as an example the number of infrastructure per area unit), then the synthetic and composite values could be obtained and finally these values could be linked to the regional typologies (as an example the urban-rural typologies of ESPON 1.1.2).

2. **How to weigh the various determinants, categories and indicators once standardized?**

   In this case a solution could be found in the construction of interaction matrices that, on the base of credited scientific theories or of reasonable demonstrations (in this respect, a fundamental support is represented by the case studies), given the value of the single indicators, returns the weighed value of the corresponding synthetic/composite indicator.

3. **How to assess the competitiveness so that it is not influenced by the initial resources?**

   The answer to this problem is to be sought in time series and dynamics, that become here essential. A twofold readout is therefore expected: static (in order to define the status quo) and dynamic (to monitor the changes in time) that will be synthesized in an single final value.

This type of approach allows one to construct eventually an indicator which includes not only the information on the current situation according to the own specificities, but also on the real dynamics of the actions that enable to reach a given goal: in this case we turn from the simple **territorial competitiveness** to the **ability to generate territorial competitiveness**.

A first attempt to build a grid of indicator is as follows:

Table 3.1

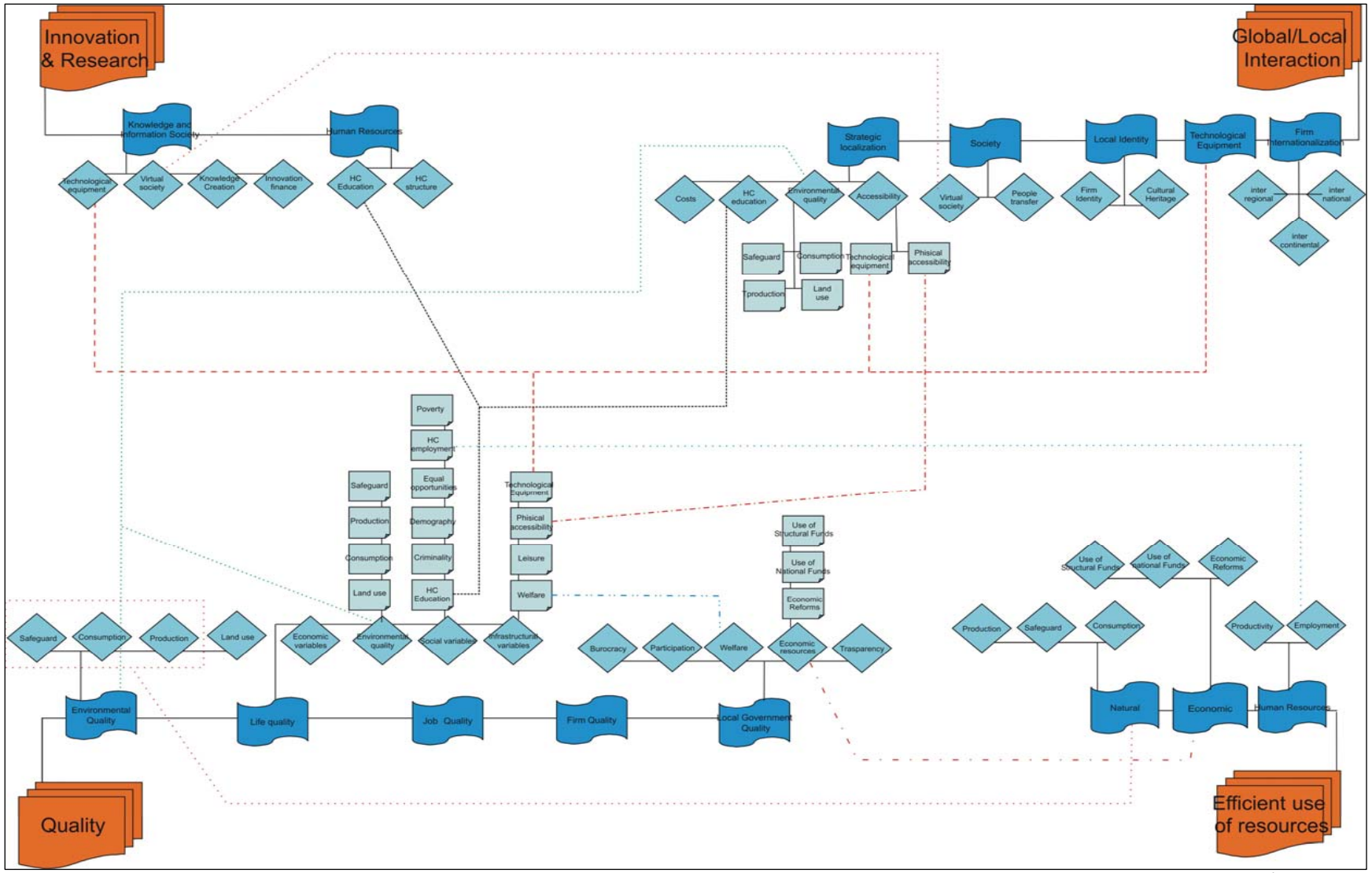
Determinants	Typologies	Sectors	Categories	Indicators
Innovation & Research	Knowledge and Information Society	"virtual" society		e-learning, e-commerce, level of internet access, internet users
		innovation finance		share of high venture capital investment, share of early stage venture capital in GDP
		technological equipment		PCs, mobile, broadband, mobile, digital tv, telephony, internet servers
		knowledge creation		ICT investment, expenditure on human capital (graduate and post-graduate education), R&D expenditure, science and technology research centres (science parks, innovation centres), EPO and USPTO patents, HighTech Firms, advanced services, RSII, telecommunication uptake
	Human Resources	human capital (employment)		unemployment long-term rate, dispersion of regional employment rate, vacancies, employment rate (per gender and total), effective average exit rate (per gender and total), employment in medium-high and high-tech manufacturing, employment in high-tech services
		human capital (structure)		dependency index, age structure population
		human capital (education)		instruction level by age and gender, population in life-long learning, e-learning, public expenditure for education, science and technology graduates, early school leavers, population with tertiary education
Global/local interaction	Society	"virtual" society		e-learning, e-commerce, level of internet access, internet users
		people transfer		immigration rate, cultural exchanges (e.g. erasmus, socrates, leonardo), travels.
	Technological Equipment			PCs, mobile, broadband, mobile, digital tv, telephony, internet servers
	Firm	interregional		foreign percentage market, FDI, foreign productive units, export/import at regional level
		international		foreign percentage market, FDI, foreign productive units, export/import at national level

		intercontinental		foreign percentage market, FDI, foreign productive units, export/import at continental level
	Local identity	productive system identity		districts, local productive systems, big firms, product trademarks
		cultural heritage		territorial trademarks, typical events (n°, expenditure, affluence), world heritage list, world heritage sites
	Strategic localization	accessibility	material	roads, railways, airports, harbours, daily accessibility, accessibility, potential accessibility, volume of transport
			immaterial=technological equipment	PCs, mobile, broadband, mobile, digital tv, telephony, internet servers
		costs		fuel price, energy price, fiscal pressure
		environmental quality	safeguard	energy from renewable resources, biodiversity index, ISO 14000 and EMAS certifications, SEA and EIA adoption, protection of natural resources
			consumption	energy (oil, gas, carbon), raw materials, energy intensity of economy
			production	pollution (air, water, soil), waste, greenhouse gases emissions
			land use	protected green area or parks, population per artificial surfaces and concentration, land-use efficency, agricoltural and rural areas
		human capital (education)		instruction level by age and gender, population in life-long learning, e-learning, public expenditure for education, science and technology graduates, early school leavers, population with tertiary education
Quality (process, environmental, production, service)	Life quality	economic variables		GDP per capita, consumption per capita, real GDP growth rate, inflation rate, tax rate on low-wage earners, prices in network industries, inequality of income distribution
		social variables	human capital (education)	instruction level by age and gender, population in life-long learning, e-learning, public expenditure for education, science and technology graduates, early school leavers, population with tertiary education
			criminality	criminality index
			demography	death rate, dependency index

			equal opportunities	gender pay gap in unadjusted terms, gender employment gap
			poverty	poverty trap, at risk of poverty rate, persistent risk of poverty rate, population in jobless households
			human capital (employment)	unemployment long-term rate, dispersion of regional employment rate, vacancies, employment rate (per gender and total), effective average exit rate (per gender and total)
		environmental quality	safeguard	energy from renewable resources, biodiversity index, ISO 14000 and EMAS certifications, SEA and EIA adoption, protection of natural resources
			consumption	energy (oil, gas, carbon), raw materials, energy intensity of economy
			production	pollution (air, water, soil), waste, greenhouse gases emissions
			land use	protected green area or parks, population per artificial surfaces and concentration, land-use efficency, agricoltural and rural areas
		infrastructural variables	welfare	hospitals, policy offices, post offices
			leisure	sport facilities, cultural opportunities
			phisical accessibility	roads, railways, airports, harbours, daily accessibility, accessibility, potential accessibility, volume of transport
			technological equipment	PCs, mobile, broadband, mobile, digital tv, telephony, internet servers
	Environmental quality	safeguard		energy from renewable resources, biodiversity index, ISO 14000 and EMAS certifications, SEA and EIA adoption, protection of natural resources
		consumption		energy (oil, gas, carbon), raw materials
		production		pollution (air, water, soil), waste, greenhouse gases emissions
		land use		protected green area or parks, population per artificial surfaces and concentration, land-use efficency, agricoltural and rural areas
	Job quality			childcare facilities, work accidents, telework

	Firm quality			ISO (9000, 14000, 18000), EMAS, social corporate responsibility
	Local Government quality	participation		voters (% of voting rights population), access to administrations web-site
		welfare		hospitals, policy offices, post offices
		economic resources	use of structural funds	number of financing projects, distributed funds, % of co-financing
			use of national funds	number of financing projects, distributed funds, % of co-financing, public finance, general government debt
			economic reforms	market structure in network industries, relative price levels and price convergence
		trasparency		social report
		burocracy weight		e-government projects
Use of resources and funds	Economic resources	use of structural funds		number of financing projects, distributed funds, % of co-financing
		use of national funds		number of financing projects, distributed funds, % of co-financing, public finance, general government debt
		economic reforms		market structure in network industries, relative price levels and price convergence, financial market integration
	Human resources	human capital (employment)		unemployment long-term rate, dispersion of regional employment rate, vacancies, employment rate (per gender and total), effective average exit rate (per gender and total), employment in medium-high and high-tech manufacturing, employment in high-tech services, labour force replacement
		productivity		labour productivity (per worker and per hours), cost growth per labour unity, average age of retirement
	Natural resources	safeguard		energy from renewable resources, biodiversity index, ISO 14000 and EMAS certifications, SEA and EIA adoption, protection of natural resources
		consumption		energy (oil, gas, carbon), raw materials, energy intensity of economy
		production		pollution (air, water, soil), waste, greenhouse gases emissions

Fig. 3.1 Indicators' synergy tree



According to this framework it has been done a first review of the 14 structural indicators and of the indicators available from the ESPON projects as shown in the following two tables.

Table 3.2

Indicator	Definition	Source	Spatial reference	Time	NUTS level	Comment
GDPpps per capita	GDP per capita in Purchasing Power Standars	Eurostat	EU 25+4 (or +3?)	1991-2001	0,(2,)3	ESPON Dtb.
Labour productivity per person employed	GDP in PPS per person employed	Eurostat	EU 25+4 (or +3?)	1991-2001	0,(2,)3	Has to be calculated in other levels than NUTS0
Employment rate	Employed persons aged 15-64 as a share of total population of the same age group	Eurostat	EU 25+4 (or +3?)	1990-2001	0,(2,)3	Disaggregated by gender; ESPON Dtb
Employment rate of older workers	Employed persons aged 55-64 as a share of the total population of the same age group	Eurostat	EU 25+4 (or +3?)	1990-2001	0,2	Disaggregated by gender
Spending on human resources (public expenditure on education)	Total public expenditure on education as a % of GDP	Eurostat	EU 24+4 (or +3?), no data on Slovenia	1993-2001	0	Joint questionnaire with Unesco/OECD
R&D expenditure	Gross domestic expenditure on research and development (GERD) as % of GDP	Eurostat	EU 24+4 (or +3?), no data on Malta	1991-2000	0,(2,)3	More information from project 2.1.2
IT expenditure	Expenditure on IT as % of GDP	OECD/ WITSA/IDC/EITO	EU 23+4 (or +3?), no data on Cyprus and Malta	1991-2000	0	
Financial market integration (convergence in bank lending rates)	Coefficient of variation across countries on annual interest rates charged on short-term corporate debt	DG MARKT / Eurostat, based on data from ECB and national central banks	EU 12	1993-2002	0	

At-risk-of-poverty rate	Share of people with an equivalised disposable income below the risk-of-poverty threshold after social transfers. The threshold is set at 60% of the national median equivalised disposable income (after social transfers)	Eurostat	EU 25+4 (or +2?)	1995-2000	0, ?	Disaggregated by gender
Long-term unemployment rate	Total long-term unemployed (over 12 months) as % of the total active population aged 15-64	Eurostat	EU 25+4 (or +3?)	1990-2001	0,2	Disaggregated by gender
Dispersion of regional employment rates	Coefficient of variation of employment rates across sub-regions within regions	Eurostat	EU 18 (no data on DK, IR, LU, CZ, HU, PL and SK). No data on BG, RO, NO (and Switzerland?)	1996-2001	0,2,3	
Total greenhouse gases emissions	Percentage change in emissions of 6 main greenhouse gases (CO2, CH4, N2O, HFCs, PCFs and SF6) since base year and targets according to Kyoto Protocol	EAA	EU 25+4 (or +3?)	1990-2000	0	
Energy intensity of the economy	Gross inland consumption of energy divided by GDP	Eurostat	EU 25+4 (or +3?)	1991-2001	0 (2)	ESPON Project 2.1.4. has a NUTS2 level indicator Final energy consumption. Is it the same as the consumption here?

Volume of freight transport relative to GDP	Index of freight transport volume relative to GDP Measured in tons-km/GDP and indexed on 1995	Eurostat	EU 23+4 (or +3?), no data on Cyprus and Malta	1991-2001	0, (2?), (3)	ESPON Project 1.2.1 should have enough data for calculating this indicator at NUTS3 level. Eurostat also has something quite correspondi ng at NUTS2 level

Table 3.3

Indicator	Definition	Source/ Project	Spatial reference	Time	NUTS level	Comment	Ideas/th oughts
Population change	Change of total population	3.1	EU 25+4	1995-1999	3	Occasional gaps in data	
Population density	Inhabitants/km2	3.1	EU 25+3 (no data on NO)	1995-1999	3	Occasional gaps in data	
Population by education and agegroups	Education groups: low, medium high; agegroups: 25-34, 35-49, 50-59, total population. Also separated by gender	3.1	EU 24+4 (no data on MT) 2002; EU 24+3 2001 (no data on MT and CH)	2001-2002	2		
Active population	Amount of active population, separated by gender and agegroups under/over 25 years	3.1	NUTS2: EU 25+3 (no data on CH); NUTS3: EU 22+3 (no data on GR, MT, PT and CH)	1995-2001	2, 3	Occasional gaps in data	
Average working hours per week	Average working hours per week, separated by full-time/part-time, gender and employer (family, employee, self-employed)	3.1	EU 24+4 in 2002 (no data on MT); EU 24+3 in 2001 (no data on MT and CH)	2001-2002	2		
Employment by economic activity	Employment by following classification: agriculture, mining and quarring, manufacturing, electricity/gas/water supply, construction, wholesale and retail/repairs, hotels and restaurants, transports/communication, financial intermediation, real estate/business activity, public administration, other services, and so on	3.1	EU 24+4 in 2002 (no data on MT); EU 24+3 in 2001 (no data on MT and CH)	2001-2002	2	The last classes are lacking the class name	

Employment by sectors	Employment in agriculture, industry and services	3.1	EU 25+3 (no data on CH)	1995-2001	2	Time span varies a little between countries	
Employment by occupation	Employment by occupation according to ISCO	3.1	EU 24+4 in 2002 (no data on MT); EU 24+3 in 2001 (no data on MT and CH)	2001-2002	2		
Typology of FUAs	Typology of Functional Urban Areas	1.1.1	EU 25+4	-	3	Lists all the FUAs in the NUTS3 region	The time reference is not given, because the data used is from different years
Land use efficiency	GDPpps per artificial surfaces	1.1.2	EU23+3, no data on Cyprus, Malta and Norway	CLC90	3		
Population per artificial surfaces	Population per artificial surfaces	1.1.2	EU23+3, no data on Cyprus, Malta and Norway	CLC90	3		
Human intervention	Degree of human intervention, measured by land use: 1= at least the share of artificial surfaces above average; 2=at least the share of agricultural land use above average; 3: only the share of residual land use above average	1.1.2	EU23+3, no data on Cyprus, Malta and Norway	CLC90	3		

Urban-rural typology	Urban-rural typology based on urban influence (FUA ranking and population density) and human intervention (see above)	1.1.2	EU23+3, no data on Cyprus, Malta and Norway	--	3		The rest of the dimensions in urban-rural typology (population density and FUA ranking) are also included in indicators. It might be useful to look at these dimensions also separately.
Dependency rate	Total population in relation to the population in the ages between 20-64 - is a function of the size of the young age groups (0-19) and the older age groups (65+)	1.1.4	1995 EU 20+3, 1999 EU 21+3	1995, 1999	2		

Share of ageing population	Share of people aged 65+ from total population. Indexes (ratio/share EU29=100).	1.1.4	NUTS3 = EU 11+3 in 1999; NUTS2 = EU 25+4 in 2000, EU 22+4 in 1999, EU 24+4 in 1998, EU 23+4 in 1997, EU 23+4 in 1996, EU 21+4 in 1995	1999, 1995-2000	1999 = N3, 1995-2000 = N2		
Aged vs. young people	Population aged 65+ divided by population aged 15-24. Indexes (ratio/share EU29=100). Deviation from Europe 29 average.	1.1.4	EU 25+4	2000	2		
Share of ageing labour force	Share of population aged 55-64 from population aged 20-64	1.1.4	EU 25+4	2000	2	Also available in 4 class typology	
Labour force replacement	Population aged 10-19 divided by population aged 55-64. Indexes (ratio/share EU29=100). Deviation from Europe 29 average	1.1.4	EU 25+4	2000	2		
Transport infrastructure endowment indicator	Number of airports of different size, number of commercial seaports of different size, length of railway network, density of railway network (km/km2), density of railway network (km/capita), length of road network, length of highroad network, density of road network (km/km2), length of road network (km/capita in 1999)	1.2.1.	EU 24+4 (no data on MT)	2001 (2000)	3		

Indicators of the capacity of transport infrastructure	Traffic in commercial airports (in million passengers/year/inhabitants (1999))	1.2.1.	EU 24+4 (no data on MT)	2000	3		
Service indicators of transportation (basic supply of nodes, travel cost)	?	1.2.1.	?	?	?	No data found from the ESPON database (some other indicators of transportation and traffic can be included in this one, too)	
Indicators of travel time	Connectivity (minutes) to the nearest commercial seaport by car of the capital or centroid representative of the NUTS3, Connectivity to commercial airports by car of the capital or centroid representative of the NUTS3 (hours), Time (minutes) to the nearest motorway access by car of the capital or centroid representative of the NUTS3	1.2.1.	EU 25+4, some data lacking from MT	2001	3		
Accessibility	Connectivity to transport terminals by car (minutes) weighted by surface of all NUTS3 (ICON)	1.2.1.	EU 25+4	2001	3		

Daily accessibility	Daily population accessible by car	1.2.1.	EU 25+4	1999	3	Also data on daily market accessible by car in terms of GDP (MIO EUR / inhabitants*10 00000), but the coverage is smaller	
Potential accessibility	Potential multimodal accessibility, different destinations and reference averages, separated to AC12 and EU15	1.2.1.	EU 25 +4	2001	3	What is the measuring unit? Minutes?	
Volume of transportation	Traffic in commercial airports (in million passengers/year), traffic in commercial seaports (in million tonnes/year)	1.2.1.	EU 24+4 (no data on MT)	2000	3		
Traffic flow	Total trips generated and attracted in the NUTS region (separated by the purpose of the trip and vehicles used)	1.2.1.	EU 23+4 (no data on CY and MT), occasional lack of data in other countries too	2001	2	Data also available on the purpose of trip in following classes: vacation, visit, obligatory and on the vehicle used: car, air, rail (the classes are also crossed with each other)	What is the unit?

Use of internet	Households with internet access + internet users / 1000 inhabitants + firms with internet access + firms with own website.	1.2.2.	EU 25+2 (no data on CH and RO)	2003	0 (2,3)	Regional data is at least partly estimated as a function of sosio-economic data. No data available in ESPON database.	
Development of telecommunication uptake	Typology according to following criteria: households with fixed telephone line (weight +1), households with at least one mobile phone (weight +2), households with internet access (weight +3), households with broadband internet access (weight +4), firms with fibre backbone access (weight +1), proportion of firms with their own websites (weight +1)	1.2.2.	EU 25+3 (no data on CH)	2002	0,2	Regional data is at least partly estimated as a function of sosio-economic data. No data available in ESPON database.	
Regional Summary Innovation Index (RSII)	An indicator of regional innovativeness created by EC	1.3.2. / EC	EU 12 (AT, BE, ES, DE, FI, FR, IE, IT, NL, PT, SE, UK)	?	2	More spesified information of the indicator is needed before it can be used.	

R&D expenditures	Total R&D expenditure by all institutions in mill. Euros	2.1.2	NUTS2: 95-00: DK, ES; 95-99: FR, IT, NL; 95 & 97-00: FI; 95 & 97 & 99: DE, GR, PT; 98:AT + NUTS1: 95 & 97-99 UK + NUTS0: 95-99 BE, IE, SE	1995-2002	0,2	Also available as divided in the following sectors: business, government, higher education, private non-profit.	The corresponding map in the final report of the project has a lot better coverage.
Share of R&D personnel as % of labour force	Share of labour force employed in research and development	2.1.2	?	?	3	No data found from ESPON database or project reports	
High-tech patents	Total number of applications	2.1.2	EU 15 (no data on new member countries, accession countries or CH and NO)	1995-2000	0,2,3	Also available as total number of applications per million people.	
Employment with HRSTC	Employees with tertiary level education working in science and technology occupation	2.1.2	?	?	?	No data found from ESPON database or project reports	
Employment in High Technology Services	Employment in High Technology Services as % of total employment	2.1.2	?	?	?	No data found from ESPON database or project reports	
Employment in MHT manufacturing	Employment in medium-high and high-tech manufacturing as % of total manufacturing employment)	2.1.2	NUTS2: 95-99:DE, ES, FI, FR, IE, SE; 96-99: BE, IT, PT; 95-97 & 99: NL; 95 & 97 & 98: AT; 95:LU	1995-1999	0,2		

			+NUTS0: 95-98: DK				
Share of working age population with tertiary education	Percentage of population aged 24-65 with tertiary education	2.1.2	NUTS2: 94-00 DK, ES, FR, GR, IT; 96-00 NL, UK; 97-00 SE; 98-00 FI, PT; 95-97 & 99-00 DE; 95-97 & 00 AT NUTS1: 94-97 IE	1994-2000	0, (1,) 2		
Number of Science Parks		2.1.2	?	?	0 (3)	Data can mostly be located manually to NUTS3 regions	
Number of Business Innovations Centres		2.1.2	?	?	0 (3)	Data can mostly be located manually to NUTS3 regions	
Number of most actively publishing universities		2.1.2	?	?	0 (3)	Data can mostly be located manually to NUTS3 regions	

Share of farmholders under 35	% of farmholders under 35 years of age	2.1.3.	93, 95, 97, most recent: DK, ES, FR, GR, IT, LU, PT; 95, 97, most recent: FI, SE	1990, 1993, 1995, 1997 + most recent	2	Note: the filename in ESPON Dtb is wrong (132_Farm-Holders_over_35_years_93-97_P213_N2)	
Value added by AFF	Value added by agriculture, forestry and fishing as % of total GDP	2.1.3.	95-99: BE, CY, CZ, DE, DK, ES, FI, IE, IT, LU, MT, NL, SE, SK; 96-99: BG, EE, LT, LV; 95-98: GR, HU; 95-97: RO; 98-99: PL; 96:FR: no data: AT, CH, PT, SI, UK, NO	1995-1999 + most recent	3	The definition should be checked, as it is not given in the database	
% employed in AFF	Per cent employed in agriculture, forestry and fishing	2.1.3.	EU 14 (no data on GR, new members, accession countries, CH and NO), data at least in three years in 1990's	1977-1997 + most recent	3	Time reference should be checked, as there is contradictory information (1977-1997 or 1982-2001	
FNVA per AWU	Farm net valued added by average working unit	2.1.3.	95, 97 & most recent: FI, FR, GR, PT, SE; the whole time span: LU	1990, 1993, 1995, 1997 + most recent	2	Unit?	

FNVA per ha of UAA	Farm net valued added by hectare of utilisable agricultural area	2.1.3.	DE (91,95,99 +mr), FI (95 & 97-99 +mr), FR (95-98 + mr), GR (95-97 + mr), LU (90-01 + mr), NL (mr), PT (95-99 + mr), SE (95-98 + mr)	1990-2001 + most recent	2		
Energy prices for industry		2.1.4	?	?	?	No data in ESPON database yet; Third Interim Report published in august 2004	
FEC by type & consuming sector	Final energy consumption by energy type and consuming sector	2.1.4	?	?	?	No data in ESPON database yet; Third Interim Report published in august 2004	
Total primary energy supply per capita		2.1.4	?	?	?	No data in ESPON database yet; Third Interim Report published in august 2004	
FEC per capita	Final energy consumption per capita	2.1.4	?	?	?	No data in ESPON database yet; Third Interim Report published in august 2004	

FEC/GDP	Final energy consumption per GDP	2.1.4	?	?	?	No data in ESPON database yet; Third Interim Report published in august 2004	
GDP/FEC	GDP per Final energy consumption	2.1.4	?	?	?	No data in ESPON database yet; Third Interim Report published in august 2004	
Fuel price indices for industry		2.1.4	?	?	?	No data in ESPON database yet; Third Interim Report published in august 2004	
Fuel price indices for domestic & tertiary use		2.1.4	?	?	?	No data in ESPON database yet; Third Interim Report published in august 2004	
Fuel price indices for transportation		2.1.4	?	?	?	No data in ESPON database yet; Third Interim Report published in august 2004	

Competition in electricity generation		2.1.4	?	?	?	No data in ESPON database yet; Third Interim Report published in august 2004	
Structural Funds spending	Structural Funds assistance for Objectives 1, 2, 3, 5b and 6 programmes (amounts to approx 93,5 % of the SF spending during the previous period)	2.2.1	EU 15	1994-1999	3	No data in ESPON database yet; Third Interim Report published in august 2004	

4. PROPOSAL OF REGIONAL CASE STUDIES ACCORDING TO ESPON TYPOLOGIES

4.1 Justification of objectives and a methodological note

The main objective of this section is to test the efficiency of new synthesis indicators and their measurements in the respective source countries as well as to assess the spatial impacts of different sectoral policies relevant for the implementation of the Lisbon/Gothenburg Strategies. A second objective to keep in mind in the choice of case studies is to verify the application of the spatial development policy framework as formulated in the ESDP (especially the concepts of polycentricity, urban-rural relations and accessibility) and their contribution to spatial cohesion in Europe.

In this context, the sample should represent regions with different potentials and handicaps, reflecting the diversity of the enlarged EU, to promote the assessment of development potential and spatial imbalances.

As the tender pointed out, the sample of proposed regions should be selected in function with the typologies of regions developed within the ESPON Programme, specifically those from Project 1.1.1. – "The role, specific situation and potentials of urban areas as nodes in a polycentric development" (2002-2004) and Project 1.1.2. – "Urban-rural relations in Europe" (2002-2004).

In order to respond to the abovementioned objectives, both assessing the spatial dimension of the Lisbon/Gothenburg Strategies and identifying the extent to which the policy framework defined in the ESDP has been integrated, choosing the case studies should obey a series of relevant criteria. These criteria are the following:

i) To secure the 'representability' and geographic diversity of the EU, by – for working purposes – opting for case studies in the countries that comprise the working group (Finland, Italy, the Netherlands, Portugal, Slovenia, Spain and the United Kingdom), as they possess different competitiveness profiles and distinct patterns of social cohesion and environmental sustainability (see Appendix 4.A);

ii) To take into consideration a variety of spaces, keeping in mind:
   - o The population structure and its incidence in areas with urban and rural characteristics (via typologies referring to the Functional Urban Areas and to urban-rural relationships);
   - o The relationships between urban and rural areas via the typology referring to urban-rural relationships);

- Cities' growth dynamics (via the typology referring to the Functional Urban Areas/MEGAs);
- Accessibility/connectivity, introducing a dimension of spatial integration that deals with spatial integration capacity (via the PIAs typology);
- The classification of regions by type of issues and structure of EU funding – identification of Objective 1 and Objective 2 regions;

iii) To create the conditions for an analysis of the level of transnational or trans-border **integration/cooperation**, thus illustrating the importance of the EU INTERREG Initiative (in domains such as infrastructure, support for economic activity, rural development, etc.) in the increase in spatial cohesion.

A multi-level approach will be taken, implying that case studies will be able to correspond to NUTS3 or groupings of two or more NUTS3 (which may comprise a NUT2).

In choosing these multi-level cases, we shall seek to understand what type of relationship exists between the various NUTS3 and whether they contribute towards an **increase in integration/cohesion** among the various sub-regions (NUT3). A multi-level approach allows for an assessment of whether or not a polycentric spatial organisation exists and in what way this organisation contributes towards the increase of economic competitiveness in such spaces.

Table 1. Summary of criteria for the selection of case studies

Criteria
Geographic representability of the EU
Different potentials and handicaps
Multi-level analysis (NUT III and NUT II)
Multi-regional scope (transnational and transborder regions)

This facet is particularly evident in the larger FUA, where the phenomenon of metropolisation is directly linked to spatial competitiveness, with a variety of implications for spatial cohesion and sustainability.

In this sense, it appears pertinent that the case studies should fit into an approach engendered by multidimensional spatial principles that must take three fundamental objectives/principles into account (as discussed in WP2):

- sustainability
- cohesion
- integration

Thus, the case studies will need to test not only the efficacy of the synthesis indicators but also identify how various forms of governance (namely public and

private funding systems) introduce differentiated effects in sectoral and spatial policy. In other words, in addition to grasping the implications for regional economic competitiveness, the case studies will entail the identification of the relationship between systems of governance and the results of policy conducive to the increase in competitiveness and spatial cohesion.

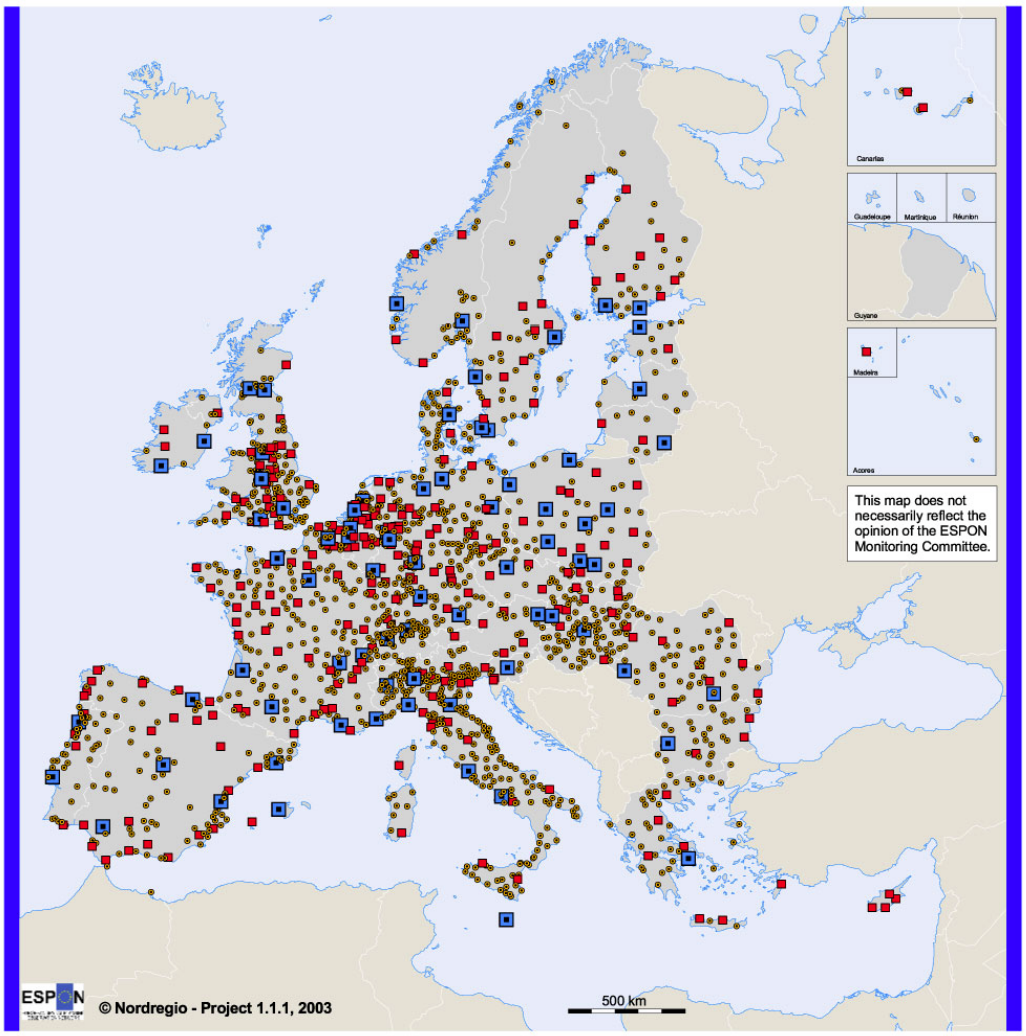
4.2 Brief overview of the typologies presented in the ESPON Programme

Of the series of typologies presented in the ESPON Programme, two whose spatial dimensions are most evident stand out and, for this reason, they were chosen as the starting point in choosing the case studies. They are Project 1.1.1 - "The role, specific situation and potentials of urban areas as nodes in a polycentric development" (2002-2004) and Project 1.1.2 – "Urban-rural relations in Europe" (2002-2004).

ESPON Project 1.1.1 - "The role, specific situation and potentials of urban areas as nodes in a polycentric development" (2002-2004) identifies 1595 Functional Urban Areas (FUAs) with more than 50,000 inhabitants, of which 149 are metropolitan areas and 76 were classified as *Metropolitan European Growth Areas* (MEGAs). The *Pentagon*, defined as the centre of Europe (delimited by London, Hamburg, Munich, Milan and Paris), is part of these MEGAs.

The 76 MEGAs can be separated into five categories (see Appendix 4.B), which in their totality comprise the **urban system at the European scale**:

Map 1. Typology of Functional Urban Areas in EU



Source: Project 1.1.1. – "The role, specific situation and potentials of urban areas as nodes in a polycentric development (2002-2004)", Final Report, pp. 10

- Global nodes (2 MEGAs) – includes the largest and most competitive urban systems with high connectivity;
- European Engines (13 MEGAs) – corresponds to large, highly competitive cities, possesses strong human capital and good accessibility;
- Strong MEGAS (11 MEGAs) – includes cities that are relatively large, competitive and often possessing strong human capital;
- Potential MEGAS (26 MEGAs) – smaller, with lower competitiveness, more peripheral and weaker human capital;
- Weak MEGAS (24 MEGAs) – usually small, less competitive, more peripheral and with lower human capital figures then Potential MEGAs.

This typology includes a group of regions outside of the *Pentagon* possessing development potential and that, because of this, are capable of contributing towards the construction of a more polycentric European urban system. We are speaking here of some "Strong MEGA" and some "Potential MEGA", which should be included in the case studies sampling.

Along with the MEGAs typology that characterises the urban system at the European scale, a second index was presented that measures the potential for polycentricity based on morphological proximity, by identifying territories referred to as *Potential Urban Strategic Horizons* (PUSH)[20]. From this second index, the index identifying the Potential Polycentric Integration Areas (PIAs) was calculated (see Appendix 4.C). This index identifies areas of influence in the FUA in addition to illustrating the potential for functional and demographic relationships between the FUA centre and the surrounding areas, confirming that a wide range of cities could significantly increase their demographic mass and, thus, also their position in the European urban hierarchy though polycentric integration.

In this scope, the index "complements" the MEGAs typology, allowing to identify the importance of **urban centres outside the MEGAs** and their areas of influence. This is another interesting indicator to keep in mind as it illustrates the fundamental role of small and medium-sized cities in the structuring of several EU countries urban systems, namely in a meso-scale.

In defining the typology presented in Project 1.1.2. – "Urban-rural relations in Europe" (2002-2004), the following two dimensions of analysis were taken into consideration:

[20] For each FUA, the area reached within 45 minutes by car from a FUA centre was calculated (travel time).

- the ***degree of urban influence***[21], defined according to population density and status of the leading urban centre of each NUTS3 area;
- the ***degree of human intervention***[22], measured by the relative share of land cover according to the main land cover classes of the CORINE data set (artificial surfaces, agricultural areas and residual land cover).

According to their urban-rural characteristics, the following six different regional types were identified:

1. High urban influence, high human intervention;
2. High urban influence, medium human intervention;
3. High urban influence, low human intervention;
4. Low urban influence, high human intervention;
5. Low urban influence, medium human intervention;
6. Low urban influence, low human intervention.

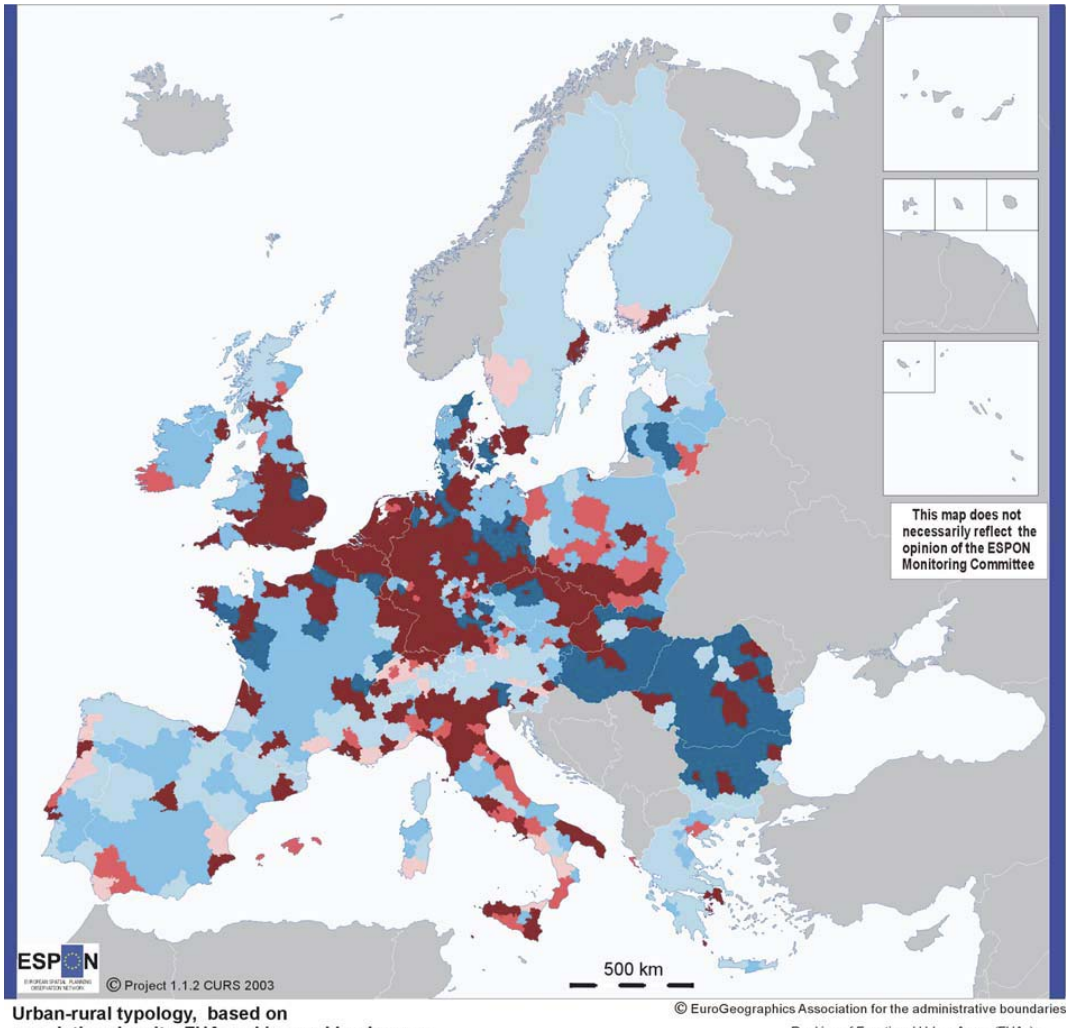
The case studies should take these six regional categories into consideration, as they portray differentiated facets of organisation and land use and, therefore, contribute towards a response to questions such as how to confirm the importance of small and medium-sized cities in peripheral regions as anchors of regional competitiveness and instruments of spatial cohesion (in their urban-rural relationships), how to characterise the dynamics of competitiveness and cohesion in regions with a sprawling urban population system, or how to assess the importance of connectivity/accessibility in spatial integration at various scales.

Following this brief overview of ESPON typologies, the next section aims to make a first methodological step towards the selection of a sample of regions to consider in the present study.

[21] Degree of urban influence:
"High human intervention corresponds to a situation where the share of artificial surfaces (and possibly one of the two other land cover categories) is above the European average;
Medium human intervention equals the cases where the share of agricultural land (and possibly the share of residual land cover) is above the European average;
Low human intervention concerns all cases where only the share of residual land cover is above the European average".

[22] Degree of human intervention was determined by the relative share of land cover according to the main land cover classes of the CORINE data set. The main classes are artificial surfaces, agricultural areas, and residual land cover. The European average of artificial land cover is 3.48 percent of the total land cover. The corresponding figure of agricultural land is 50.36 and of the residual group it is 46.16.

Map. 2 – Urban-Rural Typology



The criteria for urban influence:
- Population density above the average (107 inhabitants/km^2 in EU25+4)
- And/or at least a European level functional urban area (based on typology made by ESPON Action 1.1.1)

Degree of human intervention is estimated through the average shares of land covers (in EU23+3, no data on Cyprus, Malta and Norway):
High human intervention: at least the share of artificial surfaces above average (3,48%)
Medium human intervention: at least the share of agricultural land above average (50,36%)
Low human intervention: only the share of residual land use above average (46,16%)

Source: Project 1.1.2. – "Urban-Rural Relation in Europe (2002-2004)", Final Report, pp. 29

4.3 The sample of regions

Keeping in mind what was said in sections 4.1 (criteria to consider when choosing the sample) and 4.2 (characterisation of the most pertinent aspects of the ESPON typologies), choosing the sample of case studies should start with a reading of the following indicators for all NUTS3:

1. Typology of land use, population density and FUA population
2. Typology of urban-rural relations
3. Relation of rurality supported in the share of rural population
4. Accessibility index supported in a typology of multi-modal accessibility
5. GDP per capita, pps, 2000
6. Type of problematic that characterise territories (identification of Objective 1 Regions[23] and Objective 2[24] Regions)

These six indicators reflect, on one hand, the spatial dimension of the regions (their "structural" and "functional" [as in the cases of the typologies 1.1.1 and 1.1.2 and the rurality index] characteristics) and, on the other, their political dimension (represented in the classification of regions according to the type of issue affecting them: Objective 1 Regions and Objective 2 Regions).

Table 2. Indicators considered in choosing the sample of case studies

Dimension	Indicators
Spatial Dimension	1. Typology of urban-rural relations
↓	2. Typology of land use, population density and FUA population
	3. Relation of rurality (share of rural population)
	4. Accessibility index (Typology of multi-modal accessibility)
	5. GDP per capita, pps, 2000
Political dimension	6. Type of problematic that characterise territories (identification of Objective 1 Regions and Objective 2 Regions)

The combined analysis of the six abovementioned indexes / indicators allows for the definition of the following spatial typology (see Appendix 4.D):

1. Regions:

- That include "Strong MEGA" and "Potential MEGA" areas outside of the *Pentagon*, as potential nodes in the polycentric European system;

[23] Objective 1 of the Structural Funds is the main priority of the European Union's cohesion policy, which corresponds to supporting development in the less prosperous regions.
[24] Objective 2 of the Structural Funds is to convert regions or parts of regions seriously affected by industrial decline.

- That include “Weak Mega”, as well as potential nodes of the polycentric European urban system, making it important to assess their competitive and spatial dynamics;
- With “High urban influence and high human intervention” or “High urban influence and medium human intervention” and without MEGAs, allowing for an assessment of economic competitiveness and of the importance of the polycentric organisation at the mid-scale;
- Which represent competitive and central regions, with low levels of rurality and high levels of accessibility / connectivity, some of them in restructuring process (Objective 2 Regions);

2. Regions with “Low urban influence and low human intervention” or “Low urban influence and medium human intervention”, representing less competitive regions, with a high level of rurality and being very peripheral in terms of accessibility / connectivity, with a large part of them being supported by Objective 1 funds;
3. A third and fourth group that are less important but which correspond to regions with “High urban influence and low human intervention”, represented by high-density areas organised in a sprawl settlement model and regions with “Low urban influence and high human intervention”.

In addition to the six abovementioned criteria, a seventh criterion was considered: participation in the EU INTERREG III Initiative. Some of the regions chosen include the various sub-programmes that comprise this Initiative.

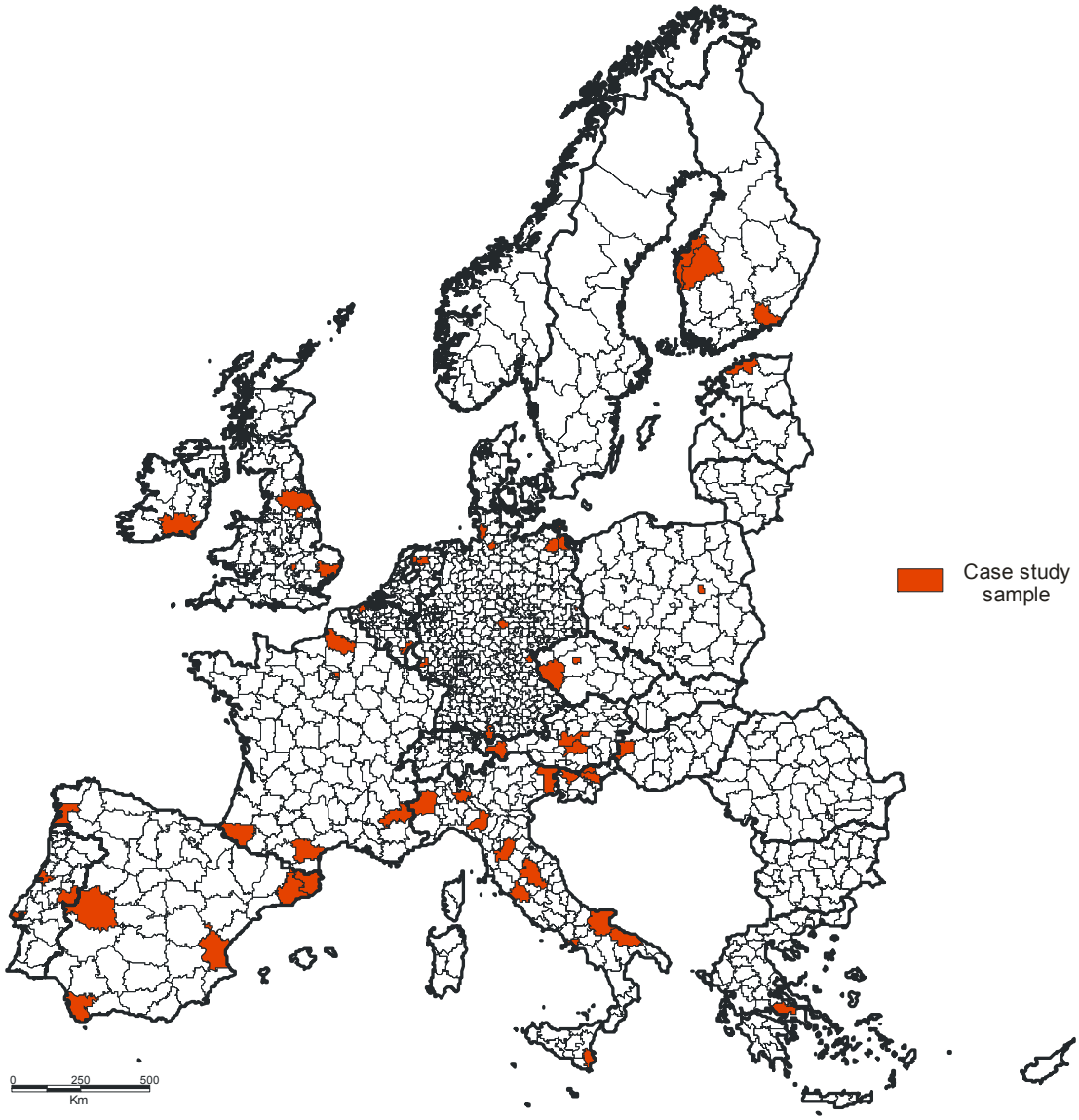
In this context, regions with very different profiles stand out, such as the Central “Potential MEGAs” which include Torino, transnational regions like Firenze and Bristol and even regional-local areas that are less competitive and highly rural like Beira Interior Sul and Cáceres (both Objective 1 Regions and belonging to INTERREG III A).

The following figure serve to illustrate the preliminary version of the regional sampling.

A final note seeks to emphasise that the regional sampling proposed in this first report should be tested and correspondingly adjusted over the next months of work. The adjustment can be justified according to two main sets of reasons. On one hand, internal factors contributing to the evolution of the project, such as the following, must be considered:

- The need to develop and clarify the “concepts and definitions of competitiveness in the international framework (WP1), namely an identification of key issues to analyse”;
- The evolution and revalidation of the indicators described in WP2;
- Attending to a framework of policy orientations considered pertinent to the objectives, as described in WP5;

Map 3. Sample of Regions (First Proposal)



- Being discussed thoroughly enough during the next group meeting, so that the proposed sample regions can be applied to the project's objectives as fully as possible.

On the other hand, there are external reasons that may lead to a readjustment of the sample proposed in this first report that include the following:

- Difficulties in obtaining statistical information for some of the EU countries. This situation is particularly the case with the new EU member-states;
- Difficulties in obtaining statistical information for the NUTS3 and NUTS2;
- Difficulties in obtaining additional information in the case that the regions chosen belong to countries that are not represented in the network, which only has a representation of seven of the 25+3.

Following these readjustments, the regional sampling will become more stable.

APPENDIX 4.A

Scheme 1. Countries participating in the network

	Spain Portugal	Traditional countries (integration in EU before 1986) Italy UK Netherlands
Periphery	Slovenia Finland	Centre-Pentagon
		New countries (more recent integration in EU)

APPENDIX 4.B

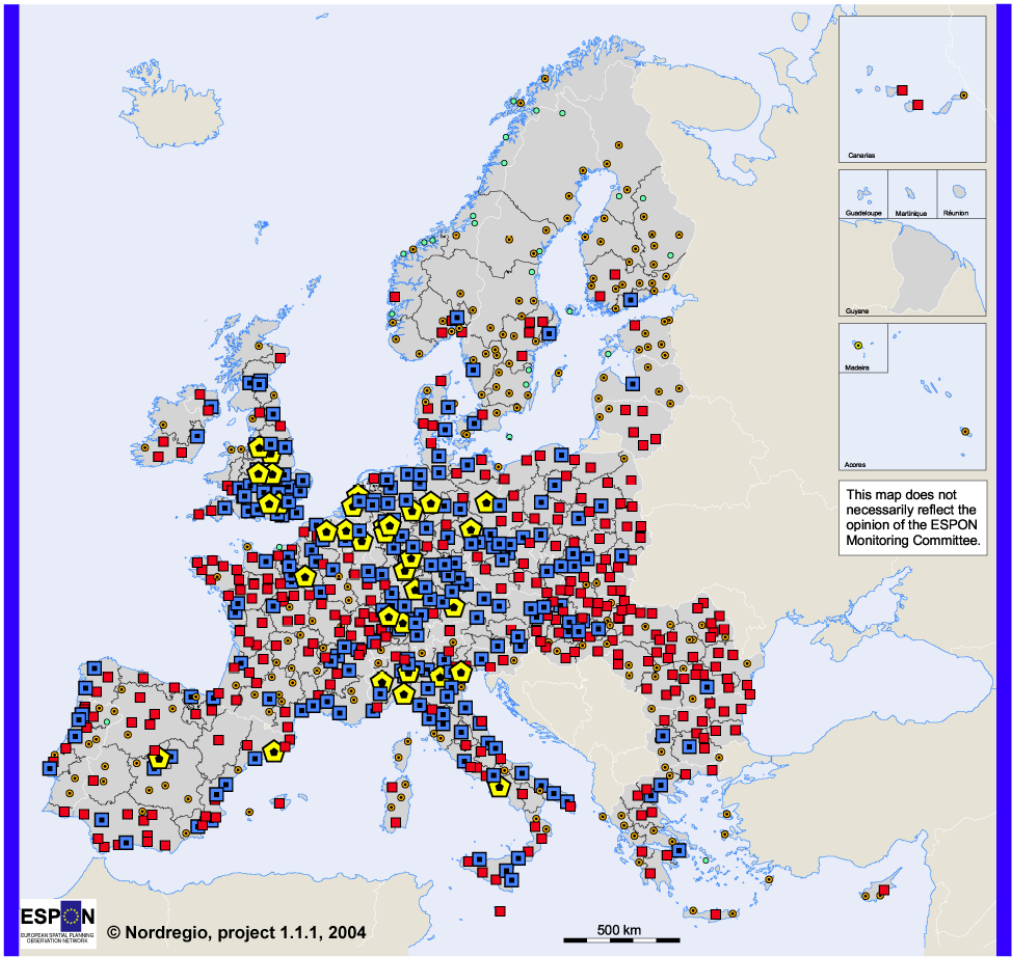
Table 4.B.1. Classification of the 76 MEGAs

MEGA - Global Nodes	*Category1 European Engines*	*Category 2 Strong MEGAs*	*Category 3 Potential MEGAs*	*Category 4 Weak MEGAs*
London Paris	Amsterdam Barcelona Berlin Brussels Copenhagen Frankfurt Hamburg Madrid Milan Munich Rome Stuttgart Zurich	Athens Cologne Dublin Düsseldorf Geneva Gothenburg Helsinki Manchester Oslo Stockholm Vienna	Aarhus Antwerp Bergen Edinburgh Glasgow Birmingham Palma de Mallorca Bern Bilbao Bologna Bratislava Bremen Budapest Lille Lisbon Luxembourg Lyon Malmö Marseille Nice Prague Rotterdam Toulouse Turin Valencia Warsaw	Bordeaux Bucharest Cork Gdansk-Gdynia Genoa Katowice Krakow Le Havre Ljubljana Lodz Naples Porto Poznan Riga Seville Sofia Southampton Szczecin Tallinn Timisoara Turku Valetta Vilnius Wroklaw

Source: ESPON Project 1.1.1.

APPENDIX 4.C

Classification of potential Polycentric Integration Areas according to total population



Source: Project 1.1.1. – "The role, specific situation and potentials of urban areas as nodes in a polycentric development (2002-2004)", Final Report, pp. 16

APPENDIX 4.D

Table 4.D.1: Examples of regions in the Typologies of urban-rural relations

Typology of urban-rural relations	Examples of regions
High urban influence, high human intervention	Benelux countries, a huge part of western Germany, most of England, most of northern Italy and parts of middle and south of Italy strong line of high urban influence and human intervention stretches from the west of Germany through the east to southern Poland, northern Czech Republic down to the west of Slovakia and Hungary. Scattered areas are to be found around the national capitals in particular and some of the seashores of the Mediterranean and the Atlantics. E.g. CATALUNHA, EAST DERBYSHIRE, EAST LOTHIAN AND MIDLOTHIAN, EAST MERSEYSIDE, EAST OF NORTHERN IRELAND, EAST RIDING OF YORKSHIRE, EAST SUSSEX CC, GENOVA, GENT (ARRONDISSEMENT), LEUVEN, MADRID, MILANO, NOORD-DRENTHE, NOORD-FRIESLAND, NOORD-LIMBURG, RHONE, VENEZIA, GRANDE LISBOA
High urban influence, medium human intervention	BALEARES, FERRARA, LUZERNA, MALAGA, PESCARA, ZUIDWEST-FRIESLAND
High urban influence, low human intervention	North (Finland and Sweden), the alpine countries (Austria, Switzerland) Portugal and the Mediterranean countries (Spain, France, Italy) E.g. BAIXO MONDEGO, BERCHTESGADENER LAND, BERN, CADIZ, CAGLIARI, VALENCIA
Low urban influence, high human intervention	Lithuania (KAUNO (APSKRITIS)) former GDR, Hungary, Romania, Bulgaria Parts of Denmark and France (BASTOGNE)
Low urban influence, medium human intervention	Part of Portugal, Spain, part of France E.g. ALTO ALENTEJO, ALTO TRAS-OS-MONTES, HAUTE-MARNE, HAUTE-SAONE, HAUTE-VIENNE, PERUGIA, PIACENZA, SEGOVIA
Low urban influence, low human intervention	Finland and Sweden in the north, Ireland in the west and Greece in the southeast E.g. DOURO, GIRONA, HUELVA, EVROS, EVRYTANIA, L'AQUILA, PYRENEES-ORIENTALES, BRATISLAVSKÝ, AALAND

Source: Project 1.1.1. – "The role, specific situation and potentials of urban areas as nodes in a polycentric development" (2002-2004), Final Report

APPENDIX 4.E

Principal Components Analysis to obtain a typology of territories in order to choose a sample of regions

Steps:

1.Indicators:

Indicators	**Source**
GDP/Capita, pps, 2000	Eurostat
Typology of land use, population density and FUA population	ESPON 1.1.2 and
Typology of multimodal accessibility	ESPON 2.1.1.
Regions Objective 1	Eurostat
Regions Objective 2	Eurostat
Relation rurality	ESPON 1.1.2
Typology of urban-rural relations	ESPON 1.1.2

2. Eigenvalues of Principal Components Analysis

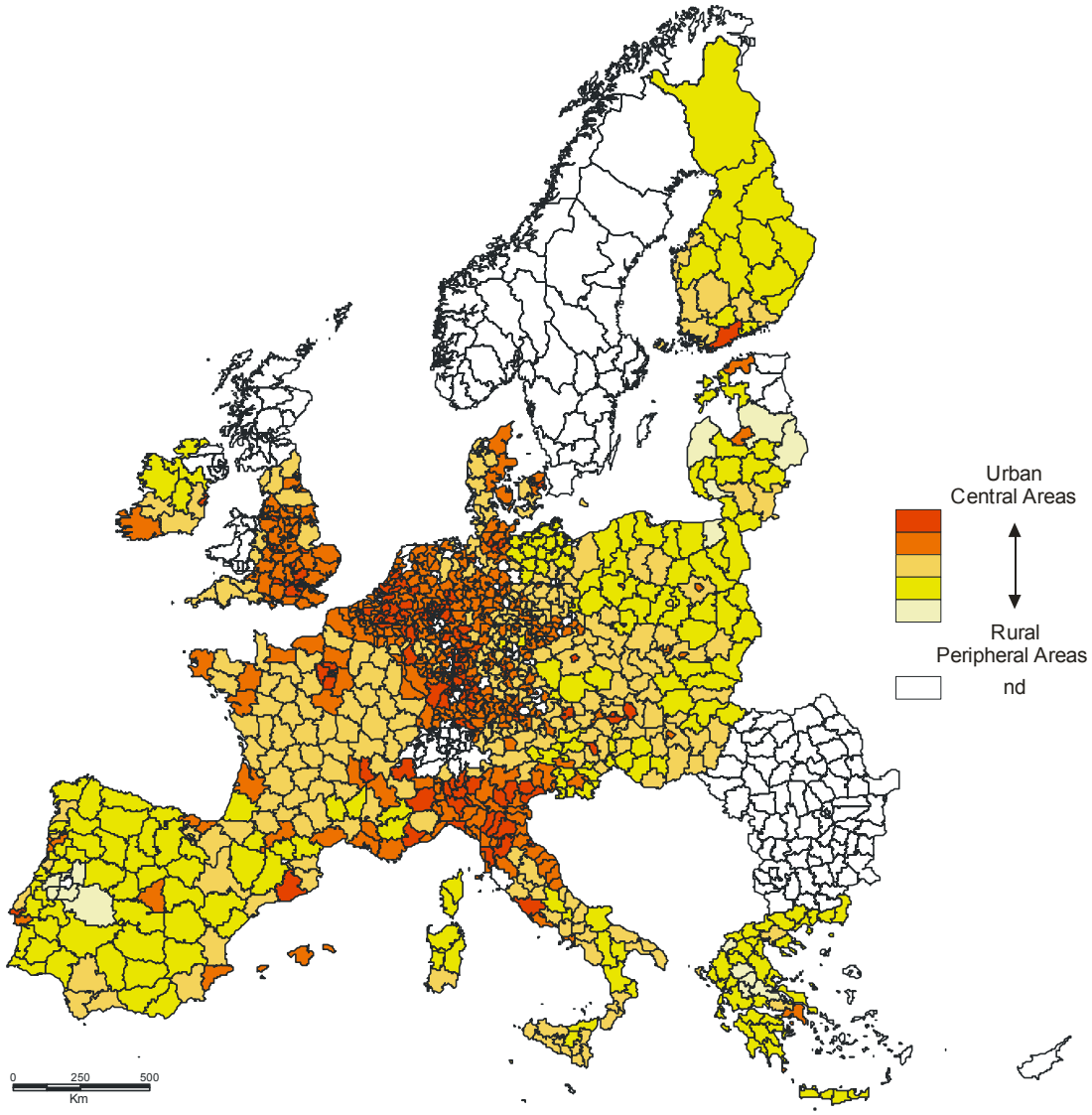
Factor	**Eigenvalue**	**% Total**	**Cumulative**
1	3,533919	50,48456	50,48456
2	1,582953	22,61361	73,09817
3	0,637710	9,11014	82,20831

3. Loadings Matrix

Indicators		**Factor 1**	**Factor 2**	**Factor 3**
GDP/Capita, pps, 2000	Eurostat	0,696274	0,421673	Not relevant
Typology of land use, population density and FUA population	ESPON 1.1.2 and	0,831486	-0,380928	
Typology of multimodal accessibility	ESPON 2.1.1.	0,815254	-0,092100	
Regions Objective 1	Eurostat	-0,646531	-0,637037	
Regions Objective 2	Eurostat	0,209079	0,806956	
Relation rurality	ESPON 1.1.2	-0,723645	0,226677	
Typology of urban-rural relations	ESPON 1.1.2	-0,841270	0,378390	

4. Scores

Factor 1



APPENDIX 4.F

Table 4.F.1 – Main Characteristics of the Sample of Regions (First Proposal)

NUTS_3	NUTS_3	GDP/Capita, pps, 2000	Typology of land use, population density and FUA population	Typology of multimodal accessibility	Regions Objective 1	Regions Objective 2	Relation rurality	Typology of urban-rural relations
Liezen	AT222	4	4C	peripheral	0	2	high	6
Westliche Obersteiermark	AT226	4	4C	peripheral	0	2	high	6
Région Bruxelles-capitale	BE1	6	1A	very central	0	2	low	1
Bruges	BE251	4	2A	intermediate	0	2	low	1
Charleroi	BE322	4	2A	central	0	0	low	1
Demmin	DE808	3	3C	peripheral	1	0	high	5
Rugen	DE80H	3	3C	peripheral	1	0	high	5
Trier-Saarburg	DEB25	3	2A	intermediate	0	0	high	1
Mainz-Bingen	DEB3J	4	2A	very central	0	0	low	1
Pinneberg	DEF09	4	2A	central	0	2	low	1
Pohja-Eesti	EE001	3	2A	intermediate	1	0	low	1
Laane-Esti	EE004	2	4C	peripheral	1	0	high	6
Pontevedra	ES114	3	4A	peripheral	1	0	low	3
Salamanca	ES415	3	4B	very peripheral	1	0	high	6
Valladolid	ES418	4	3B	peripheral	1	0	high	5
Cáceres	ES432	3	4C	very peripheral	1	0	high	6
Barcelona	ES511	4	2A	central	0	2	low	1
Alicante	ES521	3	2A	intermediate	1	0	low	1
Valencia	ES523	4	4A	intermediate	1	0	low	3
Cadiz	ES612	3	4A	peripheral	1	0	low	3
Pohjois-Savo	FI132	4	4B	very peripheral	1	0	high	6
Keski-Suomi	FI141	4	4B	peripheral	1	2	high	6
Etela-Pohjanmaa	FI142	3	4C	very peripheral	0	2	high	6
Keski-Pohjanmaa	FI144	4	4B	very peripheral	1	2	high	6
Uusimaa (maakunta)	FI161	6	2A	intermediate	0	2	low	1
Satakunta	FI172	4	4B	peripheral	0	2	medium	6
Kymenlaakso	FI176	5	4B	peripheral	0	2	low	6
Paris	FR101	6	1A	very central	0	0	low	1
Hauts-de-Seine	FR105	6	1A	very central	0	2	low	1
Seine-Saint-Denis	FR106	5	1A	very central	0	2	low	1
Val-d'Oise	FR108	4	2A	central	0	2	low	1
Aude	FR811	3	4B	peripheral	0	2	high	5
Alpes-de-HauteProvence	FR821	4	4C	peripheral	0	2	high	6

Source: ESPON DATA BASE

cont.

NUTS_3	NUTS_3	GDP/Capita, pps, 2000	Typology of land use, population density and FUA population	Typology of multimodal accessibility	Regions Objective 1	Regions Objective 2	Relation rurality	Typology of urban-rural relations
Hautes-Alpes	FR822	4	4C	peripheral	0	2	high	6
Voiotia	GR241	6	4C	peripheral	1	0	low	6
Vas	HU032	3	2B	peripheral	1	0	high	4
South-east	IE024	4	3C	peripheral	0	0	high	5
Torino	IT111	6	2A	central	0	2	low	1
Genova	IT133	5	2A	central	0	2	low	1
Milano	IT205	6	2A	very central	0	2	low	1
Parma	IT402	6	3A	intermediate	0	2	low	2
Bologna	IT405	6	2A	central	0	2	low	1
Rimini	IT409	6	2A	intermediate	0	2	low	1
Firenze	IT514	6	2A	central	0	2	low	1
Perugia	IT521	5	4B	peripheral	0	2	low	5
Viterbo	IT601	4	3C	intermediate	0	2	high	5
Roma	IT603	6	2A	central	0	2	low	1
Salermo	IT805	3	4A	intermediate	1	0	high	3
Foggia	IT911	3	3B	peripheral	1	0	high	5
Bari	IT912	3	2A	intermediate	1	0	high	1
Potenza	IT921	3	4C	peripheral	1	0	high	6
Matera	IT922	4	3C	peripheral	1	0	high	5
Palermo	ITA02	3	2A	intermediate	1	0	high	1
Messina	ITA03	3	4A	peripheral	1	0	high	3
Ragusa	ITA08	3	3A	peripheral	1	0	high	1
Siracusa	ITA09	4	2A	peripheral	1	0	high	1
Oristano	ITB03	3	3B	peripheral	1	0	high	5
Cagliari	ITB04	4	4A	intermediate	1	0	high	3
Oost-Groningen	NL111	3	2A	peripheral	0	2	high	1
Noord-Friesland	NL121	5	2A	intermediate	0	2	high	1
Zuidwest-Fiesland	NL122	4	3A	intermediate	0	2	high	2
Zuidoost-Fiesland	NL123	4	3A	intermediate	0	2	high	2
Groot-Amsterdam	NL326	6	2A	very central	0	2	low	1
Entre Douro-e-Vouga	PT116	3	4A	peripheral	1	0	medium	3
Baixo Vouga	PT121	3	4A	peripheral	1	0	low	3
Baixo Mondego	PT122	3	4A	peripheral	1	0	medium	3
BI Norte	PT128	2	4B	very peripheral	1	0	high	6

Source: ESPON DATA BASE

cont.

NUTS_3	NUTS_3	GDP/Capita, pps, 2000	Typology of land use, population density and FUA population	Typology of multimodal accessibility	Regions Objective 1	Regions Objective 2	Relation rurality	Typology of urban-rural relations
BI Sul	PT129	3	4C	very peripheral	1	0	high	6
Grande Lisboa	PT132	6	2A	intermediate	0	0	low	1
Koroska	SI003	3	4C	intermediate	1	0	medium	6
Savinjska	SI004	3	4A	peripheral	1	0	high	3
Gorenjska	SI009	3	4C	intermediate	1	0	medium	6
Cheshire CC	UKD22	5	2A	intermediate	0	2	high	1
North and North East L.	UKE13	5	2A	intermediate	0	2	high	1
North Yorkshire CC	UKE22	4	3C	intermediate	0	2	high	5
Bradford	UKE41	4	1A	intermediate	0	2	low	1
Herefordshire	UKG11	4	3C	intermediate	0	2	high	5
Shropshire	UKG22	4	3C	intermediate	0	2	high	5
Stoke-on-Trent	UKG23	4	1A	intermediate	0	2	low	1
Sulfolk	UKH14	5	2A	intermediate	0	2	high	1
Luton	UKH21	5	1A	central	0	2	low	1
Inner London - West	UKI11	6	1A	very central	0	2	low	1
Outer London - West and North West	UKI23	5	1A	very central	0	2	low	1
Milton Keynes	UKJ12	6	2A	central	0	0	low	1
City of Bristol	UKK11	5	1A	intermediate	0	2	low	1

Source: ESPON DATA BASE

LEGEND

GDP/Capita, pps, 2000	Typology of land use, population density and FUA population	Typology of multimodal accessibility	Regions Objective 1 and 2	Relation rurality	Typology of urban-rural relations
1 - <25% of EU average	1A=Urban, densely populated and high urban integration	very central	1	Low	1. High urban influence, high human intervention,. High urban influence, high human intervention,
2 -25 to 50% of EU average	2A=Urban-rural, densely populated and high urban integration	central	2	Medium	2. High urban influence, medium human intervention,
3 – 50 to 75 of EU average	2B=Urban-rural, not densely populated but high urban integration	intermediate		High	3. High urban influence, low human intervention,
4- 75 to 100 of EU average	2C=Urban-peripheral, not densely populated and low urban integration	peripheral			4. Low urban influence, high human intervention,
5 – 100-125 of EU average	3A= Rural-urban, densely populated and high urban integration	very peripheral			5. Low urban influence, medium human intervention
6 - >125% of EU average	3B= Rural-urban, not densely populated, but high urban integration				6. Low urban influence, low human intervention,
	3C= Rural-urban, not densely populated, and low urban integration				
	4A= Peripheral urban densely populated and high urban integration				
	4B= Peripheral rural, not densely populated and high urban integration				
	4C= Peripheral rural, not densely populated and low urban integration				

Source: ESPON DATA BASE

Table 4.F.2 – Main Characheristics of the Sample of Regions (First Proposal)

NUTS_3	NUTS_3	MAIN CITY NAME	overall_typology
Liezen	AT222		
Westliche Obersteiermark	AT226		
Région Bruxelles-capitale/Brussels hoofdstad gewest	BE1	BRUXELLES	MEGA
Bruges	BE251	BRUGGE	transnational/national
Charleroi	BE322	CHARLEROI	transnational/national
Demmin	DE808		
Rugen	DE80H		
Trier-Saarburg	DEB25		
Mainz-Bingen	DEB3J		
Pinneberg	DEF09		
Pohja-Eesti	EE001	KOHTLA-JARVE	regional/local
Laane-Esti	EE004	NARVA	regional/local
Pontevedra	ES114	LOGRONO	transnational/national
Salamanca	ES415	SALAMANCA	regional/local
Valladolid	ES418	VALLADOLID	transnational/national
Cáceres	ES432	CACERES	regional/local
Barcelona	ES511	BARCELONA	MEGA
Alicante	ES521	ALICANTE	transnational/national
Valencia	ES523	VALENCIA	MEGA
Cadiz	ES612	CADIZ	transnational/national
Pohjois-Savo	FI132	KUOPIO	transnational/national
Keski-Suomi	FI141	JYVASKYLA	transnational/national
Etela-Pohjanmaa	FI142	FI033	regional
Keski-Pohjanmaa	FI144	KOKKOLA	regional/local
Uusimaa (maakunta)	FI161	HELSINKI	MEGA
Satakunta	FI172	PORI	transnational/national
Kymenlaakso	FI176	KOTKA	transnational/national
Paris	FR101	PARIS	MEGA
Hauts-de-Seine	FR105		
Seine-Saint-Denis	FR106	LA ROCHE-SUR-YON	transnational/national
Val-d'Oise	FR108	LAON	regional/local
Aude	FR811	CARCASSONNE	regional/local
Alpes-de-Huate-Provence	FR821	DIGNE	regional/local
Hautes-Alpes	FR822	GAP	regional/local
Voiotia	GR241	LEVADHIA	regional/local
Vas	HU032	SARVAR	regional/local
South-east	IE024	WATERFORD	regional/local
Torino	IT111	TORINO	MEGA
Genova	IT133	GENOVA	MEGA
Milano	IT205	MILANO	MEGA
Parma	IT402	PARMA	transnational/national

Source: ESPON DATA BASE – elaborated by Project 1.1.1.

cont.

NUTS_3	NUTS_3	MAIN CITY NAME	overall_typology
Bologna	IT405	BOLOGNA	MEGA
Rimini	IT409	RIMINI	regional/local
Firenze	IT514	FIRENZE	transnational/national
Perugia	IT521	PERUGIA	transnational/national
Viterbo	IT601	VITERBO	regional/local
Roma	IT603	ROMA	MEGA
Salermo	IT805	SALERNO	transnational/national
Foggia	IT911	FOGGIA	regional/local
Bari	IT912	BARI	transnational/national
Potenza	IT921	POTENZA	regional/local
Matera	IT922	MATERA	regional/local
Palermo	ITA02	PALERMO	transnational/national
Messina	ITA03	MESSINA	regional/local
Ragusa	ITA08	MODICA	regional/local
Siracusa	ITA09	SIRACUSA	regional/local
Oristano	ITB03	ORISTANO	regional/local
Cagliari	ITB04	CAGLIARI	transnational/national
Oost-Groningen	NL111		
Noord-Friesland	NL121	LEEUWARDEN	transnational/national
Zuidwest-Fiesland	NL122		
Zuidoost-Fiesland	NL123		
Groot-Amsterdam	NL326	AMSTERDAM	MEGA
Entre Douro-e-Vouga	PT116	FEIRA	regional/local
Baixo Vouga	PT121	AVEIRO	transnational/national
Baixo Mondego	PT122		
BI Norte	PT128	GUARDA	regional/local
BI Sul	PT129	CASTELO BRANCO	regional/local
Grande Lisboa	PT132	LISBOA	MEGA
Koroska	SI003		
Savinjska	SI004	CELJE	regional/local
Gorenjska	SI009	LJUBLJANA	MEGA
Cheshire CC	UKD22	CHESTER	regional/local
North and North East L.	UKE13	HULL	transnational/national
North Yorkshire CC	UKE22	HARROGATE	regional/local
Bradford	UKE41	BRADFORD	transnational/national
Herefordshire	UKG11		
Shropshire	UKG22	SHREWSBURY	regional/local
Stoke-on-Trent	UKG23	STOKE	transnational/national
Sulfolk	UKH14	FELIXSTOWE	regional/local
Luton	UKH21	LUTON/DUNSTABLE	transnational/national
Inner London - West	UKI11	LONDON	MEGA
Outer London - West and North West	UKI23	LONDON	MEGA
Milton Keynes	UKJ12	MILTON KEYNES	regional/local
City of Bristol	UKK11	BRISTOL	transnational/national

Source: ESPON DATA BASE – elaborated by Project 1.1.1.

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6. Education, Learning and Training

Education and Training
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eEurope (including the eLearning initiative)
<http://www.europa.eu.int/information_society/eeurope/index_en.htm>

Lifelong Learning
<http://www.europa.eu.int/comm/education/policies/lll/lll_en.html>

7. Environment and Sustainable Development

EU Sustainable Development Strategy
<http://www.europa.eu.int/comm/sustainable/pages/strategy_en.htm>

8. Spatial/Regional Issues

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<http://www.europa.eu.int/comm/regional_policy/themes/spatial_en.htm>

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