



COHESION POLICY: METHODOLOGY AND INDICATORS TOWARDS COMMON APPROACH

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She is an expert of Environmental Impact Assessment (EIA), Environmental Strategic Assessment (ESA), Territorial Impact Assessment (TIA) applied at the regional and local "bottom-up" development in advanced and underdeveloped regions; she is author of SEA and TIA patents applied at master and territorial plans.

Between 2000-2006 she was LP and partner of several ESPON projects coordinating transnational project groups. She is member of the Italian ESPON Scientific Committee and of METREX and IURIAF nets. She was Chief/member of several European Scientific Committee for the polycentric and cohesion development.

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Abstract

The territorial cohesion is a focal object of the regional programming period 2007-2013.

This paper aims to purpose a critical review of the cohesion conceptualisation and of its measure, starting from an exchange of experiences and from an initial institutional demand inspired to regional projects foreseen in 2013 programme (ESPON Seminar 2008; French Green paper on Cohesion 2008).

Starting from a literature review and from the basic question of indicators, the paper aims to enhance territorial cohesion, measuring its different levels at local, national and European level. The author takes a methodological approach to analyse and to detect a set of territorial cohesion indicators and to evaluate effectiveness and efficiency of indicators' systems, currently used to measure this territorial dimension (STeMA). This kind of approach is relevant to the programming period of new Structural Funds, looking at the French Green Paper 2008, implementing the 2007-13 Programme.

Keywords: territorial cohesion, model, system of indicators, efficiency

JEL Classification: P25, P41, P48, R11, R12

Introduction

A lot of words were spent about European cohesion policy, linking it to territorial development and cooperation, balanced growth, polycentrism, urban drives, rural areas, ultra-peripheries (Territorial Agenda 2007).

Thus, it could presuppose the cohesion policy influences Energy, Climate Change, Demography, Global Economic Competition, Accessibility, Geographical structure of UE (cities, regions), etc., because, changing the policy paradigm through cohesion, new investments in potential growth areas are needed, but, at the same time, regional and urban influencing areas change promoting co-operation and cohesion to create integrated areas.

At the moment, in Europe, researchers and institutions' points of view are various:

- 1 traditional indicators (like GDP) are not exhaustive to explain how wealth is distributed onto regions and it helps cohesion
- 2 the indicators' polarization is made without territorialisation
- 3 some territorial indexes, like ETCI, could be manipulated, excluding demographic situations, education, employment and life expectancy, from the cohesion calculation.
- 4 territorial indicators for cohesion remind to complex visions, so we should design a territorial base and adopt a systemic approach and a method to impact assessment, to identify territorial indicators
- 5 time dimension is fundamental to measure cohesion status and progress
- 6 it's wrong to implement only a few and simplified indicators in cohesion measure
- 7 some experiences of Territorial Impact Assessment (TIA) and new methodologies could help cohesion characteristics to be identified

So, a Multilevel Governance and a Multiscalar Approach are needed, as well as the role of territorial indicators to maintain comparable information in particular to territorial diversity.

A support for operational tools for territorial impacts, policies' implementations and orientations should be developed.

Instead policy makers suggest

- 1 the use of traditional cohesion indicators included in past 4 relative reports
- 2 the development of policy composite indicators able to measure regional competitiveness in terms of attractiveness, labour market, accessibility, too
- 3 territorial cohesion as aspect of sustainable development which minimises conflicts. It cross-refers to costs of environmental protection, environmental externalities, environmental performance or economy, policies' assessment and solidarity. So, it's necessary to change the

approach and to use indicators for policy processes too.

1. Some topic suggestions from the literature review

Cohesion is always located and therefore it is possible to measure its territorial regional dimension and identity, which is strictly linked to the territorial socio-economic system's behaviour in Europe. This connection had already been pointed out starting from J. Brunhes e C. Vallaux (1921), G. Jaia (1938), J. Schumpeter (1954), W. Sombart (1967), P. George (1967), regarding to contents and categories which become a set of variables in the field of geo-economics background.

Adding further parameters – from EU focus on the notion of “economic system” as expression of national and regional cohesive values (political structure and organization, history, identity) – cohesion can be assessed in relation to the territorial dimension that puts on at regional level.

Nowadays, new methods (Prezioso, 2006) are able to allow the cohesion through an ex ante impact assessment, evaluating inter-dependence relations among traditional (and not) economic variables, without focus on regional wealth indicators only (e.g. GDP, employment, productivity).

According to this new approach, cohesion is evaluated as a quali-quantitative effect of policy choices of the State or of Regions; it affects both effectiveness and mass (population, natural resources, etc.) of a territory, without being affected, in turn (Lo Monaco, 1983; Prezioso, 2008).

Economics and Geography of the last century defined cohesion's principal features. Indicators, derived from these definitions, have been recently (2007) enjoyed in the geographic and geo-economic space, which is the territorial dimension hosting everyday cohesion experiences. Being less abstract about the so-called “space”, the territory could be studied in multidimensional ways and be directly perceived by citizens and citizenships.

Once applied to regional economies, all these elements appear as driven by a unique process in the same “dominion”: the territory. Thus, *without cohesion*, some systems hang on to their places of origin (as in many southern Europe regions) and give to birth “cohesive implosion” phenomena.

Cohesive values are also laws and regulations, written and decreed by constituting and solemn acts (like the “Magna Carta Libertatum”); usually these are principles at the base of policy actions, that allow operating in respect of ethical non-religious principles, for community interests, permitting society to develop itself through new communicative, relational, organisational and associative forms. In this perspective cohesion could originate an organicistic administration of the State (R. Kjellen, 1917), interpretable in geo-political terms (regional federalism).

To establish the relation between territory and cohesive political-administrative system (“region”), only a few indicators were involved (density, infrastructures' effectiveness and management, fixed social capital rate) (ESPON, 2008), demonstrating how cohesion is affected by geographical

determinants in Europe, according to scale levels and technical in-depth analysis of belonging and to the productivity of activities performed by individuals and institutions, stimulated and provided by the presence of common values of socio-cultural orientations.

According to M. Weber (1945) the cohesion determinant, although present in all cultures, is a real value only in western societies' post-capitalism systems, which exploit it in order to spread, having accepted competition, free market access of all enterprises producing similar goods, price, competitiveness. This explains positive results achieved in Europe by Industrial Districts, where cohesion has been assessed several times through the measure of *milieu*.

In each territorial context cohesion becomes “geographically” relevant only when it is assumed as “organizing principle” of landscape, where it organises itself by turning positional and functional relations among its biotic and a-biotic elements into a “technical rationality”.

Since 2000, cohesion was considered a new intervention's instrument for the national spread of the economic, monetary and social solidarity. Therefore, financial resources, connected to cohesion, pursued different objectives instead of other communitarian “funds”. Thus, to benefit from Cohesion Fund means claim to be a not cohesive territory; it means show its own regional disparities (like in Greece, Ireland, Spain and Portugal) and its will to reduce them by acting/planning through operating sectors of environment and transportation infrastructures.

Planning experience results have not always been positive. Between 2005-2006 cohesion contents have been redefined by bringing modalities foreseeing the new development cycle (2007-2013), by gaining positive and active meaning of *attractive force, able to hold out against impact, breakdown and separation from an economy or a society*. The same positive meaning was accepted by the European economy and society, which today considers cohesion as the capability of different (anthrop, natural and institutional) territorial components, to search and to achieve unity and unifying proposals, even in presence of centrifugal pushes (Prezioso, 2006).

To analyse a regional territory and its internal and external cohesion degree, means to detect and to assess its resources and to relate inter-dependence connections. With regard to cohesion's evaluation, available indicators (EUROSTAT, ESPON, OCSE, JRC, etc.) allow to detect *natural, financial, human and cultural resources*, in quali-quantitative, distributive, temporal terms, highlighting endogenous modalities through which these territorialized indicators interact.

“Europe System” points out cohesion as a regulated element to push towards collective actions (multilevel governance), in order to fight effects of competitiveness deficit in 2007-2013.

The new cohesion approach asks for a long stage of transformation and development of European and national policies between 2005 and 2007. Indications on *social inclusion potential, balanced development and life quality were involved too*.

The integration of territorial cohesion indicators, after series of surveys and four *Reports* (2001-2006), highlighted three extents: *integration*, *coherence* and *sustainability* (focal points of the “VII Communitarian Framework 2007-2013” as well) stressing the point on how to deal with cohesion’s regional borders, since it is irrespective of NUTs division, for its synonymy with intra and inter trans-border co-operation.

EU traditional administrative regions (NUTs) have little to do with cohesion, which nevertheless has to be assessed through data located inside of a statistic and territorial unity of reference (geo-referencing).

To clarify this concept we have to remember how cohesion emerges over time as result of a voluntary integration act, including all passages this act asks for in real life.

So, stability, convergence, improvement, performance became criteria at the base of the choice of cohesion’s territorial indicators; deregulated (urban and regional) competition relations stand versus them, thus it confirms the strict relationship between cohesion and territory. This is strengthened by the European Constitution, that devotes a whole section to this principle, determining that the future of cohesion should have economic, social and territorial features (art. I-14 par. 2: “*the Union has authority in competition with member States with regards social and territorial economic cohesion*”).

Pursuing cohesion is a political commitment for EU, as confirmed by the *2007 Territorial Agenda* and the 2008 French Green Paper: *Territorial cohesion is the third dimension of cohesion, together with social and economic cohesion.*

2. From political and programmed cohesion to regional territorial empiricism

With regard to regional dimension, cohesion was assessed (almost exclusively) at urban behaviour's scale. This measure was often carried out through different mark indicators, sometimes out of synch in time, thus creating a wide gap between empirical experiences at local scale and regional territorial policies. This phenomenon is studied and disassembled, so that we could part from the subsidiary relation that cohesion has to observe in the administration field (*multilevel governance*), too.

Cohesion emerges in form of polycentrism (Prezioso, 2007), through which it puts on a settled and organized territorial form; therefore it is hard to define an unequivocal typology of territorial cohesion, because of regional and sub-regional dimension changing its connotation over time.

Territorial cohesion’s “scattering” and urban functions’ fragmentation have their reading scale in polycentric regional and sub-regional systems: regions (NUTs 2) and provinces (NUTs 3). It

increases or decreases with other phenomena: labour market, social disease, marginalization and social exclusion, explosion and diversification of mobility/accessibility, urban and territorial regulation and regeneration.

Cohesion shapes an integrated geographic area, fixes and standardises economic and managerial reciprocal rules among economic-independent areas (cross-border zones).

Regional cohesion depends on its existence at sub-regional scale (NUTs 3), which is characterized by the transformation of original localisms into local systems in many European regions. Different sources pay attention to this capability, that is due to: i) competition increasing at international level; ii) processes' growth of production delocalization; iii) inclination towards faster innovation of process, product and organization, due to new technologies' implementation (ICT).

Cohesion's territorial dimension is always represented by a local collective interest.

Some authors, Camagni (1998) included, contribute claiming that, also in presence of demographic stagnation, cohesion could give to birth different settlement models, affecting a wider territorial area. Where local cohesion is stable for at least a decade (like in periurban areas) environmental values are detected higher and more lasting, as well as chances for endogenous investments beyond the city (as in Italy's North-East); when cohesion's attraction fades, phenomena appear as quality loss, functionality lack, rejection of pursuing exogenous economic objectives.

The *city*, not the territory, emerges as a *two speed cohesion vehicle*: for outcasts and for winners. This is measurable in all Fordist and post-Fordist cities, where segregation is nevertheless "joined" by strong class solidarity and socialization capability, due to the small size of mobility areas.

On the other side, in the "exploded" city, segregation is "dissociated", highlighting islands of poverty and exclusion that are randomly located inside the city fabric, virtually shaping an archipelago.

In order to recompose this de-structured vision, according to models of the end of last century, it was necessary a connected tissue organized on three elements:

1. internal accessibility (average mobility time less than 1 hour, diversification and specialization of activities, complete supply of goods, complex complementarities organized in network)
2. presence of interconnection nodes of differentiated networks, which would grant access to external nodes of the global system
3. self-organization, which leads to a strongly inter-connected landscape, mobility areas widen and synchronize (as suggested by the Netherlands experience).

It seems possible to customize polycentric cohesive patterns in terms of house-work, leaving the individual free of building an "à la carte" city to substitute to the Fordist integration and post-Fordist disintegration.

This new model, defined as *metropolitanization-regionalization*, ratifies an idea of cohesion in agreement with the Local Bodies' reform of some EU15 countries (France, Italy, Spain), and after the enlargement, of some NEC, by stressing the role of the territory and forcing policies and programming planners to ponder over what integration models achieve through planning (micro-territorial for a united and co-operative cohesion, macro-territorial to be consistent).

Cohesion is represented and measured by several regions where economic and social life is directly affected by sufficient intra-border/trans-border integration and inter-dependence: in Europe these are NUTs; these highlight its macro-economic and infrastructural features, as well as its capability in achieving local integration. Cohesive NUTs receive and get out great flows inside themselves and towards urban and productive centres, by organizing their daily directionality, like in Swiss Cantons and some Netherlands' regions, or their linear transit in trans-border cases.

When flows and exchanges are moderate, cohesion's territorial dimension extends, as far as the share of territory interested, by integrative relations since the origin/destination of traditional activities (work, leisure, education, provisioning) takes its fundamental role.

Nevertheless, NUTs are not totally homogeneous territorial units; they are at statistic and spatial levels only. In reality they are characterized by strong functional links that mostly originate from economic disparities and cultural/social affinities, and sometimes they define unified cultural landscapes.

To delve them inside is not easy, because they host different communities. For **example** NUTs 3 present regions inside regions, and all over the Europe there are two different types: 1) institutional sub-regions, particularly numerous and stable; 2) de-facto sub-regions, inside of the most recently constituted institutional ones.

Therefore, some cohesion's aspects are still evaluated in functional, quantitative or qualitative terms ("elevated, high, medium, low, etc.", or "rare, scarce, spread, etc.", or else "A, B, C, D, etc.").

In this perspective cohesion was also intended as a variable of global competition among internationalized territories, where economic concentration creates hierarchies among cities and city-regions, nowadays important for how territories could turn themselves into active subjects of development.

So co-operation among involved cities (shaping a common network) is an element of cohesion's measure, and the more agreements' number increases, the most a common "bottom-up" social and cultural identity (Cf. Reclus-Datar, 1989) is present.

In the first European Spatial Development Perspective (ESDP, 1998) there were important remarks, principally in the European VI Framework Programme, where, for different reasons, ethical-cultural guiding principles were fixed in order to regulate actions of those (public and private) subjects that

contribute to the definition of the cohesive development model:

1. a common European interest to keep a balanced and sustainable territorial development, based on the respect of sensitive and highly naturalistic areas, on a human settlement organization that pays attention on matter of land consumption and balanced relation with the territory;
2. the implementation, in European policy-making, of two concepts: globalisation and city networks.

In this context, cohesion acts to stress competitive capability of the territory.

The answer given by many people, both for regional cities networks and for major metropolises, lies in connection with wide trans-European transportation and communication network as a cohesive equipotential polycentric choice. That clashes with EU condition to achieve a balanced development and general objectives to territorial equity: to intervene in segregation and poverty areas, to increase competitiveness through better effectiveness and accessibility for external investors: to achieve sustainability by acting on energy network and by using of weak resources like land and open spaces.

This divergence is probably due to the sharp “cultural inclination” shown by the European Committee on Spatial Development (CSD) to favour (also financially), dealing with urban themes more than with cohesion.

In the Agenda 2000 the Commission’s reply to 1998's expectations was poor. It opened to Structural Funds the sole, troubling neighbourhoods (Objective 2) . So we have to wait for the implementation of the *2007 Territorial Agenda* to exceed meta-models or *policy metaphors* on the cohesion.

3. Cohesion, between co-operation and sustainable competitiveness

Shifting the focus on the connection between cohesion and competitiveness at regional level, it is clear that endogenous development systems may lose cohesion when they project outside.

In this context one of the key themes concerns the revival of urban public works of local prominence, through mechanisms of international project financing. The result is a tendency towards implementing, especially restriction planning policies, moderating urban development in order to avert the risk of new elements of discontinuity and disorder. Changing co-operation forms among public and private subjects operating inside the city, or among different territorial governance levels, cohesion is destabilized.

This is undoubtedly a key issue at urban and large area (metropolitan area) levels, as it is confirmed by recent attempts that some cities achieved to a unitary development plan through the use of “forth generation” planning instruments (Prezioso, 2002), the only solution to detect and to select

endogenous factors, fit for the assessment of suitable policy choices.

Research themes and possible solutions have been detected in order to give new impulses to cohesion studies and its related implementation, following the EU push to discuss it in terms of cohesive development, thus highlighting a paradox: strongly pursuing cohesion, the territory could blow up, causing the functional and settlement fragmentation, multiplying actors and institutions, amplifying the absence of cohesive processes.

In these cases some analysts – pro a wider and less conventional vision – point out the government responsibility and its related actions’ relevance and effectiveness in partnership approaches that are not always flexible, contractual, participative.

Others take their attention from the range of international experiences with a specific interest for the French case, where, caused to traditions and experiences, governance rules and cohesion characters coincide at inter-municipal level in the form of voluntary and solidarity associations for co-operation (e.g. the *Loi d'orientation relative à l'administration territoriale* of 1992).

A solution might rely in the *scale cohesion* (or *geographic area cohesion*) that, shunning the hierarchical approach of 60ies, states the failure of Authorities for their lowest “bottom-up” legitimization, and subsequently assumes the *measure of the principle of sustainability* as cohesion’s reference frame.

In *scale* (or *geographic area*) *cohesion* the role played by sustainability allows population to have a high level of quality life, not transferring socioeconomic and environmental issues on the outside or on next generations. The sustainable development clashes with cohesive solutions of deregulatory and functionalist kinds that are adopted in national and European political arenas, strengthening the role of medium-long term programming.

Deregulation leads to apply models of “corporate” cohesion to the city, following enterprising and marketing logics – useful also in the cohesion’s management stage – to answer to the social and economic decline in the international competition context.

It is obvious that two dominant models of cohesion until 2004 could only follow

- 1 the co-operative/institutional way, with indirect governance rules, conditioned by single municipalities’ (or groups of) interest according to the Francophone scheme, or/and
- 2 the argumentative/participative way, according to the Anglophone experience.

In this condition places of cohesion’s policy are proved to be various, and EU asked for them about system flexibility and opening, as well as capability to co-operate at different levels according to some principles: *subsidiarity, sustainability, interurban mobility, extended sprawl, “top-down” and “bottom-up” approaches’ integration, metropolitan polycentrism.*

This could be the reason why main effects on cohesion were observed in urban/rural regions, where

it is discernible a recent evolution of the urban landscape, marked by the revival and the sharpening of spatial segregation and social exclusion problems, besides issues on environment, transport ineffectiveness, minor cities frailty.

The need of organise a territory according to cohesion criteria is more and more acknowledged by EU member States, in perspective to a successful coexistence of prosperity and handicap areas. Therefore co-operation could be interpreted as a cohesion indicator.

Cohesion may arise also among groups of cities, whose current status in Europe was analysed in the document pre-arranged for the Ministers' Conference of Bristol 2005, *Cities and the Lisbon Agenda- Assessing the performance of the city*, in order to verify their contribution to the achievement of the Lisbon Agenda.

Considering that cities are radically different from States and regions, urban trends do not follow global or national ones and reveal a great variation in European cohesion (for instance in Italy and Germany).

Some key indicators correlate directly the city to main objectives of the Lisbon Agenda: urban potential attraction for work and investments; innovation and knowledge economy; higher and better occupation. Other indicators highlight connectivity, metropolitanization, ICT supply, environment and culture.

Evaluation favours medium-large central cities of the Pentagon, in contrast with a peripheral Europe (north of Europe, new Eastern Countries, south of Italy, south of Spain, Greece, Portugal) and an intermediate Europe (north of Italy, France, north-west of Spain, Great Britain). For instance, air connectivity helps cities of the second type to approach global markets (Dublin, Helsinki), absorbing effectively them into the ICT society. Nevertheless multimodal accessibility is not directly proportional to a State's GDP, as in Romania and Bulgaria (high accessibility and low GDP) where public transports are a valid alternative to private car use (79% of Budapest citizens rely on public transports). Where this relation is inverted values are lower (18% in Sheffield), while they are higher (65% in Stockholm, Helsinki and Copenhagen) where ICT technologies drastically reduced the cities' dependence on accessibility and distances, overturning the monocentric structure of connectivity in Europe in favour of peripheral cities (Cork, Oulu).

However, for the "Digital Divide" persistence, these features draw a more cohesive "north of Europe", related to Spain, Portugal and east of Europe (with rising performance in Slovakia and Estonia only).

EU cohesion policy is affected also by environmental choices and climate change (PM₁₀ concentration, noise impacts, low waste recycling), while culture became a vehicle of trans-urban competition (as in Barcelona vs. Madrid and Munich vs. Berlin) and patents are a measure of

innovation and growth (Helsinki) or of higher entrepreneurial contexts (Bulgaria, Poland, Romania).

European employment policy highlights another cohesion's paradox: cities are places with higher employment and unemployment rates (3/4 of EU cities have the lowest ratio of employed residents measured in their whole State), thus making hard the achievement of Lisbon Agenda's goals (employment rate at 70%). In 2001 this result was reached by the 10% of all European cities, while in many countries (Poland, Romania, Ireland, Austria and Denmark) not a single city exceeded the national average, contrary to what was measured in cities and capitals like Paris, Barcelona, Stockholm and Munich.

Urban Audit registers huge disparities of unemployment rate, which concentrates also in medium cities' peripheries, since many employed residents choose to live at the city's edge. The 67% of considered cities is the unemployment rate exceeding, sometimes substantially, the national average (in Naples it is 32% vs. a national average rate of 9%) and is generally associated with urban decay. Strangers presence in the city could affect cohesion negatively. In Germany, for example, foreign residents count the 24% in Munich, and the 2,5% only in Erfurt or Weimar; in Bulgarian and Romanian cities this percentage is quite lower, as in whole countries.

Shortage of services for residents is also a factor increasing disparities. In Warsaw, the 5% of town centre's houses lacks of basic services, as the 34% of peripheries'; in Liverpool, percentages are 27% in the centre and 50% in some peripheral zones. This aspect is strictly related to living standards and real estate costs and to levels of family average income and, more or less directly, with poverty and social exclusion.

4. Territorial cohesion's indicators

Therefore it is not easy to summarize main indicators used at national and European level to measure cohesion. There are various kinds indeed and many of them match with the 2000-2006 elaboration for implementing the Lisbon Strategy.

Systematization is proposed below, considering also regional scale's coverage level and data reliability.

Indicators' application at the European and Italian cases (ESPON 3.3 project, 2006; National Cohesion Report, 2006) allowed testing their reliability. The test had recourse to indicators that are thought to be directly and indirectly fit to measure territorial cohesion, statistically and geographically belonging to relevant sets and geographic scales: classical, structural, international, national-regional, urban.

Interaction between these two aspects, accepted by the STeMA model (Sustainable Territorial

Environmental/Economic Management Approach), enabled the territorialization of cohesion.

This approach operates according to a quali-quantitative systems and it was experimented in several contexts (Prezioso, 2003, 2006, 2007), highlighting phenomena potentials like polycentrism in long term too, allowing the elaboration of European territorial scenarios, not always favourable to cohesion, which is the starting point for investments of competitiveness in sustainability (Prezioso, 2006) that are co-operative according to the pattern chosen towards EU27 integration.

It shows:

1) Classical indicators concern the whole socio-economic structure of a region and are divided into macro areas:

- 1 **Structural Indicators**, suitable for single theme's confrontation in EU main industrialized countries;
- 2 **Territorial indicators**, suitable for confrontation among regions;
- 3 **Competitiveness Indicators**, related to single intervention sectors.

Their use, in the STeMA procedure, detects a geographic shift of disparities eastwards and a worse employment situation, due to a week acceleration of pre-enlargement economic restructuring (technology, ICT, age, migration); thus, linking cohesion in these contexts to European Employment Strategy's orientations and priorities like *convergence*, *regional* and *employment competitiveness*, *territorial co-operation*, that could rely on 18 billion Euro from Cohesion Fund in 2000-2006.

2) Structural indicators, divided into four sectors, are fit to measure the overall trend of regional economy and to define the global economic context where structural reforms on labour, product and capital markets are implemented. These indicators concern sustainable "growth" and structural economic dynamism, macro-economic stability, including also female employment rates, and tax rate on low-wages workers as a measure of incentives to employment.

Indicators are related to economic reforms, evaluating progress made towards a higher effectiveness and better functioning of product and capital markets. Also indicators on market integration and prices' related levels are included, so to assess performance in markets' integration and effectiveness.

Indicators on social cohesion concern poverty rate, income spread and risk of social exclusion. In this group some indicators are included to measure disparities in terms of life quality for different age brackets, sexes and population groups.

Regional disparities are evaluated through an indicator related to education results (early school leavers).

In 2002 the structural indicators' list was modified, achieving the number of 42 to enable clear,

simple and precise political messages; at the same time, reflecting the equal prominence granted to Lisbon and Gothenburg in fields of 1) employment, 2) innovation and research, 3) economic reforms, 4) social cohesion, and 5) environment. The list features also new indicators where the sufficient progress was registered in data elaboration: “actual average age of retirement”, “business registration” and “finance integration”. The inclusion of the “actual average age of retirement” indicator reflects the emphasis placed on it by Barcelona European Council.

In 2003 the European Commission proposed a restricted list of 14 structural indicators, in order to grant a better data coverage for new accession countries and candidate countries in terms of national comparison.

3) International indicators, largely deriving from those used to measure competitiveness in structural terms: real and virtual interconnection networks, i.e. physical infrastructures (roads, railroads, harbours, airports, telecommunications) and strategic ones (education, knowledge, research).

Their use allows the purpose of delivering a regional ranking of economic and social performances that constitute an attraction factor, assessing positive and negative competitiveness trends in each region.

Specifically, indicators considered for the Italian competitiveness assessment are those used by international studies like the World Economic Forum. The country ranking is established on the base of two different indexes:

- 1 **GCI (Growth Competitiveness Index)**. This is made up of three basic indexes: technology index; public institutions index; macroeconomic environment index;
- 2 **BCI (Business Competitiveness Index)**. This is made up of two basic indexes: sophistication of company operations and strategy; quality of the national business environment.

Both of them are the result of measures based on official statistical data and data obtained through special sample surveys.

Besides, indicators re-included in the “IMD world competitiveness yearbook” were analysed. This report makes reference to 59 countries or regional economies (selected on the base of their impact on global economy and the availability of comparable statistical information) and defines the ranking of different countries in four main areas:

- 1 economic performance;
- 2 government efficiency;
- 3 business efficiency;
- 4 infrastructure.

Finally, attention was paid to the “Ethical Rating” proposed since 2002 by the European Investment Fund and OECD, consisting of a 37 countries’ rating based on five main factors:

- 1 human rights;
- 2 laws and policies on environment;
- 3 relations with developing countries;
- 4 sustainability of the economic structure;
- 5 internal democracy level and security policy.

This rating gives a base to indications and evaluations expressed by UN, OECD, International Labour Organisation and EU.

International indicators could be grouped into homogeneous systems, each with its own competitiveness key: competitiveness keys concern the whole of a society’s assets, from economic welfare to social services, from human capital to social capital, from public services to infrastructures, up to culture, research and internationalization. The detected systems are usually:

- 1 economic welfare and labour market
- 2 social welfare
- 3 industry
- 4 services
- 5 networks development
- 6 transportation
- 7 agriculture and environment
- 8 culture
- 9 Research & Development
- 10 ICT diffusion
- 11 internationalization

Each homogeneous system corresponds with a set of indicators that are representative of the progress made by each region in the considered development field.

4) Regional indicators, based on country level statistics for the evaluation of cohesion policies, processed by National Statistics Institutes at regional basis, targeted to actions of programming and ex ante assessment of interventions to be carried out in Objective 1 regions through Structural Funds 2000-2006. Such indicators are set out in two levels:

- 1 “key context” indicators, related to all programming sectors, as a basis for the implementation and determination of specified objectives;
- 2 “break” variables, targeted to quantify overall impact of PSM (Purchasing and Supply

Management).

Through the structuring and updating of a wide database and regional socio-economic indicators, “key context” indicators and “breaking” variables are an instrument of monitoring and assessment for measuring the achievement of a specific objectives’ set, aggregated by sector or macro-area of intervention (demographic, social, environmental and economic), thus enabling an integrated reading of the territory.

Some indicators for the assessment of urban cohesion’s policies must be added to this long list. Indeed some countries, as Italy and France, showed the capability of creating different forms of social and cultural cohesion right at this scale. Such experiences can be observed in forms of aggregations among cities or enterprises in processes of local, network or sprawl development.

Nevertheless, the most cohesive models may as well vary over time; changing forms of organization and development of the town fabric, territorial sense of belonging, widespread rooting, identification of common and shared values, capability of competition.

It is useful indeed to remind that it is possible to “die” for too much cohesion and an overly assembled system may withdraw into itself to protect its condition.

For instance, settlement rooting is very high in France, Italy, Greece, Spain and Portugal, although in recent surveys, and specifically for younger generations, a reversal is taking place; while associations are an answer to territorial scattering.

Most of used indicators are of statistical-social nature (EUROSTAT, 2007), that do not exclude those related to services’ quality and accessibility, both public and private (public health service, social services, education, purchasing power, etc.) or to the Information-Communication Society (number of doctors and nurses per inhabitant, hospital beds per inhabitant, PC’s per inhabitant, Internet connections per inhabitant, public Internet points, etc.).

Indicators are quantitative and qualitative, and vary between a minimum number in favour of the datum availability and a maximum number suitable of analysing the complex system of European cities, according to the guidelines of the Urban Audit City Meeting in Bruxelles (2006), which proposed a nine categories organization:

- 1 Demography
- 2 Social Aspects
- 3 Economic Aspects
- 4 Civic Involvement
- 5 Training and education
- 6 Environment

- 7 Travel and transport
- 8 Information Society
- 9 Culture and Recreation

5. How to measure territorial cohesion by STeMA

Social and economic cohesion is a concept that can be defined in relation to different aspects:

- 1 Availability of goods and services perceived as essential;
- 2 Multidimensionality (poverty is a central, not crucial, aspect of social exclusion);
- 3 Social participation;
- 4 Political involvement (level of participation) and social integration;
- 5 Dependence on social exclusion of people, circumstances and processes that determine the impossibility of free self-determination of fundamental aspects of life;
- 6 processes' dynamics over time, with enduring or cumulative effects;
- 7 multilevel (individual, familiar, etc.) stratification of exclusion's processes.

In light of this and what has been said in previous paragraphs, we call a **good measure of cohesion level** a methodology with the following features:

a) Territoriality

The field of social intervention has a first geographic value at level of measure's origin. The territoriality level plays an important role indeed. Some measures are independently initiated and managed at local level, often on the base of specific needs. Other measures, although in a national planning logic, are modulated according to local specificities.

b) Inter-sectorial dimension

This dimension particularly concerns the following sectors of intervention: *economic*, *social* in the strict sense of the word, *socio-sanitary*, *educational* and *labour market*. The local dimension often favours, as in the case of territorial pacts, a virtuous meeting of the different policies implemented.

All these considerations directed the research towards using the methodological structure already successfully tested by ESPON 3.3 project. Particular emphasis is given to the "Quality" determinant, in whose definition various inter-sectorial indicators take part, being suitable to producing a reliable measure of the cohesion level inside of European regions (NUTs 2 level).

The indicators selected for cohesion's definition are shown in the following table:

Table 1: to measure cohesion by quality: the structure of indicators

Indicator	Category	Sector	Typology	Determinant	Territorial Dimension
GDPpps per capita (GDP)	GDP	Economic variables of Cohesion (EV)	Life quality (LQ)	Quality (Qty)	Territorial Quality dimension at NUTS 2 and 3 (Q 45 and Q 46)
Consumption per capita (CONS)	Consumption				
Level of employment (Emp)	Employment				
Consumer-price index (HICP)	Prices				
Hospital beds (HLT)	Health	Infrastructural variables of cohesion (IVC)			
Hotels beds (Htb)	Leisure (Ls)				
Cultural opportunities (CuOp)					
Typology Multimodal Accessibility Potential (TMAP)	Accessibility				
Old and New technologies (LTD)	Level of Telecommunicatio n development				
Municipal Waste Generation (MWas)	Municipal Waste	Waste (Ws)			
Hazardous Waste Generation (Hwas)	Hazardous Waste				

Municipal Waste Recycled (RMWas)	Recycling Waste		
Degree of vulnerability in Europe (NH)	Vulnerability	Natural hazard	
Total greenhouse emission (SA)	Air	Natural ReElaborations	
Total gross abstraction of freshwater (SW)	Water use balanced	Status (NRS)	
CO ² emissions (CC)	Ozone layer	Climate change	
Confidence in EU commission (CfCom)	Level of citizen confidence (CzCf)	Good Governance	Government quality (GQ)
Confidence in EU council of ministers (CfCM)			
Confidence in EU parliament (CfEP)			
National public participation (PbPn)	Level of Public participation (PbP)		
European public participation (PbPe)			
Early school leavers (EdB)	Base education	Social Cohesion	Social Quality and

Inequity of regional income distribution (SCEc)	Economic Elements for Social Cohesion	ReElaborations (SCR)	Cohesion (SQ&C)		
Persons aged 0-17 who are living in households where no-one works (Cer)	Risk of children exclusion	Risk of social exclusion (SEE)	Cohesion (SQ&C)		
At-risk-of-poverty rate before social transfers (Pvy)	Poverty				
Female employment (EqOp)	Equal opportunities	Social wellness attitude (SWA)			
Fertility rate (Fty)	Wellness (Wns)				
Healthy life years (HLY)					

Source: Prezioso in ESPON 3.3 project, Final Report, 2006

The STeMA methodology (Prezioso 2006) detects a series of basic indicators, which, by successive unifications, achieve more and more synthetic and composite indexes (ordered as: categories, sectors and typologies), capable of providing an actual measure of phenomena strictly linked to territorial cohesion, such as:

- 1 Risk of social exclusion
- 2 Disposition to social welfare
- 3 Social cohesion (resources)
- 4 Good Governance
- 5 Level of cohesion's infrastructure variables
- 6 Level of economic variables
- 7 Level of quality of life

In Table 1 are highlighted in yellow the indicators and their subsequent aggregations that the workgroup consider a valid starting point for the elaboration of a synthetic and composite index to measure economic and social cohesion at a territorial (not simply spatial) scale.

6. First results on the territorial cohesion interpretation in EU regions

In perspective of a full cohesive European policy by 2013, national and regional cohesion must be considered an overriding and combined measure of phenomena ranging from climatic change to deterioration and poverty (health, safety, quality of life), to the not self-sustainable economic and social systems in the great urban areas (irrational use of resources, energy wastage, traffic congestion), so that the EU gives a uniformed and balanced answer to the big issues involving the relations between infrastructure, environment, citizens' health and safety. The new general policies will have to be the result of sectorial actions and policies directly connected to the territorial dimension of cohesion.

Mapping Cohesion's Quality in the spatial view (Fig. 1) shows an attitude to achieve low level of cohesion in Europe, in particular along two parallel axes: 1) the north-south axis from Germany to Italy; 2) the north-south axis from Poland to Greece. Low values are also recorded in Spain, Ireland and Great Britain, while high cohesion level are measured in Portugal, France, Austria, Hungary, Netherlands, Lithuania and all Scandinavian Countries.

Instead, looking at the territorial dimension of Cohesion's Quality (NUTs 2 level, Fig. 2) results are different and Europe achieves a general high level. So, regions that have a territorial typology with high urban influence improve their value, ranking higher in the cohesion scale. Low values are measured in the Centre of Spain and France, South of Portugal, Greece, Czech Republic, Hungary (except Budapest's region), Sweden, and the least settled regions of Finland.

Finally, looking at territorialisation at NUTs 3 level, the map shows a detailed dynamics that is more similar to the map concerning the spatial dimension (NUTs 3 level, Fig. 3).

Figure 1: composite index final values (CEIS, 2006)

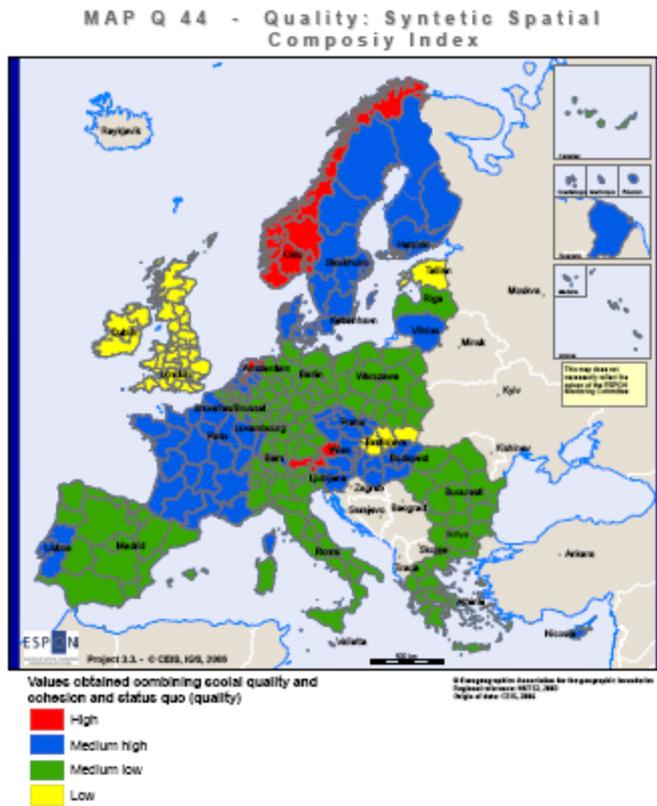
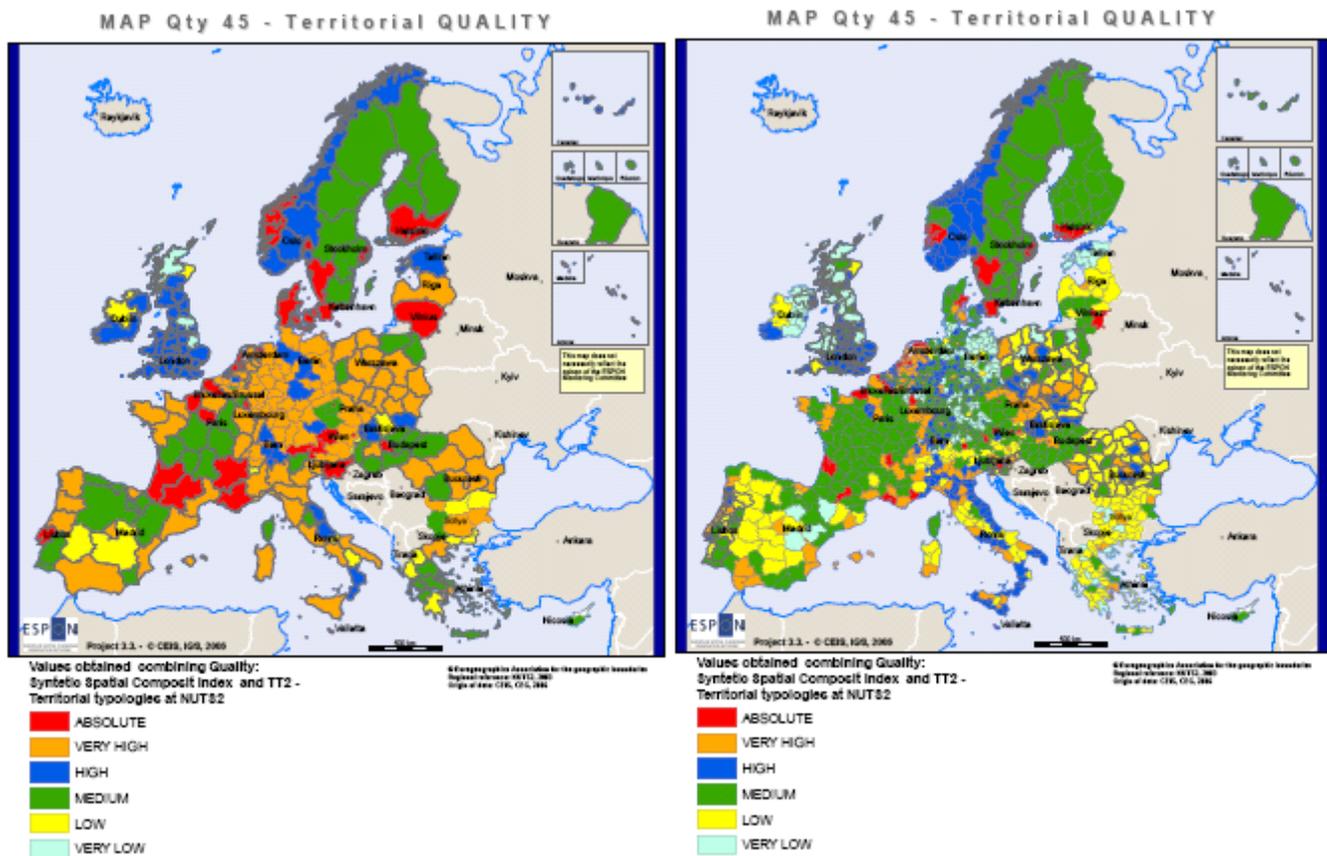


Figure 2: Territorial cohesion:
final values at NUTS2 (CEIS, 2006)

Figure 2: Territorial cohesion:
final values at NUTS3 (CEIS, 2006)



The STeMA application and assessment registered, for instance, that in the future some cases of pollution might also take place in the regional economies with the highest per capita expense, where the use of appropriate technologies is still low.

In this direction the concept of “territorial cohesion” is interpreted using the same STeMA methodological approach, as an *economic process*, and mostly as a *social cohesion process* leading to the definition of targeted actions and policies, in order to build an efficient and effective regional economic system (solidarity, creativity and high life quality) to play an important role in territorial planning and social policies.

But all that is insufficient to grant a successful increase of territorial cohesion and support development. It is therefore necessary the Union to institutionalise the concept of cohesion (and its quality) and permanently embrace it in the decisional processes (institutionalised multilevel governance), so to establish a connection between economic and social progress for a global development to be coherent and sustainable.

This is typified by the behaviour of European institutions and enterprises, to whom the concepts of territorial cohesion and quality have become synonymous with success in competitiveness, as testified by the achievement of certifications like ISO or EMAS, followed by the enlarged concept of social responsibility (i.e. Territorial more than Corporate Social Responsibility) considered as a

useful and necessary instrument of cohesion and competitiveness.

The effects of an action towards cohesion could inspire many variations on European regions:

- 1 broadening and strengthening the internal market;
- 2 ensuring open and competitive markets inside and outside Europe (trans-border, trans-national and trans-regional co-operation policies);
- 3 improving national European regulations;
- 4 widening and improving European infrastructure;
- 5 increasing and improving investments on R&D;
- 6 simplifying innovation, TLC's adoption and a sustainable use of the resources;
- 7 contributing to a steady European industrial fundament which would adopt certification systems and CSR (Corporate Social Responsibility) as means of cohesion and competitiveness;
- 8 increasing labour market's attractiveness and flexibility;
- 9 increasing investments in human capital by improving education and expertise;
- 10 improving the preservation of public health and environment in the communitarian policies, as an opportunity of sustainable development

The typologies with the strongest impact are analysed below.

Social cohesion and Quality of life

In respect of the Lisbon Strategy's objectives, the overall achievement of a good level of life quality has to be supported by policies addressed to guarantee adequate economic conditions to answer families' need (measured through per capita GDP, level of consumer prices and employment) and an adequate level of all the non-economic aspects that contribute to health, such as public health, which is commonly considered an indirect indicator of productivity and economic dynamism.

European policies on public health service only address the problem of optimising costs/efficiency ratio in health expenses, whereas poor is the attention given towards creating synergies between health, environmental policies and life quality. New directives have been even outlined by the EU, in order to achieve a stronger collaboration relationship among Countries (common objectives, national action plans and a common report by Commission or Council), connecting to the field of regional policies for social and economic cohesion.

The indicators fit to evaluating *quality of life* show as, concerning economic variables, many regions can rely on a solid base for co-operative development. The level of the Economic Variables of Cohesion shows how a structural intervention is necessary in new accession countries, as well as Portugal, south of Spain, some southern regions of Italy, and central Greece. The good performances of the Pentagon area and Scandinavian Countries were predictable, whereas less

predictable is the good dynamics of the economic variables in Ireland.

However a still variably distributed GDP (per capita per purchasing power) requires new and sharper structural actions, especially in the South of Italy and Spain, in Portugal, Greece, and the French overseas regions, in order to let them reach the high values of Austria, Luxemburg, Denmark, Belgium, Ile de France and many regions-capitals. These high values in the centre of EU15 prove that the Pentagon's area, with its extension towards the Scandinavian countries, is already strong with regard to the economic variables. With regard to *the consumer prices index*, there is a clear necessity of interventions of assimilation in the enlargement countries, in direction of the steadier economies in Spain, Portugal, Italy, Cyprus, Netherlands, Denmark and South of Ireland. Also the dynamics of labour suggest structural actions (*level of employment*) like those adopted in the South of Germany, Ireland, England, Austria, Netherlands, North-East of Italy, and some regional enclaves. The level of employment in the New Accession Countries shows as these new economies have started a new reforms' process that is achieving good results.

On the other side, thinking about Life Quality, some structural actions for the *Infrastructural variables of Cohesion* should be implemented in several areas of Europe, and specifically in peripheral regions. Indeed this measure shows a concentric rings' structure, with high values in continental Europe and lower values in peripheral regions.

Structural actions in the areas of employment, innovation, economic reforms and social cohesion must address the complex of economic variables to sustain life quality in the South of Spain and Italy, in Greece, and in Finland regions as Itä-Suomi and Pohjois-Suomi, in spite of an intense period of Structural Funds utilization.

In fact, we observe the economic variables' value is affected by different aspects, including the de-localization process that involved nearly all European industrialization's historic regions at the opening of the global market. From this point of view, Estonia, Poland, Slovak Republic, Hungary, Slovenia, Romania, Bulgaria or the south of Italy represent more flexible models than Germany or Great Britain.

Environmental Cohesion

The Action Program on environment (which covers a 10 year period starting from 22 of July 2002) can still be considered as a long term planning instrument of EU activities in 4 sectors: 1) climatic change, 2) nature and biodiversity, 3) environment, health and air quality, 4) natural resources and waste. The seven priority thematic strategies, however currently developed, require more detail, since, as of today, no strategies have as yet been definitely adopted; especially considering the effects of the recently enforced Kyoto Protocol in the 141 subscriber countries, which should trigger

“flexible mechanisms” based on the market, to accomplish projects linked to “clean development”. The Union has to push “joined implementation” starting from 2008, by supporting/financing, coherently with the Lisbon goal, those projects capable of spreading the most innovative technologies (for instance, towards emissions’ reduction) in old and new countries, fixing consistently 2012 as deadline for the follow-up activities of the first period of fulfilment.

To support this common policy objective, the evaluation of environmental quality used direct and indirect indicators (for instance, air quality and water consumption, waste production and recycling, climatic change and natural hazards, etc.). The result of this evaluation shows how strong policies in support of environmental quality should be implemented in countries like Portugal, Spain, Greece and Austria. A good level in environmental quality is present in the regions of continental Europe and the new accession countries.

Results of the analysis suggest the consideration of policies and actions on air quality as a priority in almost all the old countries, and specifically in Austria, Spain, Portugal, Greece, Ireland and Finland, whereas it has to be noted the low level of CO₂ emission in all the new countries, in Germany and Luxembourg. In the same way, the policies towards a renewable use of waters and the containment of freshwater abstraction have to be a priority for Spain, France, Germany, Luxembourg and Italy, while a good level of freshwater management is recorded in the great majority of the new accession countries (with the exception of Hungary). Therefore, the Natural Resources Status shows a good level in Great Britain, France, Germany and in all the new countries, while requires new and more incisive structural actions for all the other countries of the EU 15.

Concerning waste, average per capita production is quite high in Spain, Switzerland, Belgium, Luxembourg, Netherlands, Denmark and Cyprus if compared to the rest of EU (medium-high in Italy). The generation of municipal waste shows a medium-low level for the large part of EU, except for a vertical strip including Norway, Sweden, some areas of Poland, Czech Republic, Bulgaria and Greece, and some regions of the Mediterranean axis (Portugal, Spain and Italy). Concerning the level of hazardous waste production, this is mostly high in Portugal and medium-high in Spain, except for the peripheral zones; it is still evidently high in the north, in Norway, Sweden, Finland and Latvia, while medium-high values are recorded in Great Britain, in contrast with the medium-low values of Ireland; high values are shown also in some regions of Poland, in Czech Republic and in areas of Hungary and Greece.

The sectorial policies dedicated to waste recycling still have to be strongly supported, especially in the Pentagon area, and along the axis stretching from Spain to great part of Italy, as well as in the south of Norway, Sweden and Finland, and in the whole region of Lithuania. On the other hand, no

action seems necessary for the new accession Countries and Greece.

In detail, the level of Waste points out the necessity of rigorous intervention in all the old countries (except for Portugal, Scotland and Wales in UK, some regions in the centre of France and Italy, Greece, Luxembourg and Austria). The new countries (except for Lithuania) have an overall good waste management.

The risk of natural catastrophes, present in the Mediterranean area, in the North of Spain and in that Central Europe area symbolised by a «scorpion», is such that it is necessary to think about supporting an integral group of sectorial policies, directed also to protecting all the natural resources still widely available in Poland, Latvia and Romania, or in Italy and Greece. On the other hand, a low level of natural hazard, considering their geomorphologic structure, is present in the Balkan countries.

Some countries (Great Britain, Germany and Poland) and the wide region that spins around the Italian-Austrian Alpine range appear to have the strongest potential contribution to climate change (Gothenburg Strategy).

Government cohesion

Over the last years the EU urged the Institutions to practice the «culture of clear dialogue», confirming the principle of «good governance», which determines participatory processes addressed to reinforcing democracy and to creating new partnerships that would improve the quality of decisions and be a supplementary guarantee for their accomplishment.

The five principles at the roots of both good governance and the changes proposed in the White Book (openness, participation, responsibility, efficiency and consistency) have to be applied at all government levels (global, European, national, regional and local) strengthening a closer interaction between local and regional authorities and the civil society, involving European and national associations, right from the beginning of the policies' elaboration.

Looking at the political-social aspects of government cohesion, these can be measured through the citizens 'confidence' level in the EU and through the level of participation into political life, which is high in the smallest countries or in the so called «suburbs». Nevertheless the exercise of governance is really good in a few countries only (Italy, Greece, Belgium and Denmark). This result reflects what happens with the level of citizens' confidence in EU institutions, drawing a continental Europe with low (or medium-low) level of confidence and “peripheral” countries with great confidence (Portugal, Spain, Italy, Greece, Slovenia, Romania, Bulgaria, Czech Republic, Estonia and Lithuania). With regard to the level of public participation, the north-south axis (Scandinavian countries – Italy - Greece), featuring a high level of participation, is the Union's

dividing line, since both on its right and its left low level of participation is measured.

Social cohesion

Since the 90ies, most of the European governments began a reformation process that, inside a general revision of the social protection system, involved the sector of welfare expense. In consideration of the new challenges posed by the slowing economies, the sharpening of unemployment and 'in-occupation' phenomena, the mutations in the family structure and the growing ageing of the population, the traditional welfare structures appear unsuitable to confront the new conditions.

In this context, the policies opposing poverty and social exclusion, in pursuing the goal of social cohesion, must find immediate implementation (2013), according to the criteria in the *Social Policy Agenda*, an instrument addressed to the achievement of a model of European social state, which the member states have to focus their expenses on. In particular, it is recommended to support the policies actively contrasting the ageing population effects, which include measures towards the reduction of risks of exclusion for the older sections of the population due to technological progress and the barriers set by the knowledge society, thus including in this sector two other foundations of the Lisbon strategy: education and the reduction of sexual disparity in labour conditions.

Moreover, the data observation shows that the level of the *Early school leavers* is high in the Mediterranean area (Spain, Italy, the seaside French regions, Greece), in Portugal and in the south-east of Europe (Bulgaria, Romania). The values recorded in the north-east of France, Latvia and Lithuania are as well alarming. A similar dynamic is noticed for the "Inequity of regional income distribution", so that the level of Economic Elements for Social Cohesion shows how a structural action should be performed in the Mediterranean areas, in Portugal and in the all new countries (except for Poland, Slovakia and Czech Republic).

From the analysis on the *Risk of Social Exclusion* it is clear that EU countries have to act against poverty and social exclusion, aiming to reduce disparities in income distribution and the percentage of population at risk of poverty and of premature withdrawal from the studies (clear indicators of social exclusion).

Looking at the aspects linked to equal opportunities and wellness (an indicator of the *Social Wellness attitude*), they reveal a sort of uniform medium-low attitude with little exceptions (medium-high levels are present in Germany, Austria, Switzerland and Poland). In the analysis of the single indicators it is possible to observe that the level of *Female Employment* is high, or basically high, in all European countries (both old and new), except for Spain, Italy, Greece and Ireland. It is interesting to note that *fertility rate* is high in the Scandinavian countries, France, Great

Britain and Ireland, whereas *life expectancy* is high in the Mediterranean countries.

The observation of the data shows imbalances between old and new regions, for instance, in the evaluation of medical care through the *number of hospital beds per inhabitant* (quite low in Portugal, Spain, Italy, Greece, Great Britain, Ireland and the Scandinavian Peninsula).

On the contrary, looking at the aspects linked to playing-recreational wellness, the receptive capability of these same regions (number of hotel beds) is very high, revealing a sort of inverse correlation between investments and expense for life quality services and for cultural and recreational services, the latter being considered more productive for the growth of human capital and of the regional formative level. Some regions, well known for their tourist-recreational appeal, keep their attractive local capabilities.

A reverse of trend would have a positive influence on social cohesion, that we suggest to be evaluated as dependent from several indicators: imbalanced income distribution, “spot” distribution of the resources for social integration, high risk of juvenile exclusion, high and rising poverty risk. All these indicators are combined in a synthetic index that shows the level of Social Cohesion. This measure shows a medium-low level in a horseshoe shaped area that links Italy and Greece, passing through Germany and part of the new countries, whereas a good performance is recorded only in part of France and in the Scandinavian Countries.

In some countries, including Ireland, Italy and Greece, we advise the lowering of the limit for the female population in accessing the labour market (missed implementation of the policies for gender equality), involving as well, with common rules, regions in Belgium, France, the Netherlands and Switzerland, where the project also measured a low fertility rate similar to the Eastern countries, and a similarly low general level of social welfare. The general trend of social quality and cohesion can exclude during this consolidation stage Sweden, Finland, Slovenia and the regions in the Norway-Hungary axis, but not those on the Mediterranean.

In general the search for a better *cohesion* has to be considered a priority in the trans-national co-operation projects for Switzerland and Great Britain, as well as for Poland and Czech and Slovak Republics, whereas Italy, Ireland and Greece should focus on the themes of life quality and environment. All the countries, anyway, should employ part of their own resources on the composite theme of Cohesion to accomplish the Gothenburg strategy, with the regions of central-southern Italy and France in the first place.

For the achievement of a good level of Cohesion in compliance with the integrated objectives of Lisbon and Gothenburg, a greater and general attention to a wider vision is recommended in support of the thematic objectives, represented by the categories characterized in the Quality determinant. Therefore an implementation of these themes would generate positive effects in terms of:

- 1 Increase of Productivity level
- 2 Increase of goods Demand
- 3 Increase of Employment level
- 4 Pricing control
- 5 Public Health improvement
- 6 Increase of Leisure opportunities
- 7 Increase of Physical Relationships
- 8 Increase of Virtual Relationships
- 9 Waste Reduction
- 10 Cleaner production
- 11 Increase of Waste Recycling
- 12 Natural hazard prevention
- 13 Pollution reduction
- 14 Efficient water use
- 15 Decrease of CO₂ level
- 16 Higher level of transparency and efficiency of bureaucracy
- 17 Implementation of Bottom-Up approach
- 18 Increase of the Education level
- 19 Improvement of the equipotential level
- 20 Protection of Weak social classes
- 21 Decrease of Poverty level
- 22 Increase of Female employment
- 23 Increase of Wellness

The 2000-2006 programming period improved development of EU territorial systems, although some inadequacies remain and some indicator sets could be further developed, paying more attention to strengthen the link between Structural Funds, Lisbon-Gothenburg Strategy and the Cohesion Policy.

Thus, a finalized overview of indicators' systems currently used, could also feature a practical guide to implement an indicators' system suitable for evaluating territorial cohesion.

In the framework of Lisbon Strategy for a sustainable economic growth, the key challenge to strengthen territorial cohesion implies the improvement of the territorial "capital" and potentials of EU regions. The enhancement of territorial integration is achieved through the promotion of trans-European synergies and clusters of competitive and innovative activities. The use of a sound and

effective system to manage territorial cohesion Programmes is crucial to promote Lisbon and Gothenburg objectives. Within this context the use of adequate tools, like indicators, is pivotal to measure, monitor and evaluate the Programmes' impact, result and output.

According to results of indicator systems' analysis, the most effective methodology to measure cohesion levels is STeMA (Sustainable Territorial environmental/economic Management Approach), used also in Espon 3.3 project "Territorial Dimension of the Lisbon/Gothenburg Strategy". This approach pays particular attention to territoriality, economy, employment and socio-pedagogical sector of intervention. The STeMA process is a multi-disciplinary management system used to calculate territorial capability with regard to competitiveness, sustainability and cohesion. Its standardised methodological approach can be applied at national, regional and sub-regional level, using a dedicated GIS tool. Main cohesion indicators are drawn from ESPON research and aggregated through a qualitative and interactive matrix.

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