

DEVELOPMENT WAYS AND COMPETITIVENESS POLICIES IN SICILIA

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18.1. COMPETITIVENESS AND SUSTAINABILITY'S INTERPRETATION IN SICILIA

18.1.1. *Regional planning*

Since the beginning of the twenty-first century, regional planning in Sicilia has taken as reference the EU Lisbon strategy objectives and the Gothenburg guiding principle.

The target set by the Lisbon Council to steer European economy by 2010 towards a more competitive and dynamic vision that is capable of achieving sustainable economic growth based on employment growth and social cohesion is, therefore, the point reference of the Sicilia Region for 2007-2013.

On the other hand, the 27 EU countries, on the basis of these general guidelines, have drawn up their own national reform plan. In Italy the *Piano per l'Innovazione, la Crescita e l'Occupazione* (PICO - *Plan for Innovation, Growth and Employment*) has been approved, which specifies the definable national reforms, measures and actions to pursue Lisbon objectives and renew their potential.

Therefore, the main axes of the Lisbon strategy revival are configured as decisive strategic guidelines for policies of development and competitiveness in Sicilia.

In fact, for example, the regional programmes under ERDF (*European Regional Development Fund*) focused on the guidelines contained in the Integrated Guidelines and particularly on the following points: making the business environment more competitive; promoting an entrepreneurial culture and create a favourable environment for Small and Medium Enterprises (SMEs); increasing and improving investment in research and development; encouraging innovation and use of ITC; favouring the

¹ Despite common reflections, § 18.1.1 is attributable to C. Cirelli, § 18.1.2 to E. Nicosia, § 18.2.1 to E. Di Blasi, § 18.2 and 18.2.1.1 to A. Arangio, § 18.3.1 to L. Mercatanti and § 18.3.2 to C.M. Porto. A heartfelt thanks goes to Cristian Portale and Salvatore Federico for having contributed to the elaboration of data related to the use of the STeMA model's determinants.

sustainable use of resources and improving environmental protection; contributing to a strong local industrial base.

The first partial considerations on the results obtainable in the previous planning cycle can be expressed on the basis of the expenditure trend analysis of the *Programma Operativo Regionale* (POR – *Regional Operational Programme*) 2000-2006.

In this respect axis VI, concerning interventions to strengthen infrastructure endowment, shows an excellent capability in the use of funds, with a decidedly above-average performance of the Programme, while the measures concerning the sphere of research and development and quality of life in urban areas negatively stand out, due to significant delays in the use of available financial resources.

Other indications result from the examination of data related to measures of support for the production system.

Faced with a satisfactory capacity for commitment of resources by the Administration, a strong difficulty emerges in using such resources for the concrete support to the manufacturing system and to the tourism industry.

More specifically, the two measures of greater financial significance in support of enterprises show limited use of funds.

Still at the level of intervention measures, not fully satisfactory data are collected also in relation to the areas of waste and energy diversification.

Overall, the interim financial data already report that the most innovative actions, but also with greatest added value for the strengthening of competitive and sustainable development paths, are those which have experienced the most significant difficulties during implementation.

In relation to the degree of achievement of the previous Programme's objectives, it was then performed, as part of the *ex-ante* Assessment, an indirect reconstruction of the effects of its implementation, through the analysis of performance indicators and indicators of socio-economic impact.

The emerging picture is sufficiently positive, even taking into account that especially for actions aimed to infrastructures the achievement of the target is closely linked to the completion of the works.

Overall, it is possible to observe a high degree of heterogeneity that reflects a strong variability of performance of the indicators within each Axis.

With regard to Axis 1, the sectors that appear most critical concern waste collection and the policies of governance of protected areas.

With reference to Axis 2, emerges a different result as regards the two main attractors.

As for the museums, there is a significant distance from the target, confirming the need to create networks and synergies between different "cultural containers"; with reference to archaeological sites, however, we note the achievement of the target.

With regard to Axis 3 there is a good ability to involve the major regional bodies, but the results can be improved in matter of private research and the strengthening of their innovative capacity.

Axis 4, however, highlights positive results in terms of capacity to enable new forms of territorial governance and of response to the various forms of private incentives.

The tourism sector, for example, moved, in the period 2000-2006, the first steps

towards a process of emancipation from tourist flows' seasonality and the accommodation offer was significantly enhanced.

Failure to meet the targets for Axis 5 is connected to several delays in the works' progress (especially those related to urban mobility), while the results appear more positive as regards the ability to enhance technology services and geographic information systems.

Finally, Axis 6 presents a positive balance concerning the primary road and airport infrastructure, while the most critical factors emerge on the railway networks (POR ERDF 2007-2013).

Beyond the quantitative aspects, it can still be said that the previous programming period has introduced important elements to break with the past, including the innovation in the forms of management of essential public services (water and waste) and the introduction of specific incentives for the development of alternative energy sources.

In other sectors (energy, hydro-geological arrangement, information society, ecological network) there was a significant driving effect for the implementation of the sector programmes, which certainly opens up positive opportunities.

Especially with regard to supporting energy diversification, development of information society and promotion of the Ecological Network, the implementation has been to some extent affected by the innovativeness of the theme as an object of policy at regional level.

As also shown by the interim evaluation, the high number of "measures", sometimes of small financial scale, led to a proliferation of administrative acts that in some cases resulted in excessive consumption of resources, while in others produced a "disorientation" of the territory's demand with a consequent discouragement.

In this context, the weight of the exogenous impulses on the efficiency of the implementation process was relevant, with the enforcement of stringent rules for the use of funds.

Thanks to these stimuli, in a few years were made important sector reforms and reorganizations that the region was waiting for a long time (water and waste above all) and the groundwork was laid for a development policy renewed also in the objectives.

It is therefore clear the need to extend this approach to all sectors and all areas of regional planning.

On the other hand, a positive consequence of the experience, due to the high complexity and articulation of the strategy, including its territorial dimension, lies in the decisive push towards the gradual creation of a modern system of public policies' governance, which required all regional stakeholders to make cultural and organizational efforts previously never addressed on such a scale.

The results in this context are broadly encouraging.

Indeed it has to be acknowledged a significant improvement in the relationships framework, both institutional, vertical and horizontal, and with the socio-economic partners, although still better and more should be done to turn these collaborations into real partnerships.

In addition to these elements, experience shows the importance of an efficient selection of projects for the effective implementation of programmes.

The lack of infrastructural planning at the local level, for example, have in fact contributed to produce a sometimes detached implementation from the integration objective.

Hence the awareness of the necessity to increase the involvement in the operational planning stage in order to make implementation always consistent with the timetable of EU intervention and more effective as regards the objective of policies' integration.

18.1.2. Community initiative programmes for enterprises and employment

With reference to enterprises and employment, in Sicilia three *Programmi di Iniziativa Comunitaria* (PIC – *Community Initiative Programmes*) are active: EQUAL, URBAN II and LEADER+.

The first (validity period 2000-2006, with total contribution of the ESF - *European Social Fund* for 2,847 billion euro) is earmarked for transnational cooperation, to promote new means of combating discrimination and any kind of inequality in the labour market.

The Programme promotes actions in the following thematic areas: employment, adjustment, convergence and equal opportunities. For the Objective 1 Regions, contributions amount between 50% and 75% of the total project cost.

The PIC URBAN II (validity period 2000-2006, amounting to 700 million euro) aims at the economic, social revitalization and urban development.

The objectives are: to promote the development and implementation of innovative strategies for the socio-economic regeneration of medium-small urban centres or large cities' degraded areas; to promote the development and exchange of knowledge and experience as regards regeneration and sustainable urban development in affected areas.

To achieve these goals requires a strong local partnership that knows how to define issues, strategies, priorities, resource allocation, and can implement, monitor and evaluate the strategy.

It must be a broad and effective form of cooperation involving the participation of economic and social partners; an integrated territorial approach that is linked to broader development strategies for the conurbation or region; an analysis of the economic, social and environmental aspects, of safety and transport, also including equal opportunities in education and training; and the promotion of equal opportunities; complementary attitude with the main forms of action under the Structural Funds or other Community Initiatives.

URBAN II is divided into the following sections: multifunctional and environmentally friendly redevelopment of urban areas; entrepreneurship and employment pacts; integration of marginalized and supply of affordable basic services; integrated public transport and communications, reduction of the amount of waste and disposal, efficient management of water resources, reduction of noise pollution and oil consumption; development of the technological potential of the Information Society; improving urban governance.

The Community contribution may reach 75% of the total project cost in Objective 1 Regions, and up to 50% in other Regions.

URBAN II supports seventy urban areas throughout Europe. In particular, it supports ten urban areas in Italy, one in Sicilia: the municipality of Misterbianco (in the Catania province).

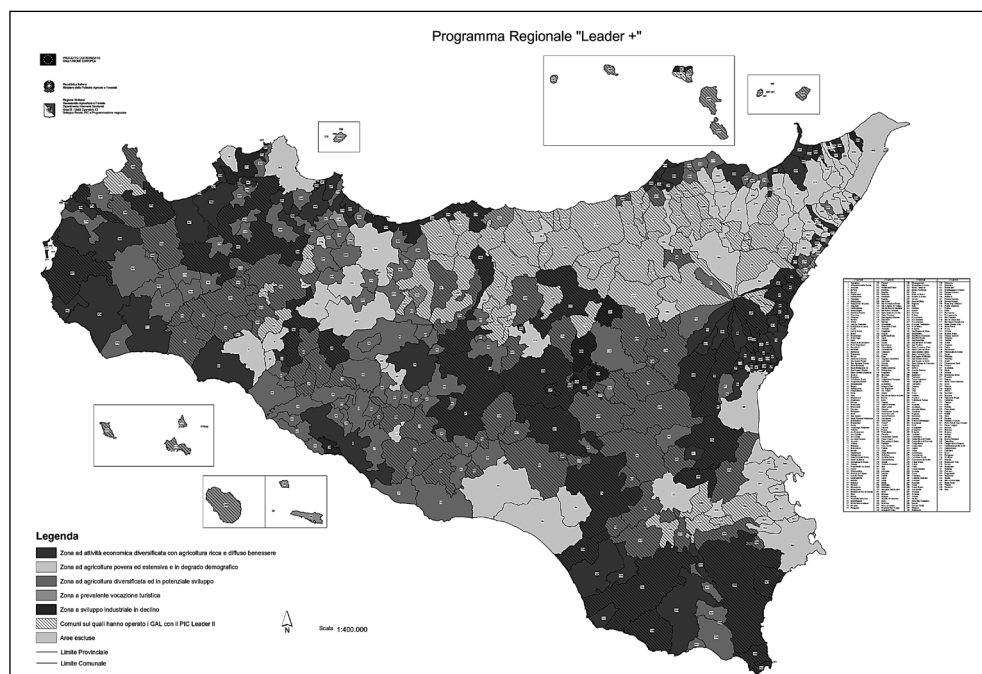


Fig. 1 - Leader+ Regional Programme.

(source: www.carrefoursicilia.it/leader).

The LEADER+ *Community Initiative Programme* (validity period 2000-2006, amounting to 2.020 million euro in total, of which 267 million in Italy) aims to implement new strategies for sustainable development, high quality and able to integrate and/or enhance EU rural development policy.

It is divided into the following sections: pilot strategies for territorial and integrated rural development around a theme typical of the area on which action is taken; support to cooperation between rural areas within a Member State (inter-territorial cooperation) or between different Member States (trans-national cooperation) for sharing know-how, human and financial resources in the territories concerned, in accordance with the guidelines defined by local action groups in their development plans; creation of a network of relations to boost cooperation among territories, dissemination of information and knowledge on rural and territorial development.

The Programme's beneficiaries may belong to two types: the *Gruppi di Azione Locale* (GAL - *Local Action Groups*), a collection of public and private partners that jointly develop a multi-sectoral *Piano di Azione Locale* (PAL - *Local Action Plan*), aimed at revitalizing rural areas through an integrated set of interventions of economic (small interventions to support agriculture, tourism, crafts, agrindustry, environment) and sociocultural (actions to raise awareness, inform, and train local people) characteristics; the *Operatori Collettivi* (OC - *Collective Operators*), public or private, that can implement thematic PAL.

These projects, however, revealed an insufficient focus on intangible services and the difficulty for leading municipalities to assume a guiding role in carrying out more advanced urban functions.

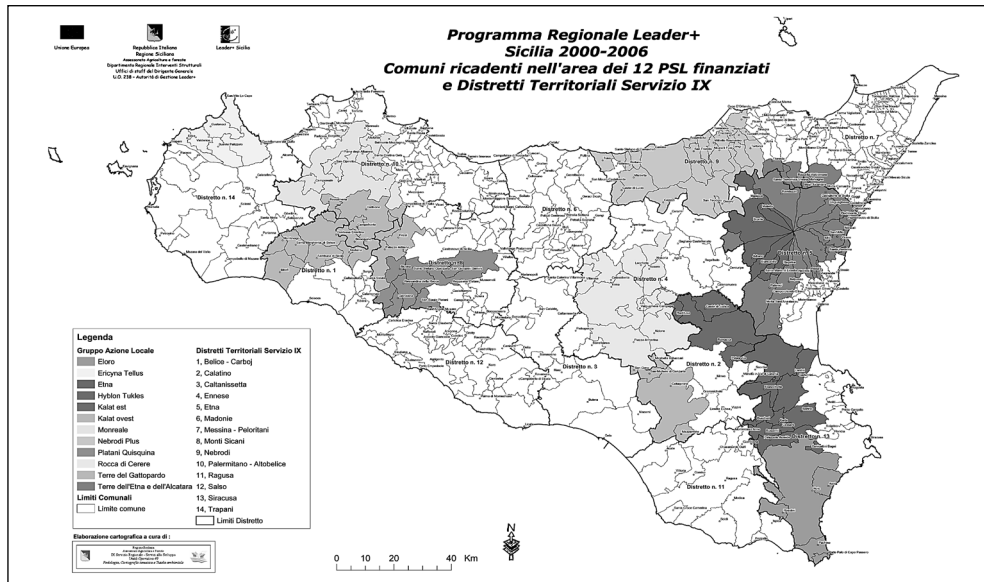


Fig. 2 - Map of PAL –Local Action Plans in Sicilia.

(source: www.carrefoursicilia.it/leader).

All typologies of intervention with features of strong innovation faced significant difficulties in the implementation phase (energy diversification, research and innovation, supporting schemes for the management of cultural heritage, waste treatment, business creation in the field of ecological network, social integration): from this we can infer that more investment is needed on the Administration management skills.

These shortcomings are also at the base of the delays in the evaluation and approval of sector plans and the frequent appeals on procurement procedures.

As regards the implementation of the various Programmes, a first general consideration concerns the configuration taken by the regional strategy for action.

Thus, the conclusion to be drawn from the implementation of the major instruments of cohesion policy at regional level is that the overall strategic approach was too articulated, leading to a very high level of management complexity.

18.2. REGIONALISATION, SETTLEMENT STRUCTURE AND ECONOMIC-TERRITORIAL SYSTEMS IN SICILIA

The territorial organization of Sicilia reflects certainly a polycentric region, in the absence of a city able to exercise absolute metropolitan dominance.

The pattern of regional polycentrism, in particular, gives Palermo (population 663,173²), Catania (pop. 298,957), Messina (pop. 243,997) and partly Siracusa (pop. 123,494) and Ragusa (pop. 72,511) the role of centres with higher urban functions, while the intermediate urban network is rather weak.

² All figures refer to resident population at 1 January 2008. Source: Istat.

With the exception of Enna (pop. 28,125), the other provincial capitals all exceed 50,000 inhabitants. Among the non-capital municipalities, stands the demographic weight of Marsala (pop. 82,514) and Gela (pop. 77,175), respectively at the third and fourth place in the regional ranking (Ruggiero and Scrofani, 2008:11).

Starting from the inner rings, the urban functions of Palermo, Catania and Messina radiate outwards and tie to other neighbouring nodes.

Of the three sub-regions, the *ibleo-etnea* one in Catania area only achieves some vague systemic dimension.

Both Palermo and Messina, in fact, did not experience that process of demographic and functional devolution that other Italian and European cities went through, starting from the first half of the seventies.

The weight of the two cities is essential and the relationship system is almost unidirectional, while Catania, which also did not experience a real counter-urbanization process, but rather a sub-urbanization one, transferred some of its urban functions to the outside (Cirelli, 1986; Zinna et al, 2003), achieving a larger metropolitan dimension in comparison to Messina, but also to Palermo, which has a greater demographic weight.

Catania experienced population growth beginning after the Second World War, coinciding with the start of an industrialization process.

Since the early eighties began to manifest a process of suburbanization and then a gradual outflow of population to the neighbouring municipalities in the belt and the *ionico-etnea* area.

Nowadays Catania has not only a dominant influence throughout the Etna region, which overall reaches nearly 800,000 inhabitants, but its functional web spread to the entire south-eastern Sicilia, the province of Enna and part of the province of Caltanissetta.

Even the *iblea* area, where the functional role of Siracusa integrates with the increasing development of Ragusa, distinguished itself in recent years for the economic dynamism of Ragusa, Vittoria (pop. 61,712) and Modica (pop. 54,332), which have intermediate urban functions, playing an important sub-regional role (Cirelli et al., 2007).

The conurbation of Palermo developed mainly along the coastal line and as a whole is home to one million inhabitants.

The serious imbalance between the inland area and the coastal belt of Palermo is not only demographic but also functional, exerting gravitational attraction on the other municipalities of the area, with resulting problems of congestion.

Some coastal towns as Bagheria (pop. 55,682), Termini Imerese (pop. 27,435) and Cefalù (pop. 13,777) developed an intermediate level of urban functions, while in the inland centres, burdened by an infrastructural gap, only basic functions are developed (Ruggiero and Scrofani, 2008).

The highest level urban functions of Palermo also reach the provinces of Trapani and Agrigento and the northwestern part of Caltanissetta province.

Messina, finally, is in the middle of an important territorial area named the Straits conurbation.

This macro-region, divided into two administrative regions, is organized around the two capitals, Messina (provincial capital) and Reggio di Calabria (regional capital).

The inland areas of both sides have a rather weak settlement structure. Only Barcellona

Pozzo di Gotto (pop. 41,293) and Milazzo (pop. 32,676) partially counterbalance the gravitational force of Messina on the *tirreno-nebroideo* territory.

18.2.1. *The economic space in Sicilia*

In the postwar period Sicilia was granted, like other *Mezzogiorno* regions, key policy of incentives and facilitation designed to support investment.

However, despite the development of some sectors such as tourism, the overall results can not be deemed satisfactory.

The dynamism of many small businesses and the presence of large industrial plants, built in the '50s and '60s, have not started a full self-generating growth system.

The entrepreneurial fabric is still weak, affected also by the actions of organized crime; the unemployment rate is the highest in Italy (13% according to ISTAT - *Italian National Institute of Statistics* in 2007) and the phenomena of shadow economy are considerable.

From a sector perspective, the higher labour productivity is in the primary sector, where is employed 7% of regional active population. In the secondary, however, labour productivity is generally lower; nevertheless, there are also sectors with high added value, especially in the energy field, but also in food, chemicals and pharmaceuticals.

The service sector employs a large number of workforce (74%), with greater weight given by trade (Cirelli, 2007) and public services (mainly Public Administration, education and health).

The transformation process of the regional agricultural landscape sees the continuing expansion of the Mediterranean garden, a native of the Ionian and Tyrrhenian coasts, to the detriment of the inland cereal areas, which resist this phenomenon so that the cultivation of wheat is still the one that occupies the larger territorial extension (ISTAT, 2000).

However, the yield per hectare is lower than other regions, mainly because of inadequate or archaic agricultural practices, but also for the scarcity of water and irrigation systems.

The landscape of intensive agriculture contrasts with the landscape of fruit trees, vineyards and greenhouses, now well established along the coasts and the rare plains.

In these areas the landscape is now dominated by vast areas of citrus orchards, vineyards and vegetables. The production of wine is quite important.

The cultivation of vines in Sicilia originates from ancient knowledge and culture, and involves social, economic and environmental aspects of exceptional importance.

Today, the vine is grown quite extensively, particularly along the well exposed hilly areas and along the coastal edge of the island. The system Trapani-Alcamo is the most important, with a wine production over 40% of the regional total.

An important element in the economic history of Sicilia is the development of the greenhouses system for vegetable production, localized in the *iblea* area.

This system is located in the provinces of Siracusa and, particularly, Ragusa. It is composed of small and medium-sized farms and some large trading companies that promoted interesting development processes.

Pachino is the main greenhouses centre in Siracusa's territory, specializing mainly in the production of tomatoes. The sector employees are several thousand, with many

non-EU citizens, especially from Tunisia. Products are delivered in the rest of Italy and in the major European markets.

Crops in greenhouses are currently booming in other provinces of the island, such as Trapani and Caltanissetta.

Breeding has a modest importance and concerns sheep more than cattle, while fishing is of major importance (Mazara del Vallo has the largest fishing fleet in Italy).

The industrial apparatus of Sicilia is structurally weak and fragmented; this condition is well represented by the percentage of workers in the sector that is below the national average.

The latest census data (2001) describe a reality of nearly 220,000 employees and 57,000 local units distributed between manufacturing and construction.

Exports account for 10.4% of regional GDP and the majority comes from the fields of oil refining and chemical industries.

The location of the most advanced industrial and service activities is affected by the effects of a polarized development model, which finds its reference points in Sicilia's major centres.

In fact, in the peripheral areas of Catania, Messina and Palermo is centred the largest number of manufacturing firms.

But it is the metropolitan area of Catania to rely on a more complex system of companies, especially in areas of Misterbianco, Belpasso and Pantano d'Arce.

In this last area is located the local high technology system, known as Etna Valley, which is gaining a district dimension and hosts on its territory many small companies and few large multinational companies (5,000 employees).

One can recognize a true economic success for this area, as it became attractive also for large foreign firms that find in Catania University a significant interaction by promoting training and internship projects (Buttà and Schillaci, 2003).

The industrial areas of the island do not focus only on the margins of the three major cities. The poles of industrial development built in the fifties give still today a strong contribution to Sicilia's economy.

The factories of Termini Imerese (Palermo), the petrochemical ones in Gela (Caltanissetta), Milazzo (Messina) and especially in the triangle Melilli-Priolo Gargallo-Augusta helped redesign Sicilia's economy, triggering processes of internal migration and creating new centralities.

Certainly, in the poles' implementation and management, not negligible mistakes were made, due to the way of conceiving and designing the development, but we can not ignore the importance these poles have had and partly, despite the crisis, still have in regional economy (Cirelli, Mercatanti and Porto, 2003).

In Sicilia there is no decentralized industrial model, but several secondary towns were able to create forms of handicraft and manufacturing settlement, as is the case of the ceramics systems in Caltagirone (CT), Santo Stefano di Camastra (ME) and Sciacca (AG), which have very ancient traditions and strong local roots (Di Blasi, 1999, Cirelli et al, 2006a); of the two textile/clothing systems in Brolo-Capo d'Orlando and Bronte-Randazzo; of paper production in Francavilla di Sicilia; of food industry in Giarre, etc. However, these are marked territorial specializations that make reference to small and medium size centres.

The tertiary sector records a stronger presence in Sicilia than the rest of the country.

The range of services is mainly concentrated in the provinces of the four major urban centres of the island (Palermo, Catania, Messina and Siracusa).

From a structural standpoint, after the public sector the largest number of workers is concentrated in trade (Cirelli, 2007), followed by real estate, rental, information technology and research.

The number of employees in the public sector is particularly high in the city of Palermo, seat of *Regione Siciliana* (regional government) and it is about 18,000 employees.

This explains how the Palermo province produces almost a quarter of regional GDP (about 16 million euro in 2002).

In tourism, the ratio of flows to the island on the national total tends to remain constant (approximately 5% of arrivals and 4% of registered tourists) and the offer of accommodation and services keeps on growing, especially in the major coastal centres.

Of particular importance is the growing demand for cultural tourism, which led to the improvement of tourist offer in Palermo, Catania and Siracusa (La Rosa, 2004).

Historically, Messina's province is the one that most contributes to spread the tourist image of Sicilia in the world, for the presence of some strong tourist poles, like Taormina, Giardini Naxos and the Eolie Islands (Cirelli, Malafarina and Porto, 2004).

At the regional level, there is a considerable interest for Cefalù and among the major destinations, in response to growing demand for cultural tourism, are Catania with the territory of "Aci" and Mount Etna, Siracusa, Palermo with Monreale, Agrigento with the Valley of the Temples, and the cities of south-eastern Sicilia for the Baroque.

18.2.1.1 The system of logistics and transportation in Sicilia

Transport systems play a key role in regional development, establishing both links to the outside and internal interconnections, that are essential for a systemic development.

Despite important achievements in recent years (the completion of the A20 highway Messina-Palermo, the extension of Catania's airport, the completion of Comiso's airport), the overall situation is still unsatisfactory.

The movement of goods and people within the island is mainly by road: in Sicilia there are about 3,800 km of state roads and highways, a density greater than the national average, but the quality of infrastructure is very poor.

The rail system is inadequate, with 1,400 km of railway lines, good enough along the Messina-Palermo and Messina-Catania-Siracusa lines, although in both routes the double track is often absent, while the rail link between the two major centres (Palermo and Catania) is poor (Fanara, 2002).

In Sicilia there are five Port Authorities and 39 ports (25% of the total number of Italian ports), but none of these perform important functions within the Mediterranean area (Cirelli, Malafarina and Porto, 2004), despite the geographical position and the prospects of great interest, in view of the envisaged opening in 2010 of the Mediterranean free trade area.

The only positive notes are the two international airports of Catania and Palermo.

The first is the most important of the whole *Mezzogiorno* for passenger and freight traffic. Instead a marginal role is played by Trapani Birgi, Lampedusa and Pantelleria.

18.3. IMPACTS OF CHOSEN POLICIES AND ESTIMATE OF POLICIES TO BE ADOPTED

18.3.1 *The Innovation and Research and Global/Local Interaction determinants*

The study of the *Innovation and Research* determinant plays a crucial role for the analysis of the achievement of sustainable territorial competitiveness in Sicilia.

This is because the rate of use of ICT, the level of education attained by a society, the endowment of infrastructure indicate unequivocally a territory's ability to generate innovation.

In particular, of the nine indicators selected, the most significant are the ones relating to the presence of university students (*Knowledge creation education (KCE)*), the *Level of telecommunication development (LTD)* (that is a category) and all those indicators that define the typology *Virtual Society (VS)*, that is the number of firms (*Firms with internet access (VF)*) and, in general, of individuals (*Internet users (VP)*) using the Internet and the availability of Public Administration e-services (*Available e-government services (VI)*).

The spread and development of ICT now concerns the tools and techniques of communication, the economic and productive structures, in short the whole of society and the forms in which it occurs, particularly with regard to culture (Mercatanti, 2005: 425).

The uneven distribution of university students in the various provinces of Sicilia is justified by the presence in the territory of four Universities (Catania, Messina, Palermo and Enna).

A significant role in facilitating mobility is played by the morphology of the region and the existing links.

The surface of the island is for 62% hilly and 24% mountain.

The problem of the specific territorial structure added to the well-known infrastructural delay faced by Italy's southern regions and made even more difficult the diffusion of roads, motorways and railway lines³ and so, while the provinces hosting university sites are well connected with highways, the southern part of Sicilia, and particularly the provinces of Agrigento, Caltanissetta, Ragusa and Siracusa are absolutely devoid of such links⁴, forcing non-resident students to expensive stays in university towns or, when commuting, to use buses or trains that cover medium distances with exhausting travel times.

³ The Region has signed with the national Government the *Accordi di Programma Quadro (Framework Programme Agreements)* providing for the completion and implementation of rail and road infrastructure, to enable the realization of Corridor 1 (Berlin-Palermo) and the Trans-European Transport Networks (TEN), deemed fundamental for cohesion and competitiveness, especially after the recent entry of Eastern countries in the European Union.

⁴ The A19 motorway connects Palermo to Catania, the A20 Palermo to Messina, the A18 Messina to Catania, the A29 Palermo to Trapani and Mazara del Vallo (Trapani). The highway linking Catania to Gela (Caltanissetta) is under construction.

Yet in the last decade university enrolment has been strongly encouraged by the successful decentralization policy implemented by Universities, which have often favoured the opening of new degree courses in other provinces as well.

The number of enrolments in the four Sicilia's universities has been always increasing over time, so to require at first the extraordinary use of the Faculty structures and the need for new premises, and thereafter the implementation of adequate policies of decentralization.

The full autonomy encouraged universities to commission research on the geographical and socio-economic characteristics of additional demand potential, to adapt one of the policies that is increasingly characterizing Italian universities: decentralization, which comes from the pursuit of objectives of economic-financial viability and social equity.

As regards research, an instrument that is the basis of technological innovation, on the island operate just over 300 scientific institutions (approximately 40% of the total of all Italian regions in the Convergence area).

Of these about 270 are university centres. Consequently, public expenditure on research and development is strongly driven by university expenditure, which absorbs about 80%.

The category indicating the *Level of Telecommunication Development (LTD)* records a low value.

In some respect this is a disappointing result, especially when considering that the new ICT technologies, based mainly on the Internet, are nowadays the main tool for spreading knowledge.

In fact the choice of sites, not only as regards the tourism sector, but also the choice of location of an industry or an economic activity, is always more based on a preliminary economic investigation carried out on the web.

Since the category is determined at the regional level, other indicators allow us to focus on the situation in the provinces.

A modestly greater number of enterprises using the Internet is located in the three provinces that are more advanced in this field: Catania, Messina and Palermo. In general, scarce are the technological capabilities of the regional productive fabric.

This is characterized by the prevalence of SMEs unable to properly develop their own demand for technological innovation, although working, as already stated, in an increasingly global market in which these intangibles have a significant part.

The innovativeness of Sicilia's enterprises, measured by the number of patents registered at the European Patent Office (EPO), although slightly above the figure for the Convergence area as a whole, is modest (11.8 patents per million inhabitants in 2002), against a national figure about seven times higher (Istat, 2002).

The same considerations can be made for the variable *Internet users (VP)*, that in Sicilia do not achieve an interesting value.

As correctly stated, the higher the number of internet users, the greater the contacts among people and the social interaction (ESPON, 2004-2006:50).

As to the level of computerization capacity of Public Administration (*Available e-government services (VI)*) provincial data are uneven, with medium-high values in Palermo and Messina, medium-low in Catania and Agrigento, and marginal in the other provinces.

The 2005 ISTAT survey on ICT in Public Administration, on the level of technological

infrastructure of the territory of Sicilia covered by broadband, indicated a value of 37% (national figure 36%).

However, considering only the municipalities with a population less than 30,000 inhabitants, the impact of broadband networks is down to 32%.

The delay stems from a still inadequate level of ICT infrastructure and an insufficient development of advanced online services.

Consider that at the time only 7% of Sicilia's Public Administrations had completed tender procedures entirely electronically.

The overall analysis of the indicators and the resulting value of the determinant *Innovation and Research* shows a very deficient *ex-ante* situation, particularly in the provinces of Caltanissetta, Enna and Ragusa.

The starting level of the *Innovation and Research* determinant is confirmed by the territorialisation process of the provinces of Agrigento, Caltanissetta, Siracusa and Trapani (C).

Instead, an improvement is shown by Enna (C→B) and Ragusa (D→C). The excellence of the absolute data (A) is scaled down to a more moderate level of development for Palermo (B) and Catania (C).

The *Global-Local Interaction*, key determinant in terms of economic-financial and social-environmental aspects, is certainly a component to constantly pay great attention to, in following the paradigm of sustainable development (Prezioso, 2006b)

Then it is fundamental for the local to be able and contact the system of global relations, without disappearing or incurring losses, as the need to recognize and preserve local differences can now be considered a positive and constructive response to the advance of the globalizing process, which may be so, somehow, "regulated".

In Sicilia, a region where local peculiarities are numerous, rooted, and in some cases more at risk than anywhere else, fully apply the requirements of Lisbon and Gothenburg they see right the "territory" as a starting point to boost the development processes.

But there must be a greater effort to fortify the territory, increasing the system of relations and promoting greater openness to the world, which often translates into mere "knowledge" of opportunities.

In this perspective of greater connectivity between local and global it will be necessary to remove at least two risks, especially given the striking contrast between the regional local and the level of current global evolution.

The first is to overlap the two paths with the adoption of pre-built models of global governance, thus far from local "rules" and features; the second is the risk for the *local* to be transformed into *localism* (ESPON, 2004 -2006: 48-50).

Not all indicators of the *Global/Local Interaction* determinant yielded useful or reliable results, and therefore we consider only the most significant.

The *ex-ante* assessment on this determinant can best be explicated if we consider the four typologies that compose it.

These are four *Interactions* (environmental, economic, financial and social) that can be evaluated according to the related indicators.

The *International Cooperation on Environment (ICE)* is essentially given by the indicator *General Environmental Concerns (GEC)*, as there is no *Specific Environmental Concerns (SEC)*.

Only the provinces of Agrigento, Siracusa and Ragusa have made general agreements of some importance as regards environment.

Such agreements, however, should be concretely supported by technological measures that are currently non-existent and by further cooperation agreements with other areas (Provinces or Regions).

The regional programmes 2007-2013 under ERDF (*European Regional Development Fund*) adopt the Community Strategic Guidelines for Cohesion policy.

The Objective 1.2 (“Strengthening the synergies between environmental protection and growth”), included in these Guideline, binds consistently with the Priority II of POR - *Regional Operational Programme*, which aims to strengthening potential synergies between development and environmental protection.

The connection between the exploitation of environmental and cultural resources and tourism is addressed by priority axis III.

The *Economic Interaction (EI)* includes a large number of indicators.

The performance of the *Identity of the productive system (PSI)* is a function of two indicators: *Manufacturing Enterprises (ME)* and *Product trademarks (PTm)*.

The data on *Manufacturing Enterprises* (percentage ratio between number of firms classed D under NACE classification and active population) is significant only for the provinces of Catania, Palermo and Messina.

The data on *Product trademarks* instead (percentage ratio between registered trademarks and number of firms as in the *Manufacturing Enterprises* indicator) shows more interesting, although uneven, values.

In particular the provinces of Catania, Caltanissetta, Palermo and Trapani achieve medium-high values, Enna and Ragusa low values, and the others medium-low ones.

The importance of the brand lies in the fact that it identifies and measures the quality of a product by linking it to its territory.

Thus the geographical position will allow the enterprise to compete, even fielding those territorial advantages that give a unique character to the production process or the supply of a product or a service.

In Sicilia it is necessary to improve the process of creating production local identities. Moreover, high levels of specialization achieved by some local producers in Sicilia are not adequately exploited by economies of scale.

This will be necessary to improve competitiveness, achieve increasing returns and boost the territory’s ability to attract new investment.

In the region an irrelevant *Foreign Direct Investments Intensity (FDIin)* is measured, although a very low index of labour cost and in the face of large financial resources from the European Union.

This is certainly explicable by the negligence in seeking international partners to propose investment or make the territory attractive to.

Territorial competitiveness can also be measured through the effective use of energy resources.

Despite recent developments in the use of renewable resources and the creation of several *wind farms* with large investments by ENEL (the main national Energy Company), the *Energy self-sufficiency Index (ESSI)* shows still minimal values (medium-

low in the provinces of Catania and Palermo) as much more could be done in an area that is naturally predisposed to “catch” wind and solar energy.

Unfortunately, after years in which the totality of the actors involved in development processes preached the use of wind or solar in Sicilia - being absolutely reversible - nowadays several administrators and representatives of environmental groups criticize the projects completed and seek to prevent new ones, standing up as defenders of the landscape.

It is therefore necessary to make more efficient and effective the system of production, distribution and consumption of clean energy, with the idea of territorial competitiveness and in compliance with the Kyoto Protocol.

Although the degree of *Vulnerability* (Q_Vuln (NH)) is high in the whole Sicilia (with the only exception of the province of Caltanissetta) this is not a serious obstacle to investment and competitiveness.

The level of financial development on economic growth and *Global/Local Interaction* is now demonstrated by statistical analysis: the *Financial Interaction*, which is a function of the two sectors *Attitude to Credit and Insurance* ($C\&IA$) and *Management Attitude* (MA), achieves quite low values, even considering the impracticability to gather the whole range of indicators related to the ESPON 3.3 project (Prezioso, 2006e).

In particular, the level of *Attitude to Credit and Insurance* ($C\&IA$) depends on the number of *Credit Institutions* (BnK) and *Insurance Companies* ($InsC$); whereas *Management Attitude* (MA) is function of the number of local units of enterprises (*Companies' local units* (BC)) and the level of capitalization of capital markets (*Stock market capitalisation* (STM)).

Unlike northern Italy, which has a generally very high number of Banks and Insurance companies, in Sicilia the figure is disappointing, although it is clear that the presence in the territory of banks and insurance institutions depends on the financial opportunities that are structurally or permanently present in the region.

In a region like Sicilia a widespread banking system would be crucial, because only banks that are rooted in the territory and in less well known realities can properly know (and direct) the actual potential of a business proposal and the needs of local enterprise.

The *Social Interaction* (SI) depends on the sectors *Population mobility* (PM) and *Active population*.

The first refers to indicators related to mobility of population, tourists and students and researchers.

For the indicators related to *Cultural Exchange* (CE) (i.e. the mobility of students and researchers) the data are computed with reference to the four provinces with universities only.

The opportunities for exchange among students of different nationalities are almost fully exploited, but appear to be few, or at least not quantitatively homogeneous in the different Faculties.

Moreover, many more Sicilia's students decide to study abroad than foreigners who decide to study in Sicilia.

It is clear that there is a deficiency in the communication of quality and opportunities for a study period in Sicilia.

Regarding the mobility of researchers the data is absolutely marginal both incoming and outgoing.

This is seriously detrimental to the training of local researchers.

The main obstacle to outgoing mobility is identifiable in the poor knowledge of a foreign language.

As the mobility of *Tourism (TI)* (*Inbound Tourism (InT)* and *Outbound Tourism (OuT)*) only the provinces of Catania and Palermo, “closer” to the world thanks to two international airports, achieve high values (anyway Messina has medium-high values).

Despite results in the tourism sector since 1994 show a positive trend, much higher is the potential of the region, which still has a weak tourism system, due to the backwardness of infrastructure, poor supply planning, spontaneity and lack of demand diversification, which is strongly seasonal and territorially concentrated.

The indicator on migrations, called *Population change (PCh)*, confirms as Sicilia has now ceased to be a catchment area of high emigration.

Despite a high unemployment rate, this is explained by the strong presence of hidden business that is necessary to bring out, so to help trigger virtuous processes in the economy.

The indicator *Active population (AcP)*, which can indirectly help to clarify the level of social interaction, is not significant.

The unsatisfactory level of the determinant improves in the phase of territorialisation only in the provinces of Caltanissetta and Enna (D→C), while remain unchanged for all other provinces.

Nevertheless some indicators, if properly interpreted, can provide guidance on specific areas on which action is needed to improve performance.

In general it is then possible to say that the degree of *Global/Local Interaction*, after a complex analysis of aspects that are apparently inconsistent with each other, is to be considered unremarkable but with ample opportunities for the future.

It is essential a real turn in the mobility of people.

It is necessary to favour the temporary outgoing mobility of students and researchers, so that they can learn and apply the best practices and know-how in the world of work; and also to mitigate the outgoing mobility of the general population, since it is often the most able or the ones who have a good education to provide expertise outside of the region.

Therefore it is necessary to invest much more in knowledge of IT and foreign languages.

Even the tourism sector should be directed to a less seasonal and more widespread exploitation.

To do this requires significant investment in territorial promotion and training of professionals, who must be able to support the areas that are less involved by tourism, but no less important.

A policy for the creation of quality new businesses (even by extra-regional entrepreneurs) and the support of existing ones, also aiming at legalizing all illegal situations, is the main policy for achieving a good level of *Global/Local Interaction*.

18.3.2. *The Quality and Resources and Funds determinants*

It is known that the shift from the paradigm of quantitative “growth” to “sustainable development” was significantly achieved with the Treaty of Lisbon (2000) and

Gothenburg (2001), although the search for alternatives to the mere dimensional growth of the economy represented one of the strategic objectives of the European Union since the 90s of last century, in response to the warning of the World Commission on Environment and Development that in the late '80s alerted the world about the limited resources.

Since then the quality of development became the main objective to be achieved through the right combination of EU policies, although only later (2007) the territory, rather than the space, was rediscovered as the right dimension and the most appropriate key to act and plan a European polycentric and balanced development.

With the support of STeMA, in this section, by analysis at NUTS 3 level of the indicators that make up the two determinants *Quality* and *Resources and Funds* we will seek to understand the evolutionary dynamics of policies to promote the development process, and also the reasons of the failure to develop a complex Italian region like Sicilia, that, despite the substantial Community assistance in the last twenty years, still shows very distant performances, and in some cases unreachable, from the goals of Lisbon 2010.

The purpose of studying the *Quality* determinant is to measure, through a geographic-economic approach, the level of quality within European territories, in order to test the policies of transnational cooperation that can take advantage of new financial resources from the Structural Funds.

The status of European regions in relation to *Quality* can lead to many changes: a) expand and strengthen the internal market; b) ensure open and competitive markets inside and outside Europe; c) expand and improve European infrastructure; d) Expand and improve investment in research and development (Prezioso, 2006b).

The current level of the above mentioned determinant stands at the D value in Agrigento and Caltanissetta, while the regional performance does not go beyond the C level.

This is affected, above all, by the indicators that impact the *Quality of Life (QL)* typology.

Among the typologies taken into account for the construction of the *Quality* determinant, there is *Quality of life (QL)*, usually supported by specific policies to ensure economic conditions suitable to the needs of families⁵ and to achieve an adequate level of all non-economic aspects that contribute to the welfare of citizens⁶.

The reality of Sicilia is rather complex and worrying, because the analysis of *Economic variables (EV)* highlights, like other southern Italian regions, an almost irreversible situation, in spite of the intense period of Structural Funds' use.

In particular, GDP per capita (*GDP pps*) based on real purchasing power has generally very low levels, and anyway low also in the south east, in the area between the provinces of Siracusa and Ragusa, characterized by an increasing economic vitality thanks to the excellent performances of the agricultural sector that has values above the national average.

Although it should be noted that in the last decade (1995-2004) GDP per capita

⁵ *GDP per capita pps (GDP pps); Consumption per capita (Cons); Level of employment (Emp); Index of Consumer Prices (HICP).*

⁶ *Health; Level of Leisure (LS); Accessibility.*

experienced a slight improvement of four percentage points compared to the national data, showing however a slight recovery (1%) on GDP per capita of the Convergence area.

On the demand side, the growth of Sicilia's domestic final consumption (*Consumption per capita (Cons)*) stands on positions substantially similar to Italy and the Convergence area, with a favourable performance that is more impacted, in comparative terms, by the evolution of private consumption rather than public consumption.

The distribution of the *Index of Consumer Prices (HICP)* is uneven across the region and has lower values in line with the national average in the provinces of Catania, Siracusa, part of Ragusa, Palermo and Trapani.

The labour dynamics instead show how the *Level of employment (Emp)* has an uniform trend across the region, but definitely below the national average, confirming that despite the steady increase of jobs in the last five years, especially for women, we are still far from the Lisbon targets.

The non-economic variables or *Infrastructural Variables of Cohesion (IVC)*, instead, define a much better regional situation. Despite being distributed unevenly throughout the region, the categories analysed (*Hospital beds (Hlt)*; *Infrastructural accessibility (PhAc)*; *Hotel beds (Htb)*) show in many provinces medium-high values, in line with the national situation and especially with central Italy.

Substantially though, the infrastructural endowment is not satisfactory, and the best data is in Catania and Palermo (B), while for all other provinces the indicator's value is C.

The overall infrastructure of the region reveals a gap against Italy that remains and does not show significant improvements in recent years.

For Sicilia's economy this is definitely a strategic point, as the infrastructure affects crucially the business system's competitiveness that, as highlighted, in Sicilia is inadequate and below the national average.

In comparison with other Italian regions in Objective Convergence, the chronic weakness of infrastructure appears to be lighter, as Sicilia is second behind Campania, while lower values are recorded in Puglia and Calabria.

The most critical situation concerns the transport system, and particularly road and rail (Regione Siciliana, 2007).

As regards social infrastructure, the regional health system relies on nine *Aziende Sanitarie Locali (ASL - Local Health Units)*, one for each regional province, serving on average around 560,000 inhabitants, a value well above the national average.

The dynamic of the index of hospital attractiveness, expressing the emigration to other regions for ordinary acute admissions compared to the total of persons hospitalized residents of the region, showed a significant improvement in the period 1999-2003 and is now better than the equivalent figure for the Convergence Area, although still below the national figure.

The significant scope of this phenomenon bears witness, in this sense, that there is not only an infrastructure gap, but also a deficit related to the effectiveness and quality of services provided by the health system.

Finally, it seems interesting to note that Sicilia is the Italian region with the highest incidence of integrated home care expenditure on total spending, to which, however, corresponds one of the lowest shares of elderly served from integrated assistance (along

with Sardegna), that is almost one elderly out of 100, against the nearly 3 nationally and about 1,2 of the Convergence Area (Regione Siciliana, 2007).

Regarding the allocation of accommodation, the provinces of Caltanissetta, Enna and Catania show the most significant deficiencies (D), although Catania has a very high level of cultural opportunities (A).

Only the province of Messina, also for the presence of Taormina, has a positive value (B), while the other provinces show some criticalities in this indicator (C)

As regards the not very comforting regional figure (D), despite the many investments over the past decade, what emerges is that, compared to Italy, Sicilia's hotel facilities are more oriented towards high levels, opting for three, four and five-star structures.

In reality, however, this comparison gives different results when considering, for greater uniformity, the Convergence Area as a yardstick, as the regional distribution of facilities compared to the level of hotels shows instead a clear gap in the presence of high level structures.

In 2005 the total number of five, four and three-star hotels in Sicilia reached 52.9% of the total, placing it last among the regions of the Convergence Area.

Among the complementary exercises, stands out the high number of B&B, which alone represent 43% of the structures of this type and, conversely, the low number of private dwellings (25.5%, although these tend to not appear officially, avoiding the survey and thus contributing to the hidden market), hence forcedly offering a very different picture than the national one (Regione Siciliana, 2007).

Particularly interesting is, finally, the analysis of the expenditure for cultural activities and leisure - *Cultural Opportunities (CuOp)*, that, although showing an uneven geographical infra-regional distribution, presents in some provincial realities, and especially the metropolitan ones, medium-high levels of expenditure that are comparable to those of the Italian centre-north.

The four areas of action of the Lisbon Treaty, *employment, innovation, economic reforms* and *social cohesion*, with the Treaty of Gothenburg (2001) have been supplemented by a fifth, *environmental sustainability*, which transversely integrates to the previous areas, producing effects in the decision-making processes of all policies of economic, social and environmental development.

That's why in the construction of the *Quality* determinant a key role is played by the *Environmental Quality (EQ)* typology, whose structure is contributed by direct and indirect indicators, such as *State of Air (SA)* and *Water Use balanced (SW)*, and those included in *Waste (WS)*, *Climate Change (CC)* and *Natural and anthropic Hazard (NH)*.

For this group of indicators, the *ex-ante* situation for the Sicilia region shows little comforting values, perfectly in line with the national ones.

The *State of Air (Total greenhouse gas emissions (SA))*, in fact, shows critical values both in the provinces of Palermo and Messina, and in the less urbanized areas like Siracusa and Ragusa, while Catania's metropolitan area stands at medium-low values.

This figure, certainly positive for the Etna region, should be read not as the result of an improved urban environmental policy, but rather as the effect of structural choices attributable to local politicians, who, from the sixties onwards, have privileged, in the policies supporting industrial location, business with low environmental impact, such as

pharmaceuticals and microelectronics, but mostly has helped creating a local production system that invested in services (trade and tourism) and advanced services (University and research) to promote the territory's development.

The positive effects in terms of environmental policy due to the few overall pollution problems in the region, are almost completely nullified by the excessive consumption of drinking water (*Total gross supply of drinking water (SW)*), which shows very high levels as in much of the country, and by the problems associated with waste production and management.

The analysis of this latter group of indicators shows, in fact, a not comforting overall situation; a low production of hazardous waste (*Hazardous waste generation (H_Was)*), with a regional performance among the best in the country, corresponds to a high production of municipal solid waste (*Municipal waste generation (MWAs)*), with very high values in the two metropolitan areas of Catania and Palermo, and medium-high values in the provinces of Siracusa and Trapani.

There are no effective policies to encourage separate collection of waste (*Municipal waste recycling (RMWas)*).

When adding to this situation the environmental risks related to *Natural and anthropic hazard* (mainly seismic and volcanic), that is the *Degree of vulnerability (NH)*, the whole of the natural resources available to Sicilia and its citizens for a balanced and sustainable development appears to be really low.

Finally, in building the *Quality* determinant a key role is played by the typologies *Government quality (GQ)* and *Social Quality and Cohesion (Vul)*; both represent a summary of some indicators that aim to measure the degree of participation and sharing of policy choices at the various territorial levels, and also the ability of local realities to address the new challenges posed by the economic slowdown, the growing phenomena of unemployment and inactivity, the changes in family structure and the growing ageing of population, through new and more efficient welfare policies.

With reference to the first typology, once again, the regional reality shows major weaknesses, synthetically expressed by an average low level of participation in political choices at different institutional levels.

Not much better resulted the regional analysis of the indicators of *Social Quality and Cohesion (Vul)*, which described a framework of structural failures now settled, as a strong *Inequality of regional income distribution (SCEc)* (second only to Campania and Calabria), rather than the high *At-risk-of-poverty rate before social transfers (Pvy)*, although the result of the latter indicator is rather homogeneous in all Italian regions examined in this study.

Medium-low values, and therefore encouraging, are recorded as regards the degree of *Risk of children exclusion (Cer)*.

Although, considering the typology that summarizes the indexes expressing the *Social wellness attitude (SWA)*, and in particular the indicator for *Female employment (EqOp)*, once again Sicilia's reality shows its structural deficiencies with generally very low levels, despite the regional gender policies in recent years have sought to promote women's work, through dedicated educational projects and special funding laws for women entrepreneurs.

In summary, to point out some remarks about the regional situation on *Quality*:

regarding the *Government Quality* typology, all nine provinces achieve a modest level (C). This typology refers to the political and social aspects of quality, and these are measured through the level of “confidence” of citizens towards the EU and the participation in political life, which is high in smaller Countries.

In particular, the unsatisfactory value (C) of the *Environmental Quality* typology for Caltanissetta, Agrigento, Enna, Messina and Trapani confirms the inconsistency of policy choices made to date by the institutions of Sicilia.

None of the other provinces exceeds the B level; the regional energy balance confirms, in terms of final consumption, the dominance of petroleum products (64%), on electricity (19%) and gas (growing), with a still residual share of renewable sources (2.5%) that is strongly delayed compared to the values of the Convergence Area (7.2%), the overall 16.9% in Italy and the EU25 values (13.9%).

The same profile has the amount of regional electricity consumption covered by renewable sources. Therefore, the path towards achieving the Lisbon objective (25%) seems very difficult. In conclusion, the analysis of *Quality*, both of life and environmental, but also of government and social cohesion, taking account of economic and non-economic variables, gives us a not very comforting overall picture, and especially Sicilia, like most Italian southern regions, should engage more profitably on the issues of quality of life and environment, investing much of its available resources on the composite theme of quality to implement the strategy of Gothenburg.

The quality theme is therefore closely related to available funding. The change of European paradigm - from growth to sustainable development - forced many OECD countries to address the issue of sustainable development by coming to terms with an effective and efficient use of resources.

Territorial competitiveness, especially for those lagging regional realities as Sicilia, is created also through a balanced use and consistent with the objectives, and the structural funds programmes has precisely this role: it is not sufficient to equip the regions lagging behind with more funding for these to reduce their performance gap; their use should be effective and rational.

The use of resources, in quantitative terms, must be integrated with the quality of implementation programmes and projects funded.

Aware that the sustainable competitiveness of a territory is achieved through the right mix of endogenous factors, such things as connecting infrastructure, network services, accommodation, social organization, qualification of work, favourable conditions for satisfying the demand expressed by citizens, constitute the elements of the competitive advantage a territorial system must acquire in a global economy.

Especially, but not exclusively, the weakest systems as Sicilia require appropriate support policies that are integrated with each other and address simultaneously support to companies on human capital formation, employment, infrastructure.

An appropriate use of economic and financial resources aimed at achieving the Lisbon and Gothenburg objectives can be verified by a qualitative-quantitative measure of the phenomenon, using groups of indicators suitable to assess the contribution that resources can give to territorial development: research and development, state aid, human capital, employment, climate and natural resources, accessibility, public

health and leisure, poverty and ageing, use of structural funds and integration level (Cf. Chap. 1 - Prezioso)⁷.

Given the average low value the *ex-ante* analysis showed homogeneously throughout Sicilia, the performance of the *Resources and Funds* determinant is modest for all provinces (C). The first objective for Sicilia would be to increase substantially spending on R&D, assuming that an effective strategy in this respect is the basis of a competitive modern society.

It has to be shared with all local stakeholders, businesses, school systems, universities and political-institutional bodies, a systemic action to create a local *milieu* that can make competitive a territory, like Sicilia, that is certainly able to express, if stimulated, innovation and knowledge.

Continuing the analysis of policies to achieve the objectives agreed in the Lisbon strategy and evaluate the effectiveness of funds spent for this purpose, attention should be paid to those indicators as public aid to enterprises (*National Funds for enterprises (Q_NA)*) and expenditure in human capital (*Funds for professional education (pps per capita) (Hcex)*), which highlight a contrasting reality in Sicilia. In fact, despite the high value achieved by the first indicator, the second, except for the province of Ragusa, has low values on average, confirming the low investment by Sicilia's enterprises in continuing training for workers already employed.

The lack of awareness of human capital's strategic role in the global competition increasingly contributes to the loss of competitiveness of Sicilia's economy, that continues to move away from the performances to reach according to the Lisbon objectives in 2010.

Even the *Level of intervention for the Gothenburg strategy (GS)* show inappropriate standards for Sicilia. The indicators examined in this case, expenditure on *Climate and natural resources (CNrex)*, *Transport and traffic (Tex)* and *Social expenditure (Paex)*, reveal more inconsistencies.

Indeed, despite Sicilia features a high seismic hazard as well as volcanic (Etna region) and a growing vulnerability due to both the high concentration of population in areas exposed to these risks, and to the structural weakness of building environment and a systemic vulnerability in the management of the emergency due to lack of awareness by the population (Cirelli and Porto, 2002; Cirelli, Di Blasi and Porto, 2005), the expenditure on *Climate and natural resources (CNrex)* in the most exposed provinces presents a low or medium-low value, confirming the lack of political clout associated with these issues.

An opposite situation is shown by the index of *Expenditure on transport and traffic (Tex)* at least for the provinces of Catania and Siracusa, that more than the previous

⁷ The indicators are respectively: for research and development *R&D expenditures (LsS)*; for state aid *National Funds for enterprises (Q_NA)*; for human capital (*Funds for professional education (pps per capita) (Hcex)*); for employment *Expenditure on employment (Eex)*; for climate and natural resources *Expenditure on environmental protection and enhancement, civil protection, waste management, parks (CNrex)*; for accessibility *Expenditure on transport and traffic (Tex)*; for public health and leisure *Expenditure on health, sports and recreation, culture, libraries and museums (Phex)*; for poverty and ageing *Social expenditure (Paex)*; for use of structural funds (*EU funds expenditure (Funds)*) and for integration level *INTERREGIII funds expenditure (Co-Op_N2)*.

one expresses a synthetic indicator (the sector *Policies for the Gothenburg Strategy (structure) (GtS)*) that can measure the ability of a territory to launch sector policies aimed at the development of trans-European transport networks and at the optimal use of infrastructure, or also at improving the institutional and administrative capacity to enhance the overall efficiency of the EU.

Overall, then, is western Sicilia to suffer for an excessive structural criticality.

The index of *Social expenditure (Paex)* for poverty and elderly presenting low values for all nine provinces, denotes an institutional inability to promote appropriate policies to counter the changed demographic situation in Europe, characterized by a generalized ageing.

To achieve the Lisbon objectives of creating more and more skilled jobs under the banner of social cohesion, especially in those most disadvantaged regions such as Sicilia, it is necessary to strengthen the social model to reflect changing needs in terms of knowledge and skills of a society increasingly open to new technologies, despite ageing.

This is due to a modest level of the indicator *Human Capital Expenditure (Funds for professional education (pps per capita) (Hcex))* and the low level (D) of the *Social expenditure (Paex)* indicator, which means a low expenditure for the weak.

The Eurostat survey of 2005 shows that in Sicilia, despite a slight improvement in the employment levels, remains low the employment rate of women (28.2%); the figure is equal to that of the Convergence Area, but lower than the national figure (45.3%).

Of employed women, 35.7% has a child, only 18% have three or more (Eurostat 2005), while people with disabilities in Sicilia, according to latest data provided by Istat dating back to 2000, are about 110,000 in the age group between 6 and 64 years. Of them, 50,000 live at home and about 45,000 have severe functional disability.

With regard to the policies of conciliation between labour and family side, it should be noted that Sicilia offers a greater share of municipalities with nursery service compared to the Convergence Area (32.8% vs. 16.2%) and not far from the national figure. In terms of children between 0 and 3 years who have used this service, Sicilia is still well above the value of the Convergence Area (5.6% vs. 3%) but the gap with the national figure (9%) has a more substantial weight.

The gender difference, beyond family circumstances, appears prominently also in relation to disabled women, who still live a “multiple discrimination” which combines the physical condition to the more general occupational segregation; nevertheless there is a growing enrolment of women with disabilities at the employment office.

As regards the issues related to migration dynamics, the theme of equal opportunities is of even wider significance.

The situation is evolving towards migration flows that see Sicilia as a place to stay, rather than a crossing point.

The provinces with the biggest concentration of foreigners are Palermo and Catania, respectively accounting for 25.5% and 22.2% of the regional total.

In 2004 there have been 65,331 residence permits in Sicilia (about 15,000 more than the previous year) (ISTAT, 2005).

Finally, in the construction of the *Resources and Funds* determinant, a key role is played by the indicators of *EU funds expenditure (Funds)* and *INTERREGIII funds*

expenditure (Co-Op_N2), that summarize the level of structural funds' use and the level of cooperation achieved by the territory analysed.

Both indicators taken into consideration for the Sicilia Region, have high and medium-high values, with a rather uniform spatial distribution on the island, although the highest levels were achieved by the Provinces of Catania and Palermo, showing their superiority both for money spent and for projects realized and development goals achieved.

Anyway these performances are still very far from the objectives of Lisbon and Gothenburg.

Modest is the progress of the Lisbon Strategy in all provinces (C).

Also the Gothenburg strategy is not implemented satisfactorily in Sicilia (D), as the result in several provinces clearly shows; the provincial performance of Caltanissetta, Siracusa and Messina, is certainly not positively affected by the presence of the petrochemical industry and the poor attention on waste treatment.

Finally, passing from a spatial dimension to a territorial one, i.e. correlating, according to STeMA, the spatial data to the territorial structure of the region concerned, both the studied determinants achieve values, after territorialisation, which synthesize an overall improvement in almost all provinces of Sicilia.

The territorialisation of *Resources and Funds* involves a marked improvement in many provinces, and namely Agrigento, Caltanissetta, Messina, Palermo, Ragusa, Siracusa and Trapani (C→B), an even greater leap in Enna (C→A), while the performance of Catania remains unchanged (C).

An indispensable intervention may be the one related to the typology *Level of intervention for the Lisbon strategy (LS)*; through *Employment* policies, especially *Support to enterprise creation*, the indicators *Funds for professional education (pps per capita) (Hcex)* and *Expenditure on employment (Eex)* record an improvement (C→B).

A significant contribution for the same indicators can be provided also by policies of *Age* aiming at the *Re-involvement of ageing people* and of *Human Capital* aiming at the *Supply of Education* and the *Human Capital Internationalization*.

Significant improvements can be obtained for other indicators as well. The choices contained in the POR – *Regional Operational Programme 2007-2013* are aimed at improving the *Efficiency of Accessibility*: it is *R&D Infrastructures* that brings the territorial system analysed to a good level of competitiveness if properly crossed with policies *Transport/network*.

The level of the *Quality* determinant improves in the territorialisation stage for several provinces: Agrigento, Caltanissetta, Messina and Ragusa (D→C), Enna to a greater extent (D→B), is unchanged in Palermo, Siracusa and Trapani (C), while worsen in Catania (E).

The majority of performances related to the considered determinant may improve with interventions aimed at *Economic development* and *Human capital*, gradually integrated with specific policies relating to the individual performance.

So, *Index of Consumer Prices (HICP)* and *Consumption per capita (Cons)*, which are the economic variables, may experience a positive change for many provinces, as in Caltanissetta (D→C).

As for the *Public health*, the weaknesses in the provision of hospital facilities of

Caltanissetta (D) can be overcome through policies in support of the *Social Programme Financing* and *Safety*.

Very low in the analysed territorial system is the *Level of Leisure (LS)* (D). It is advisable to adopt policies for *Support leisure* (under *Age* policies) integrated with policies of *Transport/Network*, and preferably those directed to the *Increase of physical accessibility*, so to bring the provinces at the C level at least.

With these solutions the whole area of *Infrastructural variables of cohesion (IVC)* receives a positive stimulus (D→B).

The typology *Environmental Quality (EQ)* improves through joint actions (B→A). This can be achieved through an increased waste disposal systems, promotion of the use of renewable resources and protection of natural resources, so that the *Natural Hazard* sector's performance approaches the standards required by the Gothenburg strategy.

As regards *Government Quality (GQ)*, both the not high *Level of public participation* (C) and the so-called *Level of citizen confidence* (D), which demonstrate a modest sense of belonging and confidence in institutions, can be improved with policies of *Human Capital*.

Policies of *Age* are also needed, and particularly *Social Integration* and *Child Protection*, to reduce the high school dropout rate and the priming of "young recruits" by organized crime, as evidenced by the improvement after territorialisation (D→A).

The policy choices contained in the POR ERDF 2007-2013 show a certain consistency with the Lisbon and Gothenburg objectives, although much will depend on the performances that will be achieved in the use of resources and funds, in terms of efficiency and effectiveness.

