

DIRECTORATE-GENERAL FOR INTERNAL POLICIES

POLICY DEPARTMENT B
STRUCTURAL AND COHESION POLICIES

Agriculture and Rural Development

Culture and Education

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Transport and Tourism

**THE INTER-RELATIONSHIP BETWEEN
THE STRUCTURAL FUNDS AND THE
PROVISION OF SERVICES OF
GENERAL (ECONOMIC) INTEREST
AND THE POTENTIAL FOR
CROSS-BORDER SERVICE DELIVERY**

STUDY



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REGIONAL DEVELOPMENT

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Abstract

This study aims to provide a detailed and critical analysis of Services of General (Economic) Interest in the 27 Member States and their regions and the scope of EU regional policy in their financing. In particular, the study discusses the different definitions and traditions in place, the main issues at stake in the policy debate, the levels of provision in the different countries and regions and the scope and use of Structural Funds to support the provision of those services.

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LIST OF ABBREVIATIONS

BHN	Baltic Healthcare Network
C&E	Competitiveness and Employment Objective
CEEP	European Centre of Employers and Enterprises
CoR	Committee of the Regions
DG	Directorate-General of the European Commission
DG ECFIN	European Commission Directorate-General for Economic and Financial Affairs
DG REGIO	European Commission Directorate-General for Regional Policy
EC	European Commission
ECJ	European Court of Justice
EEA	European Environment Agency
EGTC	European Grouping of Territorial Cooperation
EIB	European Investment Bank
EP	European Parliament
ERDF	European Regional Development Fund
ERP	European Regional Policy
ESF	European Social Fund
ESPON	European Spatial Planning Observation Network
ETUC	European Trade Union Confederation
EU	European Union
EU-12	The 12 New Member States of the EU 2004–2006
EU-15	The 15 Member States of the EU before the integration of 12 candidate countries in 2004–2006
EU-25	The 25 Member States of the EU, 2004–2007
EU-27	The 27 Member States of the EU, following the integration of Romania and Bulgaria in 2007
EUR	Euro
EU-SILC	European Union Statistics on Income and Living Conditions
FMU	Foetal Medicine Unit

GDP	Gross Domestic Product
ICT	Information and Communication Technologies
INTERREG	CI programme for cross-border, trans-national and inter-regional cooperation
ISPA	Instrument for Structural Policies for Pre-Accession
MOZC	Multi-cultural Educational-and Care Centre
NCFM	National Centre for Foetal Medicine
NESGI	Non-economic services of general interest
NGOs	Non-Governmental Organisations
NSRFs	National Strategic Reference Frameworks
NUTS	Nomenclature of Territorial Units for Statistics
OPs	Operational Programmes
PFI s	Private Finance Initiatives
PCA	Principal Component Analysis
PPP	Public–Private Partnerships
PSOs	Public Service Obligations
R&D	Research and Development
ROP	Regional Operational Programme
SF	Structural Funds
SG(E)I	Services of General (Economic) Interest
SGEI	Services of General Economic Interest
SGI	Services of General Interest
SMEs	Small and Medium-sized Enterprises
SPD	Single Programming Document
SSGI	Social Services of General Interest
TEN	Trans-European Network
TFEU	Treaty on the Functioning of the EU
UK	United Kingdom

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EXECUTIVE SUMMARY

The present study offers the Committee on Regional Development of the European Parliament (EP) a critical and comprehensive discussion about the inter-relationship between the Structural Funds (SF) and the provision of the services of general interest and of general economic interest (SG(E)I). More specifically, it provides a comparative analysis of the concepts, traditions, legislative frameworks and level of provision of SG(E)I in the 27 Member States. The discussion draws from a vast academic, regulatory and policy literature review and a qualitative and quantitative analysis of key indicators of service provision, delivery and financing.

In what follows, a critical review of the main findings and recommendations is provided.

Issues

- The **notion of SG(E)I** encompasses several services of public interest and gives rise to different definitions and boundaries according to the various national, cultural and legislative traditions. Notwithstanding the transformations that the notion has undergone, and the differences in the national traditions and practices affecting its understanding, this concept is based on a **common set of values and goals** and encompasses all services that respond to a logic of collective interest. This collective interest calls for the **universal access for all** (social, spatial and financial), the **guarantee of a continuous service** and a certain **standard in the quality delivered**, as well as responsiveness to users and **consumer protection**, along with **affordability**.
- SG(E)I relate to many **different sectors and typologies of services** which can be grouped in network utilities, public administration services which include compulsory social protection, education, health and social services, socio-cultural services. They include **services that are usually outside the scope of markets** (e.g., compulsory education, social protection), obligations of the State (e.g., security and justice) and **services of general economic interest** (e.g., energy and communications). It should be understood that SG(E)I are not to be identified with residual services for disadvantaged areas or members of the population, but are at the service of all citizens and enterprises that help ensure the exercise of fundamental rights and access to essential services, fostering social cohesion and welfare. Their economic nature is normally associated with market failures such as the collective nature of the service, the existence of economies of scale or scope, the occurrence of natural monopolies, the presence of externalities or information asymmetries. For this reason specific public-service obligations are imposed by the public authorities, which also ensure that SG(E)I are provided at an affordable price and are of high quality.

In order to gain a more practical understanding of the activities covered by SG(E)I, a tentative **list of around 25 activities** has been drawn up within the European Centre of Employers and Enterprises "Mapping Public Services" study and based on EC Regulations No. 438/2001 and 1828/2006, with each referring to a Treaty, secondary law or communication or to European Court of Justice (ECJ) judgments. In several Member States, other activities have been considered as belonging to the public domain, notably at the local level. In States with a strong local autonomy, the range of services can be very large.

Therefore, numerous activities can be considered to offer SG(E)I and these services cover a variety of sectors, such as:

- **Network utilities:** Telecommunications and ICT; postal services; energy; transport; infrastructure; public lighting; water supply and sewage; waste collection and treatment; street cleaning.
 - **Public administration services:** Compulsory social protection.
 - **Education:** Kindergarten; primary; secondary and higher education; vocational training.
 - **Health and social services:** Hospitals; ambulatory health services and ambulance services; complementary social protection; care and support services for children (including day nurseries); care of the elderly; care and protection of the disabled; respite care; support services for the long-term unemployed.
 - **Sports and leisure:** Swimming pools; sport centres; spa cures.
 - **Socio-cultural services:** Theatres; sports and music auditoriums; exhibition and conference halls; music and drama academies; museums, monuments and libraries.
 - **Other services and facilities of general interest:** Social housing; adapted housing for persons with disabilities; fire brigades; financial services; cemeteries, crematoriums and funeral services.
- The relevance of SG(E)I in the European Union (EU) policy debate stems from the consideration that they are a key aspect in the European model of society, **promoting European values, fostering social and territorial cohesion and guaranteeing the enjoyment of fundamental freedoms**. SG(E)I constitute a **cohesion factor** with respect to the provision of equal, affordable and universal services to all citizens regardless of their economic, social or geographic situation. This aspect is formally acknowledged by the Article 14 of the Treaty on the Functioning of the EU (TFEU), which implies a positive obligation of the Member States and the EU, in accordance with their respective competencies, to ensure that SG(E)I operate under the principles and conditions to fulfil their missions. Further, the Protocol on SGI annexed to the Treaty of Lisbon recognises SGI and their role in social and territorial cohesion. In conclusion, SG(E)I foster social cohesion (by guaranteeing that all citizens have access to high quality and affordable essential services), territorial cohesion (by providing services of general interest to all areas, irrespective of their geographical or economic remoteness or isolation) and aid in guaranteeing the genuine enjoyment of fundamental freedoms which are necessary to fully participate in the life of European society.
 - Given the importance of SG(E)I in the promotion of social and territorial cohesion, an **EU-wide debate** has gained momentum over the past 20 years, and has been further spurred by the **Green and White Papers on SGI**, which focused mainly on network-based industries. In 2006 a Communication on social services of general interest (SSGI) was adopted. The Treaty of Lisbon has introduced a Charter of Fundamental Rights and provided an Annex on SGI, thus further highlighting the importance of SG(E)I in the EU. These documents and the issues raised by the Services Directive have fuelled recent discussions on the definition, scope, provision, organization and funding of SG(E)I in the EU.

There has been some delay in the implementation of the Services Directive and the adaptation by the Member States of the necessary national legislation and procedures: 20 Member States have by now adopted their horizontal legislation, in 5 Member States (Austria, Cyprus, Ireland, Luxembourg and Portugal) discussions are still going on, while France and Germany opted to include the general principles in several acts (the work is nearly finalised in Germany and still ongoing in France). However, the adaptation of existing laws is more complex and only 12 Member States have indicated that they finalised those changes.

The consequences of the numerous EU rules dealing directly with SG(E)I, or indirectly through their organisation and financing modes, still requires assessment. The debate is therefore still open and several legal and organizational issues must be further discussed in 2010, the pivotal element being the horizontal or transversal framework law for SGI and the importance of cross-border provision and cooperation.

Evidence

- Endowment and provision of SG(E)I across EU countries and regions varies considerably, and is a key factor in the debate on the future of delivery and financing of services of public interest. SG(E)I provision is characterized, both at the national and regional level, by significant differences in terms of quantity and quality. Analysing the situation in the different SG(E)I sectors previously identified, it is clear that the largest gaps in the provision of SG(E)I and the quality of the services can be found in the EU-12 countries and in rural and peripheral regions. When considering an aggregate SG(E)I indicator, comprehensive of all relevant sectors, this finding is confirmed and corroborated. The highest level of provision and quality of services is found in Scandinavian and Nordic countries and, when the regional disaggregation is considered, in capital city regions of EU-15 countries.
- The **telecommunications sector**, as a main driver of the knowledge economy, represents a key service which may also help in reducing the gaps between developed and less-developed regions in the EU. The largest imbalances relate to the EU-12 countries, where, for example, **broadband penetration rates** are below the EU average of 13% of population with broadband access. In fact, in Poland, Slovakia and Bulgaria fewer than five inhabitants for every 100 are connected to a broadband network. In **social services and infrastructures**, a different pattern between EU-12 and EU-15 countries can be detected, for example, with respect to the number of **hospital beds** (where Germany, Austria, the Czech Republic, Hungary, Lithuania, Latvia and Finland were the best endowed countries in 2006, while the UK and the southern European countries such as Portugal, Spain, Italy and Greece had a low level of health facilities per inhabitants and higher regional divergences) or with respect to **preschool childcare**, where there is a large gap across Member States, but not between old and new Members. Considering instead **unmet medical needs**, the EU-12 countries are characterized by higher costs of care, longer waiting times and difficulties in reaching the nearest care facilities. Considering the **environment and energy sector**, **water supply** differs across Member States, with EU-12 countries characterized by lower shares of the population connected to the public water supply (in Romania only around 50% of the citizens have access to the public water supply). Considering the **treatment of waste**, the capacity of waste treatment of Cyprus, the Czech Republic, Latvia and Lithuania, which in 2006 were far below the EU average (0.68 tonnes per capita of

waste treated) should be improved. In the **transport sector**, many differences persist, with gaps more pronounced for EU-12 countries, in the length and quality of the **motorway and electrified railway network**. Motorway development in the eastern countries is mainly concentrated around the capital cities and other major urbanised centres, while peripheral regions are characterized by poor road accessibility. Railway networks are present in EU-12 countries, but consist mainly of single track and/or not electrified lines that substantially increase travel times.

- Given the gaps in provision of SG(E)I at a territorial and sector-specific level, it is then natural to analyze the role of **SF** in bridging the gap between well-endowed nations and regions and areas that require additional investments. During the 2007-2013 programming period, 170 billion Euro will be invested by the ERDF and 70 billion Euro by the Cohesion Fund in basic infrastructures, 40% of which are in the transport and environmental sectors, the rest being spread between telecommunications, energy and social infrastructures. The EU-12 Member States are the major beneficiaries of this massive investment.

Qualitative and quantitative statistical analysis provide evidence in favour of a negative relationship between provision indicators and SF expenditure, implying that funds are indeed directed towards areas and sectors in need. SF are thus instrumental to the achievement of social and territorial cohesion with respect to SG(E)I. When considering the overall SF expenditure in SG(E)I sectors, the correlation coefficient with an aggregate indicator of SG(E)I provision is negative (and equal to -0.57) indicating that EU countries tend to allocate SF when the endowment of services is low. Therefore, SF are contributing to the increase in delivery and quality of SG(E)I in the sectors that are lagging behind, and this seems to be especially true for the **telecommunications sector** (correlation coefficient with SF expenditure in this category of -0.59), **social infrastructure** (-0.24) and **transport** (-0.23). In the **environment and energy sector** the correlation coefficient is positive, indicating that high spending in the energy and Environment sector may be linked directly to energy saving measures and environment protection, and may be high even when the provision is good.

In this perspective, there is a **strong relationship between the provision of SG(E)I and the achievement of cohesion policy objectives**:

- The SF, the European Regional Development Fund (ERDF) and the Cohesion Fund in particular, thanks to their wide fields of intervention, finance essential infrastructures for ensuring SG(E)I provision. The ERDF finances the construction and modernisation of new roads, bridges, sewers, factories, business parks, science parks and tourism facilities. The ERDF can also support investment in education and health, Research and Development (R&D) measures, and investments linked to the environment. The Cohesion Fund finances up to 85% of the eligible expenditure of major projects involving environment and transport infrastructure. Expected outcomes of such interventions are **extension in the coverage of the population, increased quality and better efficiency**.
- At the same time, **the provision of SG(E)I reduces the disparities among regions and reinforces economic, social and territorial cohesion**. In particular, the contribution of SG(E)I to promote social and territorial cohesion can be observed at several levels:

- **Territorial cohesion** is enhanced if the access to quality and efficient SG(E)I is ensured throughout all the EU territories, including urban, remote, peripheral and scarcely populated territories. SG(E)I are structuring elements in matters of town and country planning, above all, for the provision of regular and continuous services in rural, isolated, peripheral and insular areas;
- **Social cohesion** is ensured if people are not discriminated in the enjoyment of their fundamental rights and freedom on the basis of their social conditions. The equal access to SG(E)I is a precondition for social cohesion.

Recommendations and conclusions

- SG(E)I are an essential ingredient for the achievement of the goals of social and territorial/regional cohesion in the EU and can aid in promoting EU-wide attractiveness and competitiveness in the globalized economy while guaranteeing the exercise of fundamental rights and freedoms to EU citizens. Levels of provision are heterogeneous across SG(E)I sectors and EU countries and regions in terms of distribution, accessibility, quality and efficiency. In order to guarantee universal access to all citizens, irrespective of territorial or personal characteristics, **investment in SG(E)I infrastructure** in different sectors is crucial.

To this end, **SF are a key element** in providing lagging-behind areas and sectors with more and better services of general interest. **Cross-border cooperation** programmes should also be encouraged, especially with respect to the creation of trans-national transport, communication and energy networks. Currently, evidence from the 2000-2006 programming period shows that of ERDF funds allocated to cross-border cooperation initiative, only 30% is directed towards SG(E)I sectors. Among these, the transport and telecommunication sectors are predominant and receive the highest shares. These figures may be due to the complex architecture of delivery of Cross-border services compared to standard SG(E)I delivery programmes. However, Cross-border cooperation may be an important avenue of service delivery between regions and countries, encouraging mobility, diminishing congestions costs, providing better telecommunications and energy services and generating positive spillovers through service interoperability across regions. Targeted SF investment in infrastructure for service delivery and provision should be encouraged, as it may help in overcoming the legal, financial, technical, economic and institutional barriers to the implementation of cross-border cooperation initiatives.

- The level of provision and delivery of SG(E)I should not, however, be the only goal and objective. While universal access is of paramount importance, issues of **affordability and quality** are also crucial. Once a service's basic infrastructure has been provided, maybe financed through SF investment, a balance between financial sustainability of the service provider and affordable tariffs for users must be found. Specific arrangements, such as price differentiation schemes, fiscal instruments in the form of cross-subsidies and taxes should be put in place. Quality of the service is also to be considered, and service providers should follow guidelines and directives setting standards and minimum quality requirements. With respect to this last issue, a key role can be played by European and national policies, by providing a common, and well defined, legal and institutional framework for the provision of SG(E)I.

- Finally, from a legal and organizational standpoint, the modes of provision and the main actors involved would benefit from a clear set of legal and institutional initiatives. New modes of delivery that move away from the State as the sole provider of services of general interest require new governance and regulatory settings, common to the EU as a whole, in order to encourage integration in service provision and delivery. Given the new delivery modes such as concessions, leases and public-private partnerships, the requirement of co-financing by the SF seems a key success factor.

In order to meet the specific needs of each nation and region in the EU, local authorities should give great care to translating the EU common framework into a set of specific national and regional arrangements that may help in achieving this goal. The role of the regions and of local government is central in the provision of basic services of general interest and local conditions and needs should be at the core of an effective policy design.

According to the principle of subsidiarity, Member States have the power of defining, organising, and financing services of general interest depending on their own traditions and requirements, while the EU delineates common principles regarding accessibility, affordability, safety, quality and protection. Member States should support nation-wide projects and framework conditions and should also be responsible to develop a strategic approach to service delivery and to ensure their affordability.

Unlike purely commercial services, financing the provision of SG(E)I usually cannot be covered solely by market mechanisms alone and additional schemes are needed. Such schemes, characterised by the coordination between various authorities and several public policy objectives and intrinsically linked to the provision of SG(E)I, are essentially dealt with at Member State level or even regional/local level. This results from the application of the principle of subsidiarity.

In this respect, differences between various services of general interest and the different needs and preferences of citizens, users and consumers resulting from different economic, social, geographical, cultural and physical situations should be respected. Due account should be taken of the diversity that characterises such services, the situations in which they are provided, the characteristics of the providers, and the need for flexibility to adapt services to various needs.

- The key policy implication regards the fact that, in a **multi-level governance context**, in order to ensure effective subsidiarity and coordination between partners, a single leadership (that could be played by the central, regional or local governments), capable of channelling and adapting the different interests involved to a common end, is essential. This aspect is an important condition for the efficient functioning of cohesion policy and SG(E)I delivery, especially when considering **cross-border cooperation programmes**. Regardless of the sector, the territorial specificities, the mode of financing, a clear political leadership and strong direction allow projects to develop coherently and follow a strict time schedule. Otherwise, there might be an adverse effect for which the multi-level governance can end up hampering the achievement of the project objectives by paralysing the decisional process. To this end, what can make the real difference in such a strategic domain is that local authority plays the role of a 'public entrepreneur', able to have a thorough analysis of the local needs, to develop a strategic vision to overcome bottlenecks, to leverage and catalyse relevant resources and the capacity to manage risks triggering creative solutions adapting to fast changing needs.

INTRODUCTION

In 1997, for the first time, the Amsterdam Treaty explicitly combined social and territorial cohesion with SG(E)I as expressions of European values. The Lisbon Treaty subsequently added the promotion of territorial cohesion to the various missions of the EU¹. Over and above solidarity between people and regions based on their levels of wealth, the EU also encourages solidarity based on geography (for example, to mitigate geographical remoteness). In October 2008, the EC issued a Green Paper on territorial cohesion² that championed a better and shared understanding of territorial cohesion and its implications on EU policy.

The Protocol on SGI³ annexed to the Treaty of Lisbon recognises SGI and their role in social and territorial cohesion. The increasing demand (public or private) for these kinds of services may **generate growth**, making the development of SGI a key factor in the promotion of European social and territorial cohesion. Article 14 of the Protocol further provides that in order for these services to operate “on the basis of principles and conditions, particularly economic and financial conditions, which enable them to fulfil their missions”, the EP and the Council shall establish these principles and conditions under the ordinary legislative procedure.

Cooperation between regions and Member States has been reinforced through a new generation of territorial cooperation programmes and the creation of the European Group of Territorial Cooperation (EGTC)⁴ as a legal instrument to facilitate and promote cross-border, trans-national and interregional cooperation.⁵ Regions have also received assistance to climb out of recession through a stable source of financing to stimulate economic recovery, with increased flexibility and simplified financial management.⁶

Social and territorial cohesion covers free access to education, employment, housing, territorial planning and financial services, among others. These services must be those identified on an adequate territorial level to ensure a high quality of provision and they must contribute to the overall economic growth and development of the EU, while enhancing general social welfare.

To provide such service delivery, large infrastructures are necessary to ensure universal, equal and affordable access (avoiding excluded zones or populations) and the full geographical coverage of a territory to meet new needs of the population. The SF clearly have a role in this respect: in the period 2007-2013 170 billion Euro are invested by the ERDF and 70 billion Euro by the Cohesion Fund in basic infrastructures, 40% of which are in the transport and environmental sectors, the rest being spread between ICT, energy and social infrastructures. The EU-12 Member States are the major beneficiaries of this massive investment. However, at the same time the high quality provision of SG(E)I, allowed by

¹ In parallel, the Commission also evaluated SGI that might help reinforce social and geographical cohesion “because market outcomes do not or may not provide the socially desirable level of service provision” (COM/2002/0331 final).

² European Commission (2008).

³ OJ C 306/158.

⁴ Regulation (EC) No 1082/2006 of the European Parliament and of the Council on an EGTC.

⁵ EGTCs enable public authorities of various Member States to team up and deliver joint services without requiring a prior international agreement to be signed and ratified by national parliaments. Member States must, however, agree to the participation of potential members in their respective countries.

⁶ http://ec.europa.eu/regional_policy/policy/impact/.

this infrastructure investment, creates greater potential for economic and social development and can lead to increased social, economic and territorial cohesion.

Table 1: 2007–2013 EU expenditure in infrastructures (ERDF and Cohesion Fund) by sector in EU-27

Country	INFRASTRUCTURES (% of ERDF)					Million EUR	
	Transport	ICT	Energy	Environm. protection and risk	Social infra-structures	Total ERDF	Cohesion Fund
AT	1.2	2.8	4.4	1.3	0.1	680	
BE	5.4	2.1	2.6	6.6	0.2	990	
BG	34.9	1.3	4.4	27.9	4.5	5,488	2,283
CY	12.1	3.1	1.2	36.5	2.0	493	213
CZ	33.4	4.5	5.3	19.0	5.4	22,528	8,819
DE	19.6	2.1	3.0	9.1	3.3	16,108	
DK	0.0	13.0	0.0	0.0	0.0	255	
EE	22.7	2.5	2.4	25.1	17.2	3,012	1,152
ES	27.7	4.3	1.7	23.8	3.2	26,600	3,543
FI	3.5	14.7	4.6	3.4	0.0	977	
FR	11.5	7.8	6.9	14.9	3.3	8,055	
GR	32.7	9.8	3.9	22.3	8.9	15,846	3,697
HU	25.8	3.5	1.7	28.2	11.7	21,292	8,642
IE	7.0	9.6	10.1	6.5	0.0	375	
IT	18.3	7.7	8.9	11.0	5.1	21,027	
LT	26.6	4.2	7.6	16.3	13.6	5,747	2,305
LU	0.0	5.0	9.0	15.0	0.0	25	
LV	29.5	4.8	3.2	19.9	13.2	3,980	1,540
MT	25.3	3.7	4.8	32.8	8.1	728	284
NL	4.8	8.1	6.0	8.1	1.5	830	
PL	40.8	6.7	4.0	15.9	4.9	55,515	22,176
PT	18.7	4.6	1.8	17.6	11.6	14,899	3,060
RO	34.3	2.9	3.9	30.2	3.6	15,529	6,552
SE	6.8	11.0	6.6	1.5	0.0	935	
SI	29.5	3.2	4.8	23.0	2.9	3,343	1,412
SK	34.7	11.8	1.7	18.9	11.1	9,861	3,899
UK	5.2	7.5	5.3	6.7	0.7	5,295	
cross-border cooperation	13.3	7.1	4.3	16.1	5.7	7,799	
EU-27	28.7	5.6	4.0	18.8	6.2	260,414	69,577
EU-15	21.1	6.0	4.3	16.0	5.2	112,899	10,300
EU-12	34.6	5.3	3.8	20.9	7.0	147,515	59,278

Source: Authors' processing of DG REGIO data

Note: the programmed and decided expenditure are considered respectively for ERDF and Cohesion Fund expenditure.

An interesting overview of SG(E)I is offered in the study commissioned by the Committee of the Regions (CoR) on the "services of general interest in Europe".⁷ This aimed at contributing to the debate on high quality SG(E)I, which is regarded "as an element in promoting social and territorial cohesion in the Union". The study analysed the concepts, definitions, legislative framework and role of the EU with respect to the provision of such services.

More recently, a project was led under the auspices of The European Centre of Employers and Enterprises (CEEP) providing Public Services "Mapping public services",⁸ with the support of the EC. Its objective was to appraise the understanding of SGI provision in the EU-27.

In order to gain a more practical understanding of the activities covered by SG(E)I, a tentative list of around 25 activities has been drawn up within the CEEP "Mapping Public Services" study, with each referencing a Treaty, secondary law or communication or to European Court of Justice (ECJ) judgments. In several Member States, other activities have been considered as belonging to the public domain, notably at the local level. In States with a strong local autonomy, the range of services can be very large.

Therefore, numerous activities can be considered to offer SG(E)I and these services cover a **variety of sectors**, such as:

- Network utilities:
 - telecommunications and ICT;
 - postal services;
 - energy;
 - transport;
 - infrastructure (the construction and maintenance of certain roads and related structures);
 - public lighting;
 - water supply and sewage;
 - waste collection and treatment; and
 - street cleaning.
- Public administration services including compulsory social protection.
- Education (kindergarten, primary, secondary and higher education as well as vocational training).
- Health and social services:
 - hospitals;
 - ambulatory health services and ambulance services;
 - complementary social protection;
 - care and support services for children (including day nurseries);
 - care of the elderly;
 - care and protection of the disabled;
 - respite care; and
 - support services for the long-term unemployed.

⁷ Committee of the Regions of the European Union (2005).

⁸ http://www.ceep.eu/index.php?option=com_content&view=article&id=44&Itemid=58. The research was managed by the external consultant RAP-EUROPA and the survey was carried out by Gallup Europe. CIRIEC was associated with this project.

- Socio-cultural services offered in various theatres, sports and music auditoriums, exhibition and conference halls, music and drama academies, museums, monuments and libraries.
- Sports and leisure (e.g., swimming pools and spa cures).
- Other services and facilities of general interest, such as:
 - social housing;
 - adapted housing for persons with disabilities;
 - fire brigades;
 - financial services⁹; and
 - cemeteries, crematoriums and funeral services.

The findings of the CEEP study show that SGI represent over 26% of the EU's Gross Domestic Product (GDP) - over 2.412 billion EUR - and employ more than 64 million workers.¹⁰

Furthermore, in times of economic crisis, SG(E)I can act as effective buffers by continuing their provision to all at affordable prices and not laying off workers. Noticeably, all social services that come into play act as cushions to prevent citizens from socio-economic exclusion. More generally, all together SGI maintain social and territorial cohesion.

Social cohesion can be understood as the capacity of a society to safeguard the welfare for all its members. This implies the need for and guarantee of universal services and comprehensive coverage. It aims to minimise disparities and reduce/avoid polarisation while generating and strengthening bonds among citizens. A cohesive society is one that has developed satisfactory democratic ways of managing its internal diversity.

In the same vein, territorial cohesion has always supported European policies by bridging the gaps between the economies of the Member States. The work carried out by the Member States within the context of the "Territorial Agenda", as well as the considerations of the Leipzig Charter on Urban Development and the Council Conclusions highlight the challenge of taking the Union's territorial diversity into account for cohesion policy. The Commission states in its Green Paper¹¹ that territorial cohesion is about ensuring the harmonious development of all EU territories and making sure that their citizens are able to make the most of the inherent features of these territories. Furthermore, true territorial cohesion must recognise a person's choice to live where they wish, including isolated or insular regions, while still benefiting from services equivalent to those enjoyed by people in most populous areas.

Given the role of SGI in promoting social and territorial cohesion, the debate about the objective of territorial cohesion should result in a better definition of the role SG(E)I can and must play. A reflection process on universal access to services should be part of this debate.

European policies designed to reduce regional disparities have emphasised the importance of SG(E)I as key factors for social, economic and territorial cohesion. Therefore, the financial instruments available in the frame of the European Regional Policy (ERP) are relevant tools for the improved provision of SG(E)I. The present study and especially the

⁹ Belgium established a universal banking service in 2003.

¹⁰ <http://www.ceep.eu/images/stories/pdf/Mapping/Mapping%20fact%20sheet%20vfinal%202010%2005%2005.pdf>.

¹¹ European Commission (2008).

national case studies analysed can help assess to what extent SF participate in the provision of SG(E)I. The 27 projects selected will also show to what degree the implementation of the regional policy is complementary to other European policies. Reconciling the twin goals of economic competitiveness and cohesion remains a major challenge for EU policymaking, particularly in a period of slow economic growth and global economic restructuring.

The present study is organised as follows:

- Chapter 1 sheds light on the definition and concepts of SG(E)I, illustrates the diversity in the modes of provision and financing of SG(E)I in Europe and reports the main steps in the EU policy debate recalling the key provisions in the European law;
- Chapter 2 provides an in depth analysis of the level of provision of SG(E)I, the allocation of SF to SG(E)I, and a review of the investment priorities stated in the NSRF 2007-2013 and a statistical analysis of the correlation between SG(E)I needs and investment;
- Chapter 3 describes the evidence of the case study reports, and focuses on some relevant issues in the delivery of SG(E)I such as affordability, social inclusion, geographical remoteness, cross-border cooperation, and service interoperability;
- The last Chapter presents the key conclusions and policy implications.

1. EU DEBATE ON SG(E)I: ORIGINS AND DEVELOPMENTS

KEY FINDINGS

- General interest, collective interest or public interest is a **concept frequently mentioned in policy debates and legal texts that covers a variety of forms and expressions** because of the numerous national/regional contexts (history, culture, legal and institutional framework, organisation modes). These contexts are not uniform across the EU but rather reflect local priorities, preferences and answers to specific situations.
- SG(E)I, are of **varied nature and their purpose is to ensure the exercise of fundamental rights** and satisfy democratic, social and cultural needs. They are present in many economic sectors including network utilities (telecommunications, postal services, energy, transport, water, waste), housing, education and vocational training, health and social services, sports and leisure and socio-cultural services.
- The distinction between economic and non-economic services of general interest is blurred, but it is utilised for the application of some EU rules.
- **The EU debate around SG(E)I started in the mid-1990s and has gained momentum over the past 20 years.** The issues raised by the Services Directive have fuelled recent discussions. However, the consequences of the numerous EU rules dealing directly with SG(E)I, or indirectly through their organisation and financing modes, still require assessment.
- **The organisation and financing modes of SG(E)I are more diversified and complex than ever** because they have had to adapt to new and more tailored services responding to the evolving needs of citizens and enterprises. Technological evolution, recent liberalisation and privatisation trends and public budget constraints have strongly modified and diversified the organisation and financing modes of SGI provision.

SGI play a vital role and belong to the shared values of the Union, as stated in Protocol No. 26 of the Treaty of the EU¹². Moreover, the Charter of Fundamental Rights, in Article 36, recognises access to SG(E)I in its role of promoting social and territorial cohesion. Those services also contribute to the overall economic growth and development of the EU while enhancing general social welfare.

Thus, SGI are not limited to residual services for disadvantaged groups of the population, but are at the service of all citizens and enterprises. In particular, *"the exercise of fundamental rights and that serve the satisfaction of democratic, social and cultural needs in all sectors that contribute to the quality of life and sustainable development should be qualified as being SGI"*.¹³ The concept of general interest in all its nuances includes different areas (from arts and culture to transport and energy) and has developed over time according to the evolution of social needs and technology.

¹² OJ C115/201, 9.5.2008.

¹³ Obermann G., Hall D. & Sak B. (2005).

This chapter illustrates the theoretical framework underpinning the EU debate on SG(E)I and discusses the evolution of the concepts, national differences and recent evolutions in the policy debate.

Before examining SG(E)I as such, let us consider their underlying concept. This notion of "general interest" is important to better understand the foundations of SG(E)I and their subsequent evolution - even transformation - due to the socio-economic context but also following developments of the EU law. The various conceptions and understandings of the missions to meet the collective societal interest lead indeed to different ways in setting up the services intended to respond to this objective of "general interest".

1.1. The concept of general interest

General (also known as collective or public) interest is a concept that has undergone profound transformations over time depending on historical, cultural and socio-economic factors. This social and economic reality has led to multiple dimensions of 'general interest'. Such plurality rests on the authoritarian or spontaneous initiatives that have shaped general interest over time and the 'geographical' or 'solidarity' perimeters of people sharing the same vision.¹⁴

Germanic, Nordic, Latin, Anglo-Saxon and French traditions as well as the heritage of planned economies in Central and Eastern Europe have profoundly affected the understanding of the role of public authorities in dealing with general, public or collective interest, solidarity, as well as economic democracy and the common interests of the members of a community.

Semantics and legal and administrative developments have also played an important role in shaping the provision of services to citizens, especially at the local and regional level. SGI can range from fundamental services provided to all at affordable prices to social and support services for certain categories of the population.

All authors agree that there is no general definition of general interest, and this is one reason why harmonisation in view of *Europeanisation*¹⁵ and establishment of a common legal framework of SGI at the EU-27 level is such a difficult task albeit to be encouraged. Indeed, because of the semantics, different histories and cultures and linguistic problems of the 24 languages in the EU, it has proven extremely difficult to agree on a commonly accepted concept¹⁶. The experts' report¹⁷ for the CEEP study "Mapping public Services" (2010) offers a very good country description of these difficulties.

Nonetheless, all of the above-mentioned collective services have been framed over time by (public service) obligations, missions and rules in order for them to fulfil their **multiple objectives of general interest** such as universality, continuity of long-term provision, total coverage of services, equality of treatment and access, efficient allocation of

¹⁴ Monnier L., Thiry B. (1997).

¹⁵ Europeanisation is the passage from national legislation and administrative practice regarding SGI to the EU level and body of rules related to them.

¹⁶ It should be noted that in some Member States (e.g., Slovakia, Poland, Slovenia) even the official translations of the same expression vary according to the texts (e.g., Treaty, Directive, Communication) dealing with matters of SGI. A very good overview of those problems is given in Mangenot M. (2005).

¹⁷ In the sections with the country reports (over 10 pages per country), a very interesting and detailed linguistic and semantic analysis of the notion of public service is given for the 27 Member States of the European Union. See: RAP-Europa, http://www.ceep.eu/images/stories/pdf/Mapping/CEEP_mapping%20experts%20report.pdf.

resources, equity and equal chances, safety and security of supply, accountability and transparency, adaptability (since needs, general interest and SGI evolve), quality of service (including safety, reliability and security of supply), redistribution between categories of individuals and regions, affordable prices, taking account of users (protection of consumers' rights and interests, possibility of legal remedy and simplicity of use and procedures) and contribution to macroeconomic policy goals (especially contra-cyclical policies in times of economic crises).

Box 1: Illustrations of the different traditions and concepts of general interest

CONCEPTS OF GENERAL INTEREST

Roman law shaped the vision of the organic conception of public services that were offered by a public body or an entity strictly controlled by public authorities. The service provision and service provider tended to merge in a unique entity.

The **French doctrine** of public service emerged from this vision, and France and its specific features continues to remain a separate case in SGI matters. The French vision is largely shared by other countries such as Belgium, Greece, Italy, Luxembourg, Portugal and Spain, but without the profound structuring role of public service. Consequently, any financial support to develop or enhance service provision at the regional level can have a direct positive effect.

In the **Anglo-Saxon vision** and common law countries, the notion of public utilities corresponds more directly to infrastructure services where the link to territorial development can clearly be seen.

In **Germanic countries**, so-called 'public services' cover a large range of activities, especially developed at the local level, encompassing everything that can be justified by the *Daseinsvorsorge*. This corresponds to a material vision of providing all services necessary for the mere being of humans and essential to their existence; this has led to the development of the so-called 'social state'. Thus, recognising the fundamental rights and needs of individuals and their satisfaction, a municipal swimming pool or a spa cure for the elderly can be declared of general interest. From this perspective, the ERDF support to a local infrastructure project of this kind contributes to the reinforcement of SGI provision. This proves especially true if this type of infrastructure is located in a remote area or contributes to social cohesion and/or territorial development and attractiveness.

In **Nordic countries**, this legal concept does not exist and a more pragmatic approach is taken with sector-specific regulations.

In **Italy**, an interesting illustration derives from the framework law on social services (328/00) that states that actors in the so-called 'third sector' (associations, non-profit organisations, social cooperatives, foundations) are assigned a mission of contribution to the process of policy-making, notably at the local level, to define and reconstruct the general interest of community with respect to social services (by drafting "social zone plans" to determine the needs and resources of a territory).

In the **Central and Eastern European Member States**, the concept of general interest did not exist under the totalitarian regimes and mainly appeared from the 1990s with their preparation for accession to the EU and the adoption of the *acquis communautaire*. As such, the concept of public service or general interest was totally absent in the legal system of the three Baltic States and in Poland, for instance, and is consequently not well understood. Furthermore, depending on the country, social housing, banking and insurance services might or might not be considered of 'general interest'.

Sources: Thiry B. (1996); Mangenot M. (2005); Obermann G., Hall D. & Sak B. (2005); Pöschmann G. (2007).

Besides these direct and common objectives assigned to SGI, indirect goals also shape the policy around their organisation. These include the control of strategic sectors (see the security of energy supply), possible requirements or needs in terms of national defence and security (control at borders), human resources and labour conditions of the workforce, cultural specificities, matching supply and demand (notably merit goods), environmental protection and territorial and spatial planning (e.g., taking account of the external effects of pricing policies, or congestion problems), support for R&D efforts and, more generally, economic and regional development policies. Faced with these numerous objectives, conflicts can arise between their achievement, and it is the responsibility of the public authority and the government to prioritise those objectives and/or arbitrate conflicts.

As underlined in a 1997 study report for the EP¹⁸, the **far-reaching objectives** that general interest should encompass, next to the concern for collective efficiency, provide a challenge for their integration, "which covers both people's well-being and their integration into society and which can be termed a concern for democratic citizenship. It includes the following considerations:

- **social cohesion** which requires all citizens, irrespective of age, physical condition, economic position and geographical location, to have access to what are regarded as essential services so that they feel they are part of society, with a view to strengthening social unity and preventing fragmentation and exclusion.
- **regional cohesion** means that entire areas cannot be left without the basic services on which modern economic and social life depends, and thus lagging behind the level of activity and living standards in the rest of the country; such a situation, especially in peripheral or island regions, would eventually threaten national unity (concepts of regional planning and territorial continuity).
- facilities designed to guarantee genuine enjoyment of certain **fundamental freedoms** which are essential to participate in the life of society, such as the freedom to travel, which implies the existence of frequent, comprehensive and cheap transport; freedom of expression, which relies on a cheap and secure means of communication (postal services covered by the secrecy of the mail, public telephones, etc.); freedom of the press, which can be supported by certain facilities provided by the postal service."

It is worth mentioning that from a political perspective the vision of the role of SGI has since been downsized in line with reduced public funding. However, in the Barca Report¹⁹ of April 2009, the role of public services in tackling inequalities and thereby fostering social cohesion is mentioned with respect to measuring the quality of life of European citizens. Furthermore, in the Sixth Progress Report on Economic and Social Cohesion²⁰ in June 2009, which presented the results of the public consultation following the Green Paper on Territorial Cohesion²¹, the importance of "connection (reinforcing the importance of efficient connections of lagging areas with growth centres through infrastructure and access to services)" was highlighted together with the fact "that a good quality of life, equal opportunities and access to services of general interest in all territories are crucial both for solidarity and competitiveness". Thus, there is a close relationship between SGI objectives

¹⁸ Camenen F.X (1996) http://www.europarl.europa.eu/workingpapers/econ/w21/sum-3_en.htm

¹⁹ Barca F. (2009) http://ec.europa.eu/regional_policy/policy/future/pdf/report_barca_v0306.pdf, see footnote 87, p. 29.

²⁰ European Commission (2009a), http://ec.europa.eu/regional_policy/sources/docoffic/official/reports/interim6/com_2009_295_en.pdf.

²¹ European Commission (2008).

and those pursued by ERP, especially when supporting the infrastructures necessary to provide SGI.

Such missions of general interest are generally laid out by national, regional and/or local authorities, but they now also depend on the legal framework of the EU, especially those stemming from sectoral or horizontal directives tackling issues such as state aid and public procurement. It is also important to note that the notions and terms of 'universal service' or 'Public Service Obligation (PSO)' as developed by European rules are much stricter in their understanding and scope than the objectives mentioned above. This has notably to do with the necessary consensus to be obtained from all Member States to recognise a given service as being universal and thus subject to an obligation of delivery with a financing mechanism. *A contrario*, the latter is one reason why it is quite difficult to develop, for instance, access to internet for all as a European public service.

This study does not tackle the services decided upon by public administrations (e.g., police, justice, statutory social security schemes) and those offered free of charge by NGOs. Those services are encompassed in the concept recently developed by the EU called 'non-economic SGI'. However, as discussed in the next section, the boundary between economic and non-economic SGI is thin and subject to change over time.

1.2. Key elements and issues to understanding SG(E)I

SGI are characterised not by the provision of an activity but by public interest objectives or missions - that can be manifold - to be fulfilled through SGI. As long as those SGI were only delivered by public entities (public departments, organisations, enterprises), they were mostly called public services²². Within the public sector, the content of public services was progressively adapted over time to meet the evolving objectives assigned to them. Following societal and economic evolution, but also technological progress, needs changed and evolved, new provision modes and new services appeared. Subsequently, new types of providers appeared and the organisation, regulation and financing aspects of 'public services' needed to be adapted.

From an economic point of view, SGI and related activities may be characterised by market failures. Such failures can include the public or collective nature of the service (non-exclusion or non-rivalry²³), the existence of important scale and scope returns leading, in some cases, to so-called natural monopolies, the presence of important externalities or spill-over effects (that can be positive or negative), the presence of information asymmetries that can lead to moral hazards²⁴ or the risk of adverse selection and the necessary account of long-term security that needs to correct and compensate for the short-sightedness of private economic agents, notably through infrastructure investments.²⁵ Consequently, such activities call for public action. Determining the specific conditions and modalities of SGI provision is a local (regional or national) political decision.²⁶

²² Charities and churches often took care of social services and also of the more needy population.

²³ That is the impossibility of excluding a consumer, for example, in cases of non-payment (although new techniques and devices tend to prevent this from happening, and the 'true cost' and 'polluter pays' principles tend to limit the existence of non-exclusion cases) and the fact that the quantity consumed by one customer does not affect the consumption by another customer; see also the "free-rider" problem.

²⁴ Moral hazard occurs when an economic agent or a party with more or better information or less exposure to risk behaves differently or acts inappropriately from the point of view of the principal (in a principal-agent relationship where the interests of both can diverge) or the party supporting the consequences of the risk.

²⁵ Thiry B. (1999).

²⁶ Obermann (1995, 1998) and Wimmer (1998).

However, at the European level, "it is the jurisprudence and the community doctrine of the ECJ that first tried to define general (economic) interest or public interest, in order to determine the respective competence of European authorities and Member States and define the relations between public services / services of general (economic) interest and competition law. The famous cases Corbeau and Almelo dealt with general economic interest. One possible interpretation of this jurisprudence is to maintain in the public area only the non-profitable services".²⁷ This results because the Court is bound to the European Treaty, which is principally economically oriented.²⁸

At the national, regional and local levels, the development of market liberalisation and integration has impacted not only on the organisation, provision and financing of SGI, but also on the role of public authorities, introducing new issues and questions. Increased integration and interconnection have led to the larger involvement of third parties in the provision of services, whether public, private or Public-Private Partnerships (PPP). Although public authorities still have the responsibility of defining and ensuring the provision and evaluation of SGI, civil society is also starting to express a desire to participate more actively in this area.

The provision of affordable SG(E)I that is well calibrated to the needs of the territory assumes an even greater importance when considering the future challenges facing European regions such as globalisation, demographic and climate changes and developing a secure energy supply²⁹. Issues such as budget constraints, rapid urbanisation or rural desertification, the flexibility of working hours, working conditions and the quality of employment in new service jobs also play a part here. The SF and ERDF, in particular, offer a wide range of instruments to regional and national strategies by providing infrastructure or access to SGI that can tackle these challenges. While the ERP has primarily targeted the reduction of economic and social disparities, SF have also been contributing to territorial cohesion and have proven to be determinant tools. However, the horizontal EU legal framework (competition and internal market rules) interacting with the service provision can affect the outcomes and the multiple goals assigned to SGI.

1.2.1. Conceptual issues in defining SG(E)I

Notwithstanding the caveats set forth in the section 1.1 on the difficulties in defining SGI, following discussion within the 27 Member States, a relative consensus is now emerging. The following definitions are drawn from the European Glossary on general interest services:

- Public authorities consider SGI to be in the general interest and, accordingly, they are subjected to specific PSOs including services that are usually outside the scope of markets (e.g., compulsory education, social protection), obligations of the State (e.g., security and justice) and SGEI (e.g., energy and communications). Please note that Article 86 of the Treaty (formerly Article 90) does not apply to the first two categories (services that are usually outside the scope of markets and state obligations).³⁰
- SGEI are commercial services of general economic utility, on which the public authorities impose specific PSOs (Article 86 of the European Community Treaty,

²⁷ Obermann G., Hall D. & Sak B. (2005).

²⁸ Zorn (2000).

²⁹ European Commission (2008).

³⁰ http://europa.eu/scadplus/glossary/general_interest_services_en.htm.

formerly Article 90). Transport, energy and communications services are prime examples.³¹

However, at the European level there is no consensus regarding a specific list of sectors/activities and boundaries and definitions can be inferred from official documentation and legislation.

For example, SSGI are essentially the two categories stated in the 2006 Communication concerning them³²: "In addition to health services, education and training, although they are services of general interest with a clear social function, which are not covered by this Communication, there are two main categories of social services:

- **statutory and complementary social security schemes**, organised in various ways (mutual or occupational organisations), covering the main risks of life, such as those linked to health, ageing, occupational accidents, unemployment, retirement and disability;
- **other essential services provided directly to the person**. These services that play a preventive role and are pro social cohesion consist of customised assistance to facilitate social inclusion and safeguard fundamental rights. They comprise, first of all, assistance for persons facing personal challenges or crises (such as debt, unemployment, drug addiction or family breakdown). Second, they include activities to ensure that the persons concerned are able to reintegrate into society completely (rehabilitation, language training for immigrants) and, in particular, the labour market (occupational training and reintegration). These services complement and support the role of families in caring for the youngest and oldest members of society. Third, these services include activities to integrate persons with long-term health or disability problems. Fourth, they also include social housing, providing housing for disadvantaged citizens or socially less advantaged groups. Certain services may obviously include all these four dimensions."³³

Indeed, recent discussions about social (and health) services have focused on whether they are general interest or not and whether they should be considered economic or non-economic. In addition, such services have a mediating role in their "specific character of intermingled economic and social action"³⁴ and can often iron out disparities and inequalities between regions or categories of a population. For example, childcare facilities can bring about numerous positive effects for the children involved and their parents, but also benefit the enterprises employing the latter including improved social integration (especially for migrant children and lower income families), better preparation for education and relief to out-of-work parents. Indeed, social services can support the realisation and attainment of a prosperous economy and society.

Nonetheless, as stated by a high level think-tank set up under the auspices of the Economic and Social Council of the Grand-Duchy of Luxembourg, the debate on the clarification of these concepts is far from over and the following question is still topical: "Are the concepts of SGI and SSGI an attempt to bring things together, or do they complicate the issue further?"³⁵

³¹ http://europa.eu/scadplus/glossary/services_general_economic_interest_en.htm.

³² Commission of the European Communities (2006c).

³³ <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2006:0177:FIN:EN:HTML>.

³⁴ Hermann P., Brandstätter A. (2007), p. 17.

³⁵ Conseil économique et social (2008), p. 42.

National (or even regional) definitions of SG(E)I are difficult to find and often of heterogeneous character. Very rarely are they written into national law, even in centralised states with a tradition of the provision of nationwide services. They are often found in administrative decrees or regulatory procedures, in doctrine and jurisprudence. Furthermore, the subtleties of service provision (availability, access and connection to a network, access conditions, implementation details, pricing and financing issues and quality, which has become an important issue lately) can be complex and varied depending on location, national legislation, the type of services and overall organisation of the service provider. Finally, no comprehensive study has been performed in this area.

Following the European sectoral directives in the network industries, public procurement directives and the Services Directive, several Member States defined PSOs at their national levels. This is notably true in transport, postal services, electronic communications and energy. For the rest, according to Article 14 of the TFEU, Member States are left with a margin of discretion to establish and organise their SG(E)I. However, in some sectors (e.g., public broadcasting³⁶), the characteristics of the "public" service are sometimes difficult to formulate to be accepted by the European bodies or competitors wishing to provide the service formerly "belonging" to the national operator, and conflicts do arise.

In eastern European Member States, the definition of SG(E)I came in late. To give one illustration, in Lithuania "there is no general (horizontal) law framing the SGI but numerous laws deal with specific sectors".³⁷ For instance, the Law on Public Administration (1999, amended in 2006 and 2007) provides the following definition: "public service shall mean the activities of legal persons controlled by the state or municipalities when providing social services for persons, as well as services in the spheres of education, science, culture, sports and other services provided for by laws. Other persons may also provide public services in the cases and in the manner provided for by laws".³⁸

In common law countries such as the United Kingdom (UK) and Sweden,³⁹ EU terminology is not used, but categorisation can be broadly made. In the UK, for instance, "'non-economic services of general interest' and 'social services of general interest' are called 'social services'. However, in the UK, 'social services' are limited to care for the elderly, the disabled and vulnerable children. They do not include social housing or education or health, all SSGI in European terminology."⁴⁰

Most SG(E)I are provided at a local level and subject to local authority responsibility and control. In several sectors, any municipality can decide that, for instance, a swimming pool, cultural centre, public transport connection or a specific bus line is of general interest and take decisions for its provision. Subsidiarity is supposed to prevail in the definition and mode of delivering this service. Thus, Member States (and infra-national public authorities) have a margin of discretion in this respect. In federal states such as Austria or Germany, local authorities enjoy extended autonomy and follow their own criteria for defining and setting up SG(E)I, depending on the needs of their population and their financial resources. Furthermore, municipalities may receive, such as in Austria,

³⁶ As an illustration, there is a five-page document setting the various dimensions of the public service missions of the BBC. See also Defreyne E., Jongen F. (2009).

³⁷ CEEP (2010), p. 293.

³⁸ Ibid.

³⁹ For an analysis of the terms and concepts used in the UK and in Sweden, see van der Mensbrugghe F. (2009) pp. 61.

⁴⁰ CEEP (2010), p. 431.

delegated powers to provide certain mandatory services including "the establishment and running of kindergartens, schools, adult training facilities, sports facilities, public utilities, and waste disposal systems".⁴¹

By contrast, in the social housing sector for instance, based on its power to check that there is no manifest abuse regarding the definition of SG(E)I, the EC entered into the 'political' debate to define the outline of social housing. On December 15, 2009, the EC (C(2009) 9963 final) decided to align the social housing system in the Netherlands to the EU rules on state aid. In doing so, the Commission adopted a 'residual' conception of SG(E)I. According to its decision, 90% of social housing should be aimed at socially disadvantaged people by allocating it to households whose incomes are equal to or below 33,000 EUR per year. This would exclude 60% of Dutch households from access to social housing. The Netherlands previously viewed social housing as an instrument to prevent the social exclusion of immigrants, combat spatial segregation and reduce urban and social tension (as was the case in the Nordic States or large cities such as Berlin or Vienna).⁴² This example is given to show how the EU can influence the national leeway to defining SG(E)I. As stated earlier, SG(E)I do not have only one function or aim; their objectives are embedded in a larger view of serving the collective interest.⁴³

1.2.2. Distinction between economic and non-economic services

The **distinction between SGI and SGEI** is particularly important because non-economic activities are exempt, according to Article 86(2) of the Treaty, from EC rules on competition and state aid. In particular, SGEI, with the explicit exclusion of telecommunications, transport, healthcare and certain other specified sectors, are subject to the application of the Services Directive (Directive 2006/123/EC), which aims to establish and provide services across the EU. However, Member States do not clearly distinguish between economic and non-economic services since this terminology created by the EU is somewhat ambiguous and "artificial"; the terminology is generally not used within Member States and does not fit with the common understanding of PSO.

Furthermore, a service can encompass commercial and non-commercial aspects and simultaneously be economic and non-economic depending on the goals or conditions of its provision (e.g., Internet access in cafes versus in public libraries; public education versus private courses delivered on a commercial basis to a different category of users, but given by the same teacher). According to European rules, as soon as a part of the service contains a commercial aspect, it is considered economic. "The entire question then becomes: is the whole service as such to be consequently considered as economic? In this latter case, the service is automatically subject to state aid, anti-trust and internal market rules, since it can possibly affect trade between Member States."⁴⁴

Also, "a service may be of a commercial nature without the market necessarily being in a position to provide a service matching the general approach and principles governing services of general interest".⁴⁵ As explained, the far-reaching objectives and missions of general interest are essentially of a non-profit nature; they never have a 'commercial'

⁴¹ CEEP (2010), p. 89.

⁴² See legislative watch from <http://www.ssig-fr.org/> (contact: contact@ssig-fr.org), IP/09/1928 (December 15, 2009) and the debate in the European Parliament on May 18, 2010 (<http://www.europarl.europa.eu/sides/getDoc.do?pubRef=-//EP//TEXT+CRE+20100518+ITEM-016+DOC+XML+V0//EN&language=EN>).

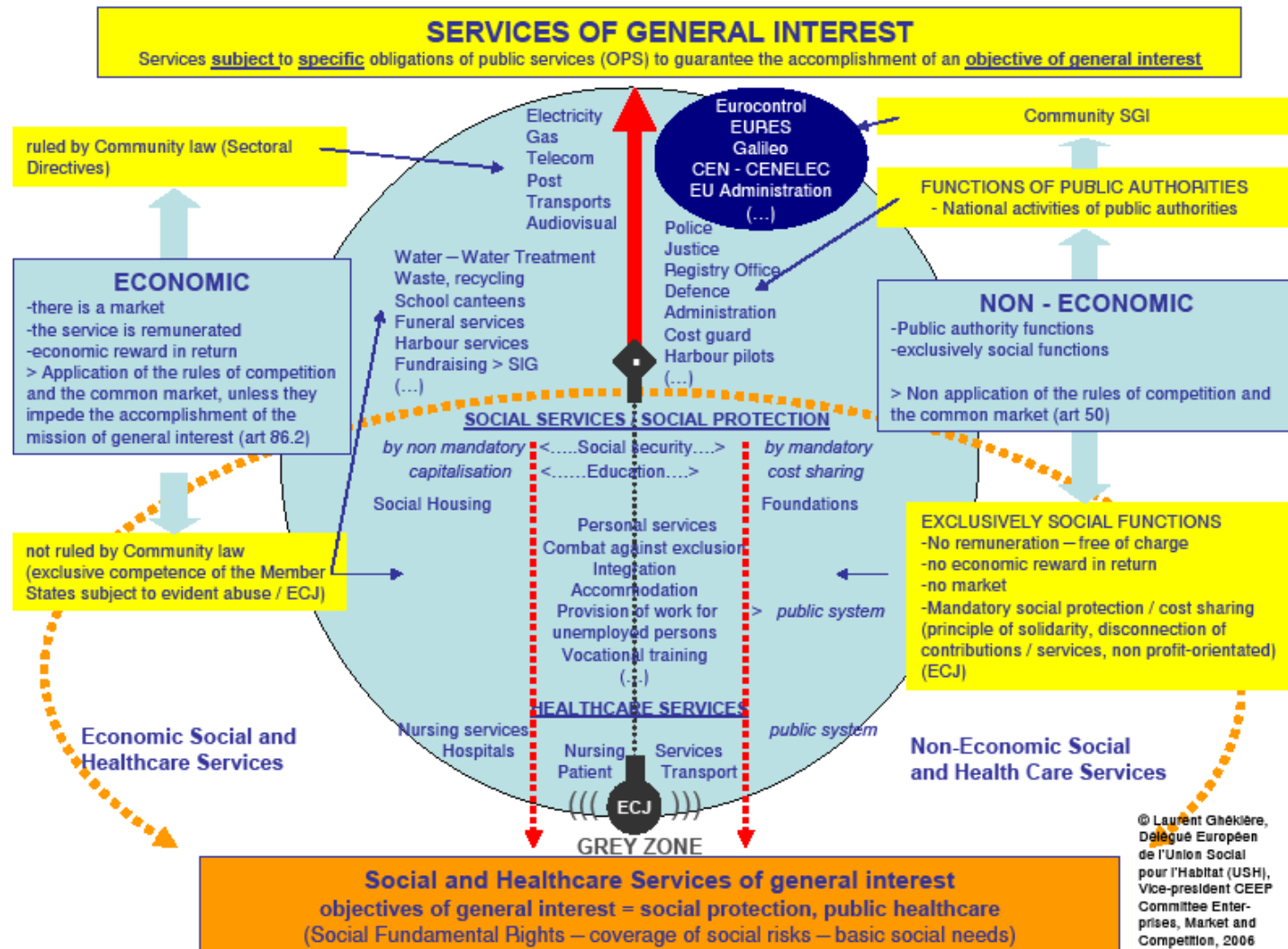
⁴³ See also the extensive analysis on the definition of social housing as SGI or SGEI by Yernault D. (2009).

⁴⁴ Obermann G., Hall D. & Sak B. (2005).

⁴⁵ European Economic and Social Committee (2003), Section 4.3.2.

characteristic. The provision of SGEI cannot deliver a financial advantage to the company providing the service because any profit is reinvested into the necessary service provision or infrastructure.

Figure 1: Services of general(economic) interest: a EU understanding



Source: <http://www.ssig-fr.org/>

Nonetheless, the European Treaty and European rules speak of SGEI but do not define them. Based on the EC's Green Paper on services of general interest (2003), it is not possible to draw up an unambiguous list of economic and non-economic services at the European level.⁴⁶ It is, however, possible to sketch a picture with a grey zone constituting a moving boundary between economic and non-economic services. The following illustration shows the complexity of SG(E)I with respect to the EU's definition and framework. Although some services can be fairly easily categorised as being either economic or non-economic, many grey areas appear at the boundaries. This is valid for several sectors, but especially in social and healthcare services.

Moreover, as needs and circumstances evolve, new services appear that could lead to new rights or additional public service missions (e.g., Internet access for the unemployed or additional care services for the elderly). Consequently, the abovementioned grey areas are not expected to fade in future years. Finally, the trend for describing a service has clearly been moving from non-economic to economic over the past two decades.

SG(E)I constitute a cohesion factor, especially regarding the provision of universal services to all citizens regardless of their economic, social or geographic situation. **It is important to assess how the attainment of the internal market impacts cohesion policy and thereby the provision of SG(E)I.** It also provides an illustration of the consequences of the distinction between economic and non-economic services, with the former being submitted to EU rules on competition and state aid.

Support and assistance for the most disadvantaged regions or Member States are matters of discussion in relation to competition and state aid policy. Structural aid was originally expected to preserve competition between regions by limiting the amount of domestic support allowed. However, following various enlargements and greater regional differentiation, the community has gradually established different aid ceilings depending on the levels of regional underdevelopment.⁴⁷ Indeed, in Article 87 of the Treaty of Rome (previously 92 and 93), if all aids distorting competition are incompatible with the common market, exception is made for those promoting the economic development of regions with an abnormally low standard of living or with serious unemployment. Furthermore, the political sensitivity of transferring large amounts of money across-borders means that redistributive mechanisms have had to be developed to ensure an equitable distribution of gains and losses between beneficiary and contributor/donor Member States.

The Single European Act provided a link between liberalisation and redistribution to reassure Member States who feared that the costs and benefits of the internal market would be unevenly distributed. It stated that the implementation of common policies and the internal market should aim to reduce regional disparities and so should Member States in the conduct of their own economic policies.

Once it is accepted that market failures may lead to public policy intervention, targeting efforts to create these opportunities has to be addressed. What is beneficial to the individual enterprise might not be socially desirable. The economic gains from increased competitiveness might not be realised if resources are not re-employed, the gains from productivity growth might not be shared by all members of the community and there can be underinvestment in "public goods" such as training. If producers' costs fall relative to competitors' because of above average improvements in productivity (due to increases in

⁴⁶ See § 49 and ff., http://eur-lex.europa.eu/LexUriServ/site/en/com/2003/com2003_0270en01.pdf.

⁴⁷ Dutrioux Y. (1991), p. 28.

efficiency and organisational capacities), the change can be a positive one. If, however, increased price competitiveness is achieved at the cost of an erosion of wages, job security or working conditions in some regions, increased competitiveness would have anti-cohesive effects. Thus, it is complex to clearly divide efficiency and equity issues and assign different policies to these different objectives. Cohesion objectives will enter into the assessment even of policies whose main principle objective is efficiency.

There must be some trade-off between competition, competitiveness and cohesion to the extent that improvements in productivity require restructuring and re-employment, and those who lose their jobs are, at least temporally, disadvantaged. The more difficult issue is whether intensifying international competition and the need for Europe to have an efficient economy to remain competitive mean that less skilled workers and less advantaged regions become vulnerable. The possible trade-off between liberalisation and cohesion can be observed in telecommunications, although the same issue also arises in transport policy. However, no clear or simple answer emerges to the question of whether the liberalisation of infrastructure provision increases or decreases the relative disadvantages of the periphery, or whether a strengthened commitment to universal service provision and cross-subsidisation of the weaker by the stronger is, for instance, needed.

Company strategies in liberalised markets have had varying effects across sectors such as air transport or energy and this has created two dangers. First, the potential abuse of market dominance can push up prices, and avoiding this places greater demands on regulatory systems. Second, the enterprises' own objectives value the short-term, for which the market gives valuable indications, to the detriment of the long-term, which concerns the public policy objectives of SG(E)I. Rapid changes in ownership can also alter this short-term perspective. This creates the risk of cost reductions at the expense of service quality and/or working conditions because of the emphasis on maximising returns on investment and reducing the costs of machinery, equipment and human resources.

Based on the observation of market failures or, more specifically for the EU, the limited ability of the internal market to equalise conditions of competition between Member States and especially regions, economists⁴⁸ have studied the causes of contemporary development polarisation. Although communications technologies have greatly improved, geography remains an element that cannot be overlooked. The determinants of the location of activity and, therefore, the sources of wealth might well have changed since the mid-20th century, but some areas face new challenges and others remain disadvantaged. Competitiveness naturally concentrates activities that seek economies of scale or economies of the agglomeration of services.⁴⁹ In other words, globalisation and the increasing mobility of the factors of production are changing the dynamics for regions and cities.

It should also be remarked that the Lisbon treaty brings new provisions for regional aid granted by Member States. Furthermore, the special status of the outermost regions is now confirmed by Articles 349 and 355 of the TFEU. In addition to that, outermost regions are now explicitly referred to in the provisions concerning state aid. The former Treaty has been reinforced, following numerous recommendations of the EP, so that Article 107§3 (a) TFEU now allows "aid to promote the economic development of areas where the standard of living is abnormally low or where there is serious underemployment and in the regions referred to in Article 349 in view of their structural, economic and social situation."

⁴⁸ Fujita M., Krugman P. (2003), p. 64.

⁴⁹ Allmendinger P., Tewdwr-Jones M. (2000), p. 87.

1.3. EU policies towards SG(E)I and current trends

The Treaty of Rome (1957) mentions SGI only twice, in relation to transport (Article 73) and competition rules (Article 86(2)). SG(E)I were a European invention that aimed at achieving a common understanding of services existing in all founding Member States. Until 1986, however, there was no discussion about the national prerogatives in this field. The Single Act then conceived the objective of ensuring a single market and the free movement of services. At the same time, the globalisation of economic evolution, liberalisation, the quest for public service efficiency and trend towards privatisation, plus the budget problems compounded by radical technological changes, took effect and culminated in legal developments in the EU, first in various network industries - such as telecommunications, energy and postal services - and then in transport and other sectors.

Consequently, European institutions have gradually paid closer attention to SGI since the 1990s and have continued to explore the provision and financing modes of SGI in increasing depth. Following the adoption of several rules and horizontal frameworks, and because of their effects, direct or otherwise, certain basic objectives of SGI, especially those dealing with social and territorial cohesion, were called into question during the full liberalisation of certain sectors. In the section below, the main EU rules and documents concerning SG(E)I in general are summarised.

1.3.1. Key provisions of SG(E)I in European law

Two key provisions regarding SG(E)I in European primary law can be mentioned. First, Article 106(2) of the TFEU (ex. Article 86(2) (TE)),⁵⁰ which exempts those undertakings entrusted with SG(E)I from general competition rules. It should be noted that the wording of this Article has not changed since 1957.

Second, Article 14 of the TFEU⁵¹ implies a positive obligation of the Member States and the EU, in accordance with their respective powers, to ensure that SG(E)I operate under the principles and conditions to fulfil their missions. The new Article 14 (TFEU) allows community institutions the mission to define "by means of regulations in accordance with the ordinary legislative procedure" the principle and conditions, especially economic and financial, that enable the SG(E)I "to fulfil their missions without prejudice to the competence of Member States, in compliance with the Treaties, to provide, commission and fund such services." However, legal experts question the possible enforcement of this article and its actual power.

⁵⁰ "Undertakings entrusted with the operation of SGEI or with the characteristics of a revenue-producing monopoly are subject to the rules contained in the Treaties, in particular those on competition, in so far as the application of such rules does not obstruct the performance, in law or in fact, of the particular tasks assigned to them. The development of trade must not be affected to such an extent as would be contrary to the interests of the Union» .

⁵¹ "Without prejudice to Article 4 of the Treaty on European Union or to Articles 93, 106 and 107 of this Treaty, and given the place occupied by services of general economic interest in the shared values of the Union as well as their role in promoting social and territorial cohesion, the Union and the Member States, each within their respective powers and within the scope of application of the Treaties, shall take care that such services operate on the basis of principles and conditions, particularly economic and financial conditions, which enable them to fulfil their missions. The European Parliament and the Council, acting by means of regulations in accordance with the ordinary legislative procedure, shall establish these principles and set these conditions without prejudice to the competence of Member States, in compliance with the Treaties, to provide, to commission and to fund such services." (ex. Article 16 TEC) OJ C 115, 9.6.2008.

Furthermore, a protocol (No. 26) annexed to the Treaties⁵² deals with SGI taken as a whole rather than only economic services, and speaks of the “non-economic services of general interest” as falling within the responsibilities of Member States. It explains the “shared values” of SG(E)I – diversity, quality, safety, accessibility and equal treatment, universal access and users’ rights – thereby conferring them for the first time legal value. It strengthens the capacities of national and local public authorities “to provide, to commission and to organise non-economic services of general interest”.

European primary law only recognises the concept of SG(E)I. They are a creation of the EU, and the ECJ possesses important powers of appreciation and interpretation since the Treaty does not precisely define what is understood by the term “general economic interest”. Furthermore, in the absence of specific texts for SG(E)I, the ECJ is obliged to subject public service operators and public authorities to competition law, especially if the public service activity is carried out with private partners.⁵³

The issue at stake in terms of definition and recognition thereby rests on the objectives set out for SG(E)I, those that have been included among the values of the community. These could be the satisfaction of collective needs (e.g., sustainable development or cohesion) or an authority's responsibility to satisfy the societal needs of its citizens. In relation to several other aspects of European law (i.e., fundamental economic freedom, public procurement, competition law and state aid), the precise definition of objectives and missions entrusted to a provider of SG(E)I has become a key issue, largely debated.

1.3.2. Intense interest from the EC since the mid-1990s

From a legal and administrative viewpoint it is impossible to list the numerous elements stemming from the “political” and legal documents on SGI.⁵⁴ The present section concentrates on the most important and most recent.

⁵² The high contracting parties, wishing to emphasise the importance of services of general interest, have agreed upon the following interpretative provisions, which shall be annexed to the Treaty on European Union and to the Treaty on the Functioning of the European Union:

Article 1

The shared values of the Union in respect of services of general economic interest within the meaning of Article 14 of the Treaty on the Functioning of the European Union include in particular:

- the essential role and the wide discretion of national, regional and local authorities in providing, commissioning and organising services of general economic interest as closely as possible to the needs of the users;
- the diversity between various services of general economic interest and the differences in the needs and preferences of users that may result from different geographical, social or cultural situations;
- a high level of quality, safety and affordability, equal treatment and the promotion of universal access and of user rights.

Article 2

The provisions of the Treaties do not affect in any way the competence of Member States to provide, commission and organise non-economic services of general interest.

⁵³ See Donnat F. (2009) in Varin K., Boual J.-C. & Bauby P. (2009).

⁵⁴ Among those (non-exhaustively), one can cite:

- two horizontal communications in 1996 (OJ C 281, 26.9.1996) and 2000 (OJ C 17, 19.1.2001) that described *inter alia* the interaction between the community rules in matters of competition and the free circulation of goods and services on the one hand, and public service missions on the other;
- the Charter of Fundamental Rights in 2000;
- a report to the Laeken European Council (COM(2001) 598);
- a non-paper in 2002;
- a Green Paper in 2003 (COM(2003) 270), where the Commission focused on network-related industries and services;
- a White Paper in 2004 (COM(2004) 374) with the introduction of the concept of social and health services of general interest; and

The EC communication on SGI dates from 1996 and following the Treaty of Amsterdam (1997), the SGI question started to be publicly debated. Additional documents were issued from 2000. In retrospect, these documents opened the debate about the rightful place and role of SG(E)I in the construction of Europe. The discussions hinged on the best instrument(s) for the delivery and development of high quality services while respecting the community framework. However, at this early stage, the full consequences of this debate were foreseen by stakeholders, namely that SG(E)I, including social services, would have to respect in full the basic EU principles of equal treatment, non-discrimination, transparency and proportionality and comply not only with all European internal market (four fundamental freedoms) and competition (state aid) rules, but also with the EC law on public procurement.

In **2003**, the Commission launched a public consultation with the **Green Paper on SGI**⁵⁵. This placed clear emphasis on network-related industries and services (such as transport, water, gas, electricity, telecommunications and postal services). Social and health services were mentioned, but were not discussed separately and/or in any great detail. The **subsequent White Paper on SGI**⁵⁶ in **2004** again mainly focused on network-based industries and services and community principles as well as the regulation and framework conditions for their functioning.

The Green Paper outlined the guiding principles of the Commission's approach and the new directions for future community action. It acknowledged the importance of the ability of public authorities to operate close to their citizens, combining public service objectives with those of the competitive open market, stressing the importance of universal access and the principles of quality, security and safety, consumer and user rights, respect for diversity and the need to monitor and evaluate performance. This document set large perspectives for the full development and the wide-ranging and possibly expanding scope of SGI.

The Green Paper acknowledged that "other relevant criteria for selecting a financing mechanism, such as its efficiency or its redistributive effects, are currently not taken into account in Community legislation. Neither have the effects of the selected mechanism on the long-term investment of providers of services and infrastructure and on security of supply been specifically considered" (par. 91 under section 4.2). This should, however, be the case.

In the White Paper, the Commission came to the conclusion that health and SSGI have a specific role as an integral part of the European model of society and, therefore, deemed it useful to develop a systematic approach to identify and recognise the specific characteristics of health and SSGI and clarify the framework under which they operate.

A core community notion developed in this regard is the concept of universal service, which can be understood as a set of quality guidelines for SG(E)I, such as universality, accessibility, affordability, continuity, security, transparency and user and consumer protection. Linked to the two documents mentioned above, the EC launched a broad debate on the future of SG(E)I in Europe, contributing to a comprehensive review of its policies in this field. Stakeholders at both a European and national level were involved in the discussions.

- a communication in 2007 (COM(2007) 725) on "Services of general interest, including social services of general interest: a new European commitment", that reviews progress since the 2004 White Paper, also in the light of the provisions of the new Reform Treaty. This draws on the public consultation on social services initiated in 2006.

⁵⁵ Commission of the European Communities (2003) (http://europa.eu.int/eur-lex/en/com/gpr/2003/com2003_0270en01.pdf).

⁵⁶ Commission of the European Communities (2004).

From the **consultations undertaken by the EC since 2005**, it came to the conclusion that community law is regarded with suspicion, but also that its rules were often interpreted narrowly and disproportionate to reality. This was the case for public procurement and state aid, particularly in the social sphere. The Commission noted, for example, that since the state aid package of 2005 (the so-called "Monti-Kroes package"⁵⁷), there was in most cases no need to ask the Commission for complete funding. However, given the small amount of the *de minimis* rule and the necessity of complying with a series of (pre-) conditions, this must be checked and evaluated for each sector and in each Member State.

In **2006**, a **Communication on SSGI**⁵⁸ implementing the community Lisbon programme was adopted. This further addressed the mutually linked issues of how European law affects general and sector-specific modernisation trends and the changes in SSGI to further systematise approaches in this field and improve knowledge of the Commission and the actors in the field. In addition to health services, which were not covered by this Communication, two main categories of social services were distinguished:

- Statutory and complementary social security schemes covering the main risks of life, such as those linked to health, ageing, occupational accidents, unemployment, retirement and disability; and
- Other essential services provided directly to the person. These services are preventive or instrumental in social cohesion and consist of bespoke assistance to facilitate social inclusion and safeguard fundamental rights.

Such services partly rely on infrastructures (e.g., nurseries, elderly homes) that are necessary for their provision.

The **Commission Communication from 2007**⁵⁹ accompanying the Communication on "a single market for 21st century Europe" attempts to further clarify the concepts related to that of SGI and assess the recent developments in Community law.

The **Treaty of Lisbon**, signed on 13 December **2007**, contains several important innovations. Among other things it bestows the legally binding **Charter of Fundamental Rights**. This charter can now be adduced, with greater legal certainty, especially in argumentation by the ECJ. The **protocol on SGI** annexed to the TFEU recognises SGI and their role in social and territorial cohesion. It also underlines the importance of social services for the fulfilment of EU objectives and proposes a strategy aimed at promoting the quality of social services.

In early **2008**, the Commission launched an **interactive information service** that offers the opportunity to submit by e-mail any questions concerning the application of Community

⁵⁷ The judgment of the Court in Altmark has been followed by the so called 'Altmark package' also known as the 'Monti-Kroes package'. This consists of three documents, one directive, one decision and one communication. Directive 2005/81/EC requires any undertaking which « receives public service compensation in any form whatsoever in relation to such service and that carries on other activities » to proceed to the accounting separation of activities for which it receives compensation from the others. More importantly, Commission Decision 2005/842/CE provides for some kind of 'block exemption' from the state aids rules where the Altmark conditions are not met. Finally, the 'Community Framework for State aid in the form of public service compensation' sets the Commission's position in respect of those subsidies which do not fall neither under the Altmark judgment (and hence, do not constitute aid) nor under the 'Altmark Decision' (and constitute aid which is automatically authorised by the Commission) and need to be notified in order to obtain an individual declaration of compatibility. Hatzopoulos V. (2007).

⁵⁸ Commission of the European Communities (2006b).

⁵⁹ Commission of the European Communities (2007).

law to SGI. In this context, the Commission produced two FAQ documents to facilitate the use of this service, one on the application of public procurement rules to SSGI and the other on state aid. However, neither document is legally-binding, which can create additional problems.

It also has to be borne in mind that the directive on services in the internal market⁶⁰ (**Services Directive**) was adopted under the co-decision procedure by the European Council and EP after several amendments. The directive changes the market's legislation for services by facilitating the conditions under which a service provider from one Member State can operate in another. The following services are, under certain conditions, excluded from the scope of the directive: non-economic SGI, healthcare services, social services relating to social housing and childcare.

1.3.3. Recent evolutions of EU policies on SG(E)I

Contrary to the EC's thoughts in 2007, the debate is far from over. However, as Rodrigues (2009)⁶¹ pointed out, the political involvement of the EC has changed considerably and there is insufficient political will from a number of stakeholders to fully engage anew - after a first move in 2003-05⁶² - in the fundamental support of a transversal or horizontal framework law for 'public services' at European level. This has a number of reasons, among others:

- the budgetary constraints of public authorities prevent them from engaging in expanding policies in the field of public services - the tendency, even before the crisis, has been to reduce personnel and cut costs wherever possible - and there is thus no pro-active move to develop or support public services;
- considering the large diversity of types, size and scope of public services, the related problems and issues become more and more complex to handle, especially when facing the different provisions of the European law that can affect them; as a result, local and regional authorities do not necessarily have the same vision anymore as national states to organise public services;
- the diversity of types providers and the increasing possibilities to meet the needs expanded the spectrum of actors and stakeholders and the divergence of interests in the "public services" sector; consequently this decreased the potential for common action, also considering the increasing presence of multinational and multi-activity providers or of large national privatised companies that now develop fully different strategies than formerly when they were still (partially) public;
- and, but not least, the enlargement of the EU brought along an increased spectrum of diversity in socio-economic and political situations; this renders the dialogue around a common vision of public services more difficult and no majority within the EP or at the European Council is to be found to make SG(E)I a priority file.

Nonetheless, there are still many milestones to pass and SG(E)I matters to discuss in 2010 before the EC plans new steps concerning them:⁶³

⁶⁰ European Parliament (2006c).

⁶¹ Rodrigues S. (2009), p. 255-256.

⁶² Thiry B. (2007).

⁶³ The information to draft this section was taken mainly from various recent issues of the News-Europe Bulletin from CELSIG (www.celsig.org) and from information provided by the legal watchdog service from SSIG-fr (<http://www.ssig-fr.org/>).

- The **implementation of the Services Directive** and evaluation of social services excluded from the scope of the directive will be interesting to follow with the much-debated discussion within Member States on the notion of 'entrustment', which is especially acute with respect to social services. The mutual evaluation process of authorisation regimes, namely certain measures relating to requirements imposed either on the establishment of service providers or on the cross-border provision of services, will also be assessed.⁶⁴ According to some stakeholders, no forward movement can be made in terms of internal market deepening without solving the question of SSGI.⁶⁵
- The assessment of the **Monti-Kroes package** is scheduled for 2010.⁶⁶
- The EC will also launch consultations on services concessions.⁶⁷
- The potential usefulness of the Communication intended to encourage the use of PPP in public services, infrastructure and research in Europe will be under scrutiny.⁶⁸ The framework provides for increased funding through the European Investment Bank (EIB), proposes regulations to ensure fairness between fully public projects and those covered by a PPP, suggests the possibility for the EU to participate in private law undertakings and invest in certain projects, states the possibility of setting up a community legislative tool for concessions and proposes the establishment of a PPP group for information and the dissemination of good practices.
- The report of the **IMCO Committee of the EP on new developments in public procurement**⁶⁹ and the initiative report (following the Hasse Ferreira Report) of the **EMPL Committee of the EP on SSGI** that is underway⁷⁰ will be discussed.
- The **Public Services Intergroup (SGI-SSGI) of the EP**, unofficial grouping of MEPs and stakeholders, established its priority themes for 2010: the possible legal steps following the Lisbon Treaty, the boundary between economic and non-economic activities, the ways in which locally based and social SG(E)I affect trade, the theatres of action of SG(E)I and the manifest error, the comparable treatment of the various kinds of SGI (SGEI, SSGI and non-economic services of general interest - NESGI) and the mapping of EU law related to public services, the residual versus universal characteristics of social SG(E)I, public tendering (concessions and PPP) and its real impact, the central in-house problem for local public authorities (e.g., inter-municipal cooperation) and, finally, cohesion policy, territorial cohesion objectives and public services. This *prima facie* simple list shows the multiple, complex, far-ranging and numerous issues still to be dealt with in the vast domain of SGI;

⁶⁴ http://ec.europa.eu/internal_market/consultations/2010/services_directive_en.htm

⁶⁵ The third European forum on SSGI is scheduled under the Belgian presidency on 26–27 October 2010. The main discussion themes will be service quality and the legal uncertainties in matters of public procurement, state aid and the internal market (Services Directive).

⁶⁶ http://ec.europa.eu/competition/consultations/2010_sgei/index_en.html

⁶⁷ http://ec.europa.eu/internal_market/consultations/2010/concessions_en.htm

⁶⁸ Communication COM (2009) 615 adopted on 19 November 2009 titled "Mobilising private and public investment for recovery and long-term structural change: developing Public Private Partnerships". <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2009:0615:FIN:EN:PDF>.

⁶⁹ European Parliament Report on "New developments in public procurement" (2009/ 2175(INI)), 18 May 2010. Rapporteur: Heide Rühle.

<http://www.europarl.europa.eu/sides/getDoc.do?pubRef=-//EP//TEXT+REPORT+A7-2010-0151+0+DOC+XML+V0//EN>

⁷⁰ Rapporteur: Proinsias De Rossa.

- In the follow-up to the work that began with its "Agenda for Europe" adopted in March 2009, the **European Economic and Social Committee** pursued its work on how SG(E)I responsibilities should be divided up between the EU and Member States, taking into account the entry into force of the Treaty of Lisbon on 1 December, 2009.⁷¹ This should help overcome the uncertainty affecting all SGI stakeholders (public authorities, service providers, consumers) because of the inadequacy of direct community law on SGI, which leads the ECJ and the Commission to interpret on a case-by-case basis. European SG(E)I or services of Union interest will be discussed in the wake. An own-initiative opinion (TEN/421) is also prepared with Raymond Hencks as Rapporteur on "What new services of general interest do we need to combat the crisis?"
- The European **charter on local and regional SGI** ⁷², adopted in March 2009 by the **Council of European Municipalities and Regions**, stresses, among other things, that local and regional authorities must be free to decide, without unjustified restrictions at the European level, how best to deliver public services to their citizens.
- Possible lobby activity can be finally expected with respect to the **Commission's launch of its "EU Strategy for 2020"**, on 03 March 2010. Indeed, this strategy stresses the importance of creating an open single market for services (based on the Services Directive), ensuring the quality of services provided to consumers. SGI are not identified specifically in this strategy as such an open market of services is mainly considered in relation to productivity⁷³. Nevertheless, the EU 2020 strategy through its flagship initiatives, addresses the issues at stake in this study: to ensure social and territorial cohesion and therefore avoid social exclusion, to modernise labour markets, to improve framework conditions and access to finance for research and innovation, to speed up the roll-out of high-speed internet and benefit from a digital single market, and to encourage economic growth from the use of resources (renewable energy, modernisation of the transport sector, energy efficiency).

In most of the issues and debates mentioned above around SG(E)I, the REGI Committee reflects the importance of territorial development to enforce social and economic cohesion, but also highlights and demonstrates the huge investments made in SG(E)I infrastructure thanks to the SF and the ERDF. Those investments prove all their importance in times of economic crisis, since effective SG(E)I can cushion some of the social and environmental consequences of such crises if their good functioning is ensured also in a sustainable perspective. Further, effective SG(E)I prove their role in supporting cohesion policies - as will be shown in Chapter 3. This is especially true when it comes to rural, lagging behind and outermost regions: favouring local (re)development through SG(E)I and supporting cross-border SG(E)I provision can be clearly seen as a solidarity mission for the regional development policy at European level. This creates added value which is often underestimated in the overall potential for economic growth and development. Consequently, even if some of the matters listed above might seem quite technical or specific, it could be useful to follow these issues, in order to make sure that the instruments of regional policy are better acknowledged and supported in a joint effort to develop SG(E)I.

⁷¹ <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:C:2010:128:0065:0068:EN:PDF>

⁷² http://www.ccre.org/docs/charter_sgi_en.pdf.

⁷³ <http://ec.europa.eu/eu2020/pdf/COMPLET%20EN%20BARROSO%20%20%20007%20%20Europe%202020%20-%20EN%20version.pdf>.

To conclude this overview of the concept, definition and legislation of SG(E)I in the EU, it is important to stress that the definition of a common framework at the EU level, both in terms of the definition of SG(E)I and of a shared legislative framework for the regulation of provision, financing and regulation of services of general interest can be seen as a long term policy goal.

Moreover it has also been suggested to introduce the concept of "Community SGI".

As mentioned, various services to the citizens could become a value at European level if they would be recognised as such, namely in promoting and serving the collective interest, but also economic, social and economic cohesion at European level. Examples could be: universal high speed internet access for all in every location, financially affordable study or training opportunity in order for the youth to spend 3 or 6 months abroad in another MS, thereby promoting the European citizenship (e.g. understanding another culture, learning another language, developing contacts, etc.). Also infrastructure SGEI aiming at sustainable development, environmental and safety goals, or at security of energy supply can be easily viewed as of European importance, transcending the interests of MS. Examples are energy and transport services with cross-border operations centralised at European level, be it in the air transport, in the energy grids⁷⁴ (issue of a European Transmission System Operator in the gas sector and better integration of the national energy transportation networks through TEN, for example).

In November 2009, the European Economic and Social Committee issued an own-initiative opinion (TEN/389) with Raymond Hencks as Rapporteur on "Services of general economic interest: how should responsibilities be divided up between the EU and the Member States?"⁷⁵ On the basis of Article 14 TFEU with a "generally applicable legal basis for SGEIs for the Community legislative authorities", the Committee wishes to study the added value and possible content of legislative initiatives by the European institutions in order to clarify, among others, in what areas could **Community SGI** be needed to implement the Union's objectives. The Committee states: "The fact that the States in principle have the power to define SGEIs does not in any way detract from the EU's power to define SG(E)Is at its level, when necessary to achieve the objectives of the Union and when the act is proportionate to the objectives."⁷⁶ It adds: "The Union, which is responsible for promoting living standards and quality of life in Europe, also has responsibility for the instruments used for putting fundamental rights and social cohesion into effect."⁷⁷ But also: "Even though no legal reference to SGIs and SGEIs has been made for some EU agencies – e.g. the agencies for maritime, food and rail safety, the agency for managing operational cooperation at the EU's external borders, and the "single sky" and "Galileo" agencies – these services are operating in the general European interest."⁷⁸

The European Economic and Social Committee had however already issued earlier two other opinions on a **possible European energy SGI**⁷⁹. But the Committee was forced to recognise that "the idea of establishing European energy services has, for example, not found favour with political decision-makers".

⁷⁴ See the Green Paper of the European Commission (COM(2008) 782) *Towards a secure, sustainable and competitive European energy network*.

⁷⁵ http://eescopinions.eesc.europa.eu/EESCopinionDocument.aspx?identifier=ces\ten\ten389\ces1696-2009_ac.doc&language=EN.

⁷⁶ Ibidem, par. 4.7.

⁷⁷ Ibidem, par. 4.9.

⁷⁸ Ibidem, par. 4.11.

⁷⁹ Opinions of the European Economic and Social Committee on "The social implications of transport and energy developments" (CESE 1293/2008) and on "The Green Paper - Towards a secure, sustainable and competitive European energy network" (CESE 1029/2009), with Ms Batut as Rapporteur for both opinions.

Even if there are many arguments in favour of European public services or SG(E)I at Community level, and now sufficient legal instruments, as listed in the reflexion led by the network "Penser public"⁸⁰, the political debate on a framework law in favour of public services, notably at European level is just moving the first steps.⁸¹

1.4. Organisation of service provision

SG(E)I have undergone a process of modernisation because of growing competition, technological evolution and public budget constraints. This modernisation does not only concern public services and administrations but also third parties in the service provision sector, which will increasingly have to develop contractual relationships with funding authorities.

1.4.1. Liberalisation and privatisation

In the past three decades following liberalisation and privatisation tendencies, the provision of SG(E)I underwent a widespread process of reform in many countries, including the divestiture of public ownership. However, EU privatisation policies, often introduced alongside increased liberalisation and market openings in relevant sectors, have been shown to have varied starting dates, intensities and durations.⁸² In some countries, public firms are still playing an important role in the provision of SGI, at times holding a monopolistic power in the relevant markets and at times operating in competition with private firms. However, privatisation is not always material and sometimes concerns only formal or legal transformation, while public authorities keep the majority of the capital shares.

Generally speaking, state and public authorities at all territorial levels are more and more frequently inclined to farm SGI out to private and public enterprises that have to act in compliance with the rules of competition. From their traditional responsibility for production in numerous sectors, public authorities have shifted to the responsibility of overall regulation. The distributed responsibilities for production, financing and guaranteeing are generally also accompanied by a redistribution of the economic risk.

In network industries, an extensive process of liberalisation and market opening was initially conducted to improve performance and generate macroeconomic benefits. The process of opening network industries has had two main effects: first, the unbundling of the vertically integrated monopolies has made certain market segments more contestable by allowing firms to enter a market and thereby potentially affect its structure. Second, liberalisation has affected the boundaries of the individual markets by making them more permeable with respect to both capital flows and cross-border trade. The Organisation for Economic Cooperation and Development (OECD)⁸³ has developed a synthetic indicator of the regulatory conditions in these industries based on entry regulation, public ownership, market structure, vertical integration and price controls,

⁸⁰ See last section in the proceedings of their colloquium (June 2006) on "Faut-il une doctrine des services publics en Europe ?": http://www.lulu.com/items/volume_62/1727000/1727171/1/print/1727171.pdf

⁸¹ For a negative opinion on this perspective, see Bauby P., Castex F. (2010)

⁸² Estache A., Goicoechea A. (2005).

⁸³ For an explanation of the OECD's Regref dataset, see Conway P. and Nicoletti G. (2006).

showing a considerable deregulation during the 1990s, especially in telecommunications and airlines.⁸⁴

The liberalisation of network industries was supposed to increase efficiency and thereby benefit consumers. However, the empirical evidence on prices and consumers in the EU remains mixed. The effect of competition should theoretically drive down prices, but in practice prices in network industries have shown no consistent relationship with the general movement in prices over the past 10 years.⁸⁵ **While some empirical results have confirmed the positive role of competition, others contradict these prescriptions, particularly around privatisation and unbundling. In some cases, a negative or neutral effect on prices has been found, with negative consequences for consumers in some sectors and countries.**⁸⁶

In addition, the introduction of market principles in SG(E)I has generated positive effects notably on territorial coverage (especially in the telecommunications sector), technological development, affordability (e.g., regional air transport) and service quality. However, they might also have operated against cohesion. The opportunities and incentives created have to some extent led providers "to seek to serve the most profitable segments of a market, and avoid the high costs and low profits of serving poorer customers or more isolated communities".⁸⁷

However, trade union and consumer protests as well as discussions within EU institutions (EP, CoR, Economic and Social Committee) have either delayed the full application of liberalisation directives or allowed steps backwards from the initial intentions of the EC. This is notably the case in the postal and railway sectors. Problems have also arisen at a national level, for instance, the endangered supply of energy in Hungary following the liberalisation and privatisation of the infrastructure and the sharp increase in consumer prices in the Belgian electricity and gas sectors. This forced the regulator or political decision-makers to take steps to revise laws or reregulate SG(E)I providers. The financing modes and funding issues of the service provision (considered in all its dimensions) are frequently the main sources of the problem.

1.4.2. Types of operators

Depending on the service, sector and country (or even region), the provision of the service can be delivered by (or entrusted to) different kinds of operators. In many Member States, legal status of such operators has undergone numerous changes in the past three decades. **SGI providers are no longer public entities only and many such organisations work in parallel in the same field.** This includes public administrations and territorial authorities, public, private and mixed companies, public-private or public-public partnerships, cooperatives and other social economy enterprises and charity organisations.

⁸⁴ DG ECFIN (2007).

⁸⁵ Lobina E., Hall D. (2008).

⁸⁶ Florio, C. V., Florio, M. (2010) *Would you say that the price you pay for electricity is fair? Consumers' satisfaction and utility reform in the EU*. Energy Economics, forthcoming. See also for an analysis of the electricity sector: Florio, C. V., Florio, M., Salini, S., Ferrari, P. (2007) *Consumers' Attitudes on services of general interest in the EU: Accessibility, Price and Quality 2000-2004*. Fondazione Eni Enrico Mattei (FEEM), Working Paper. Bacchiocchi, E., Florio, M., Gambaro, M. (2008) *Telecom Prices, Regulatory Reforms and Consumers' Satisfaction: Evidence for 15 EU Countries*. University of Milan, DEAS, Working papers.

⁸⁷ CIRIEC (2004), p. 63.

Furthermore, a provider can be small or large, act on a local scale or level only (especially in rural and remote areas) or act as a regional or national incumbent firm or be a multinational conglomerate that can even have its main business seat outside Europe. A provider can also concentrate on one single service or activity or be multi-service-oriented.

The types of providers have diversified greatly following liberalisation, and the subsequent necessary regulation has been forced to adapt to cope with different scenarios in the various sectors and regions.

The globalisation of economic exchanges has given rise to the emergence of trans-national operators and providers of services, allowing also for the exporting of techniques and know-how. Once only subject to national regulations, these operators have grown and adapted to a much larger integrated European market (including all its new opportunities), taking full advantage of economies of scale that could not be achieved nationally and now acting as global players. This has also led to a concentration of providers. Borders are disappearing, mainly because of the increasing use of ICT solutions and devices, but also because workers and the users/beneficiaries of services are moving across-borders. Expectations in terms of interconnection and the availability of continuous service provision across-borders are also rising.

1.4.3. Models of provision

Depending on the country and sector and the stage of liberalisation (i.e., the intensity of competition as well as the level of the unbundling of functions⁸⁸), the provider can be in a monopoly situation (private or public) or in full competition with several other competitors in a partially or totally liberalised market.

The procedure by which the provider is chosen or the public service mission is entrusted to the provider is likewise relevant to fully understand the evolution of provision of a service. These procedures can include in-house, direct assignment/award, public tendering/concession, PPP or the partial or total liberalisation of entry.

Across sectors and countries, several provision models can be encountered. There is no one single way or commonly used classification of provision modes, but the latter could be sorted along a line starting from the all-public and least autonomous mode (the public administration) to the all-private and least regulated actor (e.g., a joint stock company on an open, fully liberalised market with little sectoral regulation such as, for example, in broadcasting).

There is also an important reform tendency in public services, namely **new public management**. This refers to a broad set of reforms designed to modernise the public sector and make such organisations much more business-like, market-oriented and cost efficient. Delegated management, PPP, partnerships with third sector organisations and the development of agencies participating in the management of services can be seen as aspects of these reform moves.

Delegated management ("*gestion déléguée*")⁸⁹ can be regarded as of French origin in several local public services (water, sewage, urban transport) where there has been a

⁸⁸ Unbundling refers to the separation of the operator function from the regulatory function.

⁸⁹ See *inter alia* Hall D., De la Motte R. & Davies S. (2003) for a short overview: <http://www.epsu.org/IMG/doc/PPP-defs.doc>.

longstanding use of concessions and leases. Delegated management is based on a public law contract concluded for the delivery of a public service where the remuneration of the delegates is largely dependent on operating results. The management of the service is entrusted to a legal entity, which can be a private company, individual, local semi-public company, association, another local authority or a public corporation not controlled by the delegating local authority.

Box 2: Categories of SG(E)I provision modes

SG(E)I PROVISION MODES

Four "simple" categories of SG(E)I provision modes can be proposed even though there will be numerous examples of grey zones between them because of special arrangements, partnerships or cooperation agreements constructed over a long time and regulations:

- the public administration model (fully in-house operation with no external partner) where there is no unbundling of functions. Here, the public operator is responsible for both the regulation and provision of the service and manages the system;
- direct operation through an (autonomous) public or mixed enterprise with usually management contracts;
- management delegated to public, mixed or private enterprises; and
- provision by an operator acting in a free but regulated market.

In the case of mixed enterprises, since certain of those specificities can affect the application of EU rules, several subcategories should be considered depending on:

- the percentage of capital shares held by the private sector;
- the decision-making autonomy/independence of the operator; or
- the partnership or contractual arrangements between the partners in the mixed entity.

Source: Authors

There are several categories of delegated management and they differ in their modes of financing and risk sharing. The length of the service delegation can also vary according to sectors, regulations and habits, and there are also specific rules for the renewal of contracts. In all cases, a document or contract needs to set out the conditions, objectives and missions of the delegated service provision.

In the case of concessions and leases, the contractor/delegate is paid by users and assumes part of the exploitation risk. A concession in the strictest sense implies that the private company has the complete responsibility for operating the system and making the necessary investments in the infrastructure; it thus takes responsibility for financing them at its own risk.⁹⁰ When giving only an operating concession or lease, the municipality remains the owner of the infrastructure and they remain responsible for investment in the system while the private company operates the service and carries out maintenance at its own risk. In terms of cost-benefit analysis⁹¹ in the long run, this difference is of importance when (partial) European public funding is given for a new

⁹⁰ Build-operate-transfer concessions are usually of this type.

⁹¹ European Commission (2008).

investment project and it is not known in advance how the infrastructure will be operated and managed later on, or even sold.

Box 3: The special case of public-private partnership

THE SPECIAL CASE OF PUBLIC-PRIVATE PARTNERSHIP

There are several definitions and classifications about PPP are yet to be finalised at the EU level.⁹² There are two main forms of PPP: concession contracts where the company is paid by user charges and Private Finance Initiatives (PFIs) where the public authority pays the company. Another form of collaboration between public and private subjects is the so-called "institutional PPP", where a joint venture is formed.⁹³ These arrangements are especially motivated by limitations in public funds to cover investment needs and by effort to increase quality and efficiency in the provision of public services.

The presence of PPP has gained increasing relevance. PPP can be appropriate to finance investment programmes (the construction/maintenance of roads and related major structures) when there is a good reason to involve the private sector, whether because of matters of management, technical or R&D knowledge or interesting return opportunities on capital investment. However, "a major problem in attracting private investors is that they have different aims, aspirations and a higher aversion to risk than public bodies. Private actors may play an active role in financing projects if some incentives are provided."⁹⁴

Recent EU evidence has shown that PPP arrangements can be used as an additional and complementary instrument to meet infrastructure and service needs in a wide range of SGI. The main advantages are raising additional funds and increasing efficiency. However, it is important to consider not only difficulties designing, implementing and operating such SGI, but also controlling their outcomes and the new challenges created by their presence. In particular, the respect of competition and transparency rules as well as of the achievement of the public interest deserves particular attention.⁹⁵ PPP contracts in Europe are mostly used in the transport sector (82% of the value of all completed, current and projected PPP) with a minor role for other services such as healthcare, education and waste and water.⁹⁶

Source: Authors based on sources in footnotes 87-92.

Public procurement is another way of transferring tasks or delegating services to third parties, in which the contractor is paid directly by the public authorities who have entrusted the service. More generally, it refers to purchases of goods, services and public works by governments and public authorities as well as by public utilities following an open tendering (or awarding) procedure to collect several offers from providers willing to produce those goods, services and works at a certain price and according to certain

⁹² "It is possible to define as PPP any project in which the investment (or part thereof) is contributed by the private sector and where there is a regulatory contract between the private and public sectors in terms of risk allocation for the provision of the infrastructure and/or the services. The level of PPP complexity will differ according to the sector, the type of project and country, as a function of the risk mitigation mechanisms and the use of project finance to fund the project." European Commission (2008), p. 232.

⁹³ Hall D. (2008).

⁹⁴ European Commission (2008), p. 43.

⁹⁵ European Commission (2003).

⁹⁶ DLA Piper (2007).

conditions and specifications. After such a procedure, the public authorities then award the contract to the "best" bidder.

EU legal rules and procedures for awarding public contracts are based on the essential **principle of transparency**. They apply as soon as a public authority intends to conclude a contract for financial interest with a legally distinct enterprise in whose capital it has a holding with a private enterprise.⁹⁷ On the contrary, when public authorities and entities award or delegate a service provision to other in-house departments⁹⁸, public procurement rules do not apply. In this instance, a given service is then transferred from one public body to another and the relationship between the two is considered so close that the latter is equivalent to an in-house entity.

Having recourse to the market or internal production is a choice of the public authorities themselves, and this choice has consequences on transaction costs. One has to be aware that competitive tendering is the corollary of the decision to renounce the internal production of a service. Consequently, public authorities have to **comply with the relevant EU rules** as soon as they do not ensure the full production of the service through in-house means.⁹⁹ When relevant, public procurement concerns all services required by public entities. Public procurement applies in principle to all financial engagements of public authorities for services that the state does not provide itself.

Furthermore, **different procurement procedures exist for public contracts and concessions** and there are also different rules for works and services across countries.

With the applicability of procurement law, the question arises to what extent contracts for the provision of SGI can be awarded in accordance with distinct "social" conditions. Social considerations are additional criteria set out in public tenders to stress certain features linked to policy objectives in the social area.¹⁰⁰

By seeking the best deal (most often the best price since this is an objective criterion that is easy to assess), public competitive tendering procedures may fail to **take into account externalities or external benefits for the community which, by definition, are not necessarily translated into a price**. To do so, the insertion of additional criteria can help. The difficulty is expressing and defining those criteria objectively using indicators and measurable variables to compare the offers and verify *ex post* their effective delivery together with a transparent procedure.¹⁰¹

⁹⁷ ECJ, Case C-26/03 *Stadt Halle* 2005 ECR I-0001.

⁹⁸ Today, the in-house definition is determined by the case law of the ECJ.

⁹⁹ Durviaux A.L. (2006).

¹⁰⁰ Introducing social criteria to tendering procedures relates, for example, to the promotion of certain groups in the labour market, e.g., women, persons with disabilities, the long-term unemployed or elderly employees, or the promotion of enterprises that hire trainees or persons with disabilities. The ECJ has, for example, accepted that, in the final choice of tenderers, preference should be given to an enterprise that returns the long-term unemployed to work if that criterion is made public from the outset.

¹⁰¹ For an in-depth economic discussion of the issues related to competitive tendering of SGEI, see notably CIRIEC (under the coordination of Cox H.) (2003) with an update in Bognetti G. & Obermann G. (2008) and Cox H. (2008). For a recent legal update on the latest ECJ cases related to those issues, see Bovis C.H. (2009) and Frenz W. & Schleissing P. (2009).

In the special sector of social service, several stakeholders especially from the social economy sector¹⁰² have noted that public procurement has a negative impact on innovation because it leads to standardised solutions that can be inappropriate for groups with multiple needs. These stakeholders also suggest that public procurement can have detrimental effects for beneficiaries in need of services in the long-term and that it can lead to a reduction in number and types of providers.

1.5. Financing SG(E)I

Financing a service of general interest is closely linked to its method of organisation and supply,¹⁰³ and the objectives assigned to it including the possibility of social integration, invariably entail costs.

1.5.1. Costs linked to SG(E)I provision

The first difficulty is to identify all costs clearly and in advance. Costs can vary depending on the service and the sector under consideration. They must cover:

- the necessary infrastructure and the connection from the producer to the user or from one user to another user (with the aim of total coverage¹⁰⁴), including the cost of capital borrowing;
- the additional equipment needed to use the service;
- the ongoing investment in R&D, infrastructure and equipment needed to keep up with technological evolution and sustainable development in the long-term;¹⁰⁵
- the personnel needed to ensure the continuous provision of the service (this might be the most costly item in several non-economic SGI and SSGI);
- special requirements and/or constraints such as environmental specifications or "social clauses"¹⁰⁶ (e.g., the obligation to train workers within the contract scheme);
- the social dimension of SGI and PSOs, especially those that include a relational dimension or connotation;¹⁰⁷ and
- the additional costs arising from the new provision or financing modes.

¹⁰² Among others, eight European networks of social service providers, all members of the Social Platform and assembled in the Informal Network of Social Service Providers (INSSP): Caritas Europa, Eurodiaconia, the European Association of Service Providers for Persons with Disabilities (EASPD), European Council for Non-profit Organisations (CEDAG), European Federation of National Organisations Working with the Homeless (FEANTSA), European Platform for Rehabilitation (EPR), SOLIDAR and Workability Europe. For some illustration of this issue, see notably an INSSP report dated May 2010: <http://cms.horus.be/files/99931/MediaArchive/3-INSSP-input-European-quality-framework-280510.pdf>), but also an interview in June 2009 with Marie-Hélène Gillig, former French MEP: <http://www.fonda.asso.fr/Tribune-197-Quelle-politique.html>

¹⁰³ Resources, needs, habits and geographical characteristics are not the same in the far north of Finland, on a remote Greek island or in land-locked Slovakia.

¹⁰⁴ The price and cost of this network architecture will vary greatly from one region to another (see geographical characteristics, population density, socio-economic realities and living standards, etc.).

¹⁰⁵ Technology might allow for the overcoming of the lack of resources or distance.

¹⁰⁶ It should be noted that, being aware of the extra costs entailed by social clauses, several public authorities refrain from imposing them in order not to raise the cost of the service to be provided.

¹⁰⁷ This is not only the case in social services. A universal banking service can entail extra time spent with some customers, but how do you evaluate this time and possible "lost productivity" and, thus, measure it (in advance) and compensate for it?

Furthermore, enterprises in charge of SG(E)I should provide the service under good economic conditions (including a "reasonable profit" or a "normal" margin, but also sufficient cash flow) and thereby stay on the market to pursue its activities. As stated by the ECJ: "The costs allocated to the SG(E)I may cover all the variable costs incurred in providing the SG(E)I, an appropriate contribution to fixed costs and an adequate return on the capital assigned to the SG(E)I".¹⁰⁸

One could add to the above costs ensuring that citizens have the necessary capacity/capability¹⁰⁹ to use the system and mastery of the resources and services offered.¹¹⁰

Thus, in addition to the private costs identified (in particular, that part of the cost devoted to PSOs), the main difficulty lies in assessing the non-private costs (external and social) linked to the large and complex roles of SGI.¹¹¹

1.5.2. Modes of financing and their implications

There are various means of financing the overall costs linked to SG(E)I provision. Public subsidies and European support (especially the SF¹¹²) are the main source to cover the infrastructure investments. Further means include fees paid by users (e.g., additional access charges, fiscally encouraged tickets or service cheques), public service compensations paid by public authorities,¹¹³ specific sectoral financing funds, cross-subsidies between profitable and non-profitable activities through exclusive rights and the generalised equalisation of scheduled charges.

All SGI are financed through a mixture of taxation (direct, indirect and social security contributions) and/or user charges that can incorporate elements of cross-subsidy. Taxation and user charges remain the ultimate sources of financing, even under the various forms of PPP or PFIs. The effect of these arrangements is mainly to change the borrowing mechanism to redirect the payment of capital costs through user (or public sector) payments to the private operator. These payments remain based on taxation or user charges but are spread over a different timescales.

Numerous legislations and laws inside Member States and at the EU level deal with financing SG(E)I, and the question of whether the service is considered economic or not is crucial. Indeed, all legal and administrative provisions have consequences for the allowed financing of SGI.

The most recent European texts demand transparency as well as the prior definition of the missions assigned to the SG(E)I, notably to avoid the overcompensation of SG(E)I provisions. Prior definition should be effected via an official act indicating the precise nature of PSOs and the companies and territories concerned as well as the conditions of supply

¹⁰⁸ See the judgement by the Court on 3 July 2003 in Joined Cases C-83/01P, C-93/01P and C-94/01P Chronopost SA.

¹⁰⁹ See the concept of "capability" developed by Amartya Sen.

¹¹⁰ Indeed, considering the increasing technological development of western societies, the digital divide is becoming a real public interest issue (see older persons, low earners, persons with disabilities, etc.) with a new class of illiteracy emerging.

¹¹¹ For more developments on financing SGI, see Obermann G., Hall D. & Sak B. (2005) and Sak B. (2004).

¹¹² As can be seen in Table 1 in the Introduction of the present study.

¹¹³ Excluding overcompensations not permitted by European treaties.

(affordable price, quality, work conditions and relationships) and the subsequent mechanisms of financing and regulation and evaluation.¹¹⁴

Increased competition and diminishing public finances require greater efficiency and a search for better quality to continue meeting the needs of people. However, forcing excessive competition in the provision of social services in particular leads to a risk of uniformity and harmonisation in the solutions proposed by some larger providers, who can then subcontract the local provision of services, but with very limited financial means made available.

1.5.3. Affordability

The application of the concept of affordability is a key issue because it helps achieve economic and social cohesion within Member States. The criteria for determining affordable prices or bills must be defined by Member States. These criteria could be linked, for example, to the penetration rate or the price of a basket of basic services as a proportion of disposable income¹¹⁵. However, particular attention should be paid to the needs and capacities of vulnerable and marginalised groups.

Affordability can be estimated using an index that provides the percentage of annual income a consumer has to pay to enjoy a year's worth of provision of a certain service. In the energy sector, fuel poverty and social affordability of energy bills have been usually defined in 'objective', albeit arbitrary, ways, as related to an 'excessive' share of income tied to the payment of energy bills. In fact, for people in the lower percentiles of income distribution, the burden of bills can be substantial. The same indicator is also used in the water sector as a measure of the lack of affordability. In principle, this concept could similarly apply to other sectors.

Once an affordable level has been set, the Member State should ensure that this level is effectively offered by putting in place a price or targeted subsidy control mechanism. The same notion of affordability is subject to social changes. Price levels vary according to countries, regions, time and technological evolution, but the question of affordability is complicated by changes in people's willingness to pay for a given quality of services, which can produce a gap between price levels and consumer satisfaction. Furthermore, services can be substitutable (e.g., post, telephone, fax, e-mail and text messaging; electricity or gas; rail or bus), and their respective prices will play a role in their use and relative affordability when alternatives exist.

Investigations on affordability have been conducted in recent years, especially in network industries. In rail transport, for example, prices per 100 km vary considerably across countries, with a range of 1 to 5 between the lowest (Italy) and the highest (UK) for regional transport.¹¹⁶

¹¹⁴ It is, however, difficult to be exhaustive because not everything is foreseeable, particularly where the services are provided by sub-contractors or affected by missions in delegation. Indeed, these latter can – as incidentally researched by the public authorities for budget reasons – provide services at a lower price; however, care must then be taken to assure the quality (including working conditions) and exercise effective control. This requires the definition and determination of ad hoc indicators based on reliable and verifiable information.

¹¹⁵ DG ECFIN (2007).

¹¹⁶ CIRIEC (2004).

In the electricity sector, low income EU consumers spend on average 1.23% of their income on an annual consumption of 1,200 kWh (i.e., low user), and 0.96% on gas (8.37 GJ per year). It is important to note that there are "large variations across countries and income groups, and low users may not coincide with low income groups, with some disadvantaged categories of users facing higher affordability indexes and risking being cut off from a service because of their inability to pay for it. These are the energy poor, at risk of deprivation: a small percentage of the general population, around 3–5% in the EU-15 and twice that percentage in EU-12. In absolute terms, however, the number is significant, probably in excess of 20 million households in EU-27."¹¹⁷ In EU-15, the affordability index oscillated around 0.90% in 2003–2005, while it was around 1.9% in EU-12 in the same period.¹¹⁸ The same pattern has been found in the gas sector, where the average affordability index for low income EU-15 consumers was 0.76% in 2005, while in EU-12 it was 1.3%.

Poggi and Florio (2010) found that "a decrease in the degree of electricity or gas public ownership (i.e., privatization) raises the probability of experiencing deprivation. Also, a reduction in the degree of electricity vertical integration increases the probability of being deprived." This shows that the organisation mode can impact affordability. Poggi and Florio added that the cross-subsidies in pricing policies in favour of small users have an effect on the social costs of unbundling that are not necessary transitional.

Table 2: Share of expenditure and service exclusion, self-disconnection or non-payment in some sectors and countries for the bottom quintile

BOTTOM QUINTILE	ELECTRICITY SECTOR		GAS SECTOR		WATER SECTOR	
	Share of income on electricity%	% of no expenditure *	Share of income on gas	% of no expenditure *	Share of income on water	% of no expenditure *
Bulgaria	10	1	3	0	5	14
Hungary	7	3	11	8	5	22
Poland	10	41	7	48	4	51
Romania	6	34	7	32	6	42
Turkey	10	50	29	56	5	59

Source: Lampietti, Benerjee and Branczik (2007).

* Households can report zero payment for a variety of reasons, including lack of connection, self-disconnection fare-dodging, poor service quality, billing cycles and arrears.

Additional evidence can be found in the Guide to Cost-Benefit Analysis of Investment Projects.¹¹⁹ From empirical observations, this guide presents the share of persons who avoid using a certain service (replacing it when possible) or who do not pay for it, and the ratio of expenditure to total income they face. It suggests "that if the bottom quintile has to bear expenditure equal to or higher than a certain share of its revenues for utilities, then strong interventions are necessary because a substantial percentage of users will stop paying for the service or will disconnect."

¹¹⁷ Poggi A., Florio M. (2010).

¹¹⁸ DG ECFIN (2007).

¹¹⁹ European Commission (2008), Annex E, p. 220.

In fixed telecommunications,¹²⁰ the ability of some companies to offer adapted tariff schemes and better terms to profitable consumers (i.e., high intensity users) has been accompanied by a shift to higher fixed charges, which cause problems for low intensity users. Considering social, territorial and economic cohesion, the possibility of developing special 'social access' packages for low income users that combine rights to fixed, mobile and Internet usage for a fixed low fee and prepaid card financed by equalised payment schemes should be considered.

A CIRIEC report commissioned by DG Regio on SG(E)I, which considered, *inter alia*, the impact of different charging structures on social and territorial cohesion, pointed out that "the market preferences for cost-recovery pricing also mitigates against the use of cross-subsidy in solidarity pricing".¹²¹ Furthermore, "moves towards full cost recovery and reduction of subsidies leads to a worsening of territorial and social cohesion. This is reinforced by the finding in local public transport that accessibility for disadvantaged groups is most importantly achieved by general affordability, with targeted schemes less effective".¹²²

Furthermore, the report concluded that "general affordability may in fact be a better issue to address than social or territorial accessibility by promoting the overall economic well-being of all citizens and regions. General measures for all are easy to implement and may bring about better results than a large set of specific measures for specific categories with lots of transaction and implementation (administrative, control, evaluation, etc.) costs".¹²³

1.5.4. Sustainable financing of SG(E)I

From the perspective of sustainability, there is debate about whether provision and financing modes allow for the prevalence of SG(E)I. **In fact, there is a risk that leaving SG(E)I, and especially social services, only to private companies and thereby market funding without strict control or effective regulation could rapidly lead to a discontinuity of service provision,** especially in less populated areas and for less wealthy persons. The risk of the failure of private operators in charge of SG(E)I¹²⁴ is often neglected: is the return to in-house provision even possible?

Following the Watts case¹²⁵, all levels of public authorities should ensure they have sufficient capacity for the provision of SG(E)I, in terms of infrastructure, personnel and running costs, to ensure an adequate service for their citizens. Moving from national or territorial solidarity towards price-oriented models (i.e., the real price for each user) generates greater cost transparency. The visibility of the real costs of certain types of consumers can then reduce solidarity.

¹²⁰ The basic network for accessing the Internet.

¹²¹ CIRIEC (2004), p. 63.

¹²² Ibid, p. 75.

¹²³ Ibid, p. 67.

¹²⁴ A recent illustration can be given in Brussels where a private operator stopped a wastewater treatment facility in December 2009, with the resulting pollution of the rivers in other regions, and where the public authority seemed incapable of rapidly and effectively restarting the facility.

¹²⁵ Judgment of 16 May 2006 in case C-372/04 Yvonne Watts. The European Court of Justice clarified that when a patient of a National Health Service system has the right to go abroad to receive treatment, the rules on the free movement of services also apply to these systems, as the care provided abroad is provided again remuneration. NHS systems were therefore no longer sheltered from internal market rules, which increased pressure in these countries to deal with these issues at EU level. Baeten R. (2007)

The debate around democratic and public interest is necessary to discuss the perimeters of solidarity¹²⁶ and new ways for the mutualisation of services. The various possibilities of solidarity-based financing (including solidarity between territories, socio-economic categories of the population and/or economic actors/users or even generations) should be left open as in the pure commercial sector. This could mean tariff compensation or charge equalisation and cross-subsidisation.

The internal market within the EU has also had unexpected consequences for the provision of some basic SGI. For example, in the French speaking community of Belgium, some higher education departments are overcrowded with French students because education is cheaper in Belgium and access to some disciplines less restrictive.¹²⁷ How will the quality of education evolve? How will the construction of additional auditoriums be financed? Will there be a downward harmonisation? Can Belgium restrict access to its public education, which in principle is open to all? This is just one example of the issues raised regarding the definition and outline of SGI.

The costs and responsibilities of insufficient service provision might be more complex and more costly than adapting the service provision inside an existing public entity. This is not only the case in network utilities, where the technical and operation capacities and necessary knowledge has to be rebuilt, but also in social services where the social and informal networks forming part of the chain of SGI provision also have to be rebuilt. Thus, the public authorities bear more responsibility in terms of supervision and control than ever before, especially when a service is contracting out of the public sphere, since new institutional arrangements often prove to be irreversible after any length of time.

Finally, the authors wish to stress the political responsibility regarding the financial provision of SGI. EU support, especially in remote or sparsely populated areas in central and Eastern Europe, can extend the scope of SGI provision, especially to reinforce social and territorial cohesion. This support can positively affect the breadth of services offered, without which the territorial differentiation in the availability, price and quality of services in those remote areas will remain.

¹²⁶ Financing issues linked to solidarity mechanisms and perimeters include the question of which social groups should be considered for support, and who, by contrast, should be expected to pay the full rate. The same political questions (and possibilities) arise at a European level, for example in deciding whether to build solidarity between poor and rich regions by the European-level financing of train and air routes.

¹²⁷ See Delgrange X., Detroux L. (2009) for an extensive analysis of the threats posed to the organisation and financing of a public national education system within the European internal market.

2. LEVEL OF PROVISION AND SF FUNDING OF SG(E)I

KEY FINDINGS

- For most sectors, the provision and quality of SG(E)I services in Europe present the **largest gap in the EU-12 and in rural and peripheral regions**.
- **The attention dedicated to SG(E)I in the NSRF varies across Member States**, and depends on numerous factors, such as national political strategies, the need to comply with EU legislation, and the tradition of public service provision within countries.
- The **investment priorities** of the EU, which are specified in the NSRFs and shown by the allocation of SF for the period 2007-2013, generally **reflect the specific national investment needs of SG(E)I**.
- The analysis of **ERDF allocation** shows that the EU plays a significant role in co-funding infrastructural projects and initiatives in sectors that are relevant for the provision of SG(E)I in the Member States.
- **Cross-border cooperation programmes have increased their investments in SG(E)I**, with the expenditure priorities at sector and subsector level differing from those of Member States.
- The **actual use of funds in SG(E)I varies across countries** due to different national legislative frameworks and traditions, project scales, governance settings, type of needs that require addressing, and sector interest.
- The **NSRF helps to clarify the allocation choices of a country**, which in some cases may initially appear inconsistent with the endowment provision shown by the indicators.
- Statistical correlation analysis shows that **SG(E)I provision and SF expenditure are negatively correlated**, indicating that EU investment is indeed directed towards areas and sectors in need.

This section presents a survey of the infrastructural endowment and the level of provision of SG(E)I in Member States, to identify patterns in the distribution of infrastructures and services in the sectors of telecommunication, social, environment, energy and transport, and shows the link to SF expenditures and allocations.

According to the SF General Regulations (EC Regulations 1260/1999 and 1083/2006), the objectives of the cohesion policy involve the promotion of harmonious, balanced and sustainable economic development of the European Union.

The SF have a primary role in financing investments of human and physical capital to achieve the Community objectives. In particular, investments in sectors, defined as general interest for the Community, such as social infrastructures, telecommunications, environment, energy and transport, directly or indirectly contribute to the objectives of the

cohesion policy in terms of economic, social and territorial convergence, as well as environmental prevention and sustainability.

The role of SF is unquestioned especially if considering that the provision of SG(E)I is characterised by differences across countries and regions in terms of accessibility, distribution, quality and efficiency, as the previous section has shown.

The purpose of this section is to describe the allocation of ERDF¹²⁸ in sectors relevant for the provision of SG(E)I. In particular:

- a comparison between the allocation of funds in SG(E)I for the periods of 2000-2006 and 2007-2013 is provided;
- the SG(E)I level of endowment, which was described in the previous section, is compared to the percentage of funds allocated in each sector and subsector for the periods of 2000-2006 and 2007-2013;¹²⁹
- a quantitative analysis is implemented at the country level, to highlight the existing correlation between the level of SG(E)I provision and financing.

2.1. Infrastructure endowment and level of SG(E)I provision in the Member States

This section presents a survey of the SG(E)I infrastructural endowment and level of provision in Member States, to identify patterns in the distribution of infrastructures and services in the sectors of telecommunication, social, environment, energy and transport. A set of 31 illustrative indicators, provided by Eurostat and ESPON, were selected with reference to the year 2006 (Annex I). Depending on the availability of data, maps at a national, regional and mixed level of disaggregation are proposed to better visualise existing gaps in service provision.

While the analysis considers only a selection of sectors, sub-sectors and certain aspects of the service provision (in part due to the lack of a comprehensive and compatible dataset, particularly at the regional level), an extensive and illustrative insight is provided, which contributes towards the understanding of regional differences at the EU level.

2.1.1. Telecommunications

At the Lisbon summit (2000), the EU declared its ambitious intention of developing the European research area into the greatest knowledge economy of the world, overtaking Japan and the United States of America. The ICT sector is the main driver of the knowledge economy, given its close association with innovation and the improvement of standards of living. In fact, modern infrastructures and services may reduce the gaps between developed and less-developed regions in EU Member States, for example by generating

¹²⁸ The least-developed regions (belonging to the Convergence objective according to the categorisation of the period 2007-2013) are also eligible for the Cohesion Fund in the transport and environment sectors. However, given the difficulty of dividing the Cohesion Fund investments between these two sectors, and their relative subsectors, the analysis makes reference only to the allocation of the ERDF. Other Structural Funds, such as the ESF and, for the period 2000-2006, the European Agricultural Guidance and Guarantee Fund (EAGGF) and the Financial Instrument for Fisheries Guidance (FIFG), are not considered given their limited role in financing infrastructures in the SG(E)I sectors.

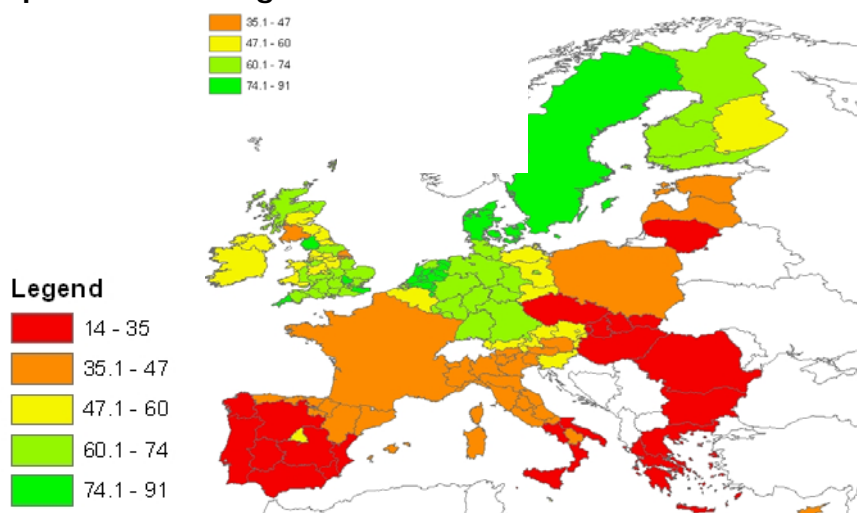
¹²⁹ For example, the share allocated to the railways subsector divided by the total share allocated in the transport sector.

new business opportunities in local environments, and reducing the problems of geographic remoteness.

In 2006, the average number of **telephone lines** in the EU-27 was 40 for every 100 inhabitants; however, a marked gap existed between the EU-12 and the other Member States. For example, there were fewer than 30 lines for every 100 inhabitants in Romania, Slovakia, Lithuania, the Czech Republic and Latvia, but more than 60 in France and Denmark.

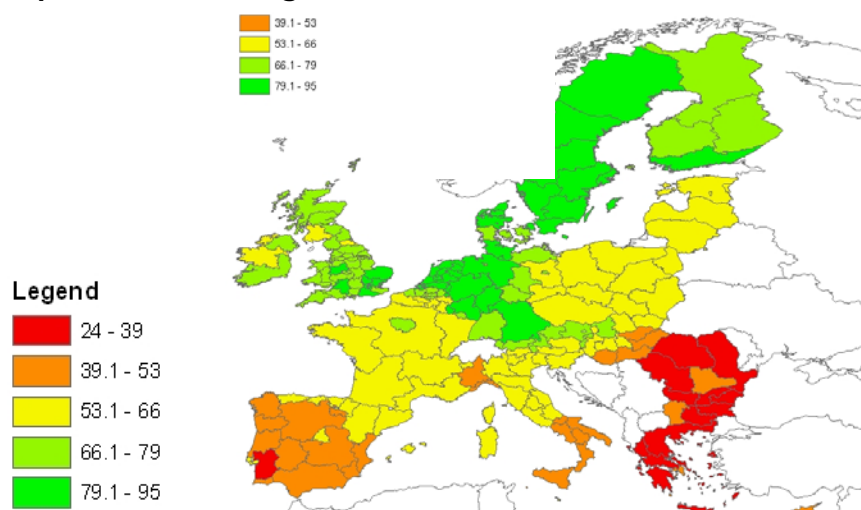
The **broadband penetration rate**, which is defined as the number of established high speed connections per 100 inhabitants, is rapidly spreading, doubling from 7% to 14% in just two years (2004-2006). However, broadband penetration is not equally distributed in Europe. For example, the highest share of the EU population that is reached by broadband comprises Sweden, Finland, the Netherlands and Denmark (more than 20%). In fact, in all the EU-12, the broadband penetration rate is below the EU average of 13%. Furthermore, in Poland, Slovakia and Bulgaria fewer than five inhabitants for every 100 are connected to a broadband network. However, in the EU-15, Greece had the lowest broadband penetration rate in 2006 (less than 3% coverage).

Map 1: Percentage of households with Internet access at home – 2006



Source: Authors' processing of Eurostat data

Note: Depending on the level of disaggregation available for the data, NUTS 0 or NUTS 2 has been used.

Map 2: Percentage of households with Internet access at home – 2009

Source: Authors' processing of Eurostat data

These figures, provided by Eurostat at a country level, hide relevant regional divergences between rural and urban areas, which may lead to very low national indicators for the EU-12. In countries where regional division is available, the percentage of **households with Internet access** at home confirms the existence of such divergences (Maps 1 and 2), in addition to the rapid expansion of information technologies. A similar variability was found between the EU-15 and EU-12, with the most urbanised and productive regions having the highest information accessibility and the best service quality. As expected, in locations where the Internet is more widespread, **broadband connection usage** is also more extensive.

It is interesting to point out the differences inferred from the broadband penetration rate, and the effective use of broadband connections by households. To provide illustrative examples, the Italian broadband network penetration is around the EU average, whereas Bulgaria, Hungary and Poland have far fewer high speed Internet connections per inhabitant. Yet, Italian households use their broadband connections less than the Bulgarians, Hungarians and Polish. This may be in part explained by the fact that the EU-12 has a more recent telecommunications network that, despite not being widespread, uses the most up to date technology, whereas many Italian households still use lower speed connections.

The level of **business telecommunications access and uptake** in 2004, which was estimated by ESPON¹³⁰, showed that high levels of uptake occur along a band stretching from Austria to Sweden and Finland, passing through Germany and Denmark. Outside of this band, only small pockets of high level uptake has been detected, which is mainly located in the proximity of capital cities such as Madrid, London, Brussels and Amsterdam. A similar pattern holds for the share of **enterprises that have a website**.

If **household and business telecommunications uptakes** are considered jointly, Sweden and the Netherlands seem to be the most advanced countries, with Brussels and London are also holding a good position. In contrast, the EU-12 and some regions of Spain,

¹³⁰ ESPON Programme (2006) Project 1.2.2 Telecommunication Services and Networks: territorial trends and basic supply of infrastructure for territorial cohesion, final report.

France and Greece are lagging behind, confirming the disparity between urbanised, rural and peripheral regions.

To summarise, three different patterns of telecommunications may be identified:¹³¹

- A north–south gradient, with the highest number of fixed telephone lines and Internet access (both for households and enterprises) associated with North European countries;
- A latitudinal pattern, with central European Member States having higher telephone and Internet penetration rates than countries in the west and east;
- An urban–rural pattern at the regional level. Regional indicators relating to household and business Internet access confirm the large disparity between rural and urban areas, as stated in the Fourth Cohesion Report¹³².

For **mobile telephony**, the previously described patterns of European disparities do not apply, as the number of subscriptions to cellular mobile services as a percentage of national population is homogeneously distributed across Europe. In the EU-12, it is reasonable to assume that, to a certain extent, the degree of mobile telephone usage offsets the use of fixed lines¹³³. For instance, against an average of 1.07 mobile subscriptions per person across all EU Member States, Belgium, France, Malta, and Romania have just 0.90 subscriptions, while the Czech Republic, Italy, Lithuania, and Luxembourg have 1.20 subscriptions.

For the supply of **e-government** services, defined as the online availability of 20 basic public services for citizens and businesses,¹³⁴ it was not possible to identify a clear divide between the EU-15 and EU-12 in 2006. Higher e-government services are provided in general by western countries, but this subsector is also well developed in Estonia, Malta and Slovenia, and is still rapidly expanding. Similarly, Greece and Luxembourg exhibit a very low supply of e-government services, with a level similar to that of other countries in Eastern Europe.

To conclude, the EU-12, along with rural and peripheral regions, receive less benefit from the new and rapidly expanding technological services and infrastructures in comparison to the rest of Europe. As part of the Lisbon strategy, the EC in the Europe Action Plan 2005 stressed that widespread and affordable broadband access and an information network were key factors towards providing a favourable environment for private sector investment, and for the creation of new jobs. This in turn would boost productivity and generate growth, supporting and modernising economic activities, stimulating public services and “giving everyone the opportunity to participate in the global information society”.¹³⁵ However, the evidence indicates that internal divergences exist, and prevent less advantaged areas from taking advantage of these benefits. Public authorities play an important role in supporting the widespread development of telecommunications and intervening after private market failures.

¹³¹ Following Eurostat (2009) and Sirtori E., Vignetti S. (2010).

¹³² European Commission (2007).

¹³³ Sirtori E., Vignetti S. (2010).

¹³⁴ The different categories of service providers taken into account are as follows: national and regional governmental units, cities and municipalities, specific multiple service providers, public libraries, hospitals, universities and other institutes of higher education and policies offices.

¹³⁵ European Commission (2002).

2.1.2. Social infrastructures

The category of social infrastructures includes facilities that provide services with social benefits to the community. This includes health services, support to labour market participation and social inclusion, improvement of human capital through the development of efficient primary, secondary and higher education systems, and vocational training. The presence of efficient social services is considered to be a factor of regional attractiveness and economic development.¹³⁶

EU **education and training** policies have gained impetus since the adoption of the Lisbon strategy in 2000. EU Member States and the EC recognise that high quality education and training are valuable assets in light of increasing global competition and are fundamental to making Europe a strong knowledge-based economy. A list of benchmarks have therefore been set for 2020, relating to, among others, the increase of children participating in early childhood education, the growth in 15-years old with sufficient abilities in mathematics and science, the increase in adults participating in lifelong learning education and training activities, and the decrease of early leavers from education and training.

The EC 2006 report, on the progress towards the Lisbon objectives in education and training, highlighted that some of the EU-12 (e.g., Czech Republic, Poland and Slovenia) were in a good position in terms of upper-secondary attainment, and also showed the lowest share of early school leavers. In comparison, Ireland, France and the UK were the best performers with regards to the share of graduates in maths, science and technology. The UK, Sweden and Denmark also had the highest rates of adults participating in education and training.

Identifying common patterns in education is far more difficult, given the diversification of objectives in this area. The only exception is represented by the two most recent Member States, Romania and Bulgaria, which showed low performance for all indicators.

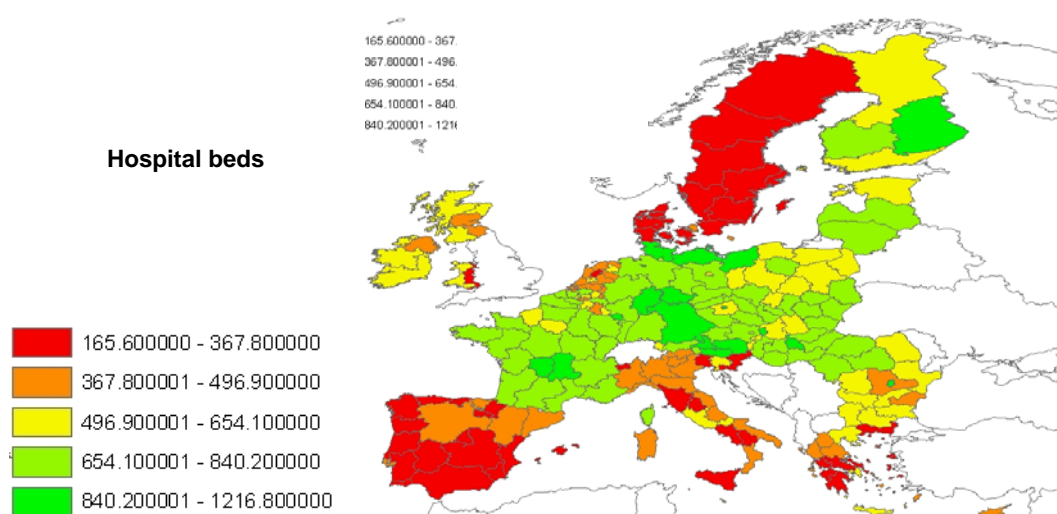
The number of **hospital beds** (Map 3) showed that the best endowed countries in 2006 were Germany, Austria, the Czech Republic, Hungary, Lithuania, Latvia, and Finland. These countries had seven or eight hospital beds for every 1,000 people because of their policies favouring large and well-equipped health centres. In contrast, the UK and South European countries (i.e. Portugal, Spain, Italy and Greece) had low health facility levels per inhabitant, and higher regional divergences. For example, while the most endowed regions of these countries had around five hospital beds for every 1,000 inhabitants, this share declined to two or three in other areas.¹³⁷ The number of hospital beds in Denmark and Sweden was subject to a significant reduction between 2000 and 2006, by an average rate of 25%, with a peak of more than 70% in the Swedish region of Norra Mellansverige. As highlighted by the EC 2007¹³⁸, the inadequate supply of hospital facilities may lead to problems for an ageing population. This trend, which corresponds to public spending per capita in the health sector standing above the EU average, reflects the efficiency of the sanitarian system of the Nordic countries, with shorter average lengths of stays in hospitals and higher numbers of surgical procedures performed on a same-day basis¹³⁹.

¹³⁶ European Commission (2007a).

¹³⁷ The less endowed regions are Alentejo and Algarve in Portugal, Valencia and Andalusia in Spain, Campania, Basilicata and Sicily in the south of Italy and Central (Kentriki) and Mainland (Sterea) Greece.

¹³⁸ European Commission (2007) *Growing Europe, growing regions. Fourth Report on Economic and Social Cohesion*.

¹³⁹ OECD 2005, 2006.

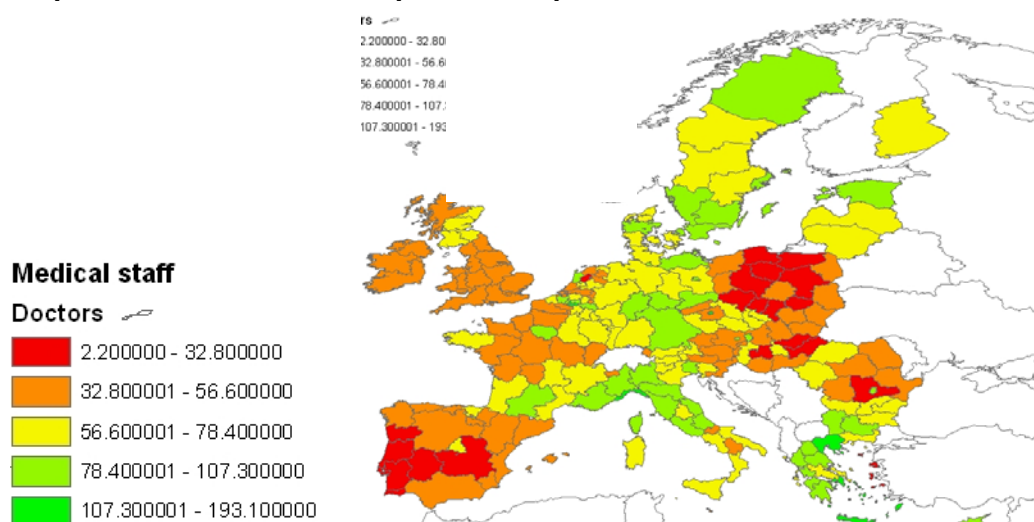
Map 3: Number of hospital beds per 100,000 inhabitants – 2006

Source: Authors' processing of Eurostat data

Note: Owing to missing data, an alternative year has been considered for some countries: 2002 for NL, 2004 for PT, 2005 for GR and 2007 for CZ and DK¹⁴⁰.

In 2006, the per capita number of **doctors, nurses and other care professionals** showed no remarkable divergence between north and south Europe, or between the EU-15 and EU-12 (Map 4). On average there were 62 professionals for every 100,000 inhabitants in the EU. The lowest share (less than 30 professionals for every 100,000 people) occurred in most of Portugal, some regions of Spain, Poland, Hungary, and the peripheral Greek region of Voreio Aigaio (north Aegean). In contrast, the highest share (more than 100 professionals for every 100,000 people) was found in some regions of Italy, Greece, Germany, Belgium, and the capital regions of the Czech Republic and Bulgaria. Owing to unavailability of regional data, the most detailed picture that could be obtained of the social service provision in Europe was at the national level¹⁴⁰.

¹⁴⁰ In all subsequent figures and tables the abbreviations for country names are used: AT Austria, BE Belgium, BG Bulgaria, CY Cyprus, CZ Czech Republic, DE German, DK Denmark, EE Estonia, ES Spain, FI Finland, FR France, GR Greece, HU Hungary, IE Ireland, IT Italy, LT Lithuania, LU Luxembourg, LV Latvia, MT Malta, NL Netherlands, PL Poland, PT Portugal, RO Romania, SE Sweden, SK Slovakia, SL Slovenia, UK United Kingdom.

Map 4: Number of health personnel per 100,000 inhabitants – 2006

Source: Authors' processing of Eurostat data

Note 1: Health personnel include doctors, physicians, dentists, pharmacists, physiotherapists, nurses, and midwives.

Note 2: Owing to missing data, an alternative year has been considered for some countries: 2002 for FI, 2003 for PT, 2005 for GR and 2007 for the UK.

During the Barcelona Summit in 2002, Member States recognised the importance of removing disincentives to female labour force participation. By 2010, the Member States committed to providing **childcare** to at least 90% of children between the age of three and the mandatory school age, in addition to at least 33% of children below three years of age, taking into account the demand for childcare services, and the national patterns of childcare provision. The indicator that was selected, by the EC in collaboration with the Member States and measured by EU-SILC (EU Statistics on Income and Living Conditions), is the proportion of children¹⁴¹ that were placed in care (by formal arrangement other than family) for up to and above 30 hours with respect to the total number of children of the same age group. The concept of formal arrangements includes preschools, compulsory schools, centre-based services outside school hours, and day-care centres. The data from 2006 showed the existence of a large gap across Member States, but not between old and new Members. The average number of hours that children of pre-scholar age spend in formal care structures is around 22.8, with the lowest value in Poland and Luxembourg (respectively 9.5 and 12.4 hours) and the highest, which was more than double, in Denmark and Estonia (32.3 and 32.7 hours).

The 2006 EU average number of childcare hours for children under three years old was lower (6.9) than for children of pre-scholar age, but the national gaps were much more relevant. For example, in the Czech Republic and Austria children are cared for informal facilities for no more than one hour per week, while in Sweden, Slovenia and Portugal the number of hours exceeds 12, and is in excess of 24 hours per week in Denmark. Hence, there is a noticeable gap between the EU-15 and EU-12 in this regard.

EU-SILC also conducts a survey to detect the extent of, and reasons for, unmet medical needs. A large proportion of people exist with **unmet medical needs** because of the high

¹⁴¹ The indicator is broken down by: children aged under three, children aged between three years and the mandatory school age and children aged between the mandatory school age and 12 in compulsory or primary education, even if the third age group is not covered by the Barcelona targets.

cost of health care, the length of waiting lists, difficulty reaching the nearest care facilities, and/or the lack of good doctors, all of which are an indicator of poor medical service. In comparison, a high level of satisfaction indicates good service quality. In 2006, the share of people who declared they had unmet medical needs was below 1% in some of the EU-15 (i.e. Denmark, Belgium, the Netherlands, Austria, and Spain), in addition to Slovenia. The highest level of dissatisfaction (more than 12%) was revealed in many of the EU-12, such as Romania, Latvia, and Bulgaria.

These results suggest that the density of social infrastructure is not the best indicator of the provision for social services, since the satisfaction of the user is linked to the quality of the service provided. In fact, the EU-12 are endowed with a good number of hospital beds, but their citizens revealed the lowest medical satisfaction.

In any case, the lack of regional data prevents a thorough analysis of the differences within each country. For instance, the Italians declare a level of medical dissatisfaction in line with the EU average (around 4%), but the national average hides the large gap between north and south Italy, which instead may be garnered from the Commission's survey on the perception of the quality of life¹⁴². Respondents living in cities in the north of Italy (i.e. Bologna, Verona, and Torino) express greater satisfaction for the healthcare services that are offered by hospitals than respondents living in Rome, Naples, and Palermo. In particular, the level of satisfaction of inhabitants of southern Italian cities is similar to that of inhabitants living in cities of Eastern Europe.

Health, education and, in general, social infrastructures are areas where public authorities in Europe actively intervene after market failures, and ensure universal and accessible services to the population. The analysed indicators show that gaps exist among European countries, but patterns are difficult to detect. In fact, for most of the considered variables clear distinctions cannot be made between the western and most developed countries and the eastern EU-12. Data must also be carefully interpreted, such as in the case of the low number of hospital beds in Sweden, which may be explained in terms of higher efficiency and minimal investment needs.

2.1.3. Environment and energy

The importance of developing an efficient infrastructure that supports environmental sustainability and protection is clear. Efficient basic environmental services are assumed to be essential for attracting people and investment to remote and peripheral areas, thereby contributing to European convergence. Human health, which is strongly linked to a high quality of life, is affected by air, soil and water pollution. The improvement of eco-efficient production and renewable energy sources may raise the competitiveness of the European economy by reducing energy dependency and cutting the social costs of production.

The subsectors of water supply and treatment, waste treatment, renewable energy and air pollution are examined in detail in this section.

¹⁴² European Commission (2007b).

Table 3: Water sector indicators – 2006

Country	Percentage of population connected to public water (a)	Number of water treatment plants per 100,000 inhabitants (b)	Percentage of urban wastewater treatments with at least a secondary treatment (c)
AT	n.a.	19.13	91.8
BE	98.8	5.56	56.2
BG	98.9	0.76	38.4
CY	100.0	n.a.	29.8
CZ	92.4	19.68	73.4
DE	99.2	12.11	97.3
DK	n.a.	n.a.	n.a.
EE	74.0	34.05	73.0
ES	n.a.	4.07	n.a.
FI	n.a.	n.a.	n.a.
FR	n.a.	27.42	n.a.
GR	92.0	1.47	85.0
HU	94.3	5.88	54.7
IE	83.0	10.42	82.0
IT	n.a.	n.a.	93.6
LT	76.0	13.37	59.2
LU	n.a.	60.23	n.a.
LV	n.a.	30.03	62.9
MT	100.0	0.25	13.0
NL	99.9	2.24	99.5
PL	86.3	7.86	60.7
PT	91.3	12.18	37.0
RO	49.3	1.24	16.9
SE	85.3	14.35	86.0
SI	n.a.	10.83	48.3
SK	86.3	8.42	n.a.
UK	n.a.	n.a.	n.a.

Source: Eurostat data

Note: Data are missing for the following countries: AT, CZ, ES, FR, IT, LV, LU, SI, FI and UK. Owing to missing 2006 data, an alternative year has been considered for some countries.

a) 2004 for DE, 2005 for IE and 2007 for RO;

b) 2003 for LU, 2004 for DE, EE and FR, 2005 for IE and PT and 2007 for GR;

c) 2005 for DE, IE, IT, CY and RO and 2007 for GR.

Water supply and quality differ significantly across the EU¹⁴³. The Commission¹⁴⁴ reported that water is scarce and, in a number of regions, the amount of clear water abstracted is close to critical levels, threatening local eco-systems, agricultural activity and tourism. In Romania, only about 50% of the population was connected to **the public water supply** in 2006, while in Estonia and Lithuania this proportion was below 80% (Table 3, column a). The southern EU-15 countries and the EU-12 have network problems, which leads to water

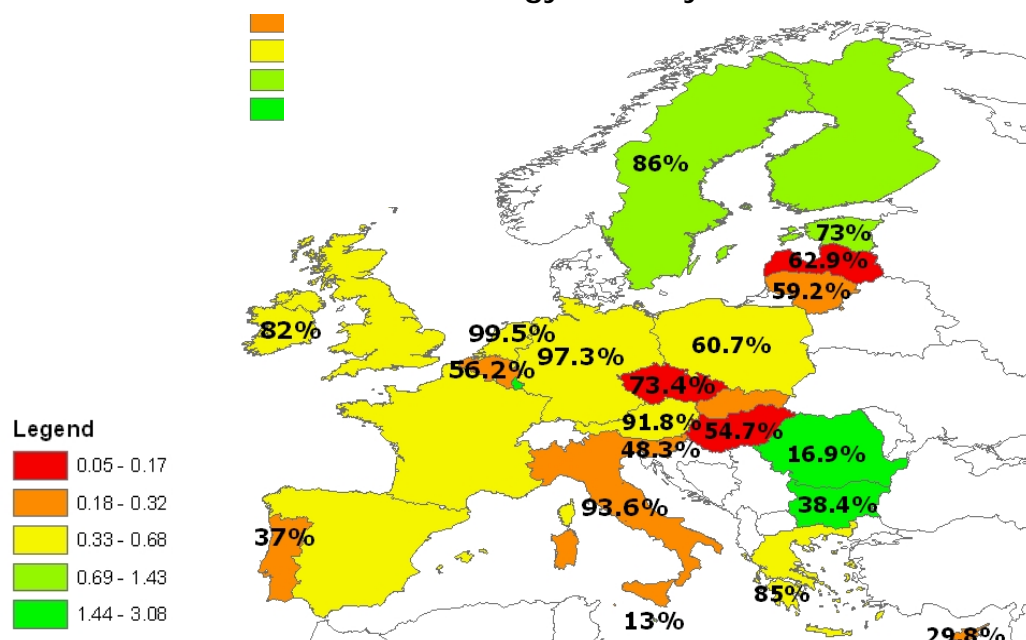
¹⁴³ European Commission (2007a).

¹⁴⁴ European Commission (2004).

loss and poor water quality. In addition, the capacity to purify drinking water in these countries is also lacking. For example, in Bulgaria, Greece, Malta, and Romania there are less than two **water treatment plants** for every 100,000 inhabitants, of which less than 50% are equipped to provide at least a secondary treatment, meaning the best quality of water (Table 3, columns b and c).

In terms of the **treatment systems of total waste**, the EU-12 also have higher investment needs than other EU countries. The waste treatment capacity of Cyprus, the Czech Republic, Latvia and Lithuania, which in 2006 were far below the EU average (0.68 tonnes per capita of waste treated), need to be significantly upgraded and expanded. This is especially important, considering that the amount of development-related waste from construction and demolition activities, as well as household waste, is expected to increase, as a result of rising income and wealth in these countries (Map 5).

Map 5: Total treatment of waste (tonnes per capita) and percentage of waste treated for recovery and energy recovery – 2006



Source: Authors' processing of Eurostat data

Note: Data for total waste treatment are missing for DK.

Italy also lacks the capacity to treat waste, but this is because of severe inefficiencies in the treatment system, not only new infrastructures. The main method of treating waste is landfill, especially in the EU-12, and incineration, usually combined with energy recovery, in more developed countries¹⁴⁵. Both of these processes are considered to be the least preferred in environmental terms, since greenhouses gases and other harmful emissions are generated. Eurostat data confirm that the largest share of waste recovery (for energy generation and otherwise) is in Belgium, Germany, the Netherlands, Austria, Poland, and the Czech Republic. In contrast, the main methods of waste treatment in the rest of Europe continue to be incineration without energy recovery and disposal (into or onto land, for permanent storage or for release into water bodies).

¹⁴⁵ European Commission (2007a).

The development of renewable energy and improved energy efficiency may potentially have important effects on future environmental sustainability and economic development due to the availability of a secure supply of energy. Final energy consumption in Europe has continued to increase (by more than 5% between 2000 and 2006), but the share of energy from renewable sources, especially wind and solar power, has increased by only 0.8% over the same period. Bulgaria, Denmark, Germany, Greece, Ireland, Hungary, and the Netherlands have increased their **shares of renewable sources** (from 3% to more than 9% on average). Therefore, these countries are closer to the Commission target of 20% of total energy consumption derived from renewable energy sources by 2020. In 2006, Malta, Cyprus, Estonia, and Poland were still using very limited renewable sources to generate energy (for the two islands the proportion is zero), but not all the EU-12 are below the EU average of 15.5%; Slovakia, Slovenia, Latvia, and Romania extensively use electricity from renewable sources.

Another factor affecting environmental sustainability and human health is air pollution. The EC (2007a) estimated that “the average life expectancy of EU citizens is shortened by more than eight months due to poor air quality”. The perception of **air pollution** differs widely. People inhabiting the largest south European cities generally believe that air pollution is a big concern, while in smaller northern cities the opposite is true.¹⁴⁶ The European Environmental Agency (EEA) confirms that air pollution affects most European capitals and largest cities, where traffic levels are higher, as well as the whole of Greece, Cyprus, Bulgaria, and about half of Romania. Moreover, countries in northern Europe generally enjoy more clean air.¹⁴⁷

The EC¹⁴⁸ explains the status of environmental infrastructure and services in Europe as “Substantial differences exist between Member States and regions as regards environment protection, the problems threatening the environment and the local capacity to address these problems. Such disparities are particularly apparent between the EU-15 and many of the EU-12”. Eastern European countries are less endowed with infrastructures to treat wastewater and urban solid waste than the rest of the EU, despite their increasing needs. Countries that have already adopted policies to protect the environment are able to offer good services to their citizens, such as clean electricity from renewable sources, in some cases even better than in the EU-15. Hence, care must be taken not to generalise the gap between the western and eastern countries. Although it is true that the level of infrastructure and services offered is generally lower in the EU-12, recent and ongoing investments and policies are helping to reduce the gap. Furthermore, the promotion of renewable energies is of particular relevance for all countries, from both an environmental and economic perspective, and this is still underdeveloped in most of Europe.

2.1.4. Transport and accessibility

The EU considers the development of transport infrastructures to be the main factor that stimulates economic development and integrates Member States, especially after recent enlargements towards Eastern Europe¹⁴⁹. An efficient network of roads, motorways, railways, air and, secondarily, sea, river, and canal navigation, guarantee accessibility to these European regions. In turn, such access is necessary to attract private business investment, increase productivity, develop access to the market, and improve economic

¹⁴⁶ European Commission (2007b).

¹⁴⁷ Source: <http://www.eea.europa.eu/data-and-maps/figures/particulate-matter-pm10-2007-annual-limit-value-for-the-protection-of-human-health-1>.

¹⁴⁸ European Commission (2007a).

¹⁴⁹ Sirtori E., Vignetti S. (2010).

competitiveness. Moreover, by shortening the time required to travel across regions and countries, transport plays an important role in reducing distance and promoting economic, social and territorial cohesion within Europe.

The general situation of transport endowment in the EU differs by mode of transport. Gaps across the EU-12 and the rest of Europe are large in terms of **motorway** density. Motorway development in the eastern countries is mainly concentrated around the capital cities, and other major urbanised centres. In Poland, there are only three separate high speed roads, most of which were completed in the 1990s, that serve the cities of Cracow and Legnica in the south, Poznan and Lodz in the centre, and Grudziadz and the port of Danzig in the north. This pattern confirms the positive relationship between good transport connections and the concentration of productive activities. In contrast, Slovenia is above the EU average for motorway density, mainly because of its unique geographic position, which makes it the natural land bridge between western and south-east European countries.

The motorway network has been growing both in the EU-12 and EU-15. However, for example, despite Greece and Ireland increasing (respectively by three and six fold) the length of their motorways between 1990 and 2004, the network density was still below the EU average in 2006. In contrast, 15 years of investment in Spain and Portugal has facilitated their reaching the EU average density. Countries that still have a low density of motorway infrastructure are the most peripheral; these include Ireland, Portugal, Finland, and Sweden.

The endowment of **other roads** (regional, primary and secondary) is more homogeneously spread. Most of the EU-12 have road networks that are as dense as the other Member States, with minor regional gaps. However, the quality of roads in the EU-12 is generally poorer, suffering a lack of maintenance over many years.¹⁵⁰ Bulgaria and Romania need investment for road maintenance, since the last investment took place in the 1970s and 1980s. Some regions of Spain, Portugal, Italy, Germany, and the Scandinavian countries also have a low density of roads.

The situation is still different for **railways**, since the highest density is concentrated in the EU-12, with no relevant internal gaps (Map 6). Railways continue to provide connections to neighbouring countries, particularly towards western Europe, for people and freight. Yet, as observed for roads, the quality of the network in these countries is significantly lower, with single track and/or non-electrified lines that substantially increase travel time. For instance, the percentage of electrified lines is highest in the Nordic countries with more than 70% of electrified railways on average. Investment in the strengthening and electrification of the railways sector would also have a positive effect on air pollution, by decreasing traffic congestion. Among the EU-15, the UK and Ireland have the lowest density of operational railways.

The volume of **air transport** continues to grow after experiencing a decline in 2001. The growth is significant in the UK, and in southern Spain and Portugal. Secondary airports also continue to grow in popularity, reflecting their use by low cost airlines and locations in the capital cities of the EU-12.¹⁵¹ In 2006, the total number of passenger flights per day was well below the EU average in Greece, some regions of Sweden and Finland, and central

¹⁵⁰ European Commission (2004) and European Investment Bank (2000).

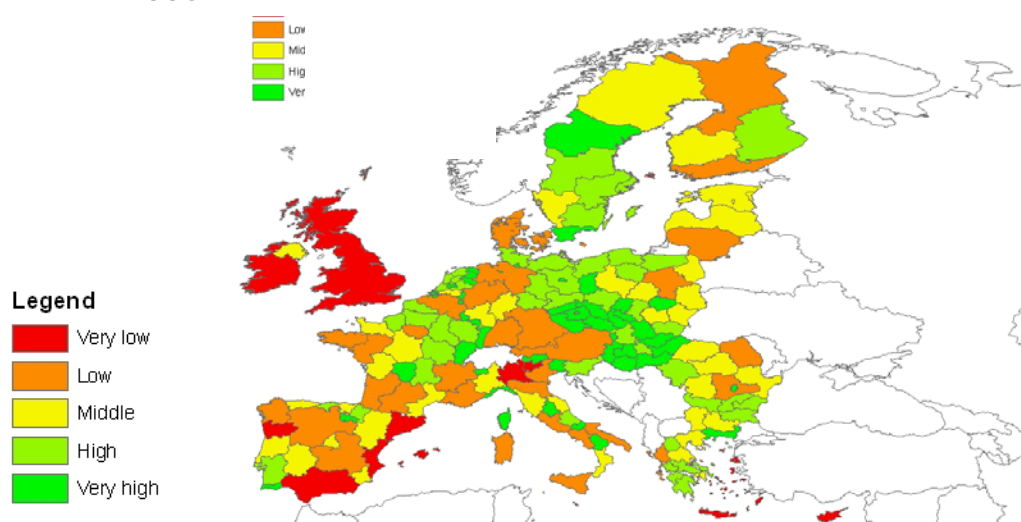
¹⁵¹ European Commission (2007a).

Europe (France and Germany). Regional gaps in Spain were also evident, with a clear division in air transport use between the north and south.

Sea and inland transport remain of secondary importance in most countries. The number of seaports or navigable rivers/canals depends clearly on the geographical characteristics of a country, as well as past investment, which in the Baltic countries, Germany and the Netherlands encouraged the development of this mode of transport. The Danube has significant potential for freight transport through Hungary, Bulgaria and Romania, but investment is required¹⁵².

In addition to the transport infrastructure endowment of the EU countries, it is also important to analyse the level of regional accessibility, to obtain a clear picture of the efficiency of transport services.

Map 6: Density of railways: index of lengths relative to area and population – 2006



Source: Authors' processing of Eurostat data

Note: Owing to missing data, a different year has been considered for some countries: 2005 for IE, AT and SI and 2007 for SE.

Potential accessibility¹⁵³, by road and rail (Map 7), provides a core-periphery pattern, with the central European regions being the most accessible in 2001. Belgium was the most accessible country because it is crossed by a dense network of motorways and major rail corridors. Investment in high speed rail does not only strengthen the potential accessibility guaranteed by roads, but may also enlarge it, as in the case of France, where the TGV lines towards the south of Europe and the Atlantic Ocean generate corridors, the accessibility of which is above the European average.

Air transport may significantly contribute towards increasing the accessibility of peripheral regions. The potential accessibility indicator for this mode indicates high values around major European airports, with greater within country differences than in the case of road

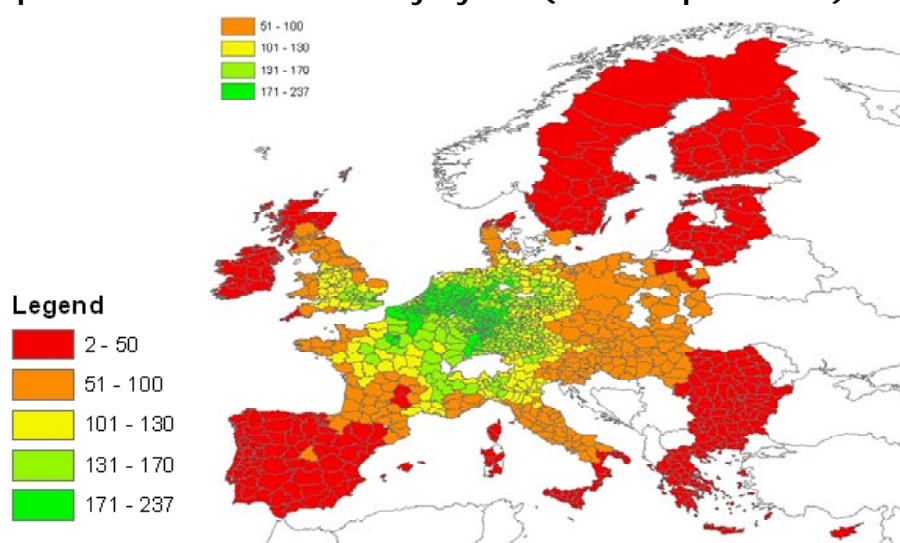
¹⁵² Ibid.

¹⁵³ Which is calculated by ESPON with a formula "comparing" the opportunities and costs to reach a place, based on the assumption that the attractiveness of a destination increases with size (represented by population or GDP) and declines with distance, travel time and cost.

and rail accessibility. However, airport regions in central Europe still have the highest values of accessibility on average than the peripheral areas of Europe.

A similar pattern concerns multimodal potential accessibility. Regions in correspondence with the so-called “blue banana”¹⁵⁴ are characterised by above average accessibility. The existence of international airports further helps to improve the accessibility of other less central areas, such as Barcelona in Spain, Rome and Naples in Italy, Vienna in Austria, Budapest in Hungary, and Warsaw in Poland. This also reflects the fact that the motorway and high speed rail network have been constructed to serve the capital and most populated cities as a first priority¹⁵⁵. As ESPON¹⁵⁶ explains, “for all other regions the combined effect of low quality surface transport infrastructures and lack of air accessibility leads to the low performance in term of accessibility”.

Map 7: Potential accessibility by rail (ESPON space=100) – 2001



Source: Authors' processing of ESPON data

ESPON indicators have been recently updated from 2006 data for road and railways to take into account the reduction of waiting times at border crossings after the enlargement in 2004, the extension of motorway networks in the EU-12, and the further development of high speed rail networks mainly in the EU-15. The recent data do not indicate substantial changes in the potential accessibility of European regions, despite a general improvement in some regions of the EU-12 (especially Poland and the Czech Republic) and a small amount of increasing accessibility in Eastern Europe.

Although air, railways, motorways, and other roads provide access to people and freight over long distances, **urban transport** guarantees mobility within cities. The majority of Europeans live in an urban environment, and European cities increasingly face problems caused by traffic and congestion. For example, urban mobility accounts for 40% of all CO₂ emissions from road transport, and up to 70% of other pollutants. The development of an

¹⁵⁴ It is a corridor stretching approximately from North-west England in the north to Milan (Italy) in the south and includes cities such as London, Brussels, Amsterdam, Rotterdam, Antwerp, Cologne, Frankfurt am Main, Luxembourg, Stuttgart, Strasbourg, Zürich, and Milan. It covers one of the world's highest concentrations of people, money and industry.

¹⁵⁵ Ibid.

¹⁵⁶ ESPON Programme 2006, Project 1.2.1, Transport services and networks: territorial trends and basic supply of infrastructure for territorial cohesion, final report.

efficient urban transport system would significantly contribute to achieving a number of objectives, including addressing climate change and reducing energy dependency, as well as improving the attractiveness of cities, by promoting, for example, cycling and walking paths.¹⁵⁷

According to the 2007 survey on the perception of quality of life¹⁵⁸, satisfaction about the frequency and reliability of public transport is generally high in Europe. In 68 cities out of 75, the majority of respondents are satisfied with public transport, including bus, tram and metro. The largest satisfaction (93%) was shown by the inhabitants of Helsinki. Higher levels of dissatisfaction are identified in some southern cities of Italy¹⁵⁹, and in some capital cities of the EU-12.¹⁶⁰ The latter also have the lowest proportion of urban transport vehicles (including motor coaches, buses and trolley buses) with less than two years in 2006, whereas the fleet of public vehicles in the EU-15, especially Sweden, Luxembourg, Austria, and the Netherlands, has recently been modernised,¹⁶¹ with direct positive consequences on the quality of transport and air, since new vehicles are less polluting.

The EC recognises the need to optimise the transport system to meet the demands of growth and suitable development from an economic, social and environmental perspective. Improving the quality of all transport modes, reducing noise and air pollution, promoting inter-modality, and improving access to outlying areas through the development of the trans-European transport network were the objectives that were set in 2001 to guide transport investment until 2010.¹⁶²

2.1.5. Aggregate SGI provision indicators

2.1.5.1. Country-level analysis

To better assess the relationship between the allocation of SF and the provision of SGI, a synthetic standardised indicator of the latter is provided. This indicator results in a correlation analysis that is useful to evaluate the relevance of public services investment policies carried out by countries/regions. However, since many variables are involved, dimensionality reduction is required to evaluate the real magnitude of the SGI provided. Empirical analysis showed that the provision of SGI is a multi-facet concept. For example, among the three indicators for water provision shown in Table 3, it is difficult to find the most representative, whereas it is more appropriate to consider them in combination, in order to retain the different information provided by the data. For this reason, the Principal Component Analysis (PCA)¹⁶³ used here was selected as a tool to provide a synthetic indicator of SGI provision.

¹⁵⁷ European Commission (2007c).

¹⁵⁸ European Commission (2007b).

¹⁵⁹ Palermo, Naples and Rome.

¹⁶⁰ Nicosia in Cyprus, Sofia in Bulgaria, Bratislava in Slovakia, Bucharest in Romania and Budapest in Hungary.

¹⁶¹ Based on Eurostat data, 2006.

¹⁶² European Commission (2001).

¹⁶³ PCA is a multivariate statistical technique aimed at transforming a set of m correlated quantitative variables - evaluated on a set of n objects - into a set of p ($p \leq m$) uncorrelated variables (also called *components*) by linearly combining them, and by retaining as much variability as possible (for example see Jolliffe, 2002 for mathematical details). p is often chosen to be very low because one of the purpose of PCA is to obtain a reduced but almost equivalently representative set of variables, and a p -dimensional vector of scores is finally assigned to each of the n objects. These scores, or a weighted average of them, form the basis of the SGI provision indicators (whose set-up is provided below), since they represent the n objects in terms of the new variables and measure the position of the j -th object in relation one another. To obtain a unique value, which gives the level of SGI provision for each country/region, one, or more than one, component may be extracted. The first option (i) may be considered optimal, if the first (and unique) component explains a considerable amount of the total variance in the data (i.e. more than 50%): the scores from this unique

However, the results from such an exercise should be evaluated with caution. The literature on synthetic indicators research is extensive, and covers several aspects and topics (for recent reference see Antony and Visweswara Rao, 2007; Roupas, Flamos and Psarras, 2009; Sabatini, 2009; Somarriba and Pena, 2009; Chen et al., 2010). Furthermore, even for existing and well-accepted methods, there is sufficient evidence on the existence of huge variability, which may produce misinterpretations and/or misleading results (see Grupp and Shubert, 2010 for the case of science and technology innovation composite indicators at a national level).

Here, the PCA provision indicators are calculated at the NUTS0 level. Standardised¹⁶⁴ sector scores for each country are obtained using option (i) above, and are shown in Figure 2 for the year 2006¹⁶⁵. A decreasing ranking of the standardised scores is provided.

The sectors considered include telecommunications, social infrastructures, environment and energy, and transport. Listwise deletion (LD) and mean imputation¹⁶⁶ (MI) methods are used for missing data, which are present for environment and energy and transport data, and the results of these sectors are shown separately. No missing data are present for telecommunications and social infrastructures.

It may be noted that higher values are almost always recorded from Scandinavian and Northern countries, while Eastern countries are at the bottom of the ranking. The high value of the transport services score for Luxembourg and, in general, the higher ranks obtained by smaller countries, are due to an *aggregate density effect* for this type of public service. For instance, in highly urbanised areas (such as Luxembourg) it is natural to expect higher values of this indicator for transport services.

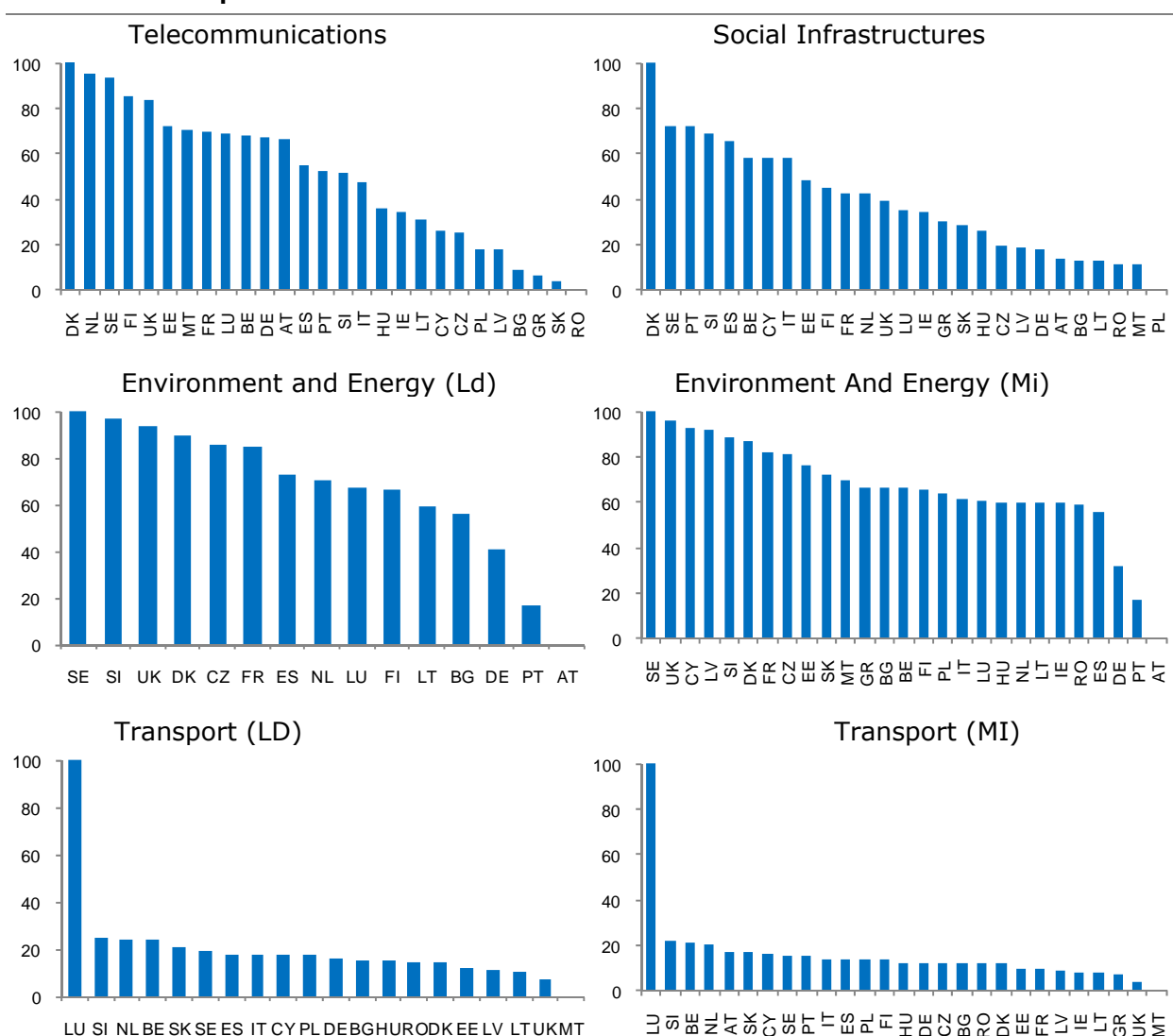
component then form the SGI provision indicator values; otherwise, (ii) two or more components have to be considered: in this case a weighted combination of the scores may be considered (for example see Antony and Visweswara Rao, 2007). In the following, both the above options are considered.

¹⁶⁴ If S_i is the score for the i -th object, standardisation is obtained from the following equation:

$$S_i^{\text{stand}} = \frac{S_i - S_{\text{minimum}}}{S_{\text{maximum}} - S_{\text{minimum}}} \times 100.$$

¹⁶⁵ Transport accessibility data are excluded from the analysis since they date back to 2001.

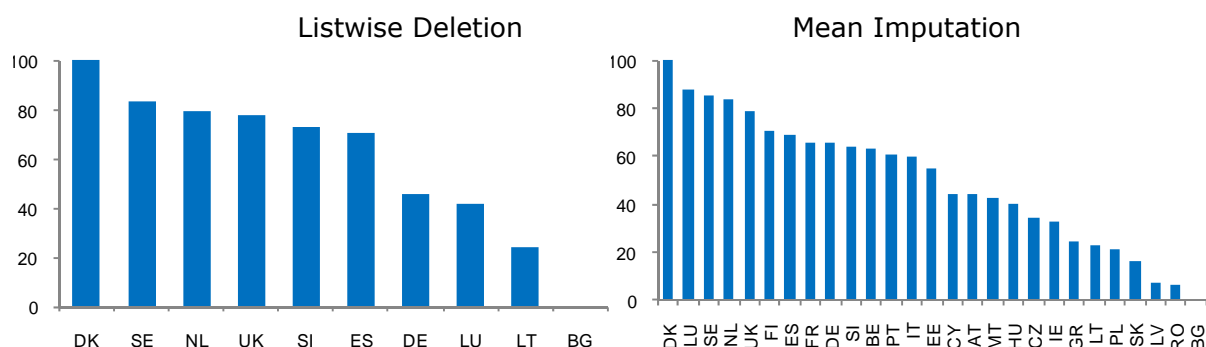
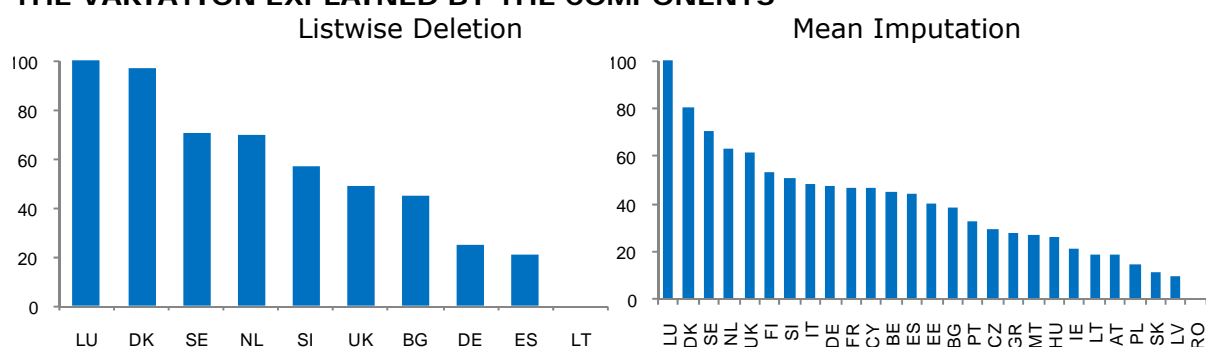
¹⁶⁶ The LD method excludes all objects with at least one missing variable value from the analysis. In the MI method, missing variable values are replaced by the mean of recorded variable values.

Figure 2: SG(E)I provision scores for each sector from a PCA with one extracted component

Source: Authors' processing of Eurostat data

In Figure 3, the overall indicators for all of the sectors that are considered here are presented using both options (i) and (ii) above. Option (ii) is implemented by extracting three components, and calculating a weighted sum of scores for each country, the weights being the percentage of the variation explained by the components. Due to the presence of missing data, two different overall SG(E)I provision scores are presented for each option. The scores are based on the different imputation method used and the standardisation that is described above.

Both options place Denmark, Sweden and the Netherlands at the top of the ranking and Bulgaria, Romania and Latvia at the bottom.

Figure 3: Overall SG(E)I provision scores**ONE EXTRACTED COMPONENT****THREE EXTRACTED COMPONENTS WITH WEIGHTS BEING THE PERCENTAGE OF THE VARIATION EXPLAINED BY THE COMPONENTS**

Source: Authors' processing of Eurostat data

In conclusion, the provision of SG(E)I is higher in the Nordic countries both in terms of the aggregate synthetic indicator and in each sector, with the exception of the transport sector where the highest values are found in Cyprus and Slovenia, due to an aggregate density effect.

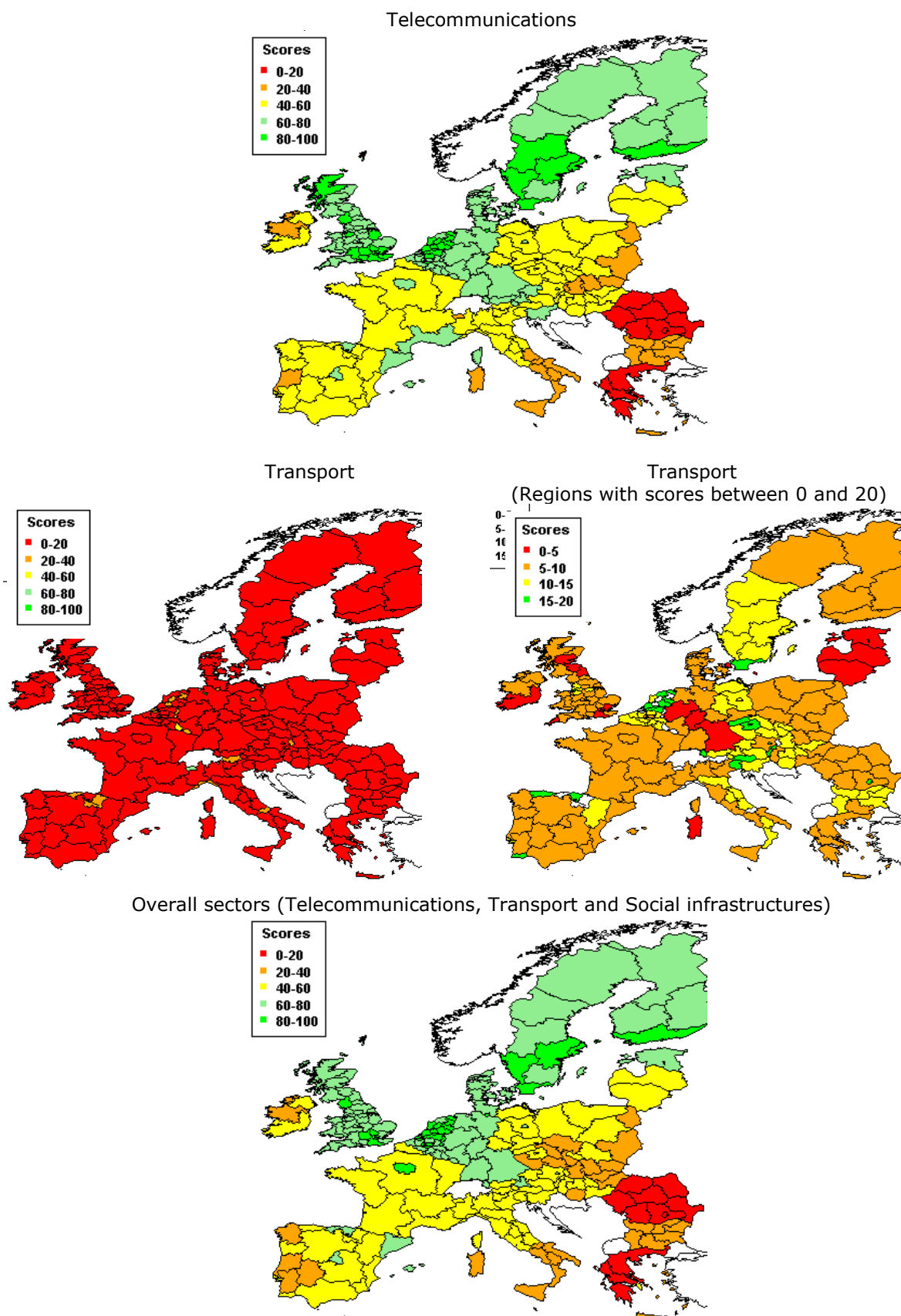
2.1.5.2. Regional-level analysis

Analysis at the regional level is important to account for spatial parameters of the SG(E)I provision, and to detect provision hotspots and provision-lacking regions¹⁶⁷.

The maps below show the spatial distribution of the standardised scores for regional provision that were calculated using option (i) from the previous section for the telecommunication sector, the transport sector, and the combination of these sectors with social infrastructures (in which the number of hospital beds per 100,000 inhabitants and the number of medical staff per 100,000 inhabitants are also included). Five classes of scores are considered. Since the majority of the regions belong to the lowest class with respect to transport, this sector is divided into four further classes.

¹⁶⁷ Adequate regional disaggregation of environment and energy data is not available. For this reason this sector is excluded from this analysis, which is presented here for the year 2006. The urban transport data were also excluded for the same reason. NUTS2 level data are not available for all of the countries, hence NUTS1 data are used for Germany, France, Greece and Poland. For Slovenia, the national data are used. In some cases, when 2006 data are missing, data from previous or subsequent years are used for the calculations, according to the corresponding national trend. If this calculation is not possible, the MI method is used in the PCA.

Map 8: Regional SG(E)I provision scores for telecommunications, transport and overall all sectors using a PCA with one extracted component



Source: Authors' processing of Eurostat data

Telecom services are being increasingly distributed from East to West and from South to North. Hotspots are detected in the Netherlands, UK, Sweden and Finland. Eastern regions (especially in Romania and Greece) are at the bottom of the ranking. In national contexts, some dualities are present. For example, in France, the Île de France and Méditerranée regions are in a higher class than the rest of the regions, as is the case for Comunidad de Madrid, País Vasco, Cataluña and Islas Baleares in Spain. Note that in Italy, apart from Valle d'Aosta, all the Southern regions are in class 20-40, whereas the rest of the regions are in class 40-60. Regions in Germany and Denmark are in class 60-80, as are Estonia and Slovenia.

A few hotspots are present for transport. These include Bremen in Germany, Valle d'Aosta in Italy, Luxembourg, and some regions in the Netherlands, Germany, Spain and Italy, as well as Bratislava in Slovakia and Praha in the Czech Republic. The distribution of transport service provision in the lowest group is much more heterogeneous. For example, the Baltic regions, Sardinia in Italy, the South of Ireland, some parts of England and Scotland and some regions in Germany are at the bottom of the list. The presence of Inner London in the lowest group may be explained by the fact that Urban Transport data is not included in the analysis, and due to the absence of motorways, airports (only the City airport is in Inner London area) and low railway density in the Inner London area.

When combining all sectors, hotspots are detected around capital city regions of the most developed European countries, including Paris, London, Stockholm, Helsinki, and Berlin. Eastern and Southern regions still have to fill the gap, but Slovenia, Estonia, Latvia, Lithuania, some regions of Hungary, the Czech Republic, and Poland are in the same group of regions as Western countries such as Italy, France and Spain. Regions of Romania and Greece, apart from the Aegean islands (Nisia Aigaiou) and Crete (Kriti) are in the lowest group.

2.2. Overview of ERDF allocation in the SG(E)I sectors

This section presents the programmed amounts of ERDF in the periods of 2000-2006 and 2007-2013 for the telecommunications, social infrastructure, environment, energy and transport sectors at the country level. In addition, the allocation to cross-border cooperation projects is also observed. The objective is to highlight if any substantial variations occurred in ERDF allocation during the two programming periods, by paying special attention to the differences between the EU-15 and EU-12 groups.

Three general remarks are valid for the analysis:

- Since the subsectors division within each of the four macro-categories of SG(E)I has different programming periods, it is therefore not possible to compare systematically the ERDF allocation at this level; nevertheless, a number of illustrative inferences are provided.
- Unlike the analysis of SG(E)I provision (section 2.1), environment and energy are considered as two distinct sectors, according to the EU classification of fields of intervention.

- Since in the period 2000-2006, ten of the EU-12 countries were eligible for the ERDF for only three years (2004-2006) out of seven, the average annual allocation of ERDF¹⁶⁸ is also considered to allow comparisons across countries.

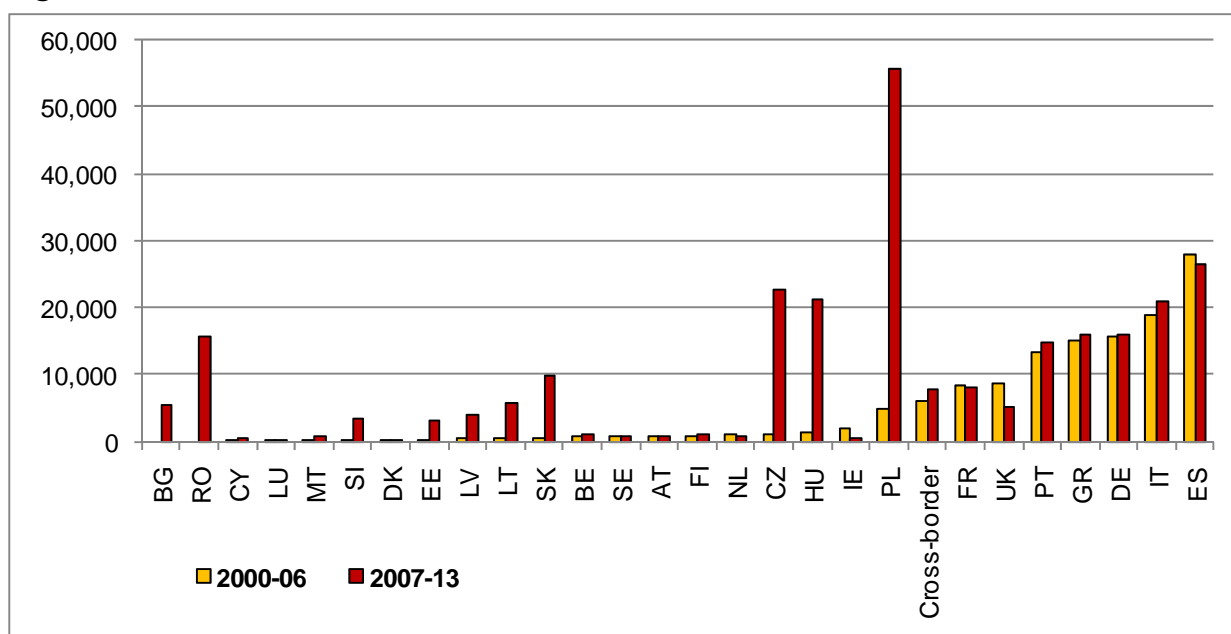
Table 14 and 15 included in Annex II show the distribution of ERDF funds by countries, for the previous and current programming periods, which are divided by the field of intervention.

2.2.1. ERDF allocation in the two programming periods

In the **period 2000-2006**, EUR 123,601 million was allocated across the EU Member States, with the highest amount provided to Spain and Italy, and the lowest amount provided to the small territories of Cyprus, Luxembourg and Malta (Figure 4). These rankings do not change when considering the annual allocation of funds.

The distribution among SG(E)I and other sectors is well balanced, with 48% of total ERDF being used for infrastructures and 52% being used for other areas such as tourism, culture, improving human capital, strengthening institutional capacities, and technical assistance. Examples of countries which use ERDF preferably in SG(E)I are Spain, Greece, Ireland, Lithuania, Malta, Poland, and Slovenia. In contrast, the ERDF is more focused on other sectors in Austria, Belgium, Finland, the Netherlands, and the UK.

Figure 4: Total allocation of ERDF (EUR million); 2000-2006 and 2007-2013



Source: Authors' processing of DG REGIO data

Focusing specifically on SG(E)I sectors, transport infrastructures absorb the largest share of ERDF, accounting for more than 27% on an average, far exceeding the proportion of any other SG(E)I sectors. Within the other SG(E)I sectors, environment is of secondary importance (19%), followed by social infrastructures and telecommunications, which receive approximately the same proportion (11%) of SG(E)I investment.

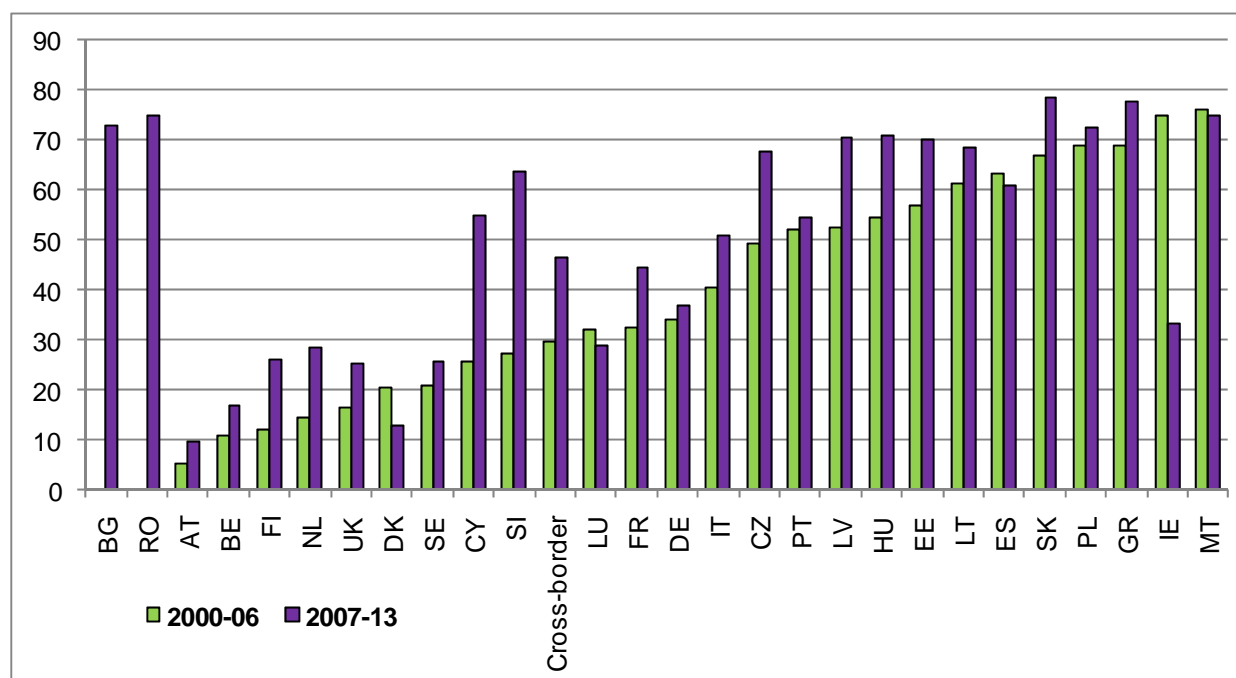
¹⁶⁸ Calculated by dividing the programmed ERDF funds of 2000-2006 by 7 for EU-15, and by 3 for the EU-12 (excluding Bulgaria and Romania).

At the country level, transport investments are high in countries which are also eligible for the Cohesion Fund (i.e. the EU-12, Italy, Greece, Spain, Portugal, and Ireland), but also Denmark, France, and the UK. In the remaining countries, investment is higher in other sectors, such as telecommunications in the Nordic countries¹⁶⁹, social infrastructures in Estonia and environmental infrastructures in Malta. Investments in energy infrastructures are significant in Austria (38% of allocations in SG(E)I), Luxembourg (33%) and Slovenia (22%), while the EU average is 2.75% for all investments in SG(E)I.

The **2007-2013** allocation of ERDF is more than twice the amount of the previous period, amounting to EUR 260,414 million. Poland receives the highest amount, in comparison to other countries. Spain remains the second largest ERDF recipient, but its funds decreased from EUR 28 million to EUR 26 million. The highest increase in funds is registered for the EU-12, especially the Czech Republic and Hungary, whose allocation of ERDF exceeds the amount designated to Italy (Figure 5). In contrast, the ERDF allocated to the EU-15 either increases slightly (as in Italy, Germany, Greece, Portugal, and Belgium) or decreases modestly (as in France and the already mentioned Spain) or more significantly (as in the UK and Ireland).

With respect to the 2000-2006 programming period, the current ERDF share concentrated in SG(E)I sectors increased and is higher than in other fields of interventions (63% versus 37%). The EU-12 and Greece are the countries where such a share is higher. As Figure 5 illustrates, the only countries which reduce the share of ERDF destined to the SG(E)I are Ireland, Spain, Luxembourg, Denmark and, to a minor degree, Malta.

Figure 5: Percentage of ERDF allocation in SG(E)I sectors; 2000-2006 and 2007-2013



Source: Authors' processing of DG REGIO data

¹⁶⁹ Belgium, Denmark, Finland, the Netherlands and Sweden.

The relevance of transport infrastructures across the total SG(E)I is lower in the current programming period, being about 45% of total allocations in SG(E)I. In contrast, the proportion dedicated to the environmental protection sector, and risk and energy sector, increased during 2007-2013 to 30% and 6%, respectively.

Countries that invest a high proportion of funds (both total ERDF and ERDF allocated only in SG(E)I) to transport are the EU-12, but also some EU-15, for example Germany, Greece and Spain. Cyprus, Malta and Romania allocate about one third of their ERDF funds, and more than 40% of the funds in SG(E)I to environmental investments.

Energy is especially important for Austria, Ireland and Luxembourg, where the proportion of SG(E)I funds is higher than 30%. As in the previous period, the proportion of funds programmed for the information society sector is higher for the Nordic countries. For instance, in the case of Denmark, information society receives 100% of the ERDF in SG(E)I sectors. Finally, investments in social infrastructures are particularly relevant for the three Baltic countries, in addition to Portugal and Slovakia.

2.2.2. ERDF allocation between SG(E)I sectors

2.2.2.1. Telecommunications

The total ERDF funds allocated to the Telecommunications sector in the EU Member States amounts to EUR 6,445 million in the period 2000-2006, almost half of which is concentrated in only three countries: Greece, Italy and Spain. Yet, if the annual programmed ERDF allocation is considered, Poland allocates more funds in telecommunication infrastructures and information society than Spain. Other countries receiving funds that exceed the EU average (corresponding to EUR 257 million) are Spain, Portugal, France, and the UK. In contrast, Austria, Denmark, Estonia, Latvia, Slovenia, Slovakia, Cyprus, Malta, and Luxembourg each receive less than EUR 20 million over the entire the period (Figure 6). In annual terms, the same countries occupy similar positions in ranking.

When comparing telecommunications expenditure with the proportion of funds allocated to the other SG(E)I sectors, as highlighted in section 2.2.1, the Nordic countries telecommunications receive from 34% (Finland) to 57% (Denmark) of ERDF funds in SG(E)I. Proportions lower than 9% are received in Portugal, Ireland, Spain, German, and Slovakia.

In the period 2007-2013, the programmed ERDF funds in telecommunications correspond to EUR 14,604 million. Poland decided to allocate the highest sum (EUR 3,714 million) to this sector, followed by Italy, Greece and Spain, as in the previous period, but also the Czech Republic and Slovakia. **However, in terms of percentages, Denmark, Finland and Sweden give the highest priority to this sector (100%, 56% and 43% of funds, respectively in SG(E)I), while most of the EU-12 dedicate less than 5%;** including Hungary, Malta, Romania, Estonia, and Bulgaria. Even the amount allocated to the information society by Poland does not exceed 10% of all its SG(E)I funds.

In **2000-2006**, the EC divided the "Telecommunications infrastructure and information society" field of intervention into 5 sub-sectors:

- Basic infrastructures;
- Information and communication technology (including security and safe transmission measures);
- Services and applications for small and medium enterprises (SMEs) (electronic commerce and transactions, education and training, networking);
- Services and applications for the citizen (health, administration, education)
- Others¹⁷⁰.

A group of countries decided to allocate all the funds in telecommunications in a single subsector. In fact, the priorities of Ireland and Latvia were information and communication technology and basic infrastructures respectively; Cyprus and Slovakia were focused on services and applications for the citizen; Denmark, Luxembourg, Sweden and Slovenia allocated all funds to the residual subsector (v).

Other countries (such as Austria, Finland, Hungary, and Lithuania) allocate the greatest part of their funds between two sectors, which generally are services and applications for the citizen, for SMEs and Basic infrastructures.

It is also possible to identify countries, for example, Germany, Italy, Netherland, Poland, and the UK, that have no specific sub-sector priority, and allocate a certain proportion or majority of their funds to all subsectors.

The sub-sector division in the **2007-2013** programming period is slightly different, as it includes the following:

- Telephone infrastructures (including broadband networks);
- ICT (including security and safe transmission measures), as in the period 2000-2006;
- ICT – Trans European Networks;
- Services and applications for SMEs (electronic commerce and transactions, education and training, networking), as in 2000-2006;
- Other measures for improving access to and efficient use of ICT by SMEs;
- Services and applications for the citizen (health, administration, education), as in 2000-2006.

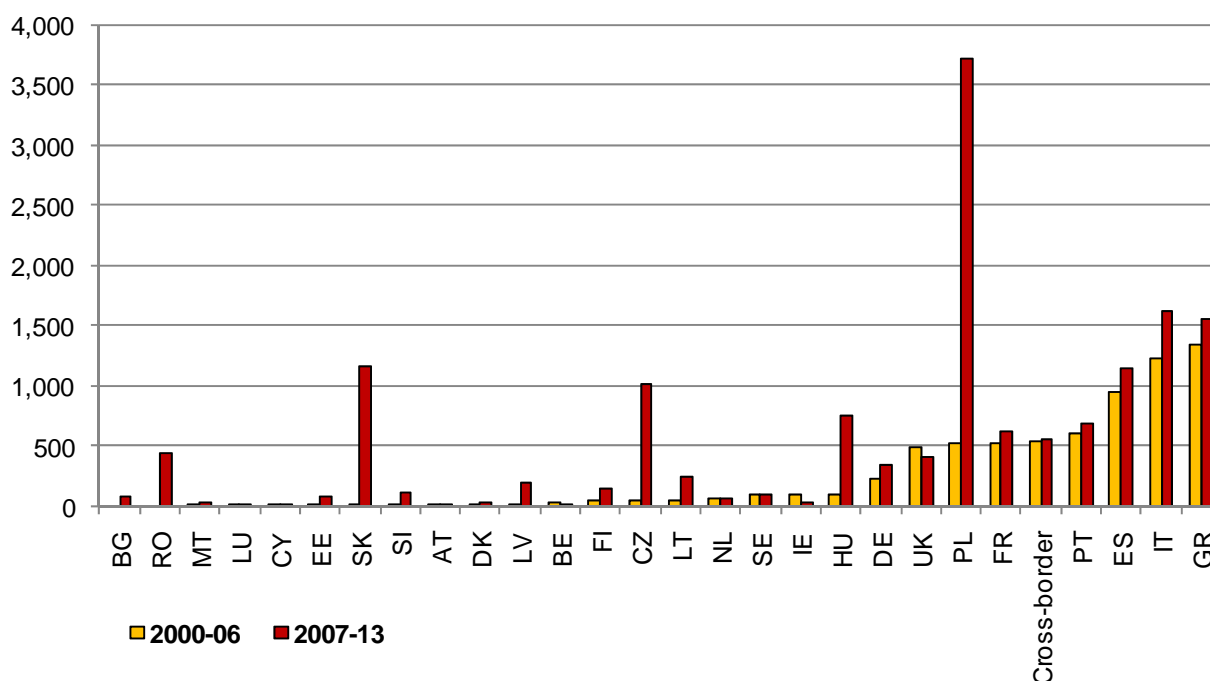
The distribution of funds at sub-sector level has changed. Only Cyprus and Malta dedicate more than 90% (100% and 93%, respectively) to a single area of intervention, such as services and applications for citizens. The priority of these countries has not changed over time, in fact for Malta it has strengthened further.

In contrast, the other EU Member States distribute their telecommunications funds between at least two sectors, or in some instances all of them. Sectors receiving the highest EU average share of funds are services and applications for citizens and ICT; the trans-European network of Information and telecommunication technologies receives the lowest share of funds across countries (3% on the EU average), with the maximum share of 20% for Luxembourg.

¹⁷⁰ Within the field of intervention coded "32".

No clear and homogeneous pattern emerges in ERDF allocation in telecommunications at sub-sector level in the groups of Nordic countries, the EU-15 and the EU-12.

Figure 6: Total allocation of ERDF (EUR million) to the Telecommunication sector; 2000-2006 and 2007-2013



Source: Authors' processing of DG REGIO data

2.2.2.2. Social infrastructures

The total amount of ERDF allocated to the social infrastructure and public health field of intervention does not differ much from the telecommunications sector. In the period 2000-2006, it amounted to EUR 6,662 million, representing 11% of investment in SG(E)I and 5% of all ERDF. In total, 75% of all funds in this sector are allocated to only three countries: Spain, Portugal and Greece (Figure 7). Portugal also dedicates one of the highest proportions of SG(E)I investment to social infrastructure sectors, in comparison to the other EU Member States (26.88%). However, in some of the EU-12, this proportion is even higher: Estonia (63%), Cyprus (39%), Hungary (33%), Lithuania (27%). The lowest proportion of funds that are allocated to social infrastructures (below 3%) is characterised by some of the EU-15 (i.e. Belgium, Germany, Ireland, Luxembourg), in addition to Slovenia.

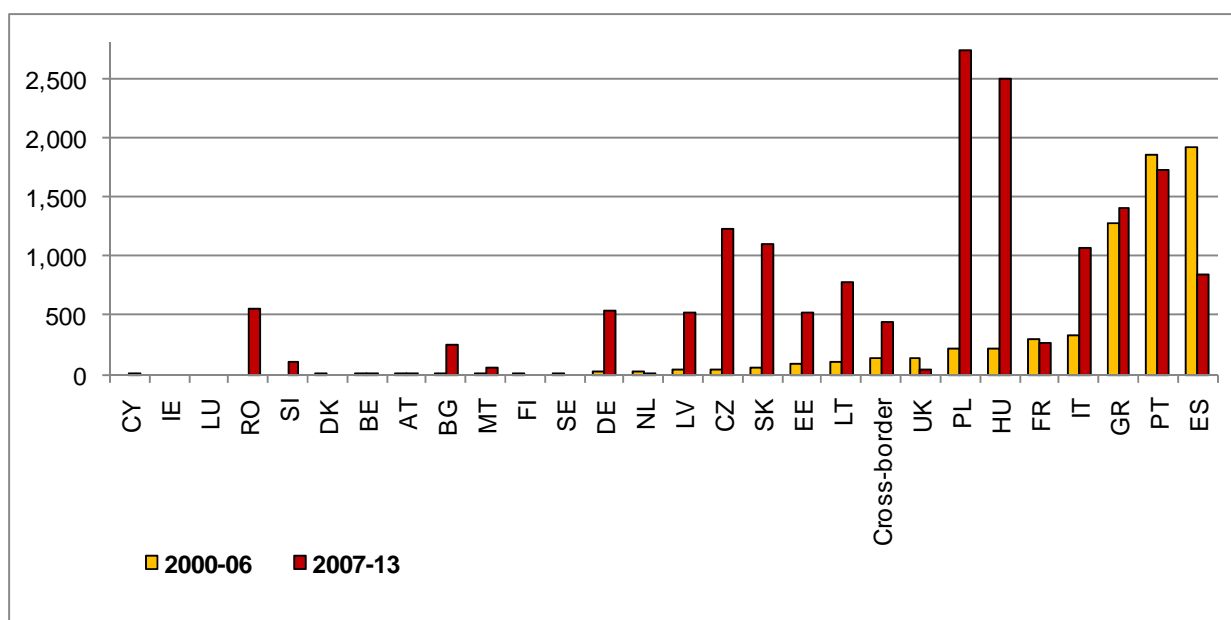
As for the other sectors, investment in social infrastructures financed by the ERDF increased in the period 2007-2013, reaching EUR 16,252 million. Countries that had the largest increase in annual allocation and proportion are the EU-12. Poland and Hungary increased the annual allocation by more than fivefold; Slovakia increased it by eight fold and Czech Republic by more than 11 fold. However, this is not the SG(E)I sector to which these countries give the highest priority. The three Baltic countries and Portugal dedicate from 19% to 35% of SG(E)I funds to social infrastructures, even if the amount of funding is lower than in other countries.

With respect to the previous period, an increase in investment of this sector is identified only for the EU-12, while the EU-15 shows a general decline (i.e. Austria, Portugal and the UK), which in some cases is significant (i.e. Spain), even to the extent of revoking their allocations (i.e. all Nordic countries). Only Italy and Germany enlarged their annual allocations significantly, also in terms of percentage.

In contrast to the period 2000-2006, investment in the social infrastructures sector during the current period has been divided in 5 sub-sectors, including:

- Education infrastructure;
- Health infrastructure;
- Childcare infrastructure;
- Housing infrastructure;
- Other social infrastructures.

Figure 7: Total allocation of ERDF (EUR million) to the social infrastructures sector; 2000-2006 and 2007-2013



Source: Authors' processing of DG REGIO data

The majority of countries give priority to the education subsector, where on an average 42% of total investment in social infrastructures is allocated. In Austria, Cyprus and the UK this share is 100%, followed by Germany and France with 92% and 77%, respectively. In contrast, the Nordic countries (i.e. Denmark, Finland, Sweden), Ireland, Belgium, and Luxembourg do not to allocate the ERDF in education expenditure. Health infrastructures appear to be a priority for Hungary, which allocates 53% of investments, and are also quite important to Bulgaria, the Czech Republic, Malta, and Poland.

Housing, childcare and other infrastructures normally have secondary importance. However, exceptions include Belgium, which allocates all its social investments to the childcare infrastructures subsector, while the Netherlands and Slovenia use ERDF specifically to finance other kinds of social infrastructures, which do not belong to the other sub-sectors.

Since the subsector level was first introduced in 2007, it is not possible to identify any change in priority between the previous and current programming period. Yet, some patterns are highlighted clearly. **The EU-12 constitute a group of countries that increased their allocation of funds mostly in the social infrastructure sector, and also the proportion dedicated to this sector with respect to other SG(E)I. In contrast, many of the EU-15 reduced or even revoked any allocation to the social infrastructures. In general, ERDF funds are used to finance education infrastructures, with no distinction between the EU-12 and EU-15.**

2.2.2.3. Environment

In the period 2000-2006, the Environment sector received the second largest amount of ERDF funds, after transport (EUR 11,329 million)¹⁷¹. Spain allocated the highest sum (EUR 4,290 million) to this sector, followed by Italy (EUR 1,938 million) and Germany (EUR 1,498 million). In contrast, countries that did not appear interested in investing in environmental infrastructures are Cyprus, Estonia, Luxembourg and Sweden, with less than EUR 5 million on average being allocated for the entire period (Figure 8).

Yet, the analysis of the proportion of funds allocated to the environment versus the total of funds allocated to the other SG(E)I sectors shows that **countries that did not allocate the largest sums, are in some cases, those that dedicated the largest priority to the environment.** While the proportion allocated by Spain, Italy and Germany are above the EU average (amounting at 24-28%), the proportion allocated by Luxembourg and Malta are even higher, corresponding to 33% and 54% (EUR 9 million) with respect to the total of investment in SG(E)I.

If annual allocation is considered, it is once again the highest for Poland among the EU-12, and is among one of the highest in the entire EU.

Like other sectors, funds allocated to the environment are higher in the current programming period (EUR 48,861), but in this case (unlike the telecommunications sector) the increase in funds also corresponds to an increase in the proportion of all the SG(E)I sectors (from 19% to 30%). **All countries increased their investment in environmental infrastructures, apart from Ireland and Germany. The largest increase occurs in the EU-12, such as Poland, Hungary, and the Czech Republic.** In contrast, such an increase is more modest in the EU-15, with the only exception being Spain. Cyprus¹⁷², Luxembourg and Malta, dedicate the largest proportion of their ERDF dispositions (between 66 and 44%), to the environment, irrespective of the relatively smaller amount of funds allocation. Romania, Spain and Belgium also gave a similarly high proportion, while less than 20% was given by Austria, Finland, Ireland and Sweden, and a negligible proportion was given by Denmark for the environment¹⁷³.

A group of countries (i.e. Denmark, Luxembourg, Sweden and Slovenia) allocated their entire investment to the environmental infrastructure subsector. A high proportion was also

¹⁷¹ The Environmental sector in the period 2000-2006 includes the following subsectors, according to the regulation: Air; Noise; Drinking Water (collection, storage, treatment and distribution); Sewage and purification; Urban and industrial waste (including hospital and dangerous waste); Environmental infrastructures (including water).

¹⁷² It is interesting to keep in mind that in the previous programming period Cyprus allocated 0% of ERDF to the Environmental sector.

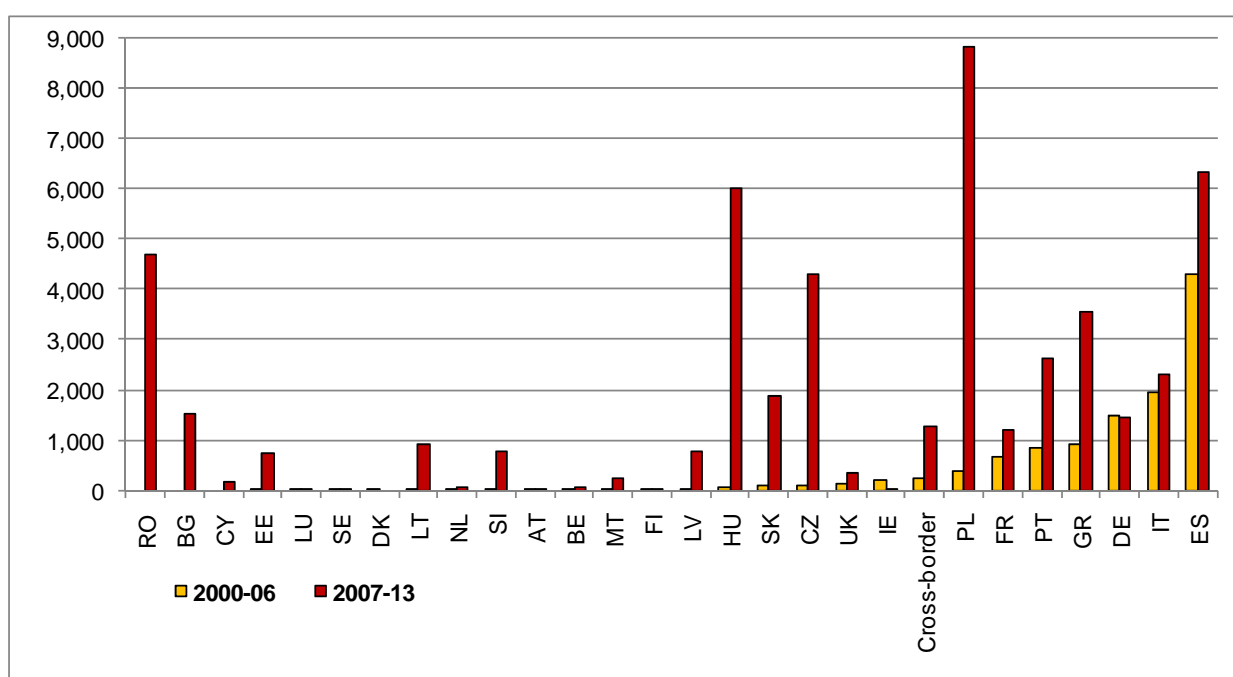
¹⁷³ In the previous programming period Denmark had the second largest proportion of SG(E)I funds dedicated to environmental sectors, after Telecommunications.

given by Finland, Spain and France, but this was much lower (if not negligible) for the remaining countries, especially in the EU-12. A certain importance is given to drinking water, sewage and purification subsectors by Austria, Greece, Lithuania, Latvia, Portugal, and the UK. Also, the Czech Republic, Germany and Hungary allocate more than 50% to sewage and purification. In contrast, Belgium, Estonia, Ireland and the Netherlands dedicate the largest part of environmental investments to the urban and industrial waste subsector.

Measures to prevent air and noise pollution received only minor amounts of funds, with the exception of Malta, Poland and Slovakia for air.

In the current programming period, the environmental sector has been enlarged, in order to include not only infrastructures but also measures to support environmental protection and to prevent risks¹⁷⁴.

Figure 8: Total allocation of ERDF (EUR million) to the Environment sector; 2000-2006 and 2007-2013



Source: Authors' processing of DG REGIO data

Analysis of country allocations at the subsector level clearly indicates that the **EU-12 concentrate their investment on environmental infrastructures**, particularly for the management and distribution of drinking water (i.e. Latvia and Slovenia), water treatment (i.e. Bulgaria, the Czech Republic, Hungary, Poland, and Slovakia) and household management and industrial waste (i.e. Cyprus, Lithuania, Malta, and Slovenia). **In contrast, the EU-15 focus their investments on the group of subsectors that has been more recently introduced: rehabilitation of industrial sites and contaminated land (i.e. the Netherlands and the UK), promotion of biodiversity and nature**

¹⁷⁴ The new subsectors as follows: Mitigation and adaptation to climate change; Rehabilitation of industrial sites and contaminated land; promotion of biodiversity and nature protection; promotion of clean urban transport; Risk prevention; Other measures to preserve the environment and prevent risks.

protection (i.e. Belgium), the promotion of clean urban transport (i.e. Ireland and Sweden), and risk prevention (i.e. Austria and Germany).

Some countries invest in both environmental infrastructures and in measures for the protection of the environment and mitigation of risks. These countries include Hungary and Malta from the EU-12, as well as Greece and Italy from the EU-15. For example, Malta distributes its funds across the subsectors of management of waste, risk prevention and the rehabilitation of industrial sites. Spain represents another exception to the highlighted pattern, since its priority is on water management, distribution and treatment.

Measures to control air and noise pollution, and to mitigate the effects of climate change, receive the lowest proportion across all EU Member States.

2.2.2.4. Energy

Energy infrastructure is the SG(E)I sector that receives the lowest amount and proportion of ERDF¹⁷⁵. In the period 2000-2006, this sector amounted to EUR 1,649 million in the Member States, and 2.75% of the total allocations to SG(E)I. The allocations by Portugal, Italy and Spain are the highest, with between EUR 226 and 387 million (Figure 9). In annual terms, the allocations by Poland are also significant. A large number of countries allocate less than EUR 10 million over the entire period. These countries include Cyprus, Estonia, Malta, Slovenia, and Slovakia from the EU-12, and Denmark, Finland, Luxembourg, the Netherlands, and Sweden from the EU-15. Yet, despite the relatively low allocation, in percentage terms, energy is a highly important sector for Luxembourg and Slovenia, which allocate 33% and 22%, respectively of the total SG(E)I funds, far exceeding the EU average. Austria is the only country that assigns the highest priority to energy in all the SG(E)I, with a proportion of 38%, after behind telecommunications.

In the period 2007-2013, the programmed funds for the energy sector increased by 10 fold (EUR 10,423 million) and the proportion among the SG(E)I sectors increased by three fold (6.32%). Poland, Italy and the Czech Republic are now the countries that invest the most in this sector through ERDF.

In percentage terms, the largest priority to this sector is given by a group of EU-15, not eligible for the Cohesion Fund. In fact, Austria and Ireland dedicate the largest proportion of funds to energy (45% and 30%). Furthermore, Luxembourg, the Netherlands, Sweden and the UK also allocate more than 20% of funds in SG(E)I. With the exception of Denmark, the lowest share is found in Cohesion countries; including Spain, Italy, Cyprus, Estonia, Greece, Hungary, Latvia, Portugal, and Slovakia.

Most of the EU Member States, including both the EU-15 and EU-12, focus the largest part of their investment on only one subsector. For example, renewable sources of energy are the priority for Austria, Finland, Malta, and Poland. Energy efficiency is important for Ireland, Latvia and the Netherlands. Denmark, Luxembourg, Portugal, Sweden, and Slovenia give priority to energy infrastructures. Finally, Spain and Greece give priority to electricity, gas, petrol, and solid fuel.

¹⁷⁵ In the programming period 2000-2006, the Energy sector was divided in 4 subsectors: Electricity, gas, petrol, solid fuel; Energy infrastructures (production, delivery); Renewable sources of energy (solar power, wind power, hydro-electricity, biomass); Energy efficiency, cogeneration, energy control.

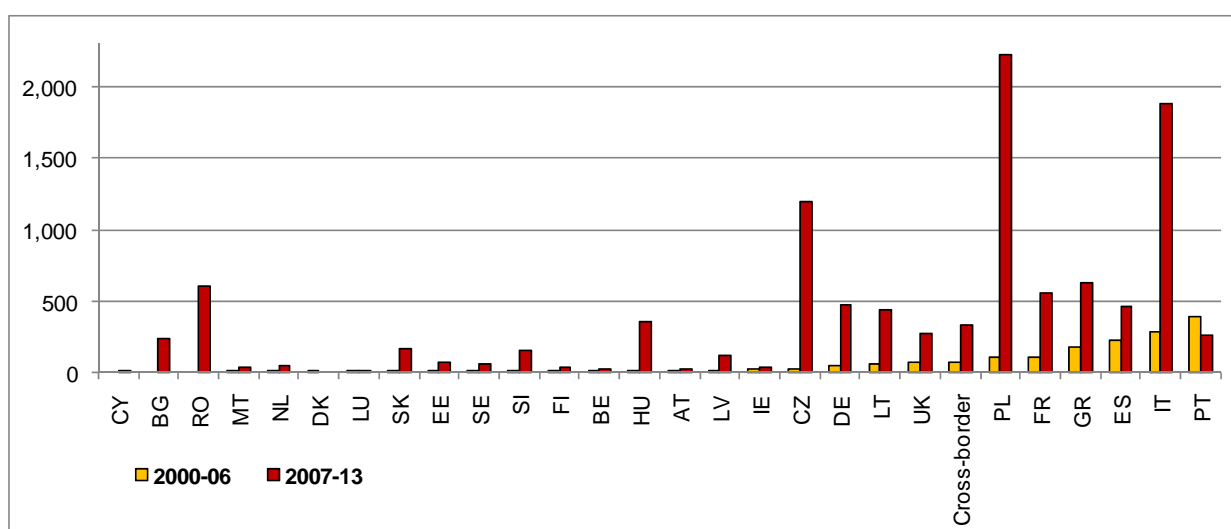
A minority number of countries spread the resources across 3-4 subsectors. They are Belgium, Estonia, France, Slovakia, and the UK.

On the average, the subsector that received the largest proportion between 2000 and 2006 is the renewable sources of energy, while the least relevant is the electricity subsector.

In the period 2007-2013, a different classification of subsectors is used, in order to distinguish investments by energy sources, and whether such investments concern the national or trans-European network¹⁷⁶.

Subsectors that received the largest share are energy efficiency and renewable energy, when considering the four subsectors within the energy source. Energy, deriving from solar and biomass sources, is the most frequently used by the EU Member States, particularly by Cyprus, Belgium, Austria, and Hungary. Very few countries still use ERDF funds for non-renewable energy sources, or national and trans-European infrastructures. Two examples may be mentioned; Spain invests in the electricity and natural gas /TEN-E) subsectors, in addition to solar renewable energy and energy efficiency, while Poland dedicates the highest share among the EU Member States to petroleum products.

Figure 9: Total allocation of ERDF (EUR million) to the Energy sector; 2000-2006 and 2007-2013



Source: Authors' processing of DG REGIO data

2.2.2.5. Transport

Transports represents the main SG(E)I sector funded by the EU Member States through ERDF. Between 2000-2006, the EU Member States received approximately EUR 33,789 million for transport, 80% of which was allocated by only four countries; specifically Spain, Greece, Italy, Germany, and Portugal (Figure 10). The EU-12 receives much lower

¹⁷⁶ Electricity/Electricity TEN-E; Natural gas/Natural gas TEN-E; Petroleum products/Petroleum products TEN-E; Renewable energy: wind; Renewable energy: solar; Renewable energy: biomass; Renewable energy: hydroelectric, geothermal and other; Energy efficiency, cogeneration, energy management.

sums since these states accessed the European Union only in 2004. When considering average annual allocation to transport, the allocation by Poland results in being larger than many of the EU-15.

In percentage terms, countries dedicating the highest proportion of investment in SG(E)I to transport (between 58% and 77%) are still the EU-15 (i.e. Ireland, Germany, Greece, and Spain), in addition to Poland and Slovakia. In contrast, Austria, Denmark and Luxembourg allocate less than 17% of SG(E)I funds in total.

In the current period, EUR 74,734 million are allocated to transport. Here, an inverse tendency may be highlighted, whereby **the annual allocation to transport has significantly increased by the EU-12 and decreased by the EU-15**. Poland, Hungary and the Czech Republic increased their allocated funds to transport by five, seven and tenfold, respectively in comparison to the previous period. The allocation of funds to transport by Spain and Greece are still among the highest in the EU, even though there has been a slight decrease, and the fact that they have been matched and surpassed by other Eastern European countries. The share of investment to transport as a proportion of all SG(E)I sectors is around 45%, which is 11% lower than that in 2000-2006. With the exception of Bulgaria and Romania, which did not receive ERDF funds between 2000-2006, the countries that decided to increase the share of ERDF funds dedicated to transport are Austria (+1.74%), Belgium (+2.63%), and most significantly, Estonia (+7.23%) and Slovenia (+24.07%). The proportions allocated by all other countries decreased; either modestly, such as Cyprus, Lithuania and Malta (a decrease of less than 2%) or significantly, such as Ireland (-56.39%), Greece (-22.27%), the UK (-20.43%), and the Netherlands (-19.68%). In fact, Denmark and Luxembourg decided not to allocate ERDF funds to transport between 2007 and 2013.

The transport sector may be divided into many different subsectors, indicating to which specific type of transport infrastructure the funds are allocated¹⁷⁷.

The types of infrastructures which are preferably financed by the EU Member States are roads. This includes motorways (for Greece), national roads (for Estonia), regional and local roads (for Hungary and especially Cyprus). In general, cycle tracks receive low or null investments, with the only exception of the Netherlands which allocate almost 20% of the total transport investment to this subsector. Rail and urban transport receive 11% and 9%, respectively over the total allocation to transport in the EU Member States. The highest proportion for rail is financed by Spain (31%) and Italy (36%), and for urban transport by Ireland (31%) and Latvia (32%). The remaining subsectors receive minor investments by the EU Member States, with few exceptions. One of the priorities for Austria during 2000-2006 were airports and ports over the Danube. Estonia expends 40% of funds on ports and waterways. Investments in multimodal transport are quite significant for Finland, Portugal and Netherlands. Intelligent transport systems, such as systems to introduce Information and Communication Technology to transport infrastructures and vehicles, are financed through ERDF by very few countries, and in a significant way only by Poland¹⁷⁸.

In the programming period 2007-2013, the generic subsectors "other roads" and "other transport infrastructures" are discontinued, and new subsectors have been introduced for motorways, railways, waterways and multimodal transport, to distinguish between national

¹⁷⁷ In 2000-2006 the subsector classification used by the EC was: Airports; Ports; Motorways; National Roads; Regional/local roads; Cycle tracks; Other roads; Rails; Waterways; Multimodal transports; Urban transport; Intelligent transport systems; Other transport infrastructures.

¹⁷⁸ In fact, Poland allocates more than 17% of its total investments to transport in this specific subsector.

infrastructures and trans-European connections. Moreover, the new subsector, Mobile rail assets (national and TEN-T), has also been introduced.

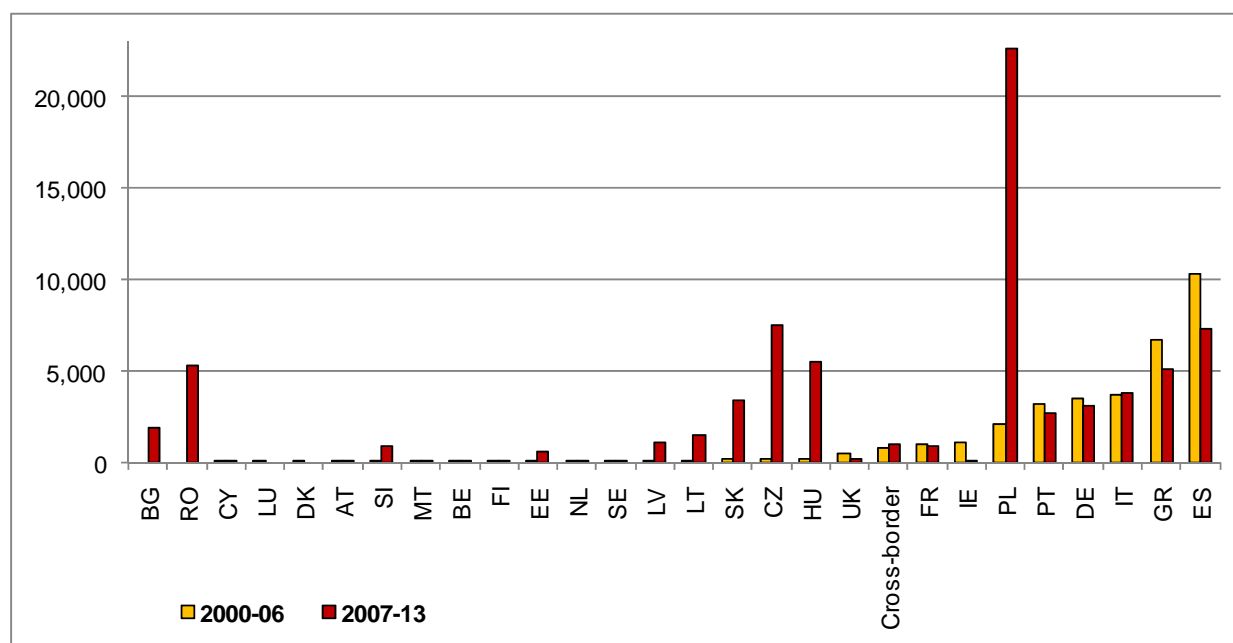
As in the previous period, roads are still the main priority for the Member States. The subsector receiving the largest proportion of funds (14% of the EU average) is represented by the trans-European motorways infrastructures. In particular, countries which preferentially allocate funds to motorways are mostly EU-12, but also Greece. Investment in TEN-T are generally higher than the corresponding national motorways (almost 6%). National roads are a priority for Ireland, Lithuania and Hungary; regional and local roads are a priority for Germany and Belgium; cycle tracks investment are still a high priority only in the Netherlands.

Both national and trans-European railways are even more important than motorways, since they receive 8% and 16%, respectively of the total transport funds. The EU-12 and Spain invest the highest share in the railways TEN-T subsector, while Austria, Italy and France prefer to invest in the internal rail networks.

Multimodal transport and ports also receive a considerable share of funds (about 8% of the transport sector). In particular, multimodal infrastructures are a priority for many of the EU-15, such as Belgium, the UK and Finland. In contrast, investment in ports is high for Austria and Cyprus.

Very few countries use ERDF funds to finance urban transport infrastructure and intelligent transport systems. The remaining subsectors have limited relevance for most countries. However, it is worth mentioning that Poland still invests a significant proportion to the intelligent transport system, together with Sweden and Austria, while urban transport seems to be a priority for Estonia, Latvia and the Netherlands.

In brief, even if the relevance given to transport infrastructures has decreased for almost all EU Member States, when compared to other SG(E)I sectors, transport still represents the SG(E)I, receiving the largest amount of ERDF funds. The largest investments have been allocated to the EU-12, while the EU-15 has tended to decrease their allocation to transport. At the subsector level, **railways and motorways are generally the main priority for most countries, with the EU-12 preferring the trans-European connections.**

Figure 10: Total allocation of ERDF (EUR million) to the Transport sector; 2000-2006 and 2007-2013

Source: Authors' processing of DG REGIO data

2.3. ERDF allocation for cross-border cooperation

Cross-border cooperation plays an important role in the economic and social development of the EU, as it contributes towards removing obstacles that prevent harmonious integration, and help develop effective economic and social cohesion of the territories across the European Community, and with neighbouring non EU countries.

The cross-border cooperation strategy was implemented in the 2000-2006 period through the INTERREG III initiative¹⁷⁹ and its three strands¹⁸⁰.

The priorities for INTERREG action in 2000-2006, listed in the Commission's Guidelines¹⁸¹, which are relevant for SG(E)I provision were: research cooperation, technological development, education, culture, communications, health and civil protection; environmental protection, energy efficiency and renewable sources of energy; basic infrastructure of cross-border importance (such as improvements in transport); promotion

¹⁷⁹ Guidelines were approved by the Commission on 28th April 2000 (C 143 of 23 May 2000)

¹⁸⁰ Strand A: cross-border cooperation in the strict sense, promoting integrated regional development between neighbouring border regions, with the scope of developing cross-border economic and social cooperation through joint strategies, for example, to encourage environmental protection and the improvement of transport.

Strand B: Transnational Cooperation aimed at promoting integration within the Union, through the promotion of development strategies for large groups of European regions. This strand encourages, for example, investment to stimulate balanced development of insular and maritime regions in the Union, or cooperation among regions belonging to the so-called "Atlantic Space" (i.e. Portugal, Spain, France, Ireland, and the UK). Strand C: Interregional Cooperation aimed at establishing large-scale networks to favour information exchange and share experience, to improve the effectiveness of regional development policies and instruments.

¹⁸¹ Official Journal C 143 of 23.5.2000

http://ec.europa.eu/regional_policy/sources/docoffic/official/communic/inter2004/226_en.pdf

of efficient and sustainable transport systems and information society on a transnational scale.

For the same period, other priorities have also been identified; however, these were not relevant for SG(E)I. Examples include: cooperation in legal and administrative fields; cooperation between citizens and institutions; technical assistance for the establishment of transnational partnerships.

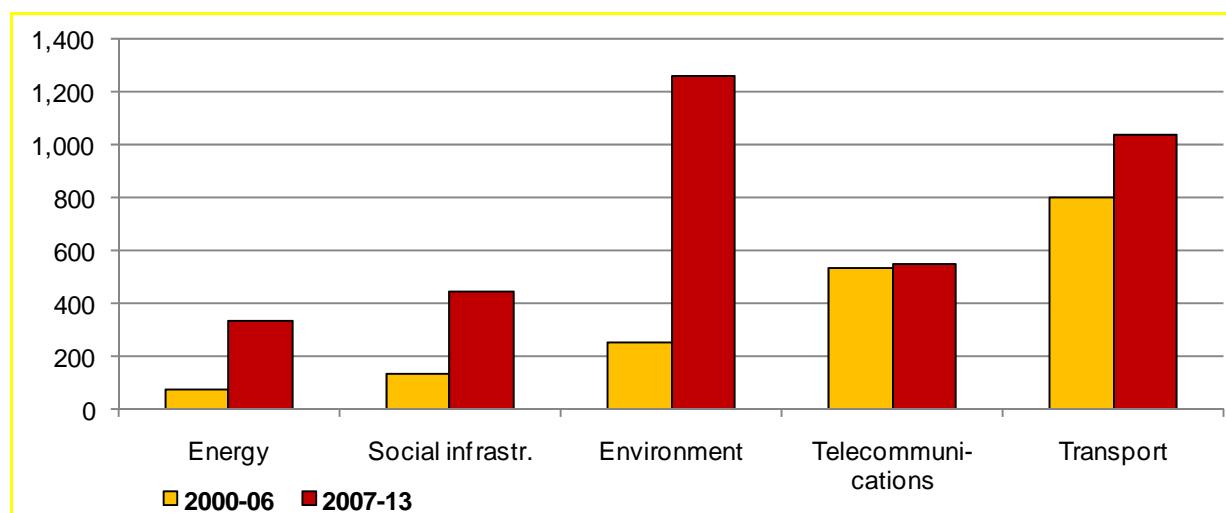
In the period 2007-2013, a specific objective of the cohesion policy has been introduced for cross-border cooperation and termed the European Territorial Cooperation Objective. INTERREG IV C is the main instrument, which is financed by the ERDF to develop interregional cooperation within the Union. The policy objective is structured around two priorities: innovation and the knowledge economy and environment and risk prevention. These priorities are reflected in the allocation of funds for cross-border cooperation programmes. The three strands of INTERREG have been considered for the 2000-2006 period to analyse the overall cross-border cooperation strategy.

The total amount of ERDF allocated to cross-border cooperation programmes in the period 2000-2006 is EUR 6,064 million. The distribution of such funds between the SG(E)I and other sectors is not balanced, as 70% are allocated to sectors other than SG(E)I. Within the SG(E)I sector, transport is predominant because the majority of countries receive EUR 803 million, corresponding to 45% of the total funds allocated in SG(E)I and 13% of total ERDF in cross-border cooperation. The second most important sector is telecommunication, which receives a higher proportion of funds than the average by the EU countries (30% of the total of SG(E)I and 9% of the total ERDF).

Environmental infrastructures appear to be a less important priority for cross-border cooperation initiatives. In comparison, this sector had primary or secondary importance for EU countries, with an average of 19% of funds in all SG(E)I sectors and 9% of the total ERDF funds. For the Cross-border cooperation programmes the environment receives just 14% of the total SG(E)I funds and 4% of the total ERDF funds.

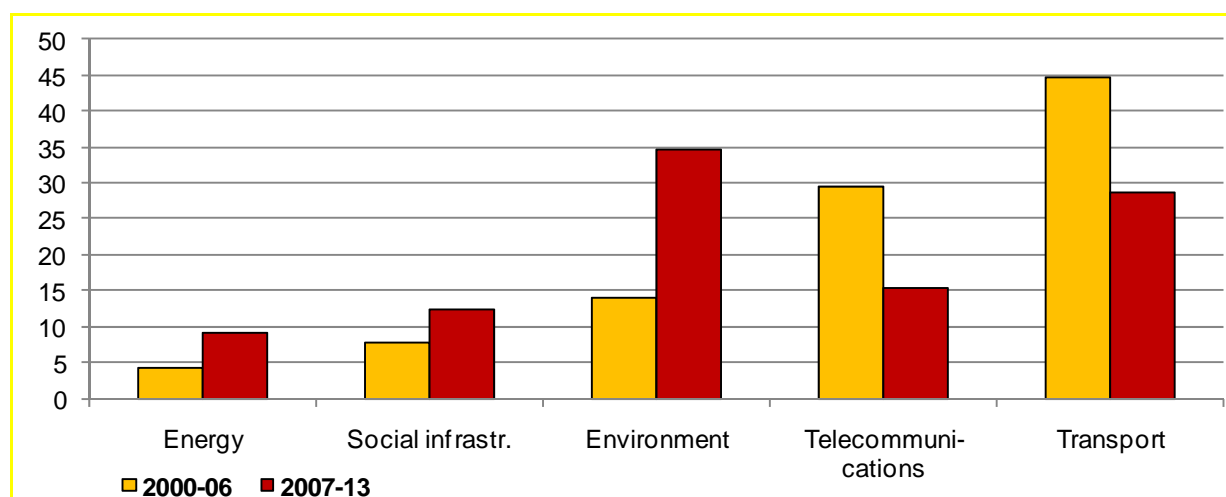
Social infrastructures and energy sectors have minor priority for cross-border cooperation, since they receive only 8% and 4% respectively of the total of SG(E)I funds, and 2% and 1% of the total ERDF funds in the 2000-2006 period.

Figure 11: Allocation of ERDF (EUR million) to cross-border cooperation for each SG(E)I sector; 2000-2006 and 2007-2013



Source: Authors' processing of DG REGIO data

Figure 12: Percentage share of ERDF allocated to cross-border cooperation for each SG(E)I sector as a proportion of the total SG(E)I funds; 2000-2006 and 2007-2013



Source: Authors' processing of DG REGIO data

In the current period (2007-2013), the total amount of funds designated to cross-border cooperation programmes increased to EUR 7,799 million. The proportion in SG(E)I fields also increased significantly to 46%, versus 54% in all other sectors.

Unlike the majority of EU Member States, the priority of cross-border cooperation is the environment, rather than transport, both in nominal terms (EUR 1,256 million versus 1,039 million) and in percentage terms (35% to the total of SG(E)I and 16% to the total of ERDF for environment, versus 29% and 13%, respectively for transport).

Environment is the sector where the highest increase of cross-border cooperation funds occurred. Apart from this, only the proportion of funds for energy and social infrastructures increased in relation to total SG(E)I and ERDF allocations, in comparison to the previous period. In contrast, the proportions of telecommunication and transport decreased in

relation to total SG(E)I allocations, while the proportions were maintained with respect to total ERDF allocations.

For the subsectors receiving the highest allocation of ERDF in the two programming periods under evaluation, considerations given at the sector level are as follows:

- Telecommunications: both in 2000-2006 and 2007-2013, the distribution of funds within the telecommunication sector is quite well balanced among all the subsectors, with none being of significant priority for the EU. As previously described, a similar pattern is shown for a group of Member States in the previous period and by the majority of Member States during the current period.
- Social infrastructures: in the current period, for which subsector classification exists, priority is being given to investments in social infrastructures, which cannot be included in any category (63% of the allocated funds in the sector). This is followed by expenditure in the health subsector (21%), while education infrastructures, which are the main priority for many countries, receive less than 14% of funds allocated to the sector.
- Environment: during 2000-2006, drinking water, urban and industrial waste, and sewerage and purification subsectors received approximately 80% of funds allocated to this sector. In contrast, air, noise and environmental infrastructures have minimal priority in cross-border cooperation programmes. During 2007-2013, risk prevention and other measures to protect the environment and prevent risks receive the largest proportion of funds. This contrasts with allocation patterns during the previous period, and with the allocation by many EU Member States in the same period, which give priority to other subsectors.
- Energy: for most EU countries the majority of funds allocated to the energy sector in the period 2000-2006 are invested in renewable sources. However, the proportion allocated by cross-border cooperation is much higher than the average of EU Member States, being approximately double the former: 69% versus 35%. Instead, energy infrastructure is the subsector to which cross-border cooperation allocates the lowest share of ERDF. In the current period, subsectors concerning renewable energy, and energy efficiency, receive the highest share of funds, similar to that for most of the EU Member States.
- Transport: general road infrastructures and motorways are the subsectors that absorbed the majority of transport funds during 2000-2006 (27% and 12%, respectively). Investment in rail infrastructures, which are high for many EU countries, are not particularly significant for cross-border cooperation, while waterways receive a higher share of funds than the average of EU Member States. In the programming period 2007-2013, regional and local roads, multimodal transport and intelligent transport system are the subsectors that are mainly financed through the ERDF to achieve the cross-border cooperation objective. Interestingly, these are not important subsectors for most of the EU Member States.

In brief, **the distribution of ERDF at the sectoral level for cross-border cooperation differs slightly in comparison to the distribution showed by most EU countries** in the previous subsection. In fact, telecommunications received the second largest amount and proportion of funds after transport in the period of 2000-2006, while the environment is the largest recipient sector in the current period. **At the subsector level, the priorities of the cross-border cooperation programmes in each sector are only consistent**

with those of the Member States for the energy sector, while for the other subsectors different patterns are highlighted.

The allocation of funds reflects the priorities identified by the Commission, and an increase in expenditure of SG(E)I sectors are highlighted, with priority given to the environmental sector, in particular to risk prevention.

2.4. Comparison between ERDF allocation and SG(E)I needs

2.4.1. Qualitative analysis of the relation between ERDF allocation and SG(E)I endowment

This section provides a descriptive comparison between the endowment of SG(E)I, as presented in section 2.1, and the ERDF allocation in the same SG(E)I sector, as presented in section 2.3. For each sector, a number of countries are considered in order to derive an illustrative picture of the relationship between SG(E)I needs and ERDF expenditure. A variable number of other countries, which provide inputs considered to be relevant for the implementation of the analysis at the sector level, are selected and examined.

The objective is to obtain an indication of whether ERDF allocation is consistent with the actual investment needs for SG(E)I. The results will be integrated by the analysis of strategic documents (i.e. the NSRF), and by quantitative analysis carried out in the following section.

2.4.1.1. Telecommunications

The analysis of telecommunications and information society endowment indicators has shown that a digital divide exists between the convergence countries, in particular the EU-12, and the rest of Europe. However, this sector is rapidly evolving, and all countries are converging towards the EU average. Regional differences are also decreasing, as new technologies spread across the national territory. National authorities may take action to complement this from the private market, and accelerate the development of telecommunications services through policies encouraging, for example, the construction of broadband networks.

The ERDF allocation trend confirms the interest of a selection of the EU-12 (such as Slovakia, Poland, and Romania) to increase investment in this sector. Consistency between ERDF allocation and SG(E)I needs is shown, for example, by Slovakia and Poland. However, **with the exception of Slovakia, telecommunication is not the main priority for the EU-12, with the proportion of allocated resources remaining very low.**

In contrast, **the highest share of ERDF in telecommunications is allocated by the EU-15, and the Nordic countries in particular; in other words, by the Member States that already have good provision of such services.**

Thus, given the limited relevance of ERDF in EU-12 investments in the ICT, and its importance in already well-endowed countries, **the ERDF allocation appears to be partially related to the ongoing reduction of the telecommunication gap across Europe.**

Box 4: Telecommunications (ICT)

COMPARISON BETWEEN ERDF ALLOCATION AND SG(E)I NEEDS IN EU COUNTRIES

In the 2007–2013 programming period, **Slovakia** is the new Member State that addresses the highest percentage (12%) of ERDF to the information society sector, corresponding to about EUR 1.163 million. These investments, promoting the development of ICT and related services, underline the Slovakian commitment to reduce the gap with western countries, and exploit the potential of telecommunications.

Poland has no specific need in the information and telecommunications sector, which is reflected by the absence of any priority in the allocated investment amounts. Instead, the funds are equally distributed between telephone infrastructure, ICT services and application for citizens¹⁸², SMEs¹⁸³ and trans-European ICT.

Accessibility and use of telecommunications in **Romania** is one of the lowest in Europe. In 2007-2013, Romania invests more in telecommunications than most other Member States (EUR 444 million). However, such expenditure corresponds to only 3% of total ERDF resources, which means the ICT sector receives the lowest share of funds in all SG(E)I.

There is also minimal correspondence between SG(E)I needs and ERDF allocation for **Latvia**. As for other EU-12, ICT basic infrastructures and services to citizens and firms require high investment to attain the EU average. However, a minor proportion of ERDF funds is allocated to the telecommunication sector, after transport, environmental and social infrastructures. From the subsector perspective, while the priority during 2000-2006 was on basic infrastructures, in the current period, almost all the EU funds are used for ICT. Investment is not allocated for the use of ICT by SMEs, even though Latvia has one of the lowest proportions of enterprises with Internet access.

In addition, **Greece** has major requirements with respect to the telecommunication sector. This country uses ERDF to finance almost all subsectors, with certain priority given to services and applications for citizens. However, the transport sector receives the largest investment, while telecommunications receive only about 13% of SG(E)I sectors in total, and 9% of the ERDF total. Such proportions have not varied between the previous and current programming period.

Denmark has no urgent telecommunications sector requirements, and the average level of ICT indicators already stand above the EU average. Yet, this sector receives the highest share of ERDF (57% of SG(E)I sectors in total during 2000-2006, and 100% in the current period). These funds are equally distributed to develop telephone infrastructures, ICT, services and applications for SMEs.

Sweden shows a similar pattern to Denmark. Notwithstanding the provision of telecommunication services is one of the highest in the EU, this is the sector in which Sweden invests the largest share of its ERDF funds, both in 2000-2006 and 2007-2013. The preferred subsector is telephone infrastructures (including the broadband network), as well as services and applications for SMEs.

Source: Based on Author processing of DG REGIO data

¹⁸² E-health, e-government, e-learning and e-inclusion.

¹⁸³ These include e-commerce, education and training and networking.

2.4.1.2. Social infrastructures

The indicators of social infrastructure endowment have showed that large gaps exist across Member States, with respect to education, health and childcare facilities. Unlike other sectors, differences in the provision of SG(E)I cannot be distinguished between the entire groups of old and new Members. In fact, the level of SG(E)I in some EU-12 is similar to that of some EU-15, and vice versa.

Instead, the ERDF allocation clearly implies that the EU-12 are more interested than the EU-15 in investing in social infrastructures, with education being the subsector that receives the largest financing through ERDF.

While in some Member States (such as Spain and the Nordic countries) there is consistency between identified needs and ERDF allocation, while in others, priority is given to subsectors where no particular gaps were shown by the examined indicators. For instance, childcare generally receives low proportions of funds, even in countries where investment seems urgent (namely the UK and eastern EU countries).

This qualitative analysis indicates that **correspondence between ERDF allocation and social infrastructure needs cannot be explained simply by the endowment gaps, and that other factors, not revealed by the analysed indicators, play a role.** In particular, the education subsector is extensive, and there may be country-specific factors that were not shown by the indicators, which promote the investments in that direction. In any case, it should be considered that additional public and private resources may contribute towards addressing national investment needs.

Box 5: Social Infrastructures

COMPARISON BETWEEN ERDF ALLOCATION AND SG(E)I NEEDS IN EU COUNTRIES

The social infrastructure sector in **Spain** needs significant investment in health, since the number of hospital beds, proportion of people with unmet medical needs, and availability of medical staff are all below the EU average. After education, the health sector receives the second largest share of ERDF (37%).

Funds have not been allocated to this sector by **Denmark, Finland and Sweden**, given the high efficiency of their social systems. In contrast, the endowment indicators suggested a negative situation in the **UK**, with the level of childcare facilities, health development (in terms of number of hospital beds and proportion of medical staff), and medical satisfaction being below the European average. However, all the ERDF resources that are designated to the social sector are to be used for the education infrastructure. This means that if the UK intends to invest in healthcare and childcare, it must rely exclusively on national resources and other sources.

The SG(E)I endowment analysis has shown that the **Netherlands** needs a degree of investment to reach the level of the other Nordic countries, particularly where the number of hospital beds and health personnel are concerned. In fact, in 2000-2006 the Netherlands invested a large share of ERDF in social infrastructures, but this share has been reduced substantially in the current period. Moreover, the subsector allocation reveals that most investments are directed towards education, rather than health infrastructures.

The allocation of ERDF for social infrastructures by **Hungary** is particularly high at over 33% of SG(E)I sectors in total between 2004 and 2006, and more than 16% in the period 2007-2013. Despite a reduction in the proportion being allocated, the amount of funds increased significantly, rising from EUR 74 million to EUR 356 million per year. Health is the subsector receiving most of the funds in the current period, even if only the indicator that reveals a gap requiring filling is the presence of medical staff. In fact, the number of hospital beds is already above the EU average, and the proportion of people with unmet medical needs is not particularly high.

Poland is one of the countries that is allocating the largest proportion of funds to social infrastructures, making it the first of the EU-12. In 2007-2013, Poland allocates only 1.5% of its total expenditure in social infrastructures to childcare facilities. Such an allocation directly contrasts with the country's investment needs. Poland has the least developed system of formal childcare in Europe, both for children under three years and for children aged between three years to the minimum compulsory school age. In contrast, Poland has selected to focus on the development of its health infrastructure (35% of funds in the sector), even though the number of hospital beds is good, few people declare unmet medical needs, and the ratio of medical personnel to inhabitants is relatively low.

Despite its investment needs being among the highest in Europe, **Romania** allocates less than 4% of ERDF to social infrastructures. Childcare facilities are underdeveloped, and the quantity of hospital beds and medical personnel is unbalanced among the regions, with Bucharest having a good provision of services and the remaining regions lagging behind. Moreover, declared unmet medical needs are high, suggesting dissatisfaction among citizens. Furthermore, the distribution of funds among subsectors does not completely reflect the country's needs, since childcare facilities need money and 0% of ERDF is used for them.

Source: Authors based on processing DG REGIO data

2.4.1.3. Environment

The EU promotes the setting of goals through directives¹⁸⁴ to address the investment needs in the environment sector. The major investment need for environmental protection is localised in the EU-12. Such a pattern is confirmed by the sectoral distribution of the ERDF, with the highest increase of funds for the environmental sector occurring in the EU-12.

Clear consistency between ERDF allocation and SG(E)I needs emerge in some countries, such as Estonia, Malta, Romania and, in part, Bulgaria. However, in other cases (such as Austria and Poland) the investment gaps that are detected from the analysed indicators do not appear to be directly correlated with the amount of resources that are actually invested.

Hence, **comparison seems to indicate that a country may either have other priorities than those suggested by the infrastructure endowment, or that existing gaps may be filled by other resources**, such as the Cohesion Fund (in addition to national and private investments).

¹⁸⁴ The Drinking Water Directive (98/83/EC), the Urban Waste Water Treatment Directive (91/271/EEC), the Landfill Directive (99/31/EC), and the Directive on Electricity Production from Renewable Energy Sources (2001/77/EC).

Box 6: Environment**COMPARISON BETWEEN ERDF ALLOCATION AND SG(E)I NEEDS IN EU COUNTRIES**

Estonia has increased the allocation of funds substantially in environmental protection. The proportion of SG(E)I funds that are dedicated to the environment rose from 2.5% in 2004-2006 to 36% in the current period, even higher than the share dedicated to transport infrastructures. The allocation of these funds is focused specifically on the management and distribution of drinking water, which is actually a priority in Estonia, and on wastewater treatment.

Malta is also using a large share of funds in infrastructures for the environmental sector (54% in 2004-2006 and 44% in 2007-2013 of the total of SG(E)I sectors), as a result of recognising the huge investment needs to comply with EU directives, and reach the EU average. Almost all subsectors receive funds; air quality (especially in the previous programming period), wastewater treatment, the rehabilitation of industrial sites and contaminated land, and the management of household and industrial waste.

Romania needs to improve the quality of its water distribution network, and the number of wastewater treatment plants, which is consistent with the ERDF allocation in the period 2007-2013. Of the ERDF resources used in the environmental sector, 30% is dedicated to the management and distribution of drinking water, while an additional 30% is invested in wastewater treatment. **Bulgaria** has the same investments needs as Romania, but in this case the largest share of funds is used only for water treatment, with minor importance being given to the management and distribution of the water subsector.

Even though **Austria** does not have any significant gap to be filled in the environmental services and infrastructures, the proportion that it dedicates to this sector is high in both programming periods, after the energy and telecommunication sectors. However, the subsector priorities have changed from one period to the next; while 95% of funds in 2000-2006 were allocated for drinking water, sewerage and purification, 100% of funds are now used for risk prevention.

Poland dedicates an increasing share of ERDF to the environmental protection sector (12% in 2004-2006 and 22% in 2007-2013), which is allocated mainly to wastewater treatment projects, the promotion of clean urban transport, and the management of household and industrial waste. Decreasing importance is dedicated to the management and distribution of drinking water (24% in the previous period and less than 6% in the current one), despite the fact that water demand is a great challenge in Poland, since its water supply is below the future expected demand¹⁸⁵.

Source: Authors based on processing DG REGIO data

¹⁸⁵ European Commission 2005.

2.4.1.4. Energy

The EC first set the targets¹⁸⁶ and then the investment needs for the proportion of renewable energy in the Member States. With few exceptions, most European countries must increase the production of clean energy.

Comparison between the needs and ERDF allocation in this sector shows that **countries which already invested resources in the production of renewable energy in the past continue to use ERDF funds in this direction**, even when the EU targets have already been met. Instead, **countries where the share of green energy is small**, according to the indicators, **still use part of the ERDF resources in traditional energy sources**.

Box 7: Energy

COMPARISON BETWEEN ERDF ALLOCATION AND SG(E)I NEEDS IN EU COUNTRIES

SG(E)I needs to guide the allocation of funds in the energy sector of **Malta**, with funds being mainly allocated for the production of energy from renewable sources (wind and solar). In fact, the proportion of energy produced from renewable sources is extremely low.

The proportion of electricity generated from renewable energy sources is also low in the **UK**, and therefore all ERDF resources in the period 2007-2013 are allocated in projects to increase the proportion of renewable energy, and the development of energy efficiency.

Countries, such as **Poland, Portugal** and **Lithuania**, still rely on natural gas, non green electricity and petroleum products. The programmed investments seem to push towards a differentiation of energy sources, by allocating a certain part of ERDF funds for the promotion of renewable energy and the development of energy efficiency.

In **Romania**, 42% of investment in the energy sector is allocated to the promotion of energy efficiency, cogeneration and energy management, while 32% is designated for the development of renewable energy, particularly the use of hydroelectric and geothermal sources. This contrasts with the fact that the Romanian proportion of renewable electricity is already one of the highest in Europe.

Source: Authors based on processing DG REGIO data

2.4.1.5. Transport

The allocation of funds in transport sector for the period 2007–2013 indicates that priority has been given to promote the Trans-European Network (TEN-T) of motorways and railways in the peripheral Member States (such as Spain, Greece, Bulgaria, the Czech Republic, Poland, and Lithuania). **The promotion of TEN-T infrastructures**, which aim to close the gaps across European countries, **is consistent with the accessibility needs of Member States and the objective of the Commission to reduce divergences** in terms of per capita GDP between convergence countries.

¹⁸⁶ Directive on Electricity Production from Renewable Energy Sources (2001/77/EC).

However, the Commission and national authorities have not neglected existing regional infrastructure gaps in national and local transport, understanding that these gaps may prevent adequate connection between rural and peripheral areas, and in turn European corridors. This is confirmed by the significant proportion of funds that are allocated for projects concerning internal roads.

In some cases, (such as Poland, Finland and Ireland) **ERDF allocation is not completely consistent with the transport and accessibility national needs**, but other sources of public or private funding may also play a role in promoting transport infrastructure, and help address the infrastructure needs.

Box 8: Transport

COMPARISON BETWEEN ERDF ALLOCATION AND SG(E)I NEEDS IN EU COUNTRIES

Belgium has one of the highest densities of transport and levels of potential accessibility in Europe, for all the main modes of transport. In the period 2007–2013, EU funds are almost equally distributed in projects for the strengthening of regional/local roads, regional/local inland waterways and multimodal transport. This is justified by the growing levels of traffic and mobility in the centre of Europe, in which Belgium occupies a strategic position.

Notwithstanding its excellent motorway network, the density of roads in **Germany** is below the EU average. This is reflected by the allocation of ERDF (in both programming periods), which gives priority to investment in regional and local roads. Investments for the development of the railway network (internal and TEN-T) are also consistent with the infrastructure gap of certain German regions, and with the EU objective for increased accessibility of east European Member States.

The description of investment needs in **Romania** shows a very low level of motorway, road and railway density compared to the EU-27 average, and with respect to the other EU-12. In Romania, the largest proportion of funds in the transport sector is allocated to the trans-European and internal railways, motorways and other national, regional and local roads. This investment choice is consistent with the transport needs of Romania.

Latvia differs from the other EU-12 in many ways. It is the only country where EU transport priorities are on national railways and motorways, instead of trans-European rail and road connections. Latvia has only around 70 km of motorways, and is below the average EU-27 density for railway lines. Therefore, its first objective is to promote internal infrastructures as a precondition for a balanced national and regional development.

In **Poland**, transport is promoted above other kinds of infrastructures. From 2004 onwards, priority is given to railways over other subsectors, even though the rail network density is already high in comparison to internal roads and trans-European motorways. A smaller proportion is instead invested in the development of the internal motorway network, as the density of motorways in Poland is extremely low.

Finland is an example of peripheral country suffering from a lack of potential accessibility, rather than a homogeneous regional density of infrastructure in transport, particularly with respect to motorways, roads and railways. The ERDF allocation is consistent with these needs, emphasising the development of the high speed trans-European railway network, as well as national and regional roads. Finland also needs to strengthen its air transport, both internally and across Europe. In both programming periods, the ERDF does not contribute towards filling this gap; investment will be financed by national resources only or other sources.

The lack of an adequate motorway and rail network in **Ireland** reduces its accessibility. However, the transport sector is not considered a priority, as in the current period it receives much less funds than in the previous period. In fact, funds are mostly concentrated on the national roads subsector. Railways have secondary importance, while motorways do not receive funds from the ERDF.

Source: Authors based on processing of DG REGIO data

2.4.2. Analysis of investment priorities in NSRFs

Beyond the strategic community guidelines, and the endowment gaps shown by the analysis of different indicators, the responsibility of the Member States in identifying the need for SG(E)I, and how to arrange for their provision is crucial. This need should already be visible in the NSRF strategy of each country. NSRFs set out the investment priorities for the new generation of regional and sectoral programmes to be supported by the EU across the seven-year period of 2007–2013. NSRFs draw inspiration from the priorities adopted by the Member States in October 2006 in the “CSG for Cohesion”.¹⁸⁷ The EC adopted NSRFs for all 27 Member States on 8 October, 2007.

The overview of the NSRFs confirms that Cohesion policy will make a decisive contribution to the Strategy for growth and jobs over the period 2007–2013. It shows that the EU budget is the major source of investment for boosting economic growth and strengthening job creation, modernising and diversifying economic structure, improving the competitiveness of the regions, and supporting macroeconomic stability.¹⁸⁸

The attention dedicated to SG(E)I in these documents also depends on numerous factors, such as the targeted priorities of each Member State and the tradition a Member State has towards SG(E)I. For example, France has always protected its “*services publics*”, even though some sectors have opened up to competition. Denmark has an NSRF with a horizontal approach that focuses on “triggers to growth” instead of a more common sectoral approach. Indeed, the majority of countries for the period 2007–2013 seem to prefer sectoral division.

It is noticeable that newcomers have detailed NSRFs, with priorities clearly deriving from their obligation to comply with EU rules and, in general, a wide provision of SGI. As an illustration, four out of six priority axes in the Estonian NSRF directly address the provision of SG(E)I. Therefore, the Estonian NSRF strongly emphasises the role of SF in supporting the modernisation of the basic infrastructure that is needed for the provision of high quality public services, as well as SGI including water resource management. Promoting universal

¹⁸⁷ Council decision of 6 October, 2006 on community strategic guidelines on cohesion (2006/702/EC).

¹⁸⁸ MEMO/07/419.

access to public infrastructure, and basic services for all, is a horizontal theme in almost all priority axes, and one of the main focuses of the NSRF in Estonia, and more generally in east European Member States and their Operational Programmes (OPs).

In some cases, the NSRF might offer a framework for the development of national priorities but other proceedings are sometimes preferred. For example, with respect to energy, the NSRF for Portugal focuses on solving the problem of the intensive use of traditional sources and promoting sustainability and renewable energies. Nevertheless, the largest increase in alternative and renewable energies in Portugal took place outside the NSRF through cross-subsidising payments for these energies with a so-called special regime.¹⁸⁹

An NSRF may also have a more political purpose, such as in the UK. Energy, which is one of the SG(E)I, is recognised as having the potential to strengthen the relationship between the Republic of Ireland and Northern Ireland by promoting collaboration in the development of an energy infrastructure to develop alternative and sustainable sources of energy.

Member States, such as Austria, Denmark and the Netherlands, have adopted NSRFs with no specific provision regarding the issues of SG(E)I, but their Operational Programmes may mention SG(E)I-related sectors. One example is the OP for the *Bundesland* of Styria (Austria), which mentions the environmental sector in the strengthening of the attractiveness of regions and municipalities. In particular, the following investments are mentioned: the dissemination and commercialisation of energy and environmental technologies, the strengthening of energy efficiency and the implementation of innovative pilot projects in the area of environmental technology. Finally, it is interesting to mention the Italian performance reserve scheme for the period 2007–2013, as an example of how specific arrangements for SF management may influence national approaches to the provision of SGI (see Box 9).

Investment priorities, as described in the strategic documents, may contribute towards explaining the correlation between SG(E)I needs and ERDF allocation. In particular:

- in countries where **Telecommunications** provision is already above the EU average, the NSRFs stress the importance to continue investments in this sector, and further increase their national scientific and technological intensity. Denmark, which may be taken as an example of excellence in this field, considers innovation and ICT development to be a key priority, with advantages in terms of competitiveness and efficiency. Sweden gives importance to the development of information society, as a means to allow people to work, participate in society and use public and private services, regardless of where they live; hence, telecommunications favours the convergence of rural and remote regions.
- For the **Social infrastructures** sector, the Lisbon strategy which gives particular relevance to the development of education and training, justifies the strong emphasis that is placed on the education subsector. Such a priority is reflected in many NSRFs (in the UK for instance), and by the allocation of EU funds. The homogeneous distribution of health and childcare facilities, across the regions, is a priority especially for the Cohesion countries (e.g., Poland, Romania and Spain).
- All NSRFs consider the **Environmental and Energy** sectors as specific or horizontal priorities for sustainable development. These priorities derive from the necessity to

¹⁸⁹ The market for the provision of electricity is totally free in Portugal, with a public electricity system and an independent electricity system. The non-binding electricity system and the special regime producers form the independent electricity system.

comply with Communitarian directives, and from the acknowledgement that investments in environmental protection and renewable energy are advantageous in terms of competitiveness and growth. For this reason, Romania invests a high proportion of ERDF in renewable energy despite the proportion being already above the EU average. Romania schedules an increase in energy efficiency and security of supply in the context of combating climate change. This is considered a factor that could support the creation of an innovative and eco-efficient productive system that directly impacts on national economic competitiveness.

- **Transport** infrastructure development is a priority (explicit or implicit) of all NSRFs. Investment in transport is encouraged for a number of reasons such as the link with economic development, the need to increase the accessibility of peripheral regions or of the country with the rest of Europe, and also recognition of the importance of the transport network to increase regional attractiveness, and hence tourism (such as Poland).

Box 9: The Italian performance reserve on SGI

THE ITALIAN PERFORMANCE RESERVE ON SGI

To improve public spending, a performance-oriented approach was introduced by SF regulation (EC Reg. 1260/1999 Article 44) during the 2000–2006 programming period. According to this approach, Member States were obliged to establish a “performance reserve”, which was based on the principle that a percentage of the SF, established at a community level, was withheld at the beginning of the programming period and allocated after a mid-term evaluation, provided the programmes are judged to be performing well on the basis of their score against a range of measurable indicators.

This principle has been confirmed in the current programming period, but the conditions of its implementation have changed drastically. According to Article 50 of the general regulations on SF (EC Reg. 1083/2006), Member States are no longer obliged to establish such a reserve, but should decide their own initiatives to establish a “national performance reserve”. Moreover, no guidelines have been provided to assess the performance of the programme, in view of the allocation of the performance reserve.

Under this new flexible framework, the Italian government decided to establish a “national” performance reserve, and allocate it to the SGI programmes that were judged to be performing well, particularly in the fields of secondary education, childcare, elderly assistance, water supply and urban waste management, which are considered key priorities for regional development in Italy. Although the amount of financial resources directed to the regions for these objectives is not substantial (0.60% of national public capital spending or 1.50% of public capital spending directed to the south), the system allows other national resources to be channelled towards the same objectives. However, not all Italian regions may compete for the allocation of this reserve. Only the southern regions of Italy (Campania, Basilicata, Puglia, Calabria, Sicilia, Sardinia, Molise, and Abruzzo) are involved in the scheme, since they are judged to be lagging behind in the provision of such public services.

The performance of these eight regions is judged according to 11 indicators, which measure the levels of service provided to citizens. Through a partnership between regional governments and central administrations, a target value, has been set to be achieved by 2013 for each of these indicators. For all the regions, a single target has been selected to achieve a minimum level of services provision, and thereby ensure the equity of opportunity of access to all citizens.

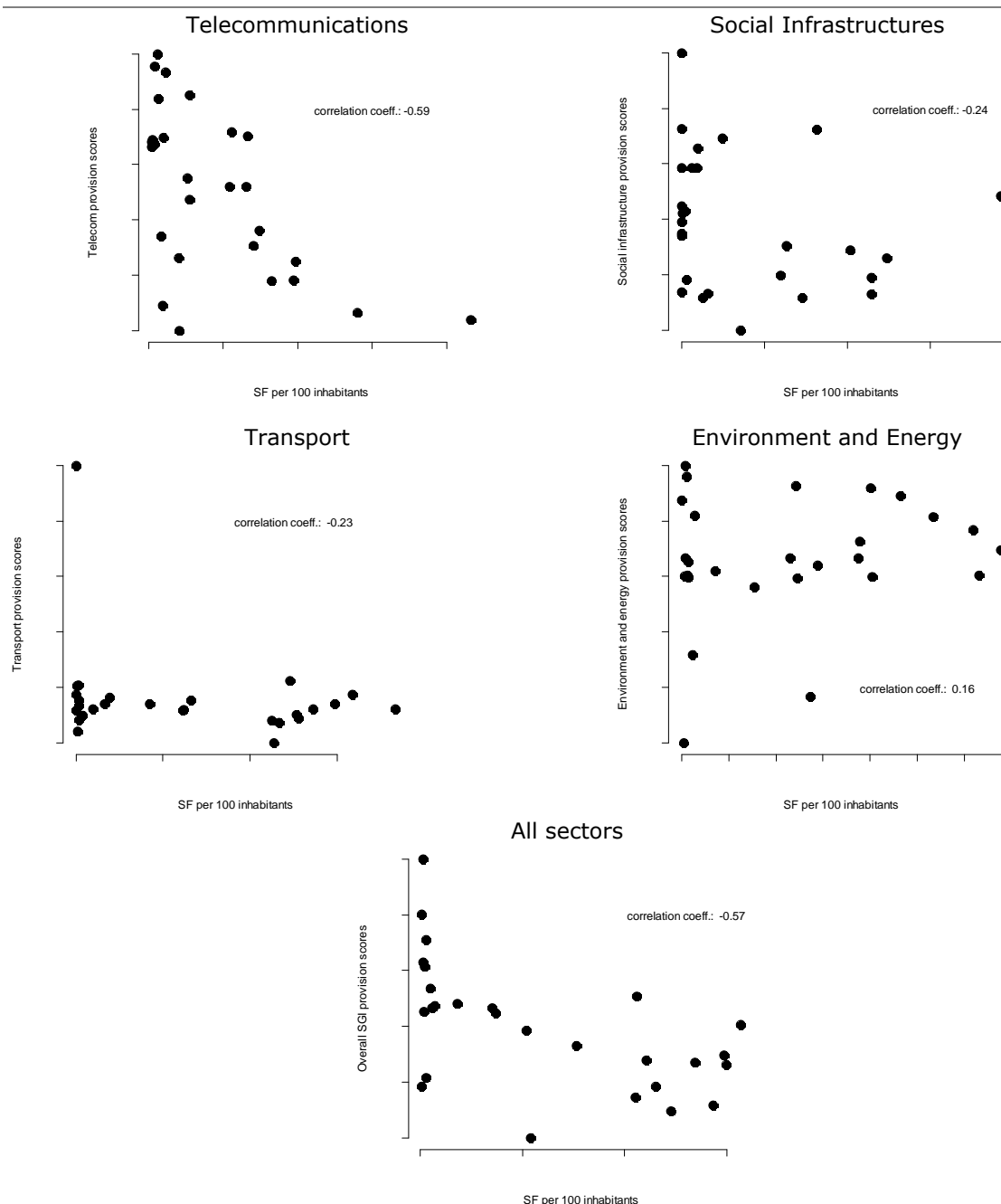
The regions concerned, drew up an action plan in which it was defined how they intended to reach the targets. The allocation of resources is planned to occur in two stages, which follows an intermediate assessment that was carried out in 2009, and a final assessment planned for 2013.

Source: Authors

In conclusion, the investment priorities recognised in the NSRFs and guiding the allocations of EU funds are an important instruments to better understand the relation between the allocation of resources and investment needs. In some cases, **NSRFs help clarify the allocation choices of a country, which at first sight may appear inconsistent with the endowment provision shown by the indicators.**

2.4.3. Quantitative analysis of the relation between SG(E)I endowment and ERDF allocation: correlations

As stated previously, the allocation of SF may be better evaluated in relation to the provision of SGI. For this purpose, the provision scores for 2006 that were calculated in section 2.4.1 are compared with 2007-2013 SFs for each sector, and for the sectors overall (Figure 13). On the horizontal axis, we plot the per capita amount of SF expenditure, while on the vertical axis we show the level of provision of SG(E)I. The main result is that there is a general negative significant correlation (Figure 13, All sectors), in which the overall Pearson's correlation coefficient is equal to -0.57.

Figure 13: Pearson's correlation coefficients and scatter plots of country SG(E)I provision scores and total SF per 100 inhabitants

Source: Authors' processing of Eurostat data

This fact may be interpreted as follows: SFs are allocated wherever there is lack of SGI provision. When considering individual sectors, this is also true for the telecommunication sector (Figure 13, Telecommunications) and, with less intensity, for social infrastructure and transport sectors. However, this does not hold true for the environment and energy sector, in which the Pearson's correlation coefficient is positive. This apparently puzzling result may be linked to the qualitative analysis in the previous section, which linked SF expenditures with NSRFs. In particular, high spending in the Energy and Environment sectors may be linked directly to energy saving measures and environmental protection, and may be high even when the provision is good.

2.4.3.1. BetweenSector analysis

For cross-sectoral relationships at the country level, the inter-sector Pearson's correlation coefficients of country SG(E)I provision scores and SF for all the sectors considered are shown in Table 4 and 5. These results indicate that countries with a high level of provision of SG(E)I in one sector tend to have a good level of endowment in other sectors as well. For the provision scores, the highest correlation occurs between telecommunication and social infrastructure provisions. The other coefficients are close to zero, and reveal no relevant association between SGI provisions. In contrast, SF are all strongly and positively correlated, ranging between 0.63 (Telecommunications - Social infrastructure) and 0.90 (Transport - Energy and Environment). The high correlation of Transport with Energy and Environment may be explained by the fact that usually these programmes are closely related and jointly financed. This indicates that the level of spending by the SF in different sectors is positively related.

Table 4: Pearson's correlation coefficients of country SG(E)I provision scores between sectors– 2006

	Telecommunications	Social Infrastructures	Environment and Energy	Transport
Telecommunications	1	0.54	0.03	0.14
Social Infrastructures	0.54	1	0.26	0.08
Environment and Energy	0.03	0.26	1	-0.10
Transport	0.14	0.08	-0.10	1

Source: Authors' processing of Eurostat data

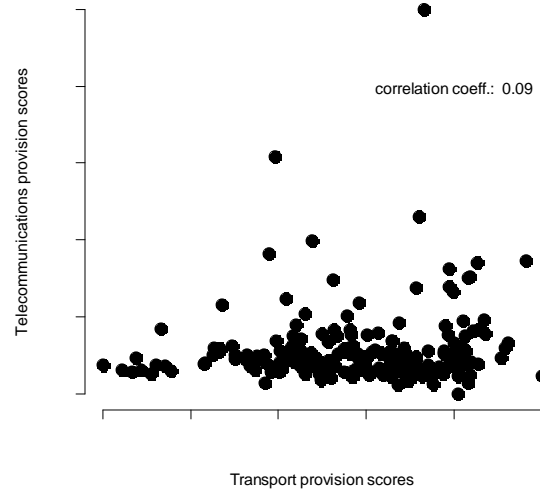
Table 5: Pearson's correlation coefficients of country total SF between sectors– 2006

	Telecommunications	Social Infrastructures	Environment and Energy	Transport
Telecommunications	1	0.63	0.83	0.64
Social Infrastructures	0.63	1	0.76	0.82
Environment and Energy	0.83	0.76	1	0.90
Transport	0.64	0.82	0.90	1

Source: Authors' processing of Eurostat data

Figure 14 shows a scatter plot of regional-level SG(E)I provision scores for telecommunication and transport sectors, together with the Pearson's correlation coefficients. A difference with the corresponding country-level correlation coefficient was not found (0.09 for regional-level correlation and 0.14 for country-level correlation).

Figure 14: Scatter plot of SG(E)I regional provision scores and Pearson's correlation coefficients between the telecommunication sector and transport sector - 2006



Source: Authors' processing of Eurostat data

In conclusion, the results of the qualitative and quantitative analysis of SG(E)I provision and SF expenditure highlight a general negative relationship, indicating that sectors and areas in greater need in terms of SG(E)I, indeed require the investment of more EU funds.

3. CONTRIBUTION OF SG(E)I TO COHESION POLICY OBJECTIVES: EVIDENCE FROM CASE STUDIES

KEY FINDINGS

- The case studies analysed show the **significance of the contribution of SF to essential facilities and infrastructures necessary to provide various SGI**. Those investments are meeting the fundamental expectations of European citizens and stakeholders.
- Several of the considered projects have extended **the coverage of the considered service; however, this is rarely the main aim of the concerned projects**, either because of sectoral specificity or because universal access has already been secured. **Most of the projects are expected to improve service quality or efficiency**. Efficiency gains depend on the sectors concerned and result from technical improvements, economies of scale and improved accessibility.
- Some of the case studies are centred on **social inclusion objectives and deal with disadvantaged groups such as migrants, women and the elderly**. In some cases, adverse effects leading to actual exclusion risk to materialise if no counter or accompanying measures are adopted. In several projects where the primary objective was not to target a disadvantaged category of the population, attention was paid to ensure such groups were not discriminated regarding access to services.
- **In most of the case studies, the services are affordable**. However, this is a delicate outcome to reach without endangering the overall sustainability of the concerned projects. Different mechanisms, such as price differentiation or subsidies, contribute to preserving such affordability while maintaining sustainability. The recourse to national/local taxation also plays an important role.
- **Geographical remoteness is a strong disincentive for infrastructure and service provision for the private sector and this calls for significant public interventions**. Projects implemented in such areas provide essential quality of life and environmental improvements. The effort is to create the preconditions to attract investment and foster local entrepreneurship.
- Intra-regional disparities are relevant mostly in terms of an urban-rural divide. Projects implemented in **sub-regional rural areas** belonged to a broader strategy of offering renewed, high quality and advanced services. The aim is **to enhance territorial attractiveness to rebalance the inequality of access towards the urban centres and mitigate migration phenomena** (intra-regional disparity). To attract businesses and people, public services should be of a high standard.
- **Cross-border projects are characterised by more complex architecture and legal, technical and economic barriers**. Cohesion policy offers an institutional framework and a range of common instruments that can help overcome these barriers.

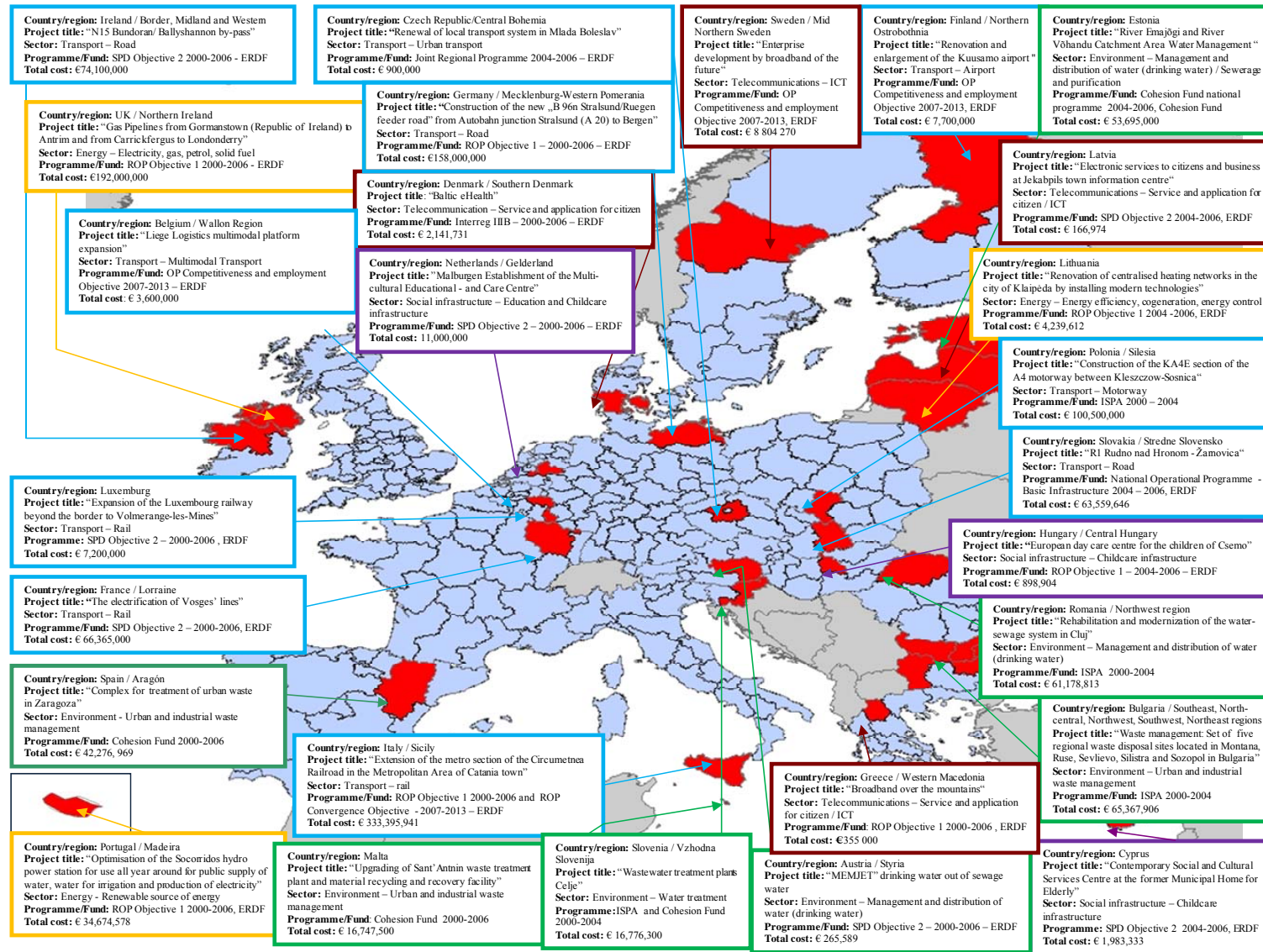
- Multi-level governance, stakeholder consultation and PPP characterise the governance procedures of the projects selected. Evidence suggests that **in a multi-level governance context, clear political leadership is necessary to ensure subsidiarity and coordination** by regulating the roles, responsibilities, powers and forms of intervention of each partner.

The aim of this chapter is to provide evidence of how the financing and provision of SG(E)I can help achieve the Union's objectives and how the SF support is relevant for improving the quality and efficiency of a number of SGI. Evidence will be provided by an in-depth analysis carried out across the 27 Member States through 27 case studies. In particular, the projects analysed concern the financing of an infrastructure (defined as the basic facilities and installations needed for daily life) co-financed by the SF in the 2000–2006 and 2007–2013 programming periods in the sectors of transport, environment, telecommunications, social infrastructure and energy.

The link with the general service objectives was a key element to identify the projects to analyse. However, a number of additional criteria have been taken into account during the selection process. A detailed description of the methodology for case study selection is provided in Annex III.

An overview of the geographical coverage of the analysis carried out is provided by the map below. As shown, examples of projects financed in the most peripheral and sparsely populated areas (e.g., Portuguese, Finnish and Greek case studies) of the EU have also been considered to provide a wide understanding of the differences across regions in the definition, provision and financing of public services.

Map 9: Map of the selected projects

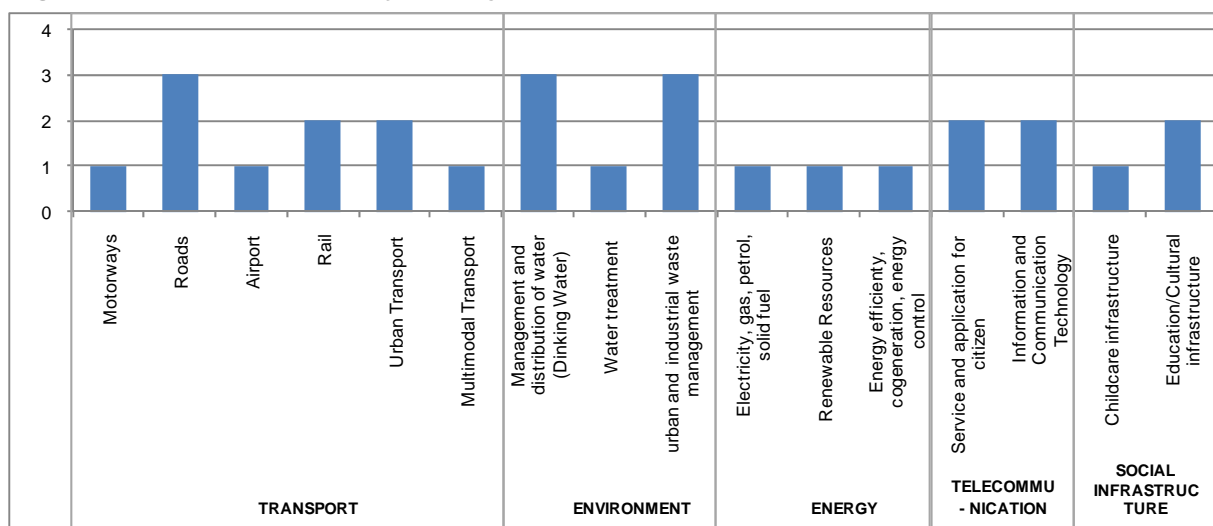


Source: Authors

3.1. Overview of the selected projects

The selected 27 projects cover a wide range of infrastructures that improve and enhance different public service objectives. A brief description of the project investment now follows. A large number of projects dealt with the transport and environment sectors (respectively 10 and seven projects), whereas the remaining projects were equally balanced among the energy, telecommunications and social infrastructure sectors.

Figure 15: Number of projects by sector and subsector



Source: Authors

The selection has mainly included projects co-financed during the 2000-2006 programming period (24 out of 27). Among these, the majority have been financed by the ERDF (17 out of 27) for a total contribution of EUR 290,041,634, while the remaining ones have benefitted from ISPA - Instrument for Structural Policies for Pre-Accession (4 out of 27) and Cohesion Fund (4 out of 27) contribution, respectively for a total of EUR 91,575,512 and EUR 157,229,289.

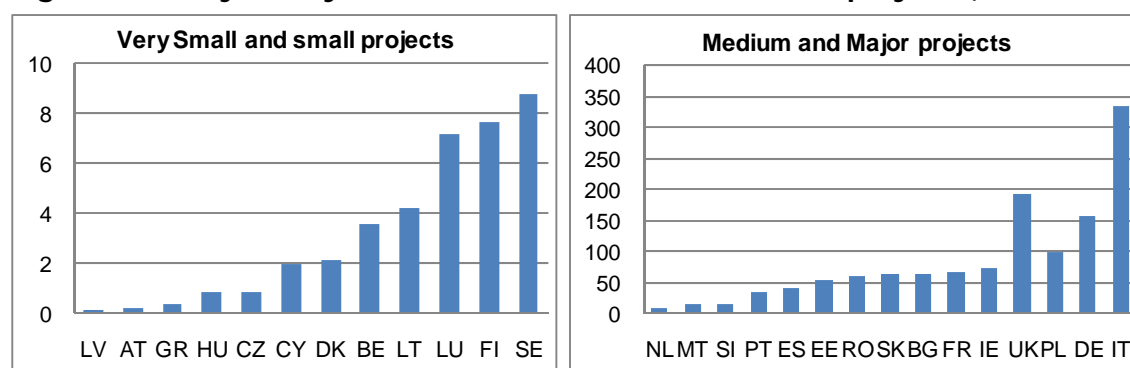
Table 6: Number of projects by programme type

	Programme	Number of projects	Countries
2000–2006	ROP objective 1	8	DE, GR, HU, IT, LT, PT, SK, LV
	SPD objective 2	5	AT, CY, FR, LU, NL
	INTERREG III-B	1	DK
	Cohesion Fund	4	EE, MT, ES, SI ¹⁹⁰
	ISPA	4	BG, PL, RO, SI
	Multiregional programme	1	CZ
	Major project	2	IE, UK
2007–2013	ROP under the convergence objective	1	IT ¹⁹¹
	ROP under the C&E	3	BE, FI, SE

Source: Authors

As shown by Table 6, a large number of projects are included in the objective 1 or 2 programmes (respectively 8 and 5 projects), whereas the remaining ones are standalone initiatives (major projects) or financed within the national strategy for Cohesion Fund and ISPA contribution, or within the INTERREG community initiative. The three projects analysed for the 2007–2013 programming period are included in the Regional Operational Programme (ROP) under Competitiveness and Employment (C&E) objective and have been financed by the ERDF for a total contribution of EUR 121,839,324.

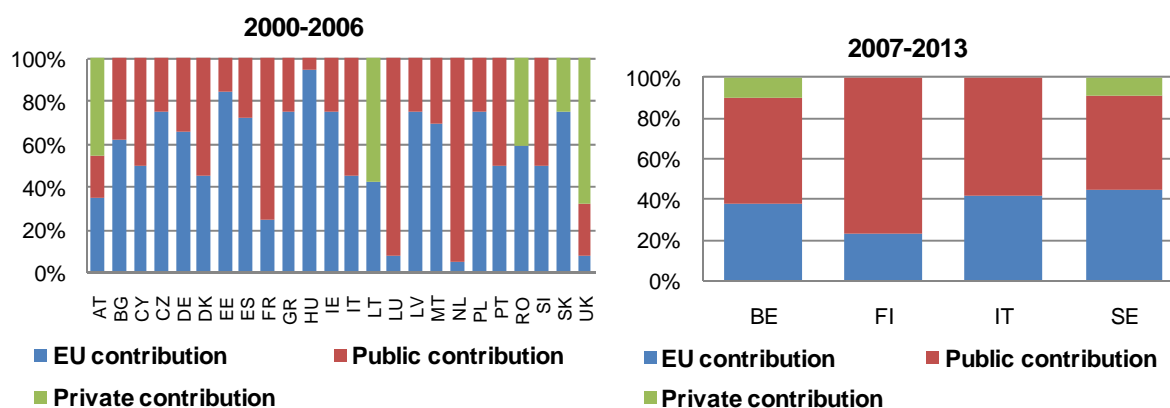
These projects are well financially balanced. As shown below, major (EUR > 50 million), medium (EUR 10–50 million), small (EUR 1–10 million) and very small projects (EUR < 1 million) have been analysed.

Figure 16: Projects by financial scale – total cost of the project (EUR million)

Source: Authors

¹⁹⁰ The Slovenian project has been financed both by the Cohesion Fund and ISPA.

¹⁹¹ The Italian project is the only one financed over the two programming periods.

Figure 17: Projects by type of contribution (European, public and private)

Source: Authors

For the majority of projects, European contribution represents the largest share of the total cost, both in the 2000–2006 and 2007–2013 programming periods. Exceptions are those projects selected for France and Luxembourg, which were mostly financed by public contribution. Only in a few cases¹⁹² did private contribution represent the highest percentage of the investment costs.

¹⁹² Private contribution represents the highest share in Austria, Lithuania and UK projects, respectively 45.3%, 57.6% and 67.6% of the total cost of the project. Source: Case studies report.

Table 7: Overview of the case studies

Project and sector	Description of the investment	Effect on the service delivered	Objective of general interest
Austria. "Memjet" drinking water out of sewage water Environment, Management and distribution of water (drinking water)	This project relates to the renovation of the existing natural pond sewage plant with microfiltration membrane technology – the first example in Austria. The nano-filtration membrane acts as a second barrier for pathogenic germs and bacteria to convert municipal sewage into drinking water. This process is called the Memjet process and its main advantage is that the degradation rate for substances such as Chemical Oxygen Demand or ammonia is significantly higher and also more stable than in a conventional sewage plants.	Thanks to this technology, the provision of the service is also ensured during winter because the general degradation rate is significantly higher and accordingly more stable throughout the year. The efficiency is also improved because the new sewage plant provides better purification results with roughly the same input and is less expensive than a conventional sewage plant. Moreover, the reuse of intensively treated wastewater can increase the quantity and improve the reliability of the water supply in drought-prone areas.	Service continuity Efficiency and effectiveness Reliability, safety and security of supply
Belgium. Liege Logistics multimodal platform expansion Transport, Multimodal transport	This project deals with the expansion of a multimodal platform – from an area of 30,925 m ² to 56,125 m ² – where containers are shifted from road to rail and vice versa. It is located in the Liege area, the heart of the four-cornered area of Paris–London–Amsterdam–Frankfurt, which is an important transport and logistics location that transits a high amount of freight (27,000 units in 2006).	This project has increased the existing multimodal platform capacity to manage the transit of a higher volume of freights. The transit of goods has become more reliable and secure, since the disadvantages of distance between the cities concerned have been reduced. The intervention has also reduced noise and environmental damage by switching a higher transit of goods from road to rail.	Universality of access Reliability, safety and security of supply Environmental sustainability
Bulgaria. Set of five regional waste disposal sites in Montana, Ruse, Sevlievo, Silistra and Sozopol Environment, Urban and industrial waste management	This project regards the construction of five waste disposal landfills in five municipalities located in five regions of Bulgaria and the construction of a waste transfer station in the south-west region. Three new landfills are located at the existing sites, whereas two are built on new sites. These new landfills provide the capacity for the disposal and storage of hazardous, construction and production wastes, which was previously unavailable in the target areas.	This project has provided five municipalities with a new solution for waste management and treatment: an organised waste collection and disposal, in which they were lagging behind. This prevents environmental damage because the waste incinerations are replaced by more environmentally and health friendly methods. The five new landfills also increase the municipality's capacity to offer waste management service to the whole population (before only 80% of the total population was served).	Quality of the service Universality of access Environmental sustainability

Project and sector	Description of the investment	Effect on the service delivered	Objective of general interest
Cyprus. Contemporary social and cultural services centre Social infrastructure, Childcare infrastructure	This project concerns the renovation of the former municipal home for the elderly in the municipality of Nicosia to establish a contemporary social and cultural services centre. This will provide social and cultural services within the framework of different local programmes targeting the welfare of vulnerable groups, such as migrants (44% of the population) and ageing people (20% of the population).	This project has helped ensure the continuity of the day-care service provision for the elderly. However, it has also enhanced the accessibility to social and cultural services for migrants, which were previously excluded. The number of services provided has been increased, and this has resulted in an increasingly attractive area for the local population. The quality of the service provided has also improved through the use of modern equipment and the recruitment of more and better skilled personnel.	Service continuity Quality of service Universality of access
Czech Republic. Renewal of local transport system Transport, Urban transport	This project deals with the renovation of the urban transport system in the municipality of Mladá Boleslav (central Bohemia) through the purchase of four modern low floor buses. The new buses are equipped with a wheelchair ramp allowing access for disabled people, a voice information unit for blind passengers (both in the buses and at bus stops), a modern system of passenger dispatching and the implementation of a smart card system for more comfortable and cheaper travel.	The investment has increased the number and typologies (especially the disabled and the elderly) of passengers with access to the urban transport service (disabled passengers have increased by 6%). The new buses also ensure a more reliable service and offer a better connection between the centre of the town and its surroundings, with lower fuel consumption. Social affordability is also ensured through smart cards.	Service continuity Reliability, safety and security of supply Universality of access Territorial accessibility
Denmark. Improving life in the rural areas of the Baltic Sea region by e-health services Telecommunications, ICT	This project concerns the realisation of a technology infrastructure for the provision of health services regardless of the proximity of the patient from the examining hospital. Known as the Baltic Sea healthcare network, this infrastructure enables the communication between hospitals in Estonia, Denmark, Lithuania, Norway and Sweden and, in particular, between small hospitals located in rural areas and hospitals of urban areas, thereby providing medical services of higher quality.	The creation of this trans-national network has enhanced access to a higher quality of medical services for a higher number of people, especially those living in peripheral and rural areas, where maintaining these services is too expensive. The use of this technology has reduced the inequality of access existing between urban and rural/peripheral areas, which can help to counteract migration from remote rural areas and improve the attractiveness of those areas.	Universality of access Territorial accessibility Social inclusion Geographical remoteness Cross-border service provision

Project and sector	Description of the investment	Effect on the service delivered	Objective of general interest
Estonia. River Emajõgi and River Võhandu: catchment area water management Environment, Management and distribution of water (drinking water)	This project includes the renovation of the outdated water and wastewater networks to ensure the supply of high quality drinking water in 28 remote municipalities in the Emajõe, Põlva and Võru regions. It is divided into three sub-projects, each concerning one of the three regions. The overall investment includes the building and reconstruction of a water supply network, of sewer pipes, wastewater pipes, drill wells, drinking water treatment stations, water tanks, wastewater pumps and sewage plants.	This project has improved access to high quality drinking water and wastewater treatment services for inhabitants of remote areas, where the drinking and wastewater network was missing or defective. In this sense, it has contributed to reducing the differences between life quality in rural and urban areas and counteracting the migration of the population from rural areas to towns. The service continuity has also been ensured and water losses have been reduced by 5–10%.	Territorial accessibility Social inclusion Geographical remoteness Service continuity Universality of access
Finland. Renovation and enlargement of the Kuusamo airport Transport, Airport	This project deals with the extension and renovation of an airport located in the Kuusamo municipality, a remote area in northern Finland located at the border with Russia. The investment concerns the extension of around 5,000 m ² and the renovation of the existing space for departing and arriving passengers (about 1,800 m ²). The new area includes a space for departing passengers, a staff security check area, the conveyor systems for departing and arriving baggage, the baggage claim area, customs, office and social areas, as well as technical premises.	The extension of the airport has enhanced the mobility of passengers by offering more daily flights. It has improved accessibility to those areas located in its sphere of influence (northern Finland and Lapland) and enabled better connections between these remote areas and southern Finland and central Europe. The air service has become more efficient in terms of time savings for boarding and disembarking passengers. The reliability and security of the service has also been ensured through a new conveyor system for departing and arriving baggage.	Territorial accessibility Social inclusion Geographical remoteness Universality of access Efficiency and effectiveness Reliability, safety and security of supply
France. Electrification of the Vosges lines Transport, Railway	This project concerns the electrification and modernisation of 200 km of two railroad lines in Lorraine (the Blainville / Epinal / Remiremont line and the Luneville / Saint-Dié line), which crosses the remote areas of the Vosges mountains. It involves the installation of 4,000 catenaries and electric cables, the modification of 21 bridges and overpasses, the automation of level crossings and the creation of computerised switching stations. It	The electrification of these two railroad lines has improved the connection between the remote mountain areas of Vosges with the major national and European cities. The efficiency and effectiveness of the service provided has also been enhanced since travel times outside the territory are shorter. This has enabled a greater use of rail transport instead of private vehicles. Consequently, traffic congestion and road accidents have been reduced.	Geographical remoteness Efficiency and effectiveness Reliability, safety and security of supply Environmental sustainability

Project and sector	Description of the investment	Effect on the service delivered	Objective of general interest
	is the first step in the electrification of railroad lines from Vosges within the framework of the east European high speed rail network.	Environmental sustainability has also been enhanced because the old diesel locomotives have been replaced with those driven by electric propulsion.	
Germany. Construction of the new "B 96n Stralsund/Ruegen feeder road" from Autobahn junction Stralsund (A 20) to Bergen Transport, Road	This project deals with the construction of a 54 km long road connecting the city of Stralsund (situated at the southern coast of the Strelasund, a strip of the Baltic Sea separating the island of Rügen from the mainland) to Bergen (located on the island of Rügen). It is divided into three sections: 1) the mainland section (28.7 km) including the construction of a bypass that avoids the city of Stralsund (9.6 km), six junctions, 15 viaduct constructions and one motorway bridge; 2) the second Strelasund crossing (4.1 km) including the construction of seven bridges; and 3) the island section (20.5 km) including the construction of four junctions, 12 viaduct constructions, one motorway bridge and a railway underpass.	The construction of this road has enhanced the mobility of local residents by providing better connections with the island of Rügen. This has contributed to preventing further emigration from this geographically isolated island to other regions. The new road has improved access to markets for port-based industries and served as a transport link for the regions' important tourism economy. The territorial accessibility of the hinterland is also enhanced since the new road serves as a feeder road that connects to northern Poland and Scandinavia. The construction of a new bridge has contributed to solving the traffic congestion problem of the area.	Geographical remoteness Efficiency and effectiveness Territorial accessibility Social inclusion Universality of access
Greece. Broadband over the mountains Telecommunications, ICT	The project deals with the development of a wireless broadband network which connects the municipal authorities of the area with the Prefectural and the Regional Authorities. It covers a geographical area of 3,515 km ² , most of which is mountainous. The network consists of 72 wireless connections with a maximum speed of 108 Mbps and it covers a total distance of 472 km.	The broadband network has contributed to provide the access of citizens living in a mountains area to a range of electronic services. In this sense it has helped to reduce the inequality of access existing between urban and mountains areas. The broadband network has also contributed to make the local government more efficient and effectiveness through procedures which assure the e-government and e-democracy.	Universality of access Geographical remoteness Efficiency and effectiveness
Hungary. European day-care centre for the children of Csemő	This project concerns the enlargement and modernisation of a children's day-care centre in Csemő (located in the central-Hungarian region). It has been addressed to solve the integration problems of the Roma community, which	This project has contributed to providing equal access to preschool services for both the local and Roma community. In this sense, it has enhanced the social integration of Roma children. The renovation of the centre has also doubled the capacity Csemő	Social inclusion Universality of access Service continuity

Project and sector	Description of the investment	Effect on the service delivered	Objective of general interest
Social infrastructure, childcare infrastructure	represents a high percentage of the local population. The investment includes the renovation of four existing classrooms and the building of three new ones for children aged 0–7 years, as well as the realisation of sport, kitchen, medical and community spaces.	preschool services (before the investment they could serve only 75 children). The purchase of new equipment has also provided a higher quality service tailored to children with special educational needs or in disadvantaged social situations.	Quality of service
Ireland – N15 Bundoran/ Ballyshannon bypass Transport, Road	This project deals with the construction of a bypass between the towns of Bundoran and Ballyshannon. The whole project consists of an 11 km single carriageway and associated side roads, which starts at Bundrowes Bridge and ends at Cotton Hill, 1 km north of Ballyshannon. It includes the building of five overpass bridges, three river bridges, two underpasses, three underpass bridges and a retaining wall. In addition, the project investment includes a new link road from the N15 road connecting Bundrowes Bridge to Cotton Hill.	The construction of this bypass improves access to the area by improving the connection to the wider region and Northern Ireland as well as increasing the security and efficiency of the road network by reducing the risk of accidents, journey times and levels of congestion. It is also aimed to improve social inclusion by linking areas within the region after several decades of civil conflict. This infrastructure offers access to the area for about 6,500 people, which expands to 30,000–40,000 people in the summer.	Universality of access Territorial accessibility Efficiency and effectiveness Reliability, safety and security of supply
Italy. Extension of the metro section of the Circumetnea railroad Transport, Railway	This project extends the underground urban section of the Circumetnea railway, which is in operation within the urban centre of Catania and rings around the Etna volcano by interconnecting with the Messina-Catania rail line. The investment includes the construction of the tunnels and stations, the installation of the rail superstructure and electrical power overhead line and the erection of the train control systems and the plants of the railroad.	The extension of the underground railway has attracted additional passengers that previously used buses or private cars. It has also improved the connection between the suburbs and central urban areas. The service provided has become more efficient and secure because the previous single track, narrow gauge railway has been replaced through the use of high quality materials and suitable technology.	Universality of access Efficiency and effectiveness Reliability, safety and security of supply Service continuity Quality of service
Latvia. E-services for citizens and businesses at the Jekabpils	This project deals with the development of a unified information system in Jekabpils for the provision of electronic services to citizens. It consists of the establishment of two networks: a local ITC network in Jekabpils and an ITC network	The provision of IT networks, which are free of charge, has enhanced access to the e-documents system and e-services to all. It has also improved the municipality's capability to process all the administrative data and documents and advise	Universality of access Efficiency and effectiveness Quality of service

Project and sector	Description of the investment	Effect on the service delivered	Objective of general interest
town information centre Telecommunications , Service and application for citizens	at the One-Stop-Agency located in the building of the town council. The One-Stop-Agency is an administrative agency where citizens can access information and consultations. The provision of this information is now ensured thanks to the interaction of these two networks.	inhabitants and businesses about municipal services, as well as helping them file all their necessary documents, regardless of their physical location. Data exchange and electronic communication between the central level public administration and the municipal level have also become more efficient.	E-government
Lithuania . Renovation of central heating networks in the city of Klaipėda by installing modern technologies Energy , Energy efficiency	This project concerns with the modernisation of the central heating supply network in Klaipėda by replacing the pipes (9,585 m) of the heat supply network, which have been in operation for 25–30 years and were outdated and inefficient. The reconstruction of the out-of-service heating tracks consists of the installation of new ones using an innovative technology (the trenchless lining method).	The renovation and optimisation of outdated heating tracks has not extended the existing network and has not made its service available to more people. It has, instead, helped provide a more efficient and environmentally friendly heating service by reducing heat losses (energy savings) and the dependency on imported fuels. It has also helped prevent a rise in service provision prices that would otherwise be likely to increase because of the inefficiencies of the old system.	Efficiency and effectiveness Reliability, safety and security of supply Environmental sustainability
Luxembourg . Expansion of the Luxembourg railway beyond the border to Volmerange-les-Mines Transport , Railway	This project deals with improving public transport between the G.D. of Luxembourg and the Lorraine region to tackle traffic congestion due to the rise in the number of cross-border workers (from 7,820 in 1990 to 26,834 in 2000). The investment concerns the expansion of the railway line, the construction of a platform in Volmerange-les-Mines, the lengthening of the platform in Dudelange and an underground addition.	This project has enhanced the connection between the G.D. of Luxembourg and France by offering cross-border workers the chance to switch from road to rail. The access of the cross-border workers to the main working places in both areas has also been improved. By diverging cross-border workers from the road to rail, the reduction of greenhouse gas emissions and noise pollution are also expected.	Territorial accessibility Efficiency and effectiveness Environmental sustainability Reliability, safety and security of supply
Malta . Upgrading of the Sant'Antnin waste treatment plant and material	This project deals with upgrading the Sant'Antnin landfill, which was not capable of treating the biodegradable waste produced in Malta because of its outdated technology. The investment concerns the enlargement and construction of facilities aimed at the treatment of municipal solid waste	The modernisation of the landfill has improved the efficiency and effectiveness of the service provided by enabling the existing landfill to receive a greater amount of waste (from 80,000 to 200,000) and manage recyclable and biodegradable products. The process of differentiation and recycling helps reduce	Universality of access Efficiency and effectiveness Environmental sustainability

Project and sector	Description of the investment	Effect on the service delivered	Objective of general interest
recycling and recovery facility Environment, Waste management and renewable	and the generation of electricity. The upgrading of the landfill has been designed to receive 200,000 tonnes/annum of mixed household waste.	emissions and is the starting point for the production of the renewable energy addressed to satisfy the energetic demands of around 5,600 inhabitants in the south of Malta.	Energy sources differentiation
The Netherlands. Establishment of the multicultural educational and care centre Social infrastructure, Education and childcare	This project concerns the establishment of a centre in the Malburgen district to provide locals, in particular the migrant population, educational and cultural services. The investment includes building a classroom for adult education, an ICT classroom, a meeting room, an entrance hall and a kitchen and storage space, as well as the provision of day-care facilities for children in the age group 0–4.	The establishment of this centre has enhanced the social inclusion of migrants in the local community. The physical concentration of a wide range of facilities, from sports to cultural activities, day-care for children and services for the elderly, has improved the efficiency and effectiveness in service delivery, with respect to the fragmented and dispersed facilities offered at different localities in the district.	Social cohesion Efficiency and effectiveness
Poland. Construction of the KA4E section of the A4 motorway between Kleszczów and Sosnica Transport, Motorway	This project deals with the construction of a new 19.1 km section of the A4 motorway between Kleszczów and Sosnica, bypassing the city of Gliwice. The investment also includes the construction of 23 viaducts connected to the city internal transport system, toll collection stations at both ends, car parking lots and the installation of safety and supporting devices (e.g., traffic monitoring stations), as well as of environmental protection devices (noise screens and animal passes) and special devices (storm protection installations).	This project has improved access to the Silesia region from the west and north of the country (through an intersection with the A1 motorway). Additional users have been attracted by the toll-free system of this new section. The transport connections have become more efficient because the travel time to the centre of cities has been shortened and the traffic congestion reduced. Transit along this new section has become more secure because high quality materials and suitable technology have been used. From the diversification of the transit traffic out of the city the reduction of noise and environmental damage are also expected.	Efficiency and effectiveness Territorial accessibility Environmental sustainability Reliability, safety and security of supply
Portugal. Optimisation of the Socorridos	This project concerns the optimisation of the Socorridos hydroelectric power station in Madeira that has been in use since 1995. The investment	The joint coordination of these infrastructures has enabled the transfer of water collected in the northern part (higher and mountainous where it	Efficiency and effectiveness Service

Project and sector	Description of the investment	Effect on the service delivered	Objective of general interest
hydroelectric power station Energy, Renewable sources of energy and drinking water	includes the construction of 5,243 m of tunnels with a capacity of 32,500 m ³ of water, the construction of a reservoir which can store 40,000 m ³ of water, the renovation of existing tunnels to regulate the flow of water and the construction of a pumping station, which has to be operational overnight.	rains) to the southern part of the island to ensure continuity and efficiency in the service provision during dry weather conditions. The water collected by the pumping station during the night is reused during the day for irrigation or water supply, as well as for producing renewable energy. This process has reduced fossil fuel-based energy consumption.	continuity Reliability, safety and security of supply Environmental sustainability Energy sources differentiation
Romania. Rehabilitation and modernisation of the water sewage system Environment, Drinking water	This project deals with the rehabilitation and expansion of 175 km of the water sewage system in Cluj. The investment includes replacing the old water grid, rehabilitating the existing wells and pumping stations, building a new sewage main, extending the sewage grid in five rural communes and developing a new freshwater source.	The expansion of the waster sewage system has increased the percentage of users accessing the service (from 86% to 100%), by including another five rural communes in the network. The service has become more efficient because the upgrading of the equipment has reduced leakages from the mains and pipes by 10%. The quality of drinking water has also been improved and the energy consumption reduced (both by 10%).	Efficiency and effectiveness Territorial accessibility Service continuity Quality of service Environmental sustainability
Slovakia. R1 connecting Rudno nad Hronom and Žarnovica Transport, Road	This project deals with building a new section of the road (almost 10 km) connecting Rudno nad Hronom and Žarnovica (located in the Banská Bytstrica region). It is part of the international road network (E571) connecting the western and eastern parts of the country. The investment includes expanding the road, building seven bridges and parallel service roads, adjusting concerned farm and forest roads and building six retaining walls and two revetment walls.	Extending the road has improved its capacity to face a high traffic volume by building a four-lane profile to remove traffic jams and reduce travel times. This has ensured a smooth and safe transit since the risk of accidents has been reduced. Higher travel speed and less congestion have reduced the fuel consumption of cars. Additionally, since the new road bypasses settlements, the population of municipalities in the area are not negatively impacted by the traffic.	Efficiency and effectiveness Reliability, safety and security of supply Environmental sustainability
Slovenia. Wastewater treatment plant at Celje Environment,	This project regards the extension of the sewage system and the building of a new wastewater treatment plant at Celje. The investment includes upgrading the existing primary collector of wastewater, building a treatment plant able to	This project has extended the provision of the service to more of the total population (from 69% to 90%). The quality of the drinking water has also been improved, thanks to the preliminary treatment, the carbon treatment and the nitrogen and	Universality of access Quality of service Cross-border effects

Project and sector	Description of the investment	Effect on the service delivered	Objective of general interest
Water treatment	handle output from 85,000 inhabitants, installing primary collectors to a total length of 7.7 km and building six pumping stations and five retention tanks along the Savinja river.	phosphorus treatment ensured by the new infrastructures. The improvement of the quality of Savinja river is expected to have a positive cross-border impact on the Sava river, used as a source of underground drinking water in neighbouring Croatia.	
Spain. Complex for the treatment of urban waste in Zaragoza Environment, Urban and industrial waste management	This project deals with the construction of an all-round centre for waste management in Zaragoza. The centre is equipped for the selective collection of waste (up to 465,000 tonnes per year) and its treatment and recovery into electrical energy, through a biomethanisation and composting process aimed at reducing the emission of harmful gases into the atmosphere.	This project has improved the municipality's capacity to manage urban waste and treat recyclable and biodegradable products. The process of differentiation and recycling is expected to reduce emissions by about 283,000 tonnes CO ₂ per year. The renewable energy produced by the biomethanisation plant is addressed to satisfy the energetic demands of around 5,600 inhabitants of the south of Spain.	Universality of access Efficiency and effectiveness Reliability, safety and security of supply Environmental sustainability
Sweden. Enterprise development by broadband of the future Telecommunications, ICT	This project concerns the installation of an IT infrastructure in the municipalities of Östersund, Krokom, Åre and Berg, which are sparsely populated areas in the mid-north of the country. The investment includes a ground installation of 540 km of fibre optic cable and air installations of 30 km fibre optic cable.	This project has enabled the provision of telecommunications services in areas where this has previously not been economically possible. This helps citizens and businesses make further use of public services in the fields of education, health and social services, which are becoming increasingly accessible through the Internet in Sweden.	Universality of access Geographical remoteness Efficiency and effectiveness
UK. Gas Pipelines from Gormanstown to Antrim and from Carrickfergus to Londonderry Energy, Electricity, gas, petrol, solid fuel	This project concerns the building of two natural gas transmission pipelines to provide natural gas to 75% of the Northern Ireland population. The north-west gas pipeline runs from Carrickfergus to Londonderry, and the south-north pipeline runs from Gormanstown (County Meath/ Ireland) to Ballyclare, County Antrim (Northern Ireland), where it links to the north-west gas pipeline. These pipelines serve as a link between the Northern Ireland and Ireland networks.	The new two pipelines have provided access to natural gas for the 75% of the population of 10 towns in Northern Ireland, which were previously served by a gas network running on coal. This has contributed to improving the local air quality. A single island gas market has also been created through the construction of a pipeline (south-north) that connects the Republic of Ireland with the Northern Ireland grid. In this sense, the way for cross-border service provision has been paved.	Universality of access Geographical remoteness Environmental sustainability Cross-border effects

Source: Authors based on case study reports

3.2. Universality of access: coverage of the service

A particularly relevant issue in the provision of SG(E)I is universal access, which includes considerations about geographical coverage, equality of access and affordability. Universal access to SGI is a right recognised by the EU Charter of Fundamental Rights. This includes ensuring equal treatment between men and women and combating all forms of discrimination.

Although affordability and social issues are addressed in the sections below, in this section evidence is drawn from the case studies about the extent to which the coverage of the SG(E)I examined in the case studies is extended to a bigger part of the population. Table 8 provides a brief overview of the cases concerned by an increase in service coverage. In a nutshell, it illustrates that the extension of SG(E)I coverage is often associated with the implementation of the considered projects, but that full coverage (100% of the population) is the objective of only a minority of cases.

In a few cases, the extension of SG(E)I coverage is the main aim of the project and the intention is to fully cover the entire population. This has a clear sectoral relevance and applies to sectors such as environmental services (e.g., supply of water, management of sewage). The Estonian case regarding the establishment of a water management system in the remote Emajõe and Võhandu catchment areas is an example of a project aiming to increase accessibility to fundamental SG(E)I. The objective here is to provide access to quality water and sewage systems for 95% of the inhabitants of the concerned villages and areas versus 60–75% currently. Similarly, the establishment of a wastewater treatment plant in Celje (Slovenia) increased the coverage of the population from 69% to more than 90%.

In other cases, the project results in an extension of the service provision even if full coverage is not outlined as an objective. In particular, this occurs in projects dealing with transport. For example, the Italian case (the extension of the metro section of the Circumetnea railroad) clearly aimed to increase the number of transport users but universal access was not the explicit aim. It is estimated that 35–40% of the overall population of the concerned area will use the new service each year. Other cases in the transport sector also aimed to increase numbers of users such as the Belgium and Finland projects. Another specific type of projects in the transport sector is that aiming to reduce traffic congestion and thereby improving accessibility such as the German, Irish, Luxembourger and Slovak projects.

The sector of communication is also concerned as illustrated by the Latvian project (electronic services to citizens and businesses in Jekabpils), which contributed to markedly improved access to e-services, or the Swedish case (development of broadband), which increased the number of enterprises connected to a high speed Internet network. The Greek case, which connects all the municipal offices of the Kozani prefecture to a wireless broadband network, is also ascribable to the same logic.

Interestingly, **in a few cases universal access and efficiency objectives are combined**. The Csemő day-care centre for children in Hungary extended the building hosting the school so that it could provide access to its services for all children concerned. As the capacity doubled, all interested families with children between three and seven could be accepted. Thus, the principle of universality of access is ensured in the sense that local needs are fully satisfied.

Extended coverage and improved efficiency often characterise projects in water and waste management projects. In Romania, the rehabilitation and modernisation / expansion of the water sewage system in Cluj reconciled two objectives: improving the quality of service to existing clients and extending the water sewage network to keep pace with urban development. Also, in the case of Bulgaria's construction of five new waste disposal landfills, the main objective is to bring these plants up to EU standards. At the same time, these new landfills are expected to provide the capacity for the disposal and storage of hazardous, construction and production waste, which was previously unavailable in the target areas. In 2001, 80% of the total population in Bulgaria (comprising 99% of the urban and 33% of the rural populations) was served by organised waste collection and disposal. After opening the new landfills, the municipalities had organised a collection and disposal system for the whole population. Universal access (full coverage) had been established, even if some disparities still characterise remote rural areas resulting from a lack of follow up activities.

One specific interpretation of the universality of service that is often stressed throughout the case studies is **continuity**. On several occasions, mostly concerning SG(E)I such as water provision, the projects enhanced service continuity. Thus, in the Memjet project in Austria the implementation of a specific technology met the statutory limits of wastewater purification throughout the year (contrary to what happened with the previous technology). The service is nearly universal since it covers about 90% of the population. Similarly, the significant investment in the hydroelectric power station on Madeira (Portugal) also aimed to continuously provide two basic services: water and energy. Finally, two projects in the communication sectors illustrate the principle of continuity. The Greek broadband wireless project offers high speed internet connections without interruption. As to the Baltic e-health project, it is an example of the use of ICT to ensure continuity of access to health services in peripheral areas where local hospitals tend to close down and have insufficient capacity.

Table 8: Extension of the access to SG(E)I

Country	Extension of the access to SG(E)I
Austria. "MEMJET" drinking water out of sewage water	The investment enabled the continuous access to purified water throughout the year.
Belgium. LIEGE LOGISTICS multimodal platform expansion	The extending of the platform (from 30,925 m ² to 56,125 m ²) helped to face the rise in traffic.
Bulgaria. Set of five regional waste disposal sites	The project enabled to ensure all the population (before only the 80%) the service of organised waste collection and disposal.
Czech Republic. Renewal of local transport system in Mlada Boleslav	The new low floor buses and transport system grew the number of disabled passengers by 6% and increased the accessibility of other groups of citizens.
Denmark. Baltic e-health	The project delivered new health services to peripheral and rural areas, thereby balancing access between urban and rural/peripheral areas in the health sector.
Estonia. River Emajõgi and River Võhandu catchment area water management	The expected result of the project was to provide 95% of local inhabitants access to high quality water and sewage systems.
Finland. Renovation and enlargement of the Kuusamo airport	The project increased the accessibility of the region for foreign tourists, and ensured better mobility for citizens. The goal is to increase the number of passengers from 103,000 to 170,000 by 2014.

Country	Extension of the access to SG(E) I
Germany. Construction of a new road from Autobahn junction Stralsund (A 20) to Bergen	The construction of the new Strelasund crossing contributed to the reduction of frequent, especially seasonal traffic congestion.
Greece – Broadband over the mountains	The "Bridge Me" network successfully connects all of the municipalities in the Kozani region as well as 200 local government bodies.
Hungary. European day-care centre for the children of Csemő	The investment contributed to double the number of children (from 75 to 176 children) enrolled in the preschool services, and to fully satisfy the local demand for day-care services.
Ireland. N15 Bundoran/Ballyshannon bypass	The Bundoran and Ballyshannon bypass has solved the problems of poor quality and bottlenecks on the N15 route, as well as the resulting traffic congestion.
Italy. Extension of the metro section of the Circumetnea railroad	The investment contributed to meet the transport demand of about 35–40% of the overall population, travelling between two cities (Catania and Misterbianco).
Latvia. Electronic services to citizens and business at the Jekabpils town information centre	The project improved the administrative capability of the Jekabpils town council and substantially improved data exchange and electronic communication between residents and regional authorities.
Luxembourg. Expansion of the Luxembourg railway beyond the border to Volmerange-les-Mines	The project is expected to reduce traffic jams and illegal parking, associated to the rise of the number of cross-border workers.
Poland. Construction of the KA4E section of the A4 motorway between Kleszczow and Sosnica	The extension of the A4 enhances accessibility to southern Poland, where there are over three million potential users. The usage on motorway A4 is estimated to be 8,000–10,000 passengers per day.
Portugal. Optimisation of the Socorridos hydroelectric power station	The investment ensured the continuity in the provision of water and energy supply for the use of water, water for irrigation and production of electricity.
Romania. Rehabilitation and modernisation of the water sewage system in Cluj	The project extends the area served by the integrated water sewage operator and increases access to EU standard running water mains from 69% to 96% of the population; and the access to sewage services from 45% to 79%.
Slovakia. R1 Rudno nad Hronom to Žarnovica	The project enhanced the connection between Bratislava and the regions by providing a new section of road and removing traffic congestion.
Slovenia. Wastewater treatment plants in Celje	The population number connected to the sewage system has been increased (from 42,000 inhabitants to 53,200, representing the 90% of the total population).
Sweden. Enterprise development by broadband of the future	An expansion of the fibre optics net in the region is expected to increase the accessibility to telecommunications services in areas where it has previously not been economically possible.
UK. Gas pipelines from Gormanstown to Antrim and from Carrickfergus to Londonderry	The project has increased the number of people (75% of the population) with access to natural gas in 10 towns in Northern Ireland.

Source: Authors based on case study reports

3.3. Social inclusion and ageing population

A few of the projects selected for case studies deal directly with social inclusion issues in general and the conditions of the elderly in particular. In several of the projects where the primary objective was not to target a disadvantaged population, attention is paid to ensuring that the latter is not discriminated in its access to the service delivered (for example, the practice of tariff differentiation in the transport sector, see section 3.5). In this section, projects dealing directly with disadvantaged categories of users are reviewed.

Although no specific project tackles directly the issue of an ageing population, it is recognised as a key trend which affects economic and social stability. Indeed an ageing population implies increase of the number and/or the proportion of the elderly and old population; increase of the number of retirees in face of a steady increase, or a prospective decrease, of working-age population and, probably, of the workforce; the ageing of the latter one; the “de-juvenation” of population; the below-replacement-of-cohorts fertility; the region-wide and extending below-zero natural change; the current and perspective decrease of many regional populations; the regional differences in all those drivers and the possible consequent internal moves¹⁹³.

The Cyprus case of the “contemporary social and cultural services centre at the former municipal home for the elderly” is one of the few examples that deal with aged people. In fact, it also provides a wider range of services to different disadvantaged categories of the population (e.g., migrants, women). To some extent, this also happens in the Dutch case of the Multi-cultural Educational-and Care Centre (MOZC) which dedicates some of its activities specifically to the elderly. In the other cases, they are indirectly targeted. For instance, in the Italian case of the Circumetnea, disadvantaged people are not the main target of the project, but it is clear that the railway and its connection to the metro will indirectly improve accessibility for the senior citizens because the railway is equipped with all the necessary facilities. The Czech project is also equipped to deal with the specific needs of elderly and disadvantaged people, and the water sewage project in Cluj (Romania) certainly makes easier their lives in remote rural areas. In the Irish natural gas infrastructure project, the elderly are eligible to a cold weather payment if temperatures fall below a certain threshold for a set number of consecutive days (the arrangement was not influenced by the SF); however, that is not a proactive measure to improve the situation of the elderly.

Children, women and migrants are other social groups often targeted by socio-cultural or health projects. For example, the MOZC project in the Netherlands delivers socio-cultural educational and health services to migrants and women. The objective is social cohesion (merging communities and making a distressed area more attractive) and the promotion of the labour participation of vulnerable groups. The originality of the centre is that instead of a gradual approach to neighbourhood development with an incremental improvement of old housing (which creates a community sense and strengthens integration because of the large participation of citizens but tends to exclude migrants), the Dutch offered a new facility to try to bring together the different communities at one location.

The European day-care centre in Csemő offers day-care and preschool services to local children, among whom an important proportion is of Roma origin. The objective was to increase the number of children from Roma origin and those who have special educational needs in the preschool period. To some extent, the Belgium intermodal transport (logistics

¹⁹³ Commission Staff Working Document “Regions 2020” [EC 2008a, 8]

and transport) project also benefits migrants because they can take advantage of the training offered.

Worryingly, **adverse effects** on social inclusion could be detected in some of the case studies. In the case of the electrification of the rail network in the French Vosges, for example, the investment promotes SG(E)I but tends to benefit the most favoured part of the population (intermediate and higher level occupations have higher mobility and/or travel the longest distances). In addition, the advantages can only be fully reaped if the train stations of smaller towns are accessible as well. In another transport case, the German B 96n feeder road, there is in principle no restriction of access, but the road benefits only those who have a private vehicle, thereby there is some risk of discrimination if measures to support public road transport are not taken in tandem. Finally, the Baltic e-health project shows how the provision of e-health services in principle benefit elderly people (and less educated people) in remote areas but can, if adequate accompanying measures are not adopted, become an adverse effect. Indeed, the elderly (and less educated people) can mistrust new technologies and risk being excluded from the provision of the service. One measure to prevent this negative paradoxical effect is the mobilisation of practitioners as informed intermediaries.

3.4. Efficiency and quality

As illustrated above, extending service coverage is often not the main objective of these case studies, and it seems that most often **improving the quality and efficiency of the service provided** is paramount. This is illustrated in Table 9, which identifies the most relevant cases in this respect.

The Lithuanian project (the renovation of the central heating network in Klaipėda) is a case in point. Universal access is to some extent already secured since the network covers 91% of the town's population. Although the service was not extended to more people, access to the service improved from a quality point of view. The emphasis was placed on efficiency objectives with a focus on delivering quantitative objectives (reduction of energy losses, lower dependency on imported fuel), and indeed the results obtained were outstanding. Substantial energy savings and lower fuel requirements were realised. The rationalisation and modernisation of the supply network reduced total heat loss and increased the overall stability and reliability of the heat supply because of a lower risk of accidents in supply routes. The other cases reviewed show that the types of efficiency gains promoted by the respective projects depend to some extent on sectoral considerations.

3.4.1. Water and waste treatment and sewage systems

Projects dealing with water and waste treatment generally display important efficiency gains resulting from improved storage and distribution techniques. For example, the hydro power station project in Madeira should enable the more reliable provision of both water and energy, reducing losses and setting up more efficient production and storage systems. Likewise, in Cluj (Romania) the water sewage system was modernised and expanded with the support of SF, and this enabled a reduction in leakages by a significant 10% rate. The complex for the treatment of urban waste in Zaragoza also aims to improve the efficiency of the service provided.

Increased capacity and associated economies of scale are also a source of efficiency gains. Again in Cluj, the most direct and important outcome of the project was the rise in used water treated from 86% to 100%. Efficiency is also at the heart of the Malta solid waste

treatment plant. Its modernisation enabled the use of more environmentally friendly technologies capable of major treatment. The same goes for another project in the area of waste management, namely the construction of five waste disposal sites in Bulgaria, which significantly increased the quantity of waste treated. The Estonian case on the establishment of a water management system is also expected to yield significant improvements in efficiency and effectiveness by taking advantage of economies of scale and a decrease of operational expenses. The gas pipeline connecting Northern Ireland and Ireland is similarly expected to yield efficiency gains because of the establishment of a single gas market.

The Austrian Memjet project is an example of how efficiency gains are possible thanks to innovative technologies requiring relatively low investment. The newly adapted sewage plant provides better purification results with roughly the same inputs.

In general, the projects in this sector also deliver **positive environmental impacts**. This is the case for the Romanian and Bulgarian projects, while the Madeira project is also expected to have positive environmental effects through the production of a higher percentage of renewable energy. Similarly, in the Malta project renewable electricity is produced from biogas. In the Cluj project too, the water purification plant was substantially upgraded technologically and a biogas energy unit was added to treat the sludge resulting from the process of purification. The electricity generated by this biogas unit covers about 30% of the consumption of the whole purification plant. In at least one case (the optimisation of the Madeira hydro power station), the project served to raise awareness about environmental concerns and efficient waste management. Interestingly, in several instances the improvements in the quality of the services provided, from an environmental point of view, were associated with the effort to reach EU standards.

3.4.2. Transport

Transport is another sector where projects dealing with the provision of SG(E)I are likely to achieve important efficiency gains. This applies for both rail and road transport.

The efficiency and effectiveness of the railway service can be radically improved as illustrated in the Italian case of the Circumetnea. The electrification of the rail network in France also contributed to cutting drastically journey times. The same goes for another railway project in Luxembourg. Interestingly, the efficiency/effectiveness gains are not only underlined from the railway customers' perspectives, but also from the perspectives of drivers taking advantage of lower traffic congestion.

The Polish case well illustrates the specificities of motorway projects. This case identifies the advantages that can be inferred from investing in a motorway. Increased mobility as well as a series of positive consequences at a local level (e.g., bypassing the town of Gliwice), a national level (e.g., better connection between west and east) and even an international level (e.g., the attraction of tourists from neighbouring countries, contribution to TEN-T) are expected. Improved efficiency will increase local and national mobility and safety and improve the environment (see below). Efficiency gains are also expected in the German case, where an improved cost-benefit ratio should result from the reduction of transportation costs as well as improving territorial accessibility. Reductions in travel time and the enhanced capacity of roads are the efficiency gains expected by the construction of new roads in the Slovak and Irish projects.

Improvements in efficiency as a result of SF investment in SG(E)I infrastructures is well illustrated by the case of the Kuusamo airport, which has been amplified in the context of the northern Finland OP. Although taking around 12 hours to reach Kuusamo from Helsinki by rail and road, travel times by air have fallen to 70 minutes. Finally, the intermodal transport project in Liege improves efficiency in the sectors of transportation and logistics. A multiplier effect is even expected not only because of the possibility of managing higher volumes of freight but also because of the complementary actions in the Walloon region and the reinforcement of the international positioning of the province of Liege. The Czech case is another example of a transport project entirely dedicated to improving the quality of the service (lower fuel consumption and lower emissions).

As in the water and waste treatment sector, **positive environmental impacts** are also stressed in the transport sector. This is almost taken for granted in railway (e.g., the Luxembourg project) and public bus transport (the Czech case) projects but, interestingly, the same goes for road and motorway projects. The Polish motorway case is telling in this respect. It argues that the choice is not between the highway and less polluting options. In fact, having highways is imperative until the network is completed. It is only then that the dilemma can be addressed. The environmental balance is ultimately considered to be positive. For example, in the Slovak case the associated environmental benefits are possible thanks to higher travel speed and the elimination of traffic congestion, which are expected to lead to reduced fuel consumption and thereby a positive impact on the environment (not to mention security gains).

3.4.3. Socio-cultural and healthcare services

Efficiency gains are also expected in the cases of socio-cultural projects. For example, in the Dutch project efficiency and effectiveness are to be enhanced by locating in one place cultural and educational services that had previously been dispersed. This made possible the greater integration of the provided services and coordination of service providers. Also, in the case of the Csemő day-care centre in Hungary, better quality is obtained alongside the greater quantity of educational services provided. After the educational infrastructure development project, the institution could serve more children in a more suitable environment with better equipment (e.g., following the modernisation of the heating). This has enabled savings and a reallocation of funds to other social services.

The Baltic e-health project is a clear example of how the application of ICT to the provision of SG(E)I in the healthcare sector can lead to significant efficiency gains. The outsourcing of healthcare services to clinics in neighbouring countries where the cost of labour is lower and where there are clinics with a surplus of capacity increases efficiency thanks to lower operating costs. To avoid these cost savings undermining the quality and effectiveness of the services provided, specific provisions and guarantees have been included in the contractual agreements signed between the clinics involved.

Table 9: Quality improvement and efficiency gains as a result of the case study projects

Country	Quality/efficiency improvements
Austria. "MEMJET" drinking water out of sewage water	The new technology represents a cost-efficient alternative to the existing conventional natural pond sewage plants.
Bulgaria. Waste management: set of five regional waste disposal sites	The new landfills comply with EU and Bulgarian environmental regulations.
Czech Republic. Renewal of local transport system in Mlada Boleslav	All new buses, meeting high European eco-standards, have lower fuel consumption and lower emissions of greenhouse gases and other air pollutants.
Denmark. Baltic e-health	The new technology developed by this project helped provide medical services to peripheral and rural areas while keeping standards high and saving the costs of maintaining these services.
Estonia. River Emajõgi and River Võhandu catchment area water management	The expected result of this project is to reduce water losses (by 5–10%) and to avoid polluted wastewater damaging surface water and ground water and avoid infiltration water damaging the sewage systems.
Finland. Renovation and enlargement of the Kuusamo airport	The project includes investment in the extension of around 5,000 m ² and the renovation of about 1,800 m ² and brings about a drastic reduction in journey times.
France. Electrification of the Vosges lines	The work involves the electrification of 200 km of tracks to allow the arrival of high speed railways, resulting in reduced travel times. Positive effects on the environment are also expected by the reduction of the emission of greenhouse gas emissions.
Germany. Construction of the new "B 96n Stralsund/Ruegen feeder road" from Autobahn junction Stralsund	This project serves as an efficient transport link to German and European markets via the A 20 motorway.
Hungary. European day-care centre for the children of Csemő	This project ensures a higher quality and a higher volume of services including better and tailor-made services for children with special educational needs and those from disadvantaged social situations. Moreover, the structure is modern, energy saving and has a less air polluting heating system with lower energy consumption.
Ireland. N15 Bundoran/Ballyshannon bypass	The upgrading of existing roads reduced journey times, traffic noise, traffic accidents and pollutants and improved access to the south of Donegal.
Italy. Extension of the metro section of the Circumetnea railroad	The project under construction is expected to increase the effectiveness and efficiency (time savings and lower operating costs), of the metro service (benefits estimated EUR 900 million over 30 years).
Lithuania. Renovation of the central heating networks in Klaipėda by installing modern technologies	This project resulted in substantial energy savings and a lower need for fuel.

Country	Quality/efficiency improvements
Malta. Upgrading the Sant'Antnin waste treatment plant and material recycling and recovery facility	The project contributed to increase the efficiency of the service by recovering and recycling collected waste and producing electricity.
The Netherlands – The Malburgen establishment of the multicultural educational and care centre	The concentration of community services at the MOZC facility contributed to higher efficiency and effectiveness in services delivery.
Poland. Construction of the KA4E section of the A4 motorway between Kleszczow and Sosnica	The A4 motorway shortened the time to reach the centres of the cities and contributed to the decrease of the congestion.
Portugal. Optimisation of the Socorridos hydroelectric power station	The project enhanced the continuity and efficiency of the service by improving the reliability of water supply and securing the water supply in dry weather conditions.
Romania. Rehabilitation and modernisation of the water sewage system in Cluj	The project contributed to replace the existing four municipal public companies with an integrated regional water sewage company.
Slovakia. R1 Rudno nad Hronom to Žarnovica	The improvement of the capacity of the road by building a four-lane profile significantly increases travel speed, safety, traffic flow and permissible traffic volume.
Slovenia. Wastewater treatment plants in Celje	The investment contributed to delete direct discharges (which were more than 4,500 m ³) into the Savinja River.
Spain. Complex for the treatment of urban waste in Zaragoza	The centre treats and eliminates the residues generated by 77.3% of the inhabitants of the province of Zaragoza (55.7% of the inhabitants of the region of Aragon). It will serve the city of Zaragoza and 60 neighbouring municipalities for approximately the next 15 years and is expected to recycle two-thirds of the urban residues generated.
UK. Gas pipelines from Gormanstown (Republic of Ireland) to Antrim and from Carrickfergus to Londonderry	The project has contributed to the development of a single island gas market through the construction of a pipeline (south–north) that connects the Republic of Ireland with the Northern Ireland grid for the first time. This contributes to the establishment of a single gas market, enabling more providers to enter an enlarged market.

Source: Authors based on case study reports

3.5. Affordability

As shown in the above section, investing in an infrastructure providing SG(E)I increases service quality and/or efficiency. The issue at hand is whether given these increased costs access to the service nevertheless stays affordable.

In the case studies reports, prices are generally documented as remaining affordable. In a few cases, the **risk of having an increase of cost transformed into an unsustainable increase in prices** is explicitly evoked. The Estonian case about the establishment of a water management system shows how an expected improvement in the provision of SG(E)I that results from the establishment of an adequate infrastructure might produce an increase in price, which could risk the whole sustainability of the project (and beyond, the

objective of universality of access). Important investment and increased operational costs will inevitably affect the price of the service. Yet, weak preparatory analyses leave some uncertainty concerning the future price. As a result, important operational costs, the impossibility of overly raising prices and lower than expected access/coverage can all endanger the future sustainability of the project despite the optimism of the operators. This illustrates the danger of having infrastructure of quality but too many problems in managing, operating and maintaining the infrastructure, with the resulting possible failure in the delivery of the service.

Box 10: Leverage effects related to SF interventions

LEVERAGE EFFECTS RELATED TO SF INTERVENTIONS

On many occasions, the case studies identify a leverage effect of Structural and Cohesion Funds. For example, in the Lithuanian (central heating network) case no alternative investment would have taken place without the SF/Cohesion Fund support because the projects were not profitable from a private operator perspective. Also, the contribution of SF was decisive for the Belgian project because the Walloon region did not have sufficient financial resources to cope with the investment required. The leverage effect is also strong in the cases of the e-services in the Latvian town of Jekabpils, the Polish motorway, the Estonian water management project and the waste treatment plant in Zaragoza.

In the German case, a temporal leverage effect is noted: the construction of feeder roads would have taken longer due to the scarcity of funds. Also, as reported in the Slovak case, the contribution of SF to the construction of a new section of road in central Slovakia speeded up the time of implementation.

In the Austrian Memjet project, the project proposes a much cheaper alternative. SF enabled a particular (cheap and effective) technology, which might not have been selected otherwise. To some extent, the same happened in the Swedish case (broadband expansion), where without SF access to the Internet would probably have taken another form than optic fibre.

The leverage of SF support is clear in the Baltic e-health project because the project would have probably not been implemented without it. The case illustrates how SF are best equipped to circumvent specific problems related to the cross-border dimension of the project (see Section 3.8). Also, in the Romanian case (the modernisation of water sewage plant in Cluj), without a strict scale, tariff schedule and environment-related conditionality incorporated into the ISPA grant (and the subsequent cohesion grant), it is likely that short-termism would have continued and local authorities would have found it difficult to stand the public pressure to invest all the funds into piecemeal extensions of the running water grid, neglecting the environmental component and the sustainability of the operation.

Source: Case study reports

A comparable story characterises the Slovak case. The Slovak project was entirely financed by public funds, but a toll system was also adopted because the provision of the service

was outsourced to an external contractor.¹⁹⁴ The financial returns of the project are derived from the toll system and depend on the density and kinds of transport using the related part of the road. The tolls were expected in tender documentation and were included in the tendering cost-benefit analysis but, in fact, they did not finance the investment. Project funding was ensured independently of the generated project returns. The implied tariffs (vignettes and tolls) will deliver increased returns in 2010 (versus 2009). The expected increasing transport density returns will only slightly grow on an annual basis. However, the proportion of tariffs to the costs of running the service (operation and maintenance) has not currently been reached.

However, in the vast majority of the remaining cases, prices charged to users are said to be affordable and thereby the projects sustainable. This is the case if **efficiency gains are sufficient to cover the price increases** resulting from cost increases. The Lithuanian case (central heating network) is one of the few illustrations of this possibility. Besides the improved reliability and efficiency of the energy supply, the renovation of outdated heating tracks also reduced energy costs since less fuel is required to provide a service of the same quality. The investment and results have not only improved the provision and quality of the central heating services they have also increased comfort for end users at no additional cost. The project did not trigger a price increase. Instead, amortisation funds – a fixed 20% share of the tariff to cover the costs of operation and maintenance – were used. Overall, the company in charge was able to allocate the necessary investment (approximately EUR 2.1 million) without raising service provision prices.

In the other cases, prices remain affordable, and this is made possible because of different factors and through different mechanisms. **SF support is an important (sometimes decisive) factor guaranteeing affordable prices.** In some cases, additional public funds are also required to tackle maintenance and operational costs and **local/national taxes** often play an important role too.

In the case of the treatment of urban waste in Zaragoza, for example, the price is proportional to the cost and quality of the services provided. If the municipality had to finance the construction of the treatment and elimination installations, the quantity of debt to finance would have required higher taxes imposed on citizens. Moreover, the price of water and energy produced through the hydro power station in Madeira is fixed by the company and ultimately depends on costs. The fact that SF cover half the important investment required to restructure the station contributes to keeping costs and thereby prices lower. Also, in the Swedish case SF halved the price that consumers paid to connect to the Internet. As a result, the price of the service was cheaper and the quality higher. Likewise, in the Austrian Memjet project, charges were in principle cost-oriented. In practice, however, the coverage by residents' charge is well below 100% with a decrease from 80% to 42–50%. The remaining costs are financed through the ordinary revenues of the municipality.

In the Cyprus case, the SF and the country's support for the project were reported to have had a positive impact on keeping the centre's services at an affordable price, since their support covered the cost of the infrastructural investment and thereby the services of the centre had substantially lower rates. Although the infrastructure was paid for by EU funding, the municipality of Nicosia committed to covering the operational and maintenance costs. However, the generation of income (rates, fees payable by users and subsidies) does

¹⁹⁴ In fact, it was already at work on the main roads before the project. The system was extended to the new section.

not cover the cost of running the centre's services. Recourse is made to charity and other income-generating events.

The Malta case illustrates the importance of national taxation as a way to maintain affordability and sustainability. The increase of efficiency here corresponds to a cost increase, which in turn falls indirectly on final users through a tax increase (the introduction of an eco-tax in 2004).

Occasionally, the public source of funding results in a service delivered **free of charge** (Table 10). In the German case, the initial plan to have a toll-based project carried out through PPP was abandoned in the face of insufficient profitability.

By contrast, full public funding enabled the service to be implemented free of charge. The same goes for the Csemő project (Hungary), as well in the Latvian and Greek cases in the communication sector. For example, in the Latvian project, e-services are provided for free and all related costs are covered by the municipality budget. The savings realised through e-services help cover the costs. Also, in the Irish case of the construction of a road bypass, it was chosen not to make recourse to PPP but to opt for public funds, and offer a service entirely free of charge for users.

In some cases, the **differentiation of tariffs** according to the category of users is used to keep prices affordable for all users, taking into account their specific needs. Table 10 identifies the cases where this system is adopted, as well as the categories of users targeted. In 14 cases out of 27, a differentiation of tariff is in place.

The Italian case (Circumetnea) is a good example of the differentiation of the tariffs proposed to access the service. Preferential rates are proposed for a high number of "disadvantaged" people. Ticket prices are related to the length of the journey (and thereby to some extent to the "quantity" of service, but not to its "quality"). The expected revenues are considered sufficient to offset the running costs (operation and maintenance) with no other financial aid. Another example in the transport sector is given by the Czech case, in which better tariffs are obtained when a "smart card" is used by specific categories of users (pensioners, seniors, students, parents on maternity leave). Other sectors are also concerned by this practice (waste and water management as in the Bulgarian and Estonian cases, socio-cultural sector as in the Hungarian and Dutch cases).

Table 10: Private co-funding and tariffs charged in the case studies

COUNTRY	PRIVATE CONTRIBUTION	TARIFF	NOTE
Austria	No	Yes	Tariff is fixed by municipal regulations. Control mechanism ensures affordability is foreseen.
Belgium	Yes	n.a.	
Bulgaria	No	Yes	Tariff is fixed by municipal regulations. Diversification of tariff is based on job and other criteria.
Cyprus	No	Yes	Tariff is fixed by service provider after consultation with public authorities.
Czech Republic	No	Yes	Tariff is fixed by municipal regulations. Diversification of tariff is based on ageing criteria.
Denmark	No	Yes	Tariff is fixed by contractual agreement between hospitals.
Estonia	No	Yes	Tariff is fixed by municipal regulation on company's proposal. Diversification of tariff is based on income and geographical criteria.
Finland	No	Yes	Tariff is fixed by air companies.
France	No	Yes	Tariff is fixed by the Société Nationale des Chemins de Fer Français.
Germany	No	No	
Greece	No	No	
Hungary	No	No	
Ireland	No	No	The road is a public good
Italy	No	Yes	Diversification of tariff is based on job and other criteria.
Latvia	No	No	All costs related to the maintenance and operation are covered by the municipal budget.
Lithuania	Yes	Yes	Tariff is fixed by national and local authorities on service provider proposals.
Luxembourg	No	Yes	Tariff is fixed by national authority.
Malta	No	Yes	
The Netherlands	No	Yes	Tariff is fixed by municipal regulations.
Poland	No	Yes	Tariff is fixed by municipal regulations.
Portugal	No	Yes	Tariff is fixed by national regulations.
Romania	Yes	Yes	Tariff is fixed by municipal regulations.
Slovakia	No	Yes	Tariff is fixed by national regulations.
Slovenia	No	Yes	Tariff is fixed by municipal regulations.
Spain	No	Yes	Tariff is fixed by municipal regulations.
Sweden	Yes	Yes	An initial (non-diversified) tariff for connecting your home to the fibre optics net is applicable.
UK	Yes	Yes	There is no price or targeted subsidy control mechanism in place to benefit low income consumers. Older people are eligible to a cold weather payment if temperatures fall below a certain temperature for a set number of consecutive days.

Source: Authors based on case study reports

Table 11: Tariff differentiation based on user categories

Country - project	Job	Age	Income	Geogr.	Disab.	Migr.	Other	Short description
Bulgaria. Waste management: Set of five regional waste disposal sites	X				X			There are different tariffs for households and industries. The municipal council can decide to exempt certain categories of individuals (usually disabled people) for social reasons.
Czech Republic. Renewal of local transport system in Mlada Boleslav		X					X	Pensioners under 70 years of age; pensioners over 70 years of age, children under 15 years of age and parents on maternity leave travel free of charge.
Estonia. River Emajõgi and River Võhandu catchment area water management			X	X				Municipalities have different tariffs since the price of the service depends on several local conditions (e.g., territory, density of population), which can be considerably different between involved local municipalities.
France. Electrification of the Vosges lines		X	X					A regional price concession is envisaged for passengers under 26 and for persons with limited resources, such as high speed rail pricing.
Hungary. European day-care centre for the children of Csemő			X				X	Based on central regulations families with three or more children pay half price and children from disadvantaged backgrounds receive the meal for free. These fees are complemented or paid for by local government.
Italy. Extension of the metro section of the Circumetnea railroad	X	X		X	X	X	X	The operator of public transport in Catania offers monthly passes at discounted rates for a significant number of special categories of users such as retirees, seniors, housewives, veterans, disabled persons, employees, non-EU immigrants, students, university students and unemployed people.
Lithuania. Renovation of the central heating networks in Klaipėda by installing modern technologies	X	X	X		X		X	Low income families and single residents, seniors, disabled persons, compulsory military service soldiers and other socially disadvantaged groups are eligible for compensation from the state budget to reduce their financial burden.
Luxemburg. Expansion of the Luxembourg railway beyond the border to Volmerange-les-Mines	X	X					X	Reductions on the cost of ticket apply to senior citizens, large families, children, students and workers, who receive season-tickets for the economy class. There are no special tariffs or rise in prices that can be exclusively attributed to the expansion of the national network.

The Netherlands. The Malburgen establishment of the multicultural educational and care centre			X			X		Day-care facilities are offered at a rate of about EUR 6.50 per hour, per child. Migrant women attending (mandatory) activities can bring their children to day-care facilities for EUR 3 per month, which is almost free of costs.
Poland. Construction of the KA4E section of the A4 motorway between Kleszczo and Sosnica							X	Differentiation on the basis of the types of vehicles. There are also special discounts for frequent users.
Portugal. Optimisation of the Socorridos hydro power station	X						X	A fixed national tariff for electricity is set by the regulatory entity. There are different tariffs depending on tension levels and power capacity, for instance a domestic client pays more than an industry one (medium tension level client).
Slovakia. R1 Rudno nad Hronom to Žarnovica							X	Tariff depends on the types of vehicles. The transport network is based not only upon the vignette system, but since January 2010 the electronic toll system for trucks (above 3.5 t) has been introduced.
Spain. Complex for the treatment of urban waste in Zaragoza	X						X	The quantity of the tax rate is fixed with a small diversification depending on the nature of users supplied rather than income: housing (based on the consumption of water), shops (volume of generated waste), markets (each stand) or ashes (according to the type of boiler).
UK. Gas pipelines from Gormanstown (Republic of Ireland) to Antrim and from Carrickfergus to Londonderry		X						Older people are eligible for a cold weather payment if temperatures fall below a certain temperature for a set number of consecutive days.

Source: Authors based on case study reports

Another frequent mechanism adopted to ensure the affordability of tariffs is the recourse to **subsidised prices**. In Cluj (Romania), for example, the water sewage operator charges a uniform and regulated tariff that allows it to make operational profits, thereby ensuring the economic viability of the project. This tariff incorporates a mechanism for subsidising rural and more isolated areas for staying in the network and keeping up with payments, since the true cost is higher in such places. Since village communities also tend to be less well off than those in the city of Cluj, the tariff is the equivalent of a social policy for ensuring equal access to SG(E)I. The tariffs are scheduled to go up slightly, according to a seven-year calendar agreed at the beginning of the project, so that by 2013 the target, cost-level prices will be reached.

Another example of subsidisation is given by the wastewater treatment plant in Slovenia. There, the price of the service is proportional to its quantity and quality. The operating costs, including maintenance and depreciation, are completely covered by the price of the treatment plant. However, the price of the service is partly subsidised to keep it at an affordable level. There is no diversification of the tariff depending on the category of users.¹⁹⁵ In the near future, an increase in the tariff for using the sewage system is planned because the current price is failing to cover increasing costs due to intensive investment in the sewage system. The effects of this investment are primarily higher costs of electricity, fuel, materials, rentals and major maintenance. However, the new investment does not lead to new connections, which in turn means that revenues are not growing. Thanks to the subsidisation, despite a planned 13% increase in the tariff for using the sewage system, the increase in the final price for the average user will not exceed 2%.

In a series of cases, affordable prices are established through **specific procedures**. For example, in the French case (electrification of the rail network), prices have tended to increase but it is difficult to say whether or to what extent this is related to SF investment (since there are numerous factors intervening in the setting of the final price such as time of booking, category of passengers).

Another illustration is given by the Baltic e-health project. The costs related to the provision of additional health services made possible by the project are entirely supported by the institutional partners without repercussion on patients. In any case, maintained or improved affordability is not the primary objective of the project since every cost is covered through the respective national health services of the countries where the project takes place. Also, in the case of the construction of landfills for waste treatment in Bulgaria, the costs for waste collection, transport, utilisation and disposal are borne by the owners and producers of the waste, which implies a "polluter pays" principle.

Local fees for household waste are determined on the basis of the necessary material, technical and administrative expenses related to the provision of the service and in compliance with specific principles.¹⁹⁶ The law on local taxes and fees states that the fee is determined according to the amount of household waste. A common practice in all the municipalities in Bulgaria is to determine the household waste fee based on the tax valuation of the property of the household.

¹⁹⁵ But there are two different prices: for wastewaters that flow into sewers and are not cleaned in the wastewater treatment plant and for wastewaters that flow into sewers and are cleaned in the wastewater treatment plant, with an overall slightly higher tariff for those users who are not connected to the wastewater treatment plant.

¹⁹⁶ Namely, the coverage of the full expenses of the municipality related to the provision of the service; the creation of conditions for expanding the offered services and improving their quality; and the fairer ways of determining and paying local fees.

3.6. Geographical remoteness and SG(E)I

Territorial cohesion is a key objective of SF interventions and consists of pursuing a place-based approach to respond to the challenges of regional development, which is characterised by a complexity of issues strongly embedded within the territory of the EU and its diversities.

Case studies have shed light on how, and if, projects implemented using SF have enhanced territorial cohesion across the EU. Territorial cohesion is, in particular, addressed in the cases of remote and outermost regions and rural and mountainous areas.

Remote and outermost regions are less attractive to commercial operators in a number of sectors. Owing to specific constraints and the often low population density, investing in or even maintaining existing infrastructure is rarely profitable. In particular, less profitable sectors are postal, phone, broadband and rail services, but also basic services such as water supply and waste management can lack quality in these areas. To counter market failures, there is a need to subsidise infrastructure in these services in such areas to reduce disparities and guarantee universal access to basic services.

The types of support range from ensuring better accessibility (better transport of telecommunications to more central areas) to guaranteeing an acceptable level of basic services provided locally (waste management, water supply and treatment, social services). In some cases, support might be needed for cross-border structures, especially in remote areas, with public transport or, for example, postal services between the north of Finland and Sweden. In other cases, such as electricity, outermost regions would be expected to benefit more from investment in local generation capacity than from greater transmission capacity for internationally traded electricity. In other cases, where neither railway nor coach services are commercially viable in remote regions, direct public subsidy or the provision of services might then be needed.

The following observations are given to illustrate the problems encountered in remote and outermost regions:

- Evidence shows that transportation accessibility is considerably low for islands all over the EU;
- The search for competitiveness in postal services has led to a thinning out of the post office network in remote areas;
- Such areas are also less economically attractive to mobile phone operators, broadband service providers and rail services;
- Access to telecommunications and broadband services are especially important not only for territorial cohesion but also for economic development. There will be territorial disparities in access to broadband if market forces are given a free rein.

Three out of the 27 projects analysed in the case studies relate to providing services to inhabitants living in remote areas (Bulgaria, Estonia and Finland) and one to inhabitants living in an outermost region (Portugal). They are representative of the theoretical framework of SG(E)I provision in geographically remote areas. The case studies in Denmark, France, Sweden and Greece are relevant examples of projects implemented in rural and/or mountainous areas.

Evidence from these case studies confirms that **remote and outermost regions are frequently associated with lower economic conditions and growth** because of inherent difficulties in achieving economies of scale and generating profits from major investments coupled with a lack of basic infrastructure and, often, high unemployment (especially among young people) and high migration phenomena.

Although access to highly developed and technological services (for example, a new technology in the telecommunications sector) is recognised as an important factor for economic development, the case studies suggest that the main needs addressed by EU funding in remote and outermost areas are still related to the provision of primary services, such as 24-hour access to drinking water, an environmentally efficient heating service or effective and healthy waste management. This is more significant in regions lagging behind than in more competitive ones.

Bulgarian and Estonian projects are examples of interventions in peripheral rural areas suffering from economic depression and low development. In these areas, there was a lack of basic infrastructure and quality services in the environmental sectors, such as solid waste management (Bulgaria) and wastewater treatment and water supply (Estonia). **Owing to regional conditions (geographical remoteness intertwined with economic deprivation), environmental services in these areas had not reached adequate standards of provision** and needed financial support from supra-regional authorities.

For instance, the Bulgarian provinces targeted by the intervention were experiencing damage to the environment because of the lack of appropriate waste management and obsolete infrastructure. Public support was necessary to fill this gap and comply with EU regulations. First, the new landfills contributed to achieving a better quality of life and improved social welfare for the local population by safeguarding the environment and ensuring that the level of pollution did not harm people's health. This was pursued by reducing the pollution of the soil, ground and surface water and air quality through the safer treatment of waste.

Secondly, the project contributed to more sustainable production and consumption patterns through more efficient waste management, thereby ensuring that the consumption of resources did not exceed the carrying capacity of the environment. This stems directly from the achieved reduction in total and hazardous waste, the introduction of safer waste treatment and disposal and the encouragement of waste reuse. Thus, a better environment and a sustainable production and consumption pattern were the immediate goals achieved by the project.

Without such elementary conditions, it would have been difficult to trigger growth through the localisation of economic activities in the territory. This is how the project will improve territorial cohesion: the new landfills will indirectly assist the areas affected to revive their economies by offering better conditions to businesses in terms of development possibilities, without increasing the pollution of the environment. In addition, local economies could benefit from the procurement of construction materials and from personnel employed during the construction and operation phase.

Similar to the Bulgarian case, the Estonian municipalities targeted by the project were suffering from poor water and wastewater systems and weak access to the central public water supply and public sewerage system. There were also problems with drinking water quality because of the high content of iron and fluoride, and the water network was mostly

in an obsolete condition and was constructed of cast iron, iron and plastic pipes. Existing wastewater treatment plants had different problems such as low treatment efficiency, poor condition and missing sludge treatment. Again, public support had previously been necessary to respond to a need that could not be appropriately addressed by local authorities or private operators alone.

The implementation of the Estonian project helped improve water and wastewater management in the regions concerned through the construction of water treatment systems and networks. This offered the population high quality drinking water and rationalised water resources. Moreover, the construction of sewage treatment systems and networks helped reduce overall pollution load, minimise health risks, decrease infiltration water in the sewerage system and protect groundwater resources. **This large scale investment extended water supply in areas with severe territorial differences in terms of availability, price and quality.**

The Portuguese case is similar to the Estonian and Bulgarian ones in that it reinforced a remote area or outermost region with a basic service such as water supply. In outermost regions, self-sufficiency in the supply of all inputs and the provision of services necessary for sustainable development is crucial given the physical isolation of these areas that prevents them to trading goods at convenient prices. The supply of secure and safe energy and drinking water is, therefore, vital. Given that tourism is the main economic sector in Madeira, it needs to be well supported by adequate infrastructure, equipment and public services. This translates into the need to constantly improve tourist facilities. Consistent with this framework, the project analysed consisted of the upgrade of a hydroelectric power station for permanent annual public water supply provision, both for irrigation and business purposes, as well as for the production of electricity (see below).

Box 11: The optimisation of the Socorridos hydro power station in Madeira

THE OPTIMISATION OF THE SOCORRIDOS HYDRO POWER STATION IN PORTUGAL

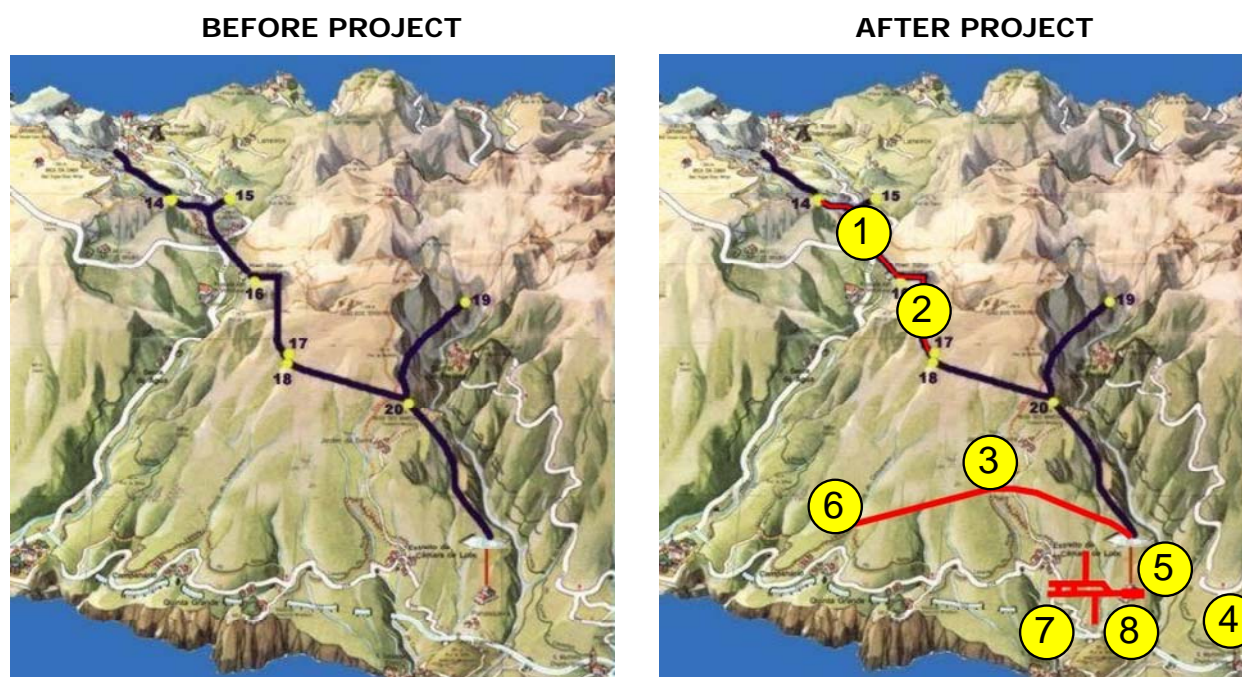
Tourism is the main economic sector in Madeira. The environmental conditions are highly favourable but the preservation of the region's natural environment must be a priority if the delicate balance between the landscape and economic exigencies of tourism is to be maintained. This means that there must be quality improvements, which will also act as an efficient means of promoting customer fidelity. The Socorridos project is a good example in this context.

The project consisted of upgrading an already existing hydro power pumping station that produces electricity all year. The station also has a storage device to redistribute power between peak and off-peak periods. Water is pumped back to reservoirs during off-peak periods so that it can be reused for electricity production during high demand periods. By reusing the water, hydro power electricity production can be ensured all year. Thanks to the project, more water is now available for irrigation and to supply populations in urban and rural areas. The coordination of these infrastructures allowed the transfer of water collected in the northern part of the island (where the terrain is at a higher altitude and there is more rainfall) to the southern part of the island.

Source: Case study report

Better economic conditions in Madeira result from the fact that the infrastructure was not totally lacking (as was the case in the Bulgarian and Estonian projects) but needed upgrading to reach adequate standards (Figure 18). Consequently, the aim was not to provide a new service but a renovated service, consisting of cleaner, environmentally friendlier and cheaper energy, in line with the goals of the Lisbon agenda. Moreover, besides their obvious advantages for the environment, renewable energies have a leverage effect on investments in the macro-economies of small regions such as Madeira. The production of electricity using renewable energy resources can replace expenditure on fuel imports with regional domestic investment. This, in turn, has an endogenous multiplier effect on the regional economy, boosting both employment and aggregate demand, positively affecting Madeira's balance of payments and gross value added. In fact, rather than paying foreign oil suppliers, payments are made directly to domestic companies, a process which stimulates further economic growth, investment, technical know-how, greater employment opportunities, greater welfare and wealth. In practical terms, the project increases Madeira's GDP while ensuring a sustainable environmental policy and reducing greenhouse gas emissions.

Figure 18: The upgrade of the hydraulic system for the public water supply in Madeira



Source: Case study report

A different need is instead recognisable in the projects of Finland, Denmark, Sweden, Greece and France, where accessibility is the main objective. Located in north-east Finland, close to the Arctic Circle and about 830 km from Helsinki, the municipality of Kuusamo is a remote and sparsely populated area with severe problems of mobility for its citizens (Figure 19). The area lacks fast public transportation and is not accessible by train, since the nearest railway station is located 200 km away. To reach Kuusamo by train and bus 12 hours are needed from Helsinki. Within this context, the strategy adopted by the regional government was to give the existing airport the capability to move a significantly higher number of passengers by offering more frequent flights to more destinations. By extending and renovating Kuusamo airport the connection between this area with the southern part of the region, as well as central Europe is improved. An **empowered airport means not**

only better accessibility to Kuusamo city and the neighbouring municipalities, but also growth opportunities stemming from the overall better conditions of the territory. In other words, **higher accessibility can attract new investment and retain people, especially the young and highly skilled workers that might be otherwise tempted to move to more attractive places.**

This was very clear to Finnish national and regional policymakers. After growing the Union, the geographical handicap of Finland became more relevant than before because EU-12 are located closer to the major European markets. The geographical location of Finland seriously hampers its competitiveness within respect to other EU countries. The national government consider overcoming these constraints a priority for improving Finland's competitiveness, and the provision of well-functioning transport connections is a key factor for growth. Finnish national transport policy is particularly focused on improving the quality of transport connections. More specifically, it has been assessed that the long distances to the most important market areas and the severe climate are responsible for the higher logistics costs of Finnish companies compared with those of companies in the core areas of the EU. Finland's strategy is to compensate these companies by having a more efficient logistics system than other countries. **The objectives pursued with the project analysed fit well into the broader national and EU strategy, since it improves the accessibility of one of the most remote areas of north-east Finland.**

Figure 19: The geographically remote area of Kuusamo (Finland)



Source: Case study report

In the Danish case, rural areas in the Syddanmark region suffer from scarce radiological services because of the time constraints of medical staff, rising closures of small hospitals, 'brain drain' to urban centres and elevated operational costs. To overcome these difficulties, the Baltic e-health project allowed several institutes in the Baltic region to provide two types of service (radiology and ultrasound visits) regardless of the proximity of the patient from the examining hospital. The new technology developed by this e-health initiative offers medical services in Danish rural areas while retaining high standards and saving costs. Thus, capacity downsides in the health sector are overcome using ICT

technology, which, in turn, balances access between urban and rural areas and fosters the attractiveness of the latter¹⁹⁷ (see Box 12).

Box 12: Baltic E-Health project

BALTIC E-HEALTH PROJECT

Improving life in rural areas of the Baltic Sea region

The Baltic e-health project consisted of the creation of a trans-national e-health network, titled the Baltic Healthcare Network (BHN), in which small rural hospitals with capacity problems could offer high quality services to their patients thanks to their connection with a network of foreign hospitals with surplus capacities.

The following steps were followed for project implementation:

- A legal and organisational framework, in which the BHN could operate, was created. The project scheduled the publication of different reports on the impacts of e-health in rural areas and the issue of cross-border cooperation in the Baltic region.
- Standard technology, hardware and software was used to communicate between the health institutes of the different countries.
- After setting up the common technology, two pilot projects took place. In the e-Radiology pilot project, if practitioners of the Danish institute Funan University Hospital had insufficient capacity, the radiological images of their patients could be transferred over the Internet to East Tallinn Central Hospital (Estonia) or Vilnius University Hospital (Lithuania), where a pool of radiologists could examine them on their behalf. The second pilot was the e-Ultrasound project between the National Centre for Foetal Medicine at St. Olav's Hospital (Norway) and the Foetal Medicine Unit at the University Hospital of Umea (Västerbotten, Sweden), a combined centre for ultrasound and special maternal treatment that routinely ultrasounds pregnant women in the county of Umeå and has secondary responsibility for the rest of northern Sweden. The request of clinical cooperation with second opinion examination at National Centre for Foetal Medicine (NCFM) can be carried out at the Foetal Medicine Unit (FMU) in different ways: either by images sent via web portal or by video conference.

Source: Case study report

In the French case, a high speed rail project was implemented to provide services to the towns of the Vosges area. This department is a rural area split between a mountainous area to the east and a west plain occupied by 48% forest. Vosges mountains occupy one-third of the department's territory and separate Lorraine and Alsace as a natural boundary. To ensure high speed rail services, the electrification and upgrading of the signals of the two pre-existing lines were required to introduce passenger rail transport and improve freight transport with a resulting significant reduction in noise pollution. A technological improvement of the existing line was adopted to improve accessibility and mobility conditions by reducing travel times within and outside the region. By becoming part of the

¹⁹⁷ As underscored by the survey by Sorensen J.F.L. and Svendsen G.L.M. (2007), geographical remoteness plays a role in the supply of healthcare services. Although for the majority of the population access to healthcare services is not a decisive factor about choice of residence, everyone appreciates high quality and accessible health services, and in rural areas about half of citizens reach these targets through e-health technologies. These solutions, such as consulting a specialist over videophone or having a doctor in a foreign country evaluate X-rays, can counteract part of the probable migration from remote rural areas and improve the attractiveness of those areas.

broader development plan of the region, the electrification of the Vosges rail lines might also work to counter major threats affecting the area, such as the continuing exodus of rural youths in the western Vosges and the desertification of certain rural areas.

The Swedish and Greek cases deal with telecommunications and, in particular, broadband access. In Sweden, the project consisted of the expansion of fibre optics to rural regions with both woodland and agricultural land and, to some extent, urban and mountain areas.¹⁹⁸ The final objective of the project was to increase the number of enterprises and encourage employment by creating access to a competitively neutral IT infrastructure with high broadband speeds. This objective resulted from the identification of the following needs of the territory:

- To provide access to the IT infrastructure in sparsely populated areas and geographic areas not yet covered because of their remote locations;
- To create equal conditions for access (e.g., fees, speed, quality) in rural areas;
- To increase accessibility to broadband services for SMEs in rural towns and villages; and
- To establish competition and suppress monopoly by developing a network infrastructure that is open to all at equal conditions.

Extended high quality Internet access was a particular request from the regional tourism and business organisations. Internet access is now seen as a necessary requirement for marketing offers and providing services to visitors. Broadband access promotes economic growth through the creation of new services and the opening of new investment and job opportunities.

The Greek "Bridge Me" project concerned the development of a wireless broadband network which connected the municipal authorities of the area with the Prefectural and the Regional Authorities. A high-speed information platform was created allowing the use and exchange of data, sounds and images. In particular, the project helped in overcoming the disadvantages created by the geographical characteristics of the area, as it is a platform that can support services which are of particular interest to specific groups of the population. This does not concern only the e-government applications that are already in operation, but also the applications that are planned to start operating the next months. The project has proved to be an essential territorial development tool by providing people of mountainous and disadvantaged areas with the possibility ability to enjoy e-services of high quality.

A comparative analysis of these cases highlights that **geographical peculiarities influence the organisation and provision of SGI as well as the building and location of related infrastructures.**

In the case of geographically remote and lagging behind regions, disparities are inter-regional, since lower population density, difficult economies of scale and more incisive market failures in services provision disadvantage these regions. Geographical

¹⁹⁸ From an engineering point of view, a larger portion of territory could have been addressed by the project, but it was not judged to be economically or commercially possible to extend the fibre optics to the most sparsely populated areas due to a too high degree of depopulation. Although it has proven to be less costly to put fibre optics in the ground in rural areas than in towns, long distances to these rural areas pose problems of cost-effectiveness. Another factor that limited the territorial coverage of the project was that an ADSL connection was already available in the area covered so that some possible end-users were already gaining access to the Internet through broadband.

remoteness acts as a strong disincentive for infrastructure and service provision in such a way to raise, in any case, the necessity to intervene radically. **The aim of the structural policies** (pursued either with SF or not) **is, therefore, to lay the basis of sustainable development**. Thus, the needs to be addressed in these regions and, consequently, the types of service to be provided can assume less advanced and technological forms of delivery. National and regional authorities see these projects as the necessary provision of an essential service to improve the quality of life and the environment in order to create the preconditions to attract investment and foster local entrepreneurship. At the same time, the territorial dimension of the projects analysed – in terms of geographical surface and population coverage – is usually large since the projects are implemented with at least a regional relevance.

The main problems of rural and mountainous areas in the more competitive regions of the EU, on the contrary, **lie in the scarce attractiveness of the territories**, with the significant exodus of the young and low human capital endowment. Thus, here **intra-regional disparities** must be addressed. The strategy adopted in these cases is to intervene by offering renewed, high quality and advanced services. **The aim is to enhance territorial attractiveness to promote regional cohesion by retaining the territory's people, ideas and initiatives**. To maintain adequate levels of business, public services should be of a high standard. In this regard, the use of innovative and advanced technological solutions can represent added value.

Analysing the impact of the projects co-financed with EU money, the SF can contribute to counter territorial imbalances through the provision of:

- **Primary services**, for example the treatment of waste disposal (Bulgaria) and wastewater treatment and water supply (Estonia), **to trigger growth potentials in geographically remote and lagging behind regions** by improving conditions to start sustainable development. In this way, inhabitants of remote and outermost regions can equally access services necessary for their quality of life and well-being.
- **More innovative and technological solutions**, in the case of sub-regional areas in need of a rebalance with the rest of the regional territory. **When projects in rural and mountainous areas are part of regional plans to counter intra-regional disparities, the solutions are technological innovations, improvements or extensions**. Whether a rail line, a fibre optic, a radiological exam or an IT network, the project builds on a pre-existing service that for different reasons needs to be renewed or extended.

To conclude, the discussion on territorial cohesion needs to be satisfied and types of intervention go hand in hand: the richer a region, the more likely it already has an infrastructure providing primary services and thereby its need is to upgrade services. This is particularly the case for projects implemented in rural **sub-regional areas** of more competitive regions, where **SF interventions have been mainstreamed within the broader strategy of balancing intra-regional disparities** (i.e., the inequality of services between urban and rural areas).

In the case of geographical remoteness, different types of interventions have been implemented, all responding, however, to the primary need of providing the regions with the necessary conditions (or in some cases preconditions) for growth. Greenfield investment is particularly significant in this domain because it creates new services where they were lacking. This is the case for **lagging behind regions, where SF can have a great impact by endowing the region to trigger a sustainable development path**.

Table 12 provides a comparative overview of the case studies selected as relevant for territorial cohesion. For each of them, the main features characterising the projects in light of their territorial cohesion impacts have been summarised.

Table 12: Overview of case studies relevant for territorial cohesion

Country/Project	Territorial cohesion dimension	Type of need to be satisfied	Type of intervention implemented	Territorial relevance of the project
Bulgaria. Waste management: set of five regional waste disposal sites located in Montana, Ruse, Sevlievo, Silistra and Sozopol in Bulgaria	Geographical remoteness	Primary	Greenfield investment	Medium
Estonia. River Emajõgi and River Võhandu catchment area water management	Geographical remoteness	Primary	Greenfield investment	Medium
Finland. Renovation and enlargement of Kuusamo airport	Geographical remoteness	Primary	Capacity extension	Large
Madeira. Optimisation of the Socorridos hydro power station	Geographical remoteness	Primary	Infrastructural improvement	Large
Sweden. Enterprise development by broadband of the future	Rural	Secondary	Capacity extension	Small
France. Electrification of the Vosges lines	Rural	Secondary	Infrastructural improvement	Small
Greece. Bridge Me (Broadband over the mountains)	Rural	Secondary	Innovation	Small
Slovakia. R1 Rudno nad Hronom to Žarnovica	Rural	Primary	Greenfield investment	Medium
Denmark. Improving life in rural areas of the Baltic Sea region by e-health services	Rural	Secondary	Innovation	Large

Source: Authors based on case study reports

3.7. Cross-border cooperation and service interoperability

The fact that only 4 out of 27 case studies addressed the cross-border features indicate that delivery of SGI through cross-border cooperation is not a consolidated and frequent procedure although there are practical examples presenting benefits of cross-border cooperation in SGI provision to inhabitants of two or more countries.

A wide range of services starting from transport to healthcare can be provided through cross-border cooperation. Evidence from previous case studies suggests that no particular sector or type of service is more suitable than others for interoperability. However, the service interoperability of some sectors such as transport might be more important because commuters need joint services in order to travel efficiently across the borders. The type of benefits received by the inhabitants of a particular region will depend on the nature of services themselves. The benefits generally arise due to **better access of the inhabitants to services that tend to spread to all segments of the population because of better mobility**. In this sense, the Service Directive attempts to balance the objectives of facilitating the provision of cross-border services by removing obstacles to the free

movement of services in the internal market with social considerations. Nevertheless, continued legal uncertainty remains with certain provisions of cross-border services because of the varied nature of the structures and provisions provided by the respective national laws.

The main benefit of cross-border service provision is the inhabitants' **better access to services**. When some schemes on joint service provisions are developed, they usually include access of the services on both sides of the border. In other words, it is an installation of joint facilities (e. g. waste management) which provides more opportunity for its use by inhabitants of both sides. As an example, the immediate benefit in the case of "all Ireland natural gas market" included development of basic infrastructure in the cross-border area that provided its inhabitants and all consumers with better and more reliable access to natural gas¹⁹⁹. Common sewerage treatment provision for Suwalki (Poland) and Marijampole municipalities (Lithuania) gives access to safe drinking water to the inhabitants of Baragine village²⁰⁰. Similarly, the Cerdanya cross-border hospital project for French and Catalan region, once completed, is expected to serve about 30000 patients from both the regions²⁰¹. The inhabitants can benefit from better capacity in terms of specialists and facilities across the border. Thus, patients spend less time waiting in queues and have easier access to better facilities and specialized doctors, which in turn translates into better health and quality of life for the inhabitants.

Services (usually transport) that have the primary goal of **enhancing mobility** of inhabitants, is beneficial in a number of ways. Achieving service interoperability by connecting territories with transport services such as bus, boat train or plane, and integrating tariff systems and time schedules in the cross-border regions, implies easier travelling from one region to another is made easier for the inhabitants. That is especially important when they commute to another country for work. The aforementioned example of French Lorraine and the G.D. of Luxembourg illustrates the case: in order to reduce the congestion between these two areas due to the flow of commuters, rail lines on both sides of the border were connected. In this case, the cross-border workers and other travellers were benefited by the additional travelling options and shorter journey times by using railways instead of the road transport.

The example of Lorraine – Luxembourg can be used further to illustrate how cross-border service provision not only brings immediate benefit to target groups (commuters, patients) but also **benefits inhabitants who are not facing the problem of lack of mobility or access to services directly**. The traffic congestion on the roads to work places and illegal parking decreased because of the railway option, thus benefitting all drivers in the area not only commuters. Similar to the case of common water treatment project, decrease in exhaust fume from the vehicles increased the quality of environment for everybody in the region. Likewise, better access of flu patients to healthcare facilities decreases the chances of healthy people contracting this contagious disease in public places. Additionally, better mobility and easier access to regions of other country by both workers and consumers through cross-border transport connections facilitate economic growth and employment in the region which, in turn decreases disparities in employment on both sides of the border and increases consumption of services and products. In this way, cross-border cooperation in service delivery, indirectly brings about greater economic growth, employment and overall sustainability that benefit all the inhabitants in the region.

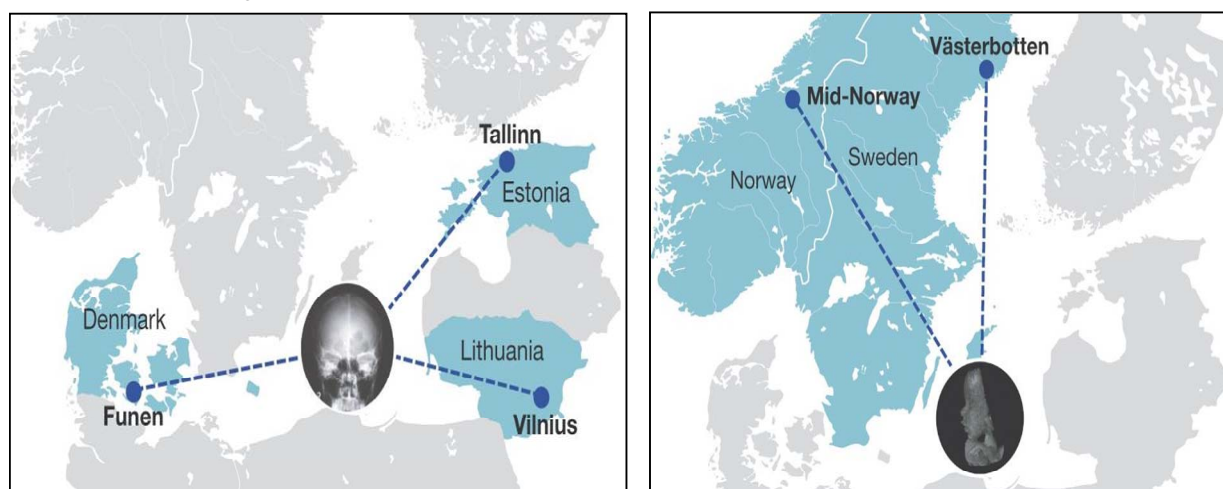
¹⁹⁹ For more information, see « The inter-relationship between the Structural Fund and the provision of services of general interest and services of general economic interest and the potential for cross-border service delivery », final report volume II, p. 344.

²⁰⁰ For more information see www.lietuva-polska.eu.

²⁰¹ For more information, see <http://www.hcerdanya.eu/webgc/en/index.html>.

Moreover, **service interoperability can spread its effects outside cross-border regions**. In the Danish project, for example, the final beneficiaries are not only the inhabitants of the rural areas of the concerned territories, but also those in the neighbouring areas. As illustrated in Figure 20, all citizens of the Syddanmark region, located in the south of Denmark, can profit from the e-Radiology project, exploiting resources from countries such as Estonia and Lithuania, that do not even neighbour Denmark. Similarly, the inhabitants from Västernorrland region in Sweden can benefit from the surplus of capacity coming from mid-Norway.

Figure 20: e-Radiology and e-Ultrasound schemes within the Baltic e-health project



Source: www.baltice-health.com

Cross-border cooperation for service delivery, though still not widespread, is an option that could be further explored because of its substantial benefits.

However, a the noticeable feature is that the **delivery of cross-border services has more complex architecture** than the traditional ones because of the duplication in decisional and organisational aspects in addition to legal responsibilities. This results in barriers to the implementation and provision of cross-border services; the barriers can be legal, technical, economic, financial, political or cultural.

Legal constraints are the most significant challenges. It is essential to bring the different national laws and regulatory requirements in the concerned countries under a common legal framework (see Box 13 below). Agreements between service providers and authorities must therefore be established on an ad-hoc basis. Differences in the structure and responsibilities of various levels of administration on both sides of a border should also be mentioned as a factor hindering cross-border service provision²⁰². It makes communication more complicated and lengthy since additional coordination and procedures are required. Another legal constraint is the absence of common frameworks for taxation and social security²⁰³. Who should tax for services provided to the inhabitants of both regions across the border, and how to compensate for the treatment of patients in another country, are all questions that need additional agreements and frameworks to set up. Reconciling different social security systems is of greatest importance to cross-border healthcare provision.

²⁰² Opinion of the European Economic and Social Committee on 'Euroregions' (2007/C 256/23), Official Journal of the European Communities, 27.10.2007.

²⁰³ Ibid.

Even though these issues could be resolved by national regulations or by bilateral or multilateral treaties, the lack of political will often hinders the elimination of these restrictions²⁰⁴.

Technical constraints can be related to the geographical features of the project implemented (although this is not specific to cross-border projects only). Of the main technicalities faced to create an interoperable service, the necessity to ensure homogeneous technological standards (as in the case of the gas pipeline, e-health projects, connecting railways etc.) is an issue that needs to be taken into account.

It has also been noted²⁰⁵, that local and regional authorities have limited experience of programme-development and programme-management, which makes them less capable of developing and sustaining cross-border service provision.

Economic barriers mainly relate to the need to establish full cost recovery tariffs within a multinational context. Users from different countries with different economic situations can have different affordability thresholds and willingness to pay. When services are exchanged in a trans-national network, the prices and quantities exchanged have to be regulated with specific contracts between providers. Divergent price structure is one of the obstacles hindering the interoperability of cross-border healthcare services in which the providers treating foreign patients should be reimbursed appropriately.

Moreover, structural economic differences between the border regions might hinder cooperation²⁰⁶ because the richer region might feel reluctant to get involved in cross-border cooperation service provision with the poorer regions since it runs the risk of carrying a greater financial burden while receiving the smaller share of benefits.

Financial problems pose a greater challenge to cross-border service provision. A survey conducted among the responsible project bodies of about 300 healthcare cross-border cooperation projects has indicated that almost one third of the projects (i.e. 29 %) experienced financial problems²⁰⁷. This might be related to the lack of SF since over 90% of those surveyed were funded by Community INTERREG initiative²⁰⁸. But, since SF covers only a part of the expenses, additional challenges arise in getting scarce funds elsewhere, i.e. through national and regional grants²⁰⁹.

Political barriers include not only the unwillingness to solve legal constraints with bilateral or multilateral agreements but also the reluctance to involve in cross-border cooperation in general. For example, one of the main problems of EGTC project on Karst-Bodva (between Hungary and Slovakia) for social and economic cohesion is the unwillingness of adjacent bigger cities and authorities on the regional level to join in. Thus only small municipalities participate in the EGTC²¹⁰ which results in allocation of smaller budget and far smaller abilities to make an impact.

²⁰⁴ Ibid.

²⁰⁵ Opinion of the Committee of the Regions on 'Strategies for promoting cross-border and inter-regional cooperation in an enlarged EU — a basic document setting out guidelines for the future' (2002/C 192/09) Official Journal of the European Communities, 12.8.2002.

²⁰⁶ Opinion of the European Economic and Social Committee on 'Euroregions' (2007/C 256/23), Official Journal of the European Communities, 27.10.2007.

²⁰⁷ LIGA.Fokus 1, Evaluation of Border Regions in the European Union (EUREGIO) Final Report, April 2008, 53 p.

²⁰⁸ Ibid, 54 p.

²⁰⁹ Ibid, 53 p.

²¹⁰ Metis GmbH, 37 p.

Cultural challenges consist of language barriers as well as cultural prejudices²¹¹. Half of the cross-border healthcare cooperation projects reported language barrier problems that hinder the cooperation and can prevent it from being long lasting²¹². Although this challenge can be dealt with by hiring interpreters or taking language courses, this puts additional strain on the already scarce funds. Cultural prejudices and differences can result in overall reluctance to cooperate (or continue to cooperate) even when the project might be beneficial for both sides.

On a more general level, the lack of development of cross-border projects can also stem from the lack of mutual interest for cross-border services at a political level as well as from concerned users. If the provision of a service requires the response of the concerned territories to a specific need, such needs must be identified through programming policies of public authorities and by users to assure efficient financing.

Projects similar to those considered in this study can also be conducted in the framework of the construction of Trans-European Networks (TENs). TENs contribute to the creation of internal market and the reinforcement of economic and social cohesion through interconnection and interoperability of national networks, as well as through providing access to such networks. These infrastructure networks were defined by the Treaty for transport, energy and telecommunications. The primary objectives are to create high-level service or utility networks alleviating congestion (transport issues), the development of broad-band networks ("information highways"), and the gradual integration of natural gas and electricity networks in view of guaranteeing energy supply security of all EU regions. This goes to show how infrastructure projects can also be funded through the TEN-budget and by other EU programming policies outside the scope of this study.

²¹¹ Opinion of the European Economic and Social Committee on 'Euroregions' (2007/C 256/23), Official Journal of the European Communities, 27.10.2007.

²¹² LIGA, 51 p.

Box 13: European grouping for territorial cooperation**EUROPEAN GROUPING FOR TERRITORIAL COOPERATION (EGTC)****Legal barriers in cross-border cooperation**

To overcome the difficulties associated with the coexistence of several national legal systems and to accelerate the cohesion process, the EU considered this problem in its 2007–2013 programming period by creating the EGTC. It is a legal structure that was not specifically created for trans-national cooperation, but it can nonetheless be considered as a useful framework to achieve it. A legal framework, which would override the other standards, was formulated by the EU for EGTCs. This allows a more efficient set of measures that will receive the same recognition on either side of the border. Member States, regional or local authorities, and public bodies can be part of an EGTC. However, an essential requirement is that the framework must involve at least two different countries, so that it allows multilevel cooperation. These tasks include the facilitation and promotion of "territorial cooperation" and "the implementation of territorial programs or projects co-financed by the Community" under the SF. The EGTC is a method of territorial cooperation and can be considered a useful tool, especially when the EU provides fund for the cross-border actions.

Because of its legal framework, EGTC can independently manage and implement the SF granted to a joint operational program. But the EGTC mission needs to be defined precisely in the constituent agreement between its Members²¹³. Since 2008, this structure has attracted a number of communities. The first EGTC – the "Lille Kortrijk Tournai" Eurodistrict, was created on January 22, 2008 with a primary mission to promote and support effective and coherent cross-border cooperation in the concerned area. Equipped with extended powers, it brings together the French and Belgian states, and Belgian federal entities alongside local and regional authorities to intervene in a number of areas involving cross-border relations in mobility, health, education, employment and tax harmonisation. Combining inter-municipality and State level can help in examining how the provision should be interpreted when it foresees that the tasks entrusted to the EGTC, "all fall within the competence of each of them under national law".

Source: Ciriec (2007)

Within the context of different and significant barriers to project implementation, **SF can play a role by providing a common institutional framework and common operational instruments to authorities** to help them overcome constraints inherited in cross-border activities.

They also provide a **financial incentive** for achieving active and effective cooperation for a common objective. While the legal obstacles to cross-border SGI can be solved at least partially by the EGTC, the availability of adequate funding as a factor for promoting cross-border cooperation²¹⁴ can be tackled by the availability of SF. The shift of priorities in the EU Cohesion policy made European territorial cooperation as one of the objectives of the policy for the period 2007 – 2013 (instead of having a separate programme known as

²¹³ Granger M. (2010), p. 92.

²¹⁴ Opinion of the Committee of the Regions on 'Strategies for promoting cross-border and inter-regional cooperation in an enlarged EU – a basic document setting out guidelines for the future', (2002/C 192/09), Official Journal of the European Communities, 12.8.2002.

INTERREG). Such shift resulted in allocation of more funds for the promotion of cross-border, inter-regional and trans-regional cooperation. Budget for this objective increased from EUR 5.5 billion in 2000-2006 to EUR 8.7 billion for 2007 – 2013. Moreover, cross-border cooperation, the so called strand A, receives more than 70% of the whole objective's funding²¹⁵. Currently, there are 52 cross-border cooperation programmes financed by EUR 5.6 billions of ERDF contribution²¹⁶. Since setting up and sustaining cross-border SGI require substantial funds, the SF contribution is of great importance for such cooperation. As an example, it is considered that because of lack of finance, the cross-border healthcare accessibility in Euregio Meuse-Rhine wouldn't have been sustainable and feasible without the additional EU funding²¹⁷.

In addition, other EU objectives including the Convergence objective, Regional competitiveness and employment objective can contribute to the promotion of cross-border cooperation. Under these objectives, economic infrastructure, employment, social inclusion and economic growth in the least developed regions are promoted by means of ESF and ERDF funds. Thus these objectives ensure elimination of structural and economic differences on both sides of the border, thereby creating an environment conducive to cross-border cooperation service provision.

Another great advantage of SF financing is that it **allows achieving economies of scale** in cross-border service provision. Running joint services is cheaper and more efficient than having the same services separately in both cross-border regions since the initial cost of developing the facilities (e. g. water treatment plants) may be the same, but they may not be able to operate to their full capacities owing to lack of service receivers. For the same reason, training farmers in order to promote sustainable horticultural services between Lithuanian and Latvian regions²¹⁸ is more efficient when done jointly. Since national authorities are less likely to fully fund the cross-border cooperation projects as they exceed national borders and bring forth budget limitations, the role of SF becomes crucial in achieving successful and continuous cross-border service provision.

SF can also help in solving problems related to lack of experience in programme management and language usage by local and regional authorities. SF can help **strengthening administrative capacities** of public administrations²¹⁹. For example, Alytus district municipality - a partner for three cross-border cooperations in SGI projects with Polish border region²²⁰ - uses this opportunity for strengthening its administrative and English language skills²²¹. Through continuous participation in SF projects, the skills of public administrations are likely to get developed, which when passed on and shared, will make up for the skill gap and maintain continuity. Finally, if the local authorities are not involved in the cross-border cooperation at the moment, upgrading their skills and capacities using SF finance might serve as the basis for their involvement in future cross-border cooperation projects.

²¹⁵ European Union Regional Policy, « Regions as partners. The European Territorial Cooperation Objective » Inforegio panorama. No 24, December 2007, 7 – 8 p.

²¹⁶ http://ec.europa.eu/regional_policy/cooperation/crossborder/index_en.htm.

²¹⁷ Case study: cross-border cooperation for healthcare provision in Euregio Meuse-Rhine, The European e-business market watch, www.ebusiness-watch.org, 2004.

²¹⁸ For more information see www.bsrinterreg3a.net.

²¹⁹ European Union Regional Policy, « Regions as partners. The European Territorial Cooperation Objective » Inforegio panorama. No 24, December 2007, 6 p.

²²⁰ For more information see <http://www.lietuva-polska.eu/index.php?2207622484>.

²²¹ For more information see www.esparama.lt (in Lithuanian).

Last but not the least is the fact that the use of SF in cross-border service provision has the potential of **increasing sustainability in the EU**. Since rivers, lakes and forests are generally divided by regions from different countries, solving the associated cross-border environmental issues can be done efficiently only through cross-border cooperation. EGTC of Amphictyony (Cyprus, Greece, Italy and France) stimulated local authorities to take up collective environmental action in 55 municipalities²²². Development of cross-border energy efficient municipal services between Latvian and Estonian regions resulted in up-gradation of street lighting (with efficient lighting technology) as well as other energy efficient measures, that helped in raising public awareness to environmental themes and learning about them naturally by sharing experience on efficient approaches²²³. Moreover, cross-border service provision might not necessarily include just one type of service. The France–Spain–Andorra cross-border cooperation (Operational Programme 2007 – 2013) for example, includes economic development, environment protection and accessibility, and infrastructure promotion in the region²²⁴. This results in coordinated action for promoting every aspect of sustainable economy in the region. Thus, cross-border cooperation in SG(E)I can contribute significantly to sustainability of the EU, if the cooperation has adequate financial and political support.

Regardless of all the advantages, the project application for SF is considered very bureaucratic as the amount of administrative work involved in the course of the project is very high²²⁵. The most common problems mentioned about SF application²²⁶ includes: complicated application and billing forms, short deadlines for handing documents, and lengthy decision making processes. All this may result in delays in starting and may hinder the progress of the project or may result in unpreparedness of potential project partners. So, it has been noted that administration of SF programmes should be made less bureaucratic and more user-friendly for cross-border, trans-national and inter-regional cooperation²²⁷.

In conclusion, **cross-border cooperation projects** are peculiar cases of SG(E)I provision. Barriers for such a provision are related to the need for coordinated action from a legal, technical, economic, financial, political and cultural perspective. The benefits of such cooperation are visible for the inhabitants of the regions as well as for **outside regions in the neighbouring areas**. Sometimes, territorial relevance confirms that **SF have been used to overcome national barriers**. Such an effort requires a project with at least a regional relevance. SF helps in promoting cross-border SG(E)I by providing **necessary funding as well as development of necessary skills**. A set of standards could be drawn at EU level to help overcome legal constraints and facilitate contractual terms between the concerned countries. This complex task would have to offer enough flexibility to integrate the various national laws and regulatory requirements at stake. It could take the form of a harmonisation of individual types of services (by sector) or a horizontal instrument containing some general rules plus sector specific individual legislation.

²²² Metis GmbH, EGTC Developments on the Ground: added value and solutions to problems, Catalogue number : QG-80-10-186-EN-C, ISBN : 978-92-824-2522-0, DOI : 10.2860/41298, 31 p.

²²³ For more information see www.bsrinterreg3a.net

²²⁴ <http://europa.eu/rapid/pressReleasesAction.do?reference=MEMO/08/314&format=HTML&aged=0&language=EN&guiLanguage=en>

²²⁵ LIGA.Fokus 1, Evaluation of Border Regions in the European Union (EUREGIO) Final Report, April 2008, 54 p.

²²⁶ Survey of Cross-border cooperation healthcare project bodies, LIGA . Fokus 1, 54 p.

²²⁷ Opinion of the Committee of the Regions on 'Strategies for promoting cross-border and inter-regional cooperation in an enlarged EU — a basic document setting out guidelines for the future', (2002/C 192/09), Official Journal of the European Communities, 12.8.2002

3.8. Governance aspects in the provision of SGI

Whatever the organisational and provision modes of SG(E)I, some important decisions concerning the final responsibility for the good, sound and sustainable delivery of services lies with public authorities.

This responsibility is even more important when considering the overall objectives of cohesion (economic, social and territorial) encompassed in a global vision of societal and sustainable development. The national state is, for instance, responsible for ensuring that any remote or outermost regions of its territory are adequately covered by SG(E)I. However, it has to be noted that socio-political objectives linked to cohesion can be either conflicting (the financial sustainability of a service provision versus universal accessibility for all) or difficult to manage (territorial planning versus mobility and access to the service in an urban city centre).

Political responsibility is emphasised in lagging behind regions, where the needs and demands are particularly acute with respect to basic services. The monitoring and control of the good use of the financial means provided, the good management of an adequate service development and of its organisation, but also effectively meeting the citizens and enterprises' needs and expectations (e.g., by setting up democratic participation tools for all stakeholders), are particularly important in such cases.

A main feature to consider when analysing case studies in light of their governance and political responsibility is that they offer different examples of **decision-making processes in a consolidated and common framework such as EU cohesion policy**. As a consequence, Member States have organised their decisional frameworks differently, but they all still comply with the requirements of the cohesion policy scheme.

It is probably too much to say that evidence of a common European-wide approach exists, but some common trends linked to the EU financing scheme for the projects discussed can be highlighted. The first remark is that, in most of the projects analysed, decision-making responsibilities were dispersed among a number of authorities at different institutional levels: European, national, regional and local. In a **multi-level governance context, in fact, policy competencies are decentralised and distributed between different levels of decision making**.

Within the context of SG(E)I provision, **EU, central, regional and local governments have the particular responsibility of concentrating resources** on those needs identified as priorities to address economic, social and territorial disparity issues at a regional level.

The project selected for Italy is a relevant example of this. The main stakeholders involved here were the Ministry of Economy and Finance, the Ministry of Infrastructures and Transport, the Sicilian Region: Planning Department, Department of Transportation and Regional Environmental Authority, Circumetnea Rail - Governmental Administration (a public body directed by a Government Commissioner), the municipalities of Catania and Misterbianco, the Municipal Transport Company of Catania (a public in-house provider of Catania) and Rete Ferroviaria Italiana S.p.A (inter-modal integration). As is evident from such a list, many institutions of different levels were involved. Other projects followed a similar path.

There are also cases for which the number of institutions involved is far lower. In the case study of Hungary (a childcare facility), for example, only local authorities played a role in the project, with no involvement of national or regional authorities. The Netherlands project (education and childcare) shared a similar approach.

In these cases, it is the small financial size of the intervention (especially in the Hungarian case), which acts as a disincentive to implement an institutional partnership, whose management and coordination would create more organisational problems than benefits. A large variety of institutions is not automatically synonymous with good governance, since **many actors at many levels require coordination**, on the one hand, **and effective distribution of the powers**, on the other. **Subsidiarity and coordination** are two aspects of multi-level governance that must be carefully taken into account because they are resource-consuming. In some circumstances, it may be not the case to invest in such an effort. When, on the contrary, the financial size of a project is significant, the correct approach should be to commit all intuitions with relevant interests to the decisional process.

Box 14: The Slovak National Motorway company

THE SLOVAK NATIONAL MOTORWAY COMPANY

In 2005, a new national institutional framework for the transport sector was created in Slovakia. It also influenced the management of the European SF implementation. The transfer of competencies in the area of the construction and maintenance of motorways and high speed roads from the Slovak Road Administration (former beneficiary) to the newly established National Motorway Company required the formal modification of the beneficiary of the project, when the project was already started. The new beneficiary was 100% owned by the Ministry of Transport, Telecommunications and Posts. The National Motorway Company is after the completion of the project responsible for the management, running and maintenance of the constructed road. The Ministry of Transport, Telecommunications and Posts, owner of the company, has overall control over the functioning of the company. Only these two subjects were involved in the project governance. Financing the project from the ERDF and state budget was based on the provision of a non-repayable grant between the ministry and the beneficiary. The contract, which was used for all SF financed projects, precisely stipulated the obligation of the beneficiary to not change the purpose of project outcomes and its ownership in next five years. With the change of beneficiary, all contract responsibilities are handed over to the new agency.

Source: Case study report

Thus, **the larger the financial size of a project, the greater the need to set up a complex and articulated decisional framework, with many actors involved at different institutional levels**. Most case studies respected this paradigm, with the exception of the Slovakian one, where only the Ministry of Transport and a national public motorway company were committed despite the project being a major investment (see Box 14).

Moreover, to ensure effective subsidiarity and coordination between partners, **a strong leadership, capable of channelling and adapting the different interests involved to a common end, is essential.** A clear political leadership and strong direction allow projects to develop coherently and follow a strict time schedule. Otherwise, there might be an adverse effect for which the multi-level governance can end up hampering the achievement of the project objectives by paralysing the decisional process.

The Italian case study exemplifies good multi-level governance, with the effective delivery of power to the bottom layers of the hierarchy and clear agreements about the different roles of the partners thanks to the leadership played by the Sicilian region. More specifically, a formal partnership was established among the national partners through the signing of a framework agreement in 2001. In addition, government management of Circumetnea Rail and the Sicilian region signed an agreement dealing with the realisation of the intervention on January 29, 2001. In 2005, Circumetnea Rail, the Ministry of Transport, Rete Ferroviaria Italiana S.p.A and the municipality of Catania signed a memorandum of understanding with the aim of integrating the different modes of transport in the region. The Circumetnea railway is today operated by a government commissioner, who is the representative of the state.

The French case is similar in this sense since *concertation* was implemented involving a broad co-financing agreement including the EU, the state, the local authorities and the public company Réseau Ferré de France, as well as companies such as Electricité de France and France Telecom. Finally, some cities have occasionally participated in a partnership through remote operations. The whole decision-making process has been driven by Réseau Ferré de France, the company able to coordinate the various co-financing partners and clearly define their roles on the basis of a broad consultation system with the organisation of technical panels and steering committees.

In more general terms, case study analysis suggests that there is limited evidence of significant delays in project decision and implementation because of discussions between institutions or a lack of leadership, with the notable exception of the German project.

In the course of the planning approval process, the majority of the media, NGOs and citizens strongly disapproved of the German motorway project. It was assumed that the new bridge would interfere with a medieval structure in Stralsund and jeopardise the city's status as a World Cultural Heritage site. Environmental representatives also raised concerns about some ecological aspects of this project (EC habitats and birds directive). This complex consultation system resulted in a paralysis of the procedure to the point that the last section of the project is still undergoing the planning approval procedure.

The second relevant dimension in the analysis of governance procedures is a component of multi-level governance and relates to the **partnership principle**.²²⁸ According to this principle, responsibilities should be managed by public authorities through a comprehensive participation of institutional, economic and social stakeholders, which provide essential inputs. The aim is to ensure that project financing decisions are taken only when all stakeholders have been consulted and when the necessary information and analyses have

²²⁸ Together with complementarity, consistency, coordination, compliance, additionality, proportionality, gender equality and sustainable development, the partnership principle is a pillar governing the current architecture and strategic approach of the EU cohesion policy for the implementation period 2007–2013. The concept is fixed in Article 11 of the regulation laying down the general provisions of the SF (Reg. 1083/2006/228) and is defined as the close cooperation between the Commission and the Member State in pursuing the objectives of the funds.

been undertaken. Public administrators, in fact, cannot simply rely on hierarchies to implement their objectives, but need to build consensus and share decisions. Thus, the application of the partnership mechanism within a multi-level governance framework requires that **the main authority responsible for project implementation** (usually the project coordinator) **consults not only other institutional bodies but also the non-institutional ones holding an interest over the project** to discuss the best strategy and service design.

Evidence from the case studies confirms that most projects established an institutional partnership for decision making. In most cases, the number of stakeholders involved in the process was high and included public administrators, infrastructure owners and service operators as well as private companies, technical experts, representative territorial bodies and environmental associations. **The more varied the stakeholders, the greater the indication that project planning has followed a transparent path.**

The Austrian case study is an example in this regard. The stakeholders involved in the project were: Styrian government: Department for Strategy and Development, Department for Research, Regional Construction Authority; Municipality of St. Peter ob Judenburg; EnviCare Engineering GmbH (a privately owned consultant in charge of the overall project engineering and management); Rotreat Abwasserreinigung GmbH (a private-owned expert for wastewater treatment in charge of implementing a new technology); University institutes and professors. In particular, the governance structure of the project consisted of three main parts. On the one hand, there was a funding agreement within the framework of the Objective 2 Programme Styria 2000–2006 between the municipality of St. Peter ob Judenburg and the Styrian government. On the other hand, there were two PPP: the consultancy contract between the municipality and EnviCare and the contract to adapt the sewage plant between the municipality and Rotreat. Following, the adaptation and an operating contract was signed between the municipality and Rotreat.

The Austrian project is illustrative of a complex partnership mechanism committing together public and private entities to achieve a common objective. However, evidence from other case studies highlights examples of **where stakeholder involvement was a mere formal moment rather than an actual process of sharing decisions**. The project selected for the Czech Republic is a case in point. Despite a large number of institutions being formally involved, decisions were not actually discussed and shared because of the **lack of a clear legal framework for PPP and little practical experience**. Other case studies, especially from the EU-12, suffered a similar problem.

Another crucial point is that **final users are the only stakeholders always excluded from the partnership mechanism**. In only a few and exceptional cases (e.g., Malta) were final users consulted. However, the case studies do not report evidence of interventions that were wrongly targeted to the needs of the citizens because of a lack of consultations with the final users (the German case being the only exception).

Finally, **a third matter is the application of PPP** as a new form of organisation of service delivery. As seen previously, the modes of the organisation of services can be diverse. The traditional model of service provision with only actors from the public sector prevailing does not give rise to major problems in terms of governance. However, when new delivery modes such as concession, lease or PPP enter into play, it results in issues regarding the responsibilities to be endorsed by either public entities or their private partners. More generally, defining and specifying all dimensions and contractual provisions of the relationship between public and private actors is complex. Public contractors find it hard to

combine matters of collective interest with profit-oriented interest of the private enterprises involved in service provision. It is to be noted that the clear division between public and private is stressed in this section only for the purpose of clarity, the reality being much more complex.

The **case studies reflect this diversity in the modes of organisation in service provision**. The selected project for Germany, for example, shows how railway infrastructures imply new models of PPP and how public authorities resort to concessions with private sector operators. A similar trend can be found in the Spanish case study, with the indirect management of waste collection and treatment services being entrusted to private enterprises. It is interesting to observe that in the telecommunications sector in Sweden, the relationship between public authorities and the providers of SG(E)I is strictly commercial, even though a certain level of regulation is maintained (e.g., for public procurement and state aid rules).

In conclusion, **multi-level governance, stakeholder consultation and PPP** are the main aspects characterising the governance of the selected projects. These elements are interlinked and originate from the necessity to organise infrastructure and further service provision within EU as well as national institutional and legal framework in a competitive market regime.

To efficiently govern and avoid the paralysis of the decision-making process, subsidiarity and coordination between actors must be ensured. To ensure these aspects, clear leadership is vital. In particular, **strong leadership can allocate and regulate for each partner their roles, responsibilities, powers and forms of intervention in the decision-making process**.

The following table reviews the main responsibilities and types of inputs of the different institutional actors involved in the case studies. As the table suggests, some general trends exist. National authorities usually set regulations, standards, sectoral strategy and priorities, as well as providing financing resources. In the case of projects of national relevance, their role can, however, extend to cover the design of the service or role as project coordinator. The main actors are the regional governments and the municipalities, which are usually called to provide financing, coordinate the project and manage and operate the infrastructure as well as being responsible for monitoring and evaluation activities. Service providers (public, private or a mixed company) have the responsibility for service delivery, while technical experts, usually in the form of private companies, provide consultancy and advisory services.

Table 13: Roles and responsibilities in the multi-level governance of SG(E)I co-funded by Structural Funds

Country	Total cost EUR	Partner	Role						NOTE
			Setting regulation and stan- dards	Fund- ing pro- vider	Project coordi- nator	Imple- men- ting body	Service delivery	Consul- tancy/ advisory	
Austria. "Memjet" drinking water from sewage water	265,589	Nat. aut.		✓					Funding agreement between the municipality of St. Peter of Judenburg and the Styrian Government. Two PPP are in place.
		Reg. aut.	✓						
		Loc. aut.		✓	✓		✓		
		Private co.		✓		✓		✓	
Belgium. Liege Logistics multimodal platform expansion	3,600,000	Reg. aut.	✓	✓					Collaboration trough regular contact and a common goal and political objective.
		Loc. aut.					✓		
		Private co.			✓	✓			
Bulgaria. Waste management: set of five regional waste disposal sites	65,367,906	Nat. aut.	✓	✓	✓	✓			A financing memorandum between the EC and the Bulgarian government. No document was signed among the municipalities. No PPP was used.
		Loc. aut.					✓		
		Private co.						✓	
Cyprus. Contemporary social and cultural services centre	1,983,333	Nat. aut.	✓	✓	✓				
		Loc. aut.				✓			
		NGO					✓		
Czech Republic. Renewal of local transport system in Mlada Boleslav	900,000	Nat. aut.	✓	✓					All the bodies involved are public. Service provided under a contract between the Public Transport Company and the town.
		Reg. aut.	✓		✓				
		Loc. aut.		✓			✓		
		Public co.						✓	
Denmark. Baltic e- health	2,141,731	Nat. aut.	✓	✓	✓			✓	No private partners participated in the project, since the national healthcare systems of the countries concerned are in charge of public administration.
		Reg. aut.	✓	✓					
		Loc. aut.		✓					
		Public inst.				✓	✓	✓	

Country	Total cost EUR	Partner	Role						NOTE
			Setting regulation and stan- dards	Fund- ing pro- vider	Project coordi- nator	Imple- men- ting body	Service delivery	Consul- tancy/ advisory	
Estonia. River Emajõgi and River Võhandu catchment area water management	53,695,000	Nat. aut.	✓	✓	✓				Shareholder agreements have been concluded.
		Reg. aut.			✓				
		Loc. aut.	✓	✓					
		Private co.					✓	✓	
Finland. Renovation and enlargement of Kuusamo airport	7,700,000	Nat. aut.	✓	✓					
		Loc. aut.		✓					
		Public co.		✓	✓	✓			
		Private co.					✓		
France. Electrification of the Vosges lines	66,365,000	Nat. aut.	✓	✓	✓	✓			
		Reg. aut.		✓					
		Loc. aut.		✓					
		Public co.					✓		
Germany. Construction of the new "B 96n Stralsund/Ruegen feeder road	158,000,000	Nat. aut.			✓				
		Reg. aut.	✓			✓	✓		
Greece- Bridge Me (Broadband over the mountains)	355,000	Reg. aut.		✓					
		Loc. aut.			✓	✓	✓		
		Private co.						✓	
Hungary. European day-care centre for the children of Csemő	898,904	Nat. aut.	✓						There was no involvement of national or regional authorities. Local forums have been organ- ised regularly to inform the local community and to conciliate the interests of all concerned.
		Loc. aut.		✓	✓	✓			
		NGO					✓		

Country	Total cost EUR	Partner	Role						NOTE
			Setting regulation and stan- dards	Fund- ing pro- vider	Project coordi- nator	Imple- men- ting body	Service delivery	Consul- tancy/ advisory	
Ireland. N15 Bundoran/ Ballyshannon bypass	74,100,000	Nat. aut.	✓	✓	✓		✓		
		Loc. aut.		✓					
		Private co.				✓		✓	
Italy. Extension of the metro section of the Circumetnea railroad	16,747,500	Nat. aut.	✓	✓		✓			All bodies involved in the project were public.
		Reg. aut.				✓		✓	
		Loc. aut.						✓	
		Public co.					✓		
Latvia. Electronic services to citizens and businesses at the Jekabpils town information centre	166,974	Nat. aut.	✓						A formal partnership agreement was not established. The municipality implemented all the project activities alone and was the final beneficiary, but during the implementation stage it subcontracted to several private IT companies to develop the IT infrastructure and information systems.
		Reg. aut.	✓					✓	
		Loc. aut.		✓		✓			
		Private co.					✓	✓	
Lithuania. Renovation of central heating networks in Klaipėda by installing modern technologies	4,239,612	Nat. aut.	✓					✓	AB 'Klaipėdos energija' implemented the project alone, without any partners. The local municipality owns 75.2% of the company's shares.
		Reg. aut.							
		Loc. aut.	✓		✓				
		Private co.		✓		✓	✓		
Luxemburg. Expansion of the Luxembourg railway beyond the border to Volmerange-les-Mines	7,200,000	Nat. aut.	✓	✓		✓			French Lorraine has an agreement with the G.D. of Luxembourg for the development of mobility of cross-border workers between both regions.
		Reg. aut.						✓	
		Loc. aut.		✓				✓	
		Public co.					✓		

Country	Total cost EUR	Partner	Role						NOTE
			Setting regulation and stan- dards	Fund- ing pro- vider	Project coordi- nator	Imple- men- ting body	Service delivery	Consul- tancy/ advisory	
Malta. Upgrading of the Sant'Antnin waste treatment plant and material recycling and recovery facility	16,747,500	Nat. aut.	✓	✓	✓	✓			The final users were not involved in the implementation phase of the project but they were consulted during the permitting and Equality Impact
		Loc. aut.						✓	
		Public co.					✓		
The Netherlands – The Malburgen establishment of the multicultural educational and care centre	11,000,000	Nat. aut.	✓						A coordination structure was established between service providers. Initially, the management arrangement included local providers only.
		Loc. aut.		✓	✓	✓			
		Private co.						✓	
Poland. Construction of the KA4E section of the A4 motorway between Kleszczow and Sosnica	100,500,000	Nat. aut.	✓	✓		✓		✓	The relationships between the institutions involved are governed by EU law and Polish national law, with a more detailed regulation set out in a special document signed on 22 September, 2000.
		Reg. aut.						✓	
		Loc. aut.						✓	
		Public co.					✓	✓	
Portugal. Optimisation of the Socorridos hydro power station	34,674,578	Nat. aut.	✓					✓	The local, regional and national authorities were involved in the initial stages but, it is the Electricity Company of Madeira which is responsible for the management, operation and monitoring of the system. A public tender was launched at the construction stage and, at present, there are no other contractual agreements in place.
		Reg. aut.	✓					✓	
		Loc. aut.						✓	
		Public co.		✓	✓	✓	✓		

Country	Total cost EUR	Partner	Role						NOTE
			Setting regulation and stan- dards	Fund- ing pro- vider	Project coordi- nator	Imple- men- ting body	Service delivery	Consul- tancy/ advisory	
Romania. Rehabilitation and modernisation of the water sewage system in Cluj	61,178,813	Nat. aut.	✓	✓	✓				There was little consultation with the potential clients at begin- ning. There was competition between local governments to have their proposals included on the list approved by the MA.
		Reg. aut.						✓	
		Loc. aut.						✓	
		Public inst.		✓					
		Public co.				✓	✓		
Slovakia. R1 Rudno nad Hronom to Žarnovica	63,559,646	Nat. aut.	✓	✓	✓	✓	✓		The project was submitted and implemented by a single entity; no partners were involved.
Slovenia. Wastewater treatment plants in Celje	16,776,300	Nat. aut.	✓	✓	✓	✓			
		Reg. aut.	✓						
		Loc. aut.	✓	✓			✓		
		Private co.						✓	
Spain. Complex for the treatment of urban waste in Zaragoza	42,276, 969	Nat. aut.	✓		✓			✓	A joint venture was established between the two private compa- nies which awarded the contract.
		Loc. aut.	✓	✓		✓			
		Private co.					✓	✓	
Sweden. Enterprise development by broad- band of the future	8,804,270	Nat. aut.	✓						The partnership does not include the end users of the service (such as NGOs).
		Loc. aut.		✓	✓			✓	
		Public co.		✓		✓	✓		
		Private co.		✓					
UK. Gas pipelines from Gormanstown to Antrim and from Carrickfergus to Londonderry	192,000,000	Nat. aut.	✓	✓	✓				The separation of regulation from the provision of infrastruc- ture enabled the private sector to take a lead role in the project by securing additional funding.
		Private co.		✓		✓	✓	✓	

Source: Authors based on case study reports

Note: Loc. aut.: Local authority, Nat. aut.: National authority, Private co.: Private company, Public co.: Public company, Public inst.: Public institute, Reg. aut.=Regional authority

4. CONCLUSIONS AND RECOMMENDATIONS

The present study aims at advising the Committee on Regional Development of the EP about the relationship between cohesion policy and SG(E)I and to show to what extent and how effectively the 2007-2013 generation of programmes are addressed at financing infrastructures for SG(E)I. After presenting the different definitions and traditions in place about SG(E)I at the national and regional level and the main issues at stake in the policy debate, the study provides evidence on the actual use of SF towards SG(E)I and is then enriched with a review of 27 projects (one for each Member States) co-financed by the SF in the period 2007-2013 and 2000-2006 by different funds and programmes in all the relevant sectors of SGI/SGEI.

A number of conclusions arise from the analysis presented in the previous chapters. They are summarized in this chapter, together with the discussion of their policy implications.

4.1. Conclusions

1. A first conclusion stems from the consideration that significant disparities in the level and quality of provision of SG(E)I in the EU-27 are in place at the national and regional level, and investing in infrastructures is a precondition for bridging these gaps. The provision of services differs across countries and regions in terms of accessibility, distribution, quality and efficiency. For most sectors, the provision of SG(E)I and the quality of the services in Europe present the largest gaps in EU-12 and rural and peripheral regions.

The level and quality of provision is strongly connected with the existence and quality of the infrastructure assets. Increased capacity and interconnection is needed to better serve European users, consumers and citizens. For example, an efficient network of roads, motorways, railways, air and, secondarily, sea, river and canal navigation guarantees accessibility to these European regions. In the same vein, modern environmental infrastructures are key in the provision of basic services such as water supply or waste management.

Certain patterns show that – depending on the sectors involved – some disparities tend to fade, and that, in some cases, due to previously adopted policies some EU-12 countries have proven to have moved forward with respect to EU-15 countries. The investment priorities of the Member States, expressed in the NSRF, and shown by the allocation of SF for the period 2007–2013, generally reflect the national investment needs in SG(E)I.

2. SF play a significant, in some cases decisive, role by providing and leveraging substantial resources for investment in SG(E)I infrastructures. In the period 2007-2013, 170 billion Euro are invested by the ERDF and 70 billion Euro by the Cohesion Fund in basic infrastructures, 40% of which are in the transport and environmental sectors, the rest being spread between ICT, energy and social infrastructures. In addition, national public resources are provided in the light of the co-financing mechanisms and private investments are in some cases leveraged with Public-Private Partnerships arrangements. The EU-12 Member States are the major beneficiaries of this massive investment.

The qualitative and quantitative analysis regarding the link between the existing level of provision and financing of SG(E)I through SF shows that the correlation is negative, indicating that investment is indeed directed towards areas and sectors in need of more and better quality SG(E)I.

On many occasions, the case studies identify a leverage effect of Structural and Cohesion Funds, providing the local authorities with the financial resources needed to cope with the investment required.

3. The actual existence of basic infrastructures and the assurance of their good state are the preliminary conditions for the provision of services, however they do not necessarily and immediately imply a reliable service delivery of high quality. This suggests that the density of infrastructures may not be the best indicator of the level of provision of social services, since the satisfaction of the user is linked to the quality of the service provided. Therefore, in the case of financial support to infrastructures, the role of the SF is significant but influences in a rather indirect way the ultimate provision of the services. Financing the infrastructure brings about positive effects, however it is a one-shot operation. In order to have durable and long-run positive effects, once an improved or adapted facility is put in place, the service provision needs to be managed, operated, maintained and financed in a lasting manner. In fact, important operational costs, the impossibility of overly raising prices and lower than expected access/coverage can all endanger the future sustainability of the project despite the optimism of the operators. Problems in managing, operating and maintaining the infrastructure, may result in possible failure in the delivery of the service.

4. Once the infrastructure has been financed, finding a balance between financial sustainability and affordable tariffs remains a key issue in the provision of SG(E)I. Evidence from the case studies shows that investing in an infrastructure providing a SG(E)I yields an increase in the quality of the service and (or) in the efficiency with which the service is delivered. However, once the infrastructure has been constructed or renovated, an increase in operational costs is usually encountered. The issue at stake is whether despite the increased costs, access to the service nevertheless stays affordable. In the case studies reports, prices charged to users are said to be affordable and thereby the project is sustainable. This is especially the case if efficiency gains are sufficient to cover price increases resulting from higher costs (e.g., Lithuanian case). In a few cases, the risk of having an increase of cost transformed into an unsustainable rise in prices is explicitly evoked (e.g., Estonian case). In general, however, although the SF provide significant financial resources, in order for the service provided to stay affordable, arrangements such as price differentiations, cross-subsidies, and, finally, the recourse to taxation, are generally needed.

5. A more direct role played by the SF (and more widely by the EU cohesion policy) consists in setting standards and incentivizing good practices in the provision of key services. This is particularly evident in the case of environment and technological developments (especially in the telecommunication sector). As illustrated by some of the case studies, the need to comply with EU directives, public procurement rules or simply the emphasis brought about by the Lisbon strategy to issues such as high-tech applications or environmentally friendly technologies, provided an incentive, if not a mandatory requirement, to design the intervention according to specific qualitative standards.

6. Finally, a key role may be played by the EU policies, and the SF in particular, in providing common legal and institutional frameworks for the provision of services of general interest, albeit the existing differences in national and regional traditions and legislations. The provision of SG(E)I normally requires a vast range of stakeholders to be involved. Not only actors of different nature (public institutions and agencies, private companies, citizens' representatives, local interest groups, NGOs) but also

different institutional tiers are concerned. Normally the governance requires mixed partnerships. SF offer a good framework in setting the key rules for the functioning of the partnership. As shown by the case studies the modes of organisation of services can be diverse. The traditional model of service provision with only actors from the public sector (public authorities and/or public enterprises), usually gives rise to minor problems in terms of governance. But for relatively new delivery modes such as concessions, lease or public-private partnerships issues on the responsibilities to be endorsed by either public entities or their private partners are in place. More generally, defining and specifying all the dimensions and contractual provisions of the relationship between public and private actors is quite complex.

The partnership principle has been, however, evoked in several case studies as a requirement of the project co-financed by the SF which, although demanding, proved to be a key success factor for the sustainability of the project. It in fact enhances the good management and operation of the infrastructure after the EU support stops.

7. Cross-border cooperation in the delivery of services should become a priority, especially in the context of the creation of trans-national transport, communication and energy infrastructures. Current opportunities to provide cross-border SGI/SGEIs are however relevant only to a minor sample of the selected projects examined in this study. This reflects the fact that cross-border cooperation is not a frequent practice and financing through SF for SG(E)I in cross-border programmes is low, while it is strongly believed that this should become a priority in SG(E)I provision. Cross-border service delivery may provide better access to services, enhance mobility and in general generate positive spill-over effects that may spread outside cross-border regions. What emerges in all these case studies is that the delivery of cross-border services has a more complex architecture than traditional ones because of the duplication in decisional and organisational aspects as well as legal responsibilities. Barriers to the implementation and provision of cross-border services can be legal, technical, economic financial, political and cultural. Yet, the SF can provide institutional frameworks able to overcome some of the barriers for the interoperability and the financial incentive for cross-border partnerships to be put in place. Furthermore, SF financing may help achieving economies of scale, strengthen administrative capacities and, ultimately, increase sustainability in the EU.

4.2. Policy Implications

SG(E)I contribute not only to social and territorial cohesion but also to increased competitiveness of the European economy and the exercise of fundamental freedoms. Therefore, a shared vision of the role and contribution of SG(E)I to the EU model of society is advocated. At present, this is more of a policy long term goal than a snapshot of the current EU situation. A common definition and legal framework for SG(E)I is still missing, and is an essential prerequisite for the implementation of truly European SG(E)I. The EU institutions must be aware that they play a decisive role in setting a common framework given that the policies towards SGI are set at the national and regional level. As illustrated in the framework of the cohesion policy, the EU is not merely a financial sponsor for the provision of the basic infrastructure endowment, but may be a strategic partner in setting the standard and leveraging the resources at the national and regional level. A major effort should be realised in terms of raising consensus around a common set of rules for the definition, organization and financing of the services of general interest in the EU countries and regions. As a start, there is a strong need for setting a harmonized knowledge base and monitoring arrangements on the actual level of provision of SG(E)I and the citizens' satisfaction about it.

In this perspective, a long term policy goal could be the definition and provision of some **European SG(E)I** directly financed by the EU budget. The REGI Committee should consider the opinion of the European Economic and Social Committee (November 2009) aiming at studying the added value and possible content of legislative initiatives by the European institutions in order to clarify in what areas could **Community SGI** be needed to implement the Union's objectives.

National and regional authorities should be aware that their role is crucial in translating the EU common framework into a set of specific arrangements tailored to the specificities of their territories. The role of the regions and of local government is central in the provision of basic services of general interest. Local conditions and needs are at the core of an effective design of services implying the need for specific territorial analysis and evaluation of the needs of the population.

According to the principle of subsidiarity, especially since its potential for enforcement was strengthened in the new TFEU, Member States have the power of defining, organising, and financing services of general interest depending on their own traditions and requirements, while the EU delineates common principles regarding accessibility, affordability, safety, quality and protection. Member States should support nation-wide projects and framework conditions and should also be responsible of developing a strategic approach to service delivery and to ensure their affordability.

Unlike purely commercial services, financing the provision of services of general interest usually cannot be covered by market mechanisms alone and additional schemes are needed. Such schemes, characterised by coordination between various authorities and several public policy objectives and intrinsically linked to the provision of services of general interest, are essentially dealt with at Member-State level - or even regional/local level. This results from the application of the principle of subsidiarity.

In this respect, differences between various services of general interest and the different needs and preferences of citizens, users and consumers resulting from different economic, social, geographical, cultural and physical situations should be respected. Due account should be taken of the diversity that characterises such services, the situations in which they are provided, the characteristics of services providers, and the need for flexibility to adapt services to various needs.

The key policy implication regards the fact that, in a **multi-level governance context**, in order to ensure effective subsidiarity and coordination between partners, a single leadership (that could be played by the central, regional or local governments), capable of channelling and adapting the different interests involved to a common end, is essential. This aspect is an important condition for the efficient functioning of cohesion policy and SG(E)I delivery, especially when considering **cross-border cooperation and delivery**. Regardless of the sector, the territorial specificities, the mode of financing, a strong direction allow projects to develop coherently and follow a strict time schedule. Otherwise, there might be an adverse effect for which the multi-level governance can end up hampering the achievement of the project objectives by paralysing the decisional process. To this end, what can make the real difference in such a strategic domain is that local authority plays the role of a 'public entrepreneur', able to have a thorough analysis of the local needs, to develop a strategic vision to overcome bottlenecks, to leverage and catalyse relevant resources and the capacity to manage risks triggering creative solutions adapting to fast changing needs.

ANNEX I: EU-27 INDICATORS FOR SG(E)

Sector	Indicator	Geograph. disaggr.	Year	Original Source
Telecommunications (ICT)	Number of main telephone lines per 100 inhabitants	NUTS 0	2006	Eurostat
	Number of dedicated high speed connections per 100 inhabitants	NUTS 0	2006	Eurostat
	Percentage of households who have Internet access at home	NUTS 0	2006, 2009	Eurostat
	Percentage of households using a broadband connection	NUTS 0	2006, 2009	Eurostat
	Estimated levels of business telecommunications access and uptake	NUTS 2	2004	Espon
	Estimated percentage of firms with own website	NUTS 2	2002	Espon
	Typology comparing levels of household and business telecommunications uptake	NUTS 2	2004	Espon
	Number of subscriptions to cellular mobile services per 100 inhabitants	NUTS 0	2006	Eurostat
	Percentage of e-government availability (supply side)	NUTS 0	2006	Eurostat
Social Infrastructures	Education and training indicators	NUTS 0	2006	EC 2006 progress report ²²⁹
	Number of hospital beds per 100,000 inhabitants	NUTS 2	2006	Eurostat
	Number of health personnel per 100,000 inhabitants	NUTS 2	2006	Eurostat
	Average number of weekly hours of formal care – Children between three and the minimum compulsory school age	NUTS 0	2006	Eurostat
	Average number of weekly hours of formal care – Children under three years	NUTS 0	2006	Eurostat
	Percentage of people with unmet medical needs	NUTS 0	2006	Eurostat
Environment and energy	Percentage of population connected to public water	NUTS 0	2006	Eurostat
	Number of water treatment plants per 100,000 inhabitants	NUTS 0	2006	Eurostat
	Percentage of urban wastewater treatment plants with at least secondary treatment	NUTS 0	2006	Eurostat
	Total treatment of waste (tonnes per capita) and percentage of waste treated for recovery and energy recovery	NUTS 0	2006	Eurostat
	Percentage of electricity generated from renewable sources to total electricity consumption	NUTS 0	2006	Eurostat
	Air pollution	Sample of cities		2007 survey on perception of quality of life in 72 cities ²³⁰
Transport and accessibility	Motorway density to area and population	NUTS 2	2006	Eurostat
	Other roads density to area and population	NUTS 2	2006	Eurostat
	Railways density to area and population	NUTS 2	2006	Eurostat
	Number of passenger flights	NUTS 2	2006	Eurostat
	Potential accessibility by road (ESPON space=100)	NUTS 3	2001 2006	Espon Espon
	Potential accessibility by rail (ESPON space=100)	NUTS 3	2001 2006	Espon Espon
	Potential accessibility by air (ESPON space=100)	NUTS 3	2001 2006	Espon Espon
	Multimodal potential accessibility (ESPON space=100)	NUTS 3	2001 2006	Espon Espon
	Satisfaction with public transport	Sample of cities		2007 survey on perception of quality of life in 72 cities (EC 2007b)
	Share of urban transport vehicles with less than two years	NUTS 0	2006	Eurostat

Source: Authors

²²⁹ European Commission (2006d).²³⁰ European Commission (2007).

ANNEX II: ERDF DATA

Table 14: Allocation of ERDF in the period 2000-2006

Country	SG(E)I sectors															Total SG(E)I		Other sectors		Total ERDF
	Transport infrastructures			Telecommunications infrastructure and information society			Energy infrastructures			Environmental infrastructure			Social infrastructure and public health							
	EUR million	% on total SG(E)I	% on total ERDF	EUR million	% on total SG(E)I	% on total ERDF	EUR million	% on total SG(E)I	% on total ERDF	EUR million	% on total SG(E)I	% on total ERDF	EUR million	% on total SG(E)I	% on total ERDF	EUR million	% on total ERDF	EUR million	% on total ERDF	EUR million
AT	5.27	10.72	0.59	13.39	27.22	1.49	18.89	38.40	2.11	9.09	18.48	1.01	2.55	5.18	0.28	49.19	5.49	846.86	94.51	896.05
BE	27.42	29.44	3.17	32.69	35.10	3.78	11.35	12.18	1.31	19.19	20.61	2.22	2.49	2.67	0.29	93.14	10.76	772.25	89.24	865.38
BG	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CY	1.68	23.51	6.00	2.67	37.38	9.53	0.00	0.00	0.00	0.00	0.00	0.00	2.80	39.11	9.98	7.15	25.50	20.88	74.50	28.02
CZ	266.63	55.04	27.05	43.59	9.00	4.42	24.98	5.16	2.53	104.20	21.51	10.57	45.03	9.29	4.57	484.42	49.15	501.15	50.85	985.56
DE	3,493.85	66.07	22.41	221.64	4.19	1.42	55.95	1.06	0.36	1,498.75	28.34	9.61	17.78	0.34	0.11	5,287.98	33.92	10,300.28	66.08	15,588.26
DK	3.57	11.92	2.43	16.95	56.62	11.53	2.72	9.07	1.85	5.03	16.80	3.42	1.67	5.58	1.14	29.94	20.36	117.09	79.64	147.03
EE	33.19	25.17	14.26	6.71	5.09	2.88	5.43	4.12	2.33	3.34	2.53	1.43	83.18	63.09	35.73	131.84	56.63	100.98	43.37	232.82
ES	10,312.02	58.28	36.79	939.85	5.31	3.35	226.64	1.28	0.81	4,290.59	24.25	15.31	1,925.06	10.88	6.87	17,694.17	63.13	10,331.99	36.87	28,026.16
FI	31.02	27.83	3.39	37.98	34.07	4.15	8.41	7.55	0.92	26.11	23.42	2.85	7.95	7.13	0.87	111.47	12.17	804.72	87.83	916.19
FR	1,074.63	39.96	12.99	526.91	19.59	6.37	113.14	4.21	1.37	677.61	25.20	8.19	296.84	11.04	3.59	2,689.13	32.51	5,582.32	67.49	8,271.45
GR	6,736.00	64.39	44.38	1,344.75	12.85	8.86	178.57	1.71	1.18	920.28	8.80	6.06	1,281.63	12.25	8.44	10,461.23	68.92	4,716.82	31.08	15,178.05
HU	275.71	41.01	22.25	94.44	14.05	7.62	15.17	2.26	1.22	64.11	9.54	5.17	222.85	33.15	17.98	672.28	54.24	567.10	45.76	1,239.38
IE	1,134.38	77.54	58.12	90.41	6.18	4.63	22.86	1.56	1.17	215.23	14.71	11.03	0.00	0.00	0.00	1,462.88	74.95	488.81	25.05	1,951.69
IT	3,782.23	50.04	20.17	1,221.54	16.16	6.51	290.04	3.84	1.55	1,938.82	25.65	10.34	325.29	4.30	1.73	7,557.94	40.30	11,197.69	59.70	18,755.62
LT	142.36	39.77	24.38	52.03	14.54	8.91	60.03	16.77	10.28	6.61	1.85	1.13	96.90	27.07	16.60	357.93	61.30	226.01	38.70	583.94
LU	2.36	16.65	5.36	2.36	16.65	5.36	4.73	33.35	10.74	4.73	33.35	10.74	0.00	0.00	0.00	14.17	32.20	29.83	67.80	44.00
LV	93.75	46.67	24.54	20.38	10.14	5.33	19.71	9.81	5.16	29.55	14.71	7.74	37.51	18.67	9.82	200.90	52.59	181.14	47.41	382.04
MT	12.38	34.93	26.50	0.65	1.84	1.39	0.20	0.57	0.43	19.29	54.44	41.31	2.91	8.22	6.24	35.44	75.88	11.26	24.12	46.70
NL	51.81	36.55	5.34	59.21	41.77	6.10	1.01	0.71	0.10	6.75	4.76	0.70	22.96	16.20	2.37	141.75	14.60	829.16	85.40	970.91
PL	2,172.00	63.50	43.68	523.18	15.30	10.52	107.98	3.16	2.17	397.69	11.63	8.00	219.47	6.42	4.41	3,420.33	68.78	1,552.46	31.22	4,972.79
PT	3,228.87	46.71	24.34	600.69	8.69	4.53	387.62	5.61	2.92	837.58	12.12	6.31	1,858.20	26.88	14.01	6,912.96	52.12	6,351.23	47.88	13,264.20
RO	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SE	75.28	40.66	8.55	89.32	48.25	10.14	6.89	3.72	0.78	4.97	2.68	0.56	8.68	4.69	0.99	185.14	21.02	695.68	78.98	880.82
SI	8.31	22.40	6.09	12.19	32.84	8.93	8.30	22.38	6.08	8.30	22.38	6.08	0.00	0.00	0.00	37.11	27.18	99.41	72.82	136.52
SK	242.82	59.50	39.76	10.61	2.60	1.74	4.76	1.17	0.78	91.73	22.48	15.02	58.21	14.26	9.53	408.12	66.82	202.62	33.18	610.74
UK	582.27	40.72	6.75	480.85	33.63	5.57	74.19	5.19	0.86	149.98	10.49	1.74	142.61	9.97	1.65	1,429.90	16.57	7,197.26	83.43	8,627.17
Total countries	33,789.80	56.43	27.34	6,445.00	10.76	5.21	1,649.59	2.75	1.33	11,329.55	18.92	9.17	6,662.57	11.13	5.39	59,876.51	48.44	63,725.00	51.56	123,601.51
Cross-border	803.33	44.58	13.25	531.59	29.50	8.77	77.55	4.30	1.28	251.31	13.95	4.14	138.35	7.68	2.28	1,802.13	29.72	4,262.16	70.28	6,064.29
TOTAL (countries and cross-border)	34,593.13	56.09	26.68	6,976.58	11.31	5.38	1,727.15	2.80	1.33	11,580.85	18.78	8.93	6,800.92	11.03	5.24	61,678.63	47.57	67,987.17	52.43	129,665.80

Source: Authors based on DG REGIO data

Table 15: Allocation of ERDF in the period 2007-2013

Country	SG(E)I sectors															Total SG(E)I		Other sectors		Total ERDF
	Transport			Information society			Energy			Environmental protection and risk			Investment in social infrastructures							
	EUR million	% on total SG(E)I	% on total ERDF	EUR million	% on total SG(E)I	% on total ERDF	EUR million	% on total SG(E)I	% on total ERDF	EUR million	% on total SG(E)I	% on total ERDF	EUR million	% on total SG(E)I	% on total ERDF	EUR million	% on total ERDF	EUR million	% on total ERDF	EUR million
AT	8.36	12.46	1.23	19.07	28.42	2.80	30.19	45.00	4.44	9.07	13.53	1.33	0.40	0.59	0.06	67.10	9.87	612.97	90.13	680.07
BE	53.71	32.07	5.42	20.70	12.36	2.09	25.83	15.42	2.61	65.50	39.11	6.61	1.73	1.03	0.17	167.47	16.91	822.81	83.09	990.28
BG	1,913.80	47.80	34.87	72.12	1.80	1.31	243.15	6.07	4.43	1,528.59	38.18	27.85	246.36	6.15	4.49	4,004.02	72.96	1,484.15	27.04	5,488.17
CY	59.61	22.05	12.10	15.30	5.66	3.11	5.95	2.20	1.21	179.87	66.52	36.51	9.67	3.58	1.96	270.39	54.88	222.27	45.12	492.67
CZ	7,515.03	49.39	33.36	1,011.10	6.64	4.49	1,190.03	7.82	5.28	4,279.26	28.12	19.00	1,221.32	8.03	5.42	15,216.75	67.55	7,311.34	32.45	22,528.08
DE	3,149.28	52.81	19.55	339.31	5.69	2.11	479.13	8.04	2.97	1,461.44	24.51	9.07	533.71	8.95	3.31	5,962.86	37.02	10,145.10	62.98	16,107.96
DK	0.00	0.00	0.00	33.09	100.00	12.99	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	33.09	12.99	221.70	87.01	254.79
EE	682.25	32.40	22.65	74.85	3.55	2.49	73.58	3.49	2.44	756.89	35.95	25.13	517.87	24.60	17.19	2,105.43	69.90	906.52	30.10	3,011.94
ES	7,375.71	45.67	27.73	1,138.04	7.05	4.28	461.21	2.86	1.73	6,326.67	39.18	23.78	847.92	5.25	3.19	16,149.55	60.71	10,450.85	39.29	26,600.41
FI	34.13	13.32	3.49	143.53	56.02	14.69	44.93	17.53	4.60	33.63	13.12	3.44	0.00	0.00	0.00	256.22	26.21	721.18	73.79	977.40
FR	926.81	25.87	11.51	626.96	17.50	7.78	557.54	15.56	6.92	1,201.96	33.55	14.92	269.45	7.52	3.35	3,582.72	44.48	4,471.95	55.52	8,054.67
GR	5,183.64	42.12	32.71	1,556.70	12.65	9.82	625.18	5.08	3.95	3,536.46	28.74	22.32	1,404.78	11.41	8.86	12,306.76	77.66	3,539.70	22.34	15,846.46
HU	5,490.17	36.38	25.79	749.49	4.97	3.52	359.09	2.38	1.69	5,993.89	39.72	28.15	2,497.06	16.55	11.73	15,089.70	70.87	6,202.36	29.13	21,292.06
IE	26.40	21.15	7.03	36.00	28.85	9.59	38.00	30.45	10.12	24.40	19.55	6.50	0.00	0.00	0.00	124.80	33.25	250.56	66.75	375.36
IT	3,847.29	35.87	18.30	1,621.07	15.11	7.71	1,874.97	17.48	8.92	2,305.86	21.50	10.97	1,076.13	10.03	5.12	10,725.32	51.01	10,301.98	48.99	21,027.31
LT	1,530.17	39.00	26.62	240.09	6.12	4.18	437.43	11.15	7.61	936.25	23.87	16.29	779.14	19.86	13.56	3,923.08	68.26	1,824.10	31.74	5,747.19
LU	0.00	0.00	0.00	1.26	17.24	5.00	2.27	31.03	9.00	3.79	51.72	15.00	0.00	0.00	0.00	7.32	29.00	17.92	71.00	25.24
LV	1,173.29	41.77	29.48	189.36	6.74	4.76	127.40	4.54	3.20	792.69	28.22	19.92	526.13	18.73	13.22	2,808.88	70.58	1,170.91	29.42	3,979.79
MT	184.30	33.86	25.31	27.00	4.96	3.71	34.84	6.40	4.78	239.06	43.92	32.83	59.08	10.85	8.11	544.28	74.75	183.84	25.25	728.12
NL	39.86	16.87	4.80	67.22	28.44	8.10	49.39	20.90	5.95	67.55	28.58	8.14	12.34	5.22	1.49	236.36	28.48	593.64	71.52	830.00
PL	22,677.48	56.48	40.85	3,714.35	9.25	6.69	2,219.79	5.53	4.00	8,808.77	21.94	15.87	2,732.67	6.81	4.92	40,153.06	72.33	15,361.62	27.67	55,514.68
PT	2,785.25	34.46	18.69	689.54	8.53	4.63	269.36	3.33	1.81	2,615.23	32.36	17.55	1,722.88	21.32	11.56	8,082.25	54.25	6,816.93	45.75	14,899.17
RO	5,330.29	45.83	34.33	444.85	3.82	2.86	603.76	5.19	3.89	4,690.12	40.32	30.20	561.88	4.83	3.62	11,630.92	74.90	3,897.97	25.10	15,528.89
SE	63.20	26.24	6.76	102.37	42.51	10.95	61.52	25.54	6.58	13.74	5.71	1.47	0.00	0.00	0.00	240.83	25.77	693.71	74.23	934.54
SI	986.20	46.47	29.50	108.60	5.12	3.25	159.89	7.53	4.78	769.54	36.26	23.02	98.18	4.63	2.94	2,122.41	63.50	1,220.14	36.50	3,342.55
SK	3,425.30	44.37	34.74	1,163.54	15.07	11.80	168.84	2.19	1.71	1,865.30	24.16	18.92	1,096.18	14.20	11.12	7,719.15	78.28	2,141.87	21.72	9,861.02
UK	273.26	20.29	5.16	398.57	29.60	7.53	280.58	20.84	5.30	356.35	26.46	6.73	37.85	2.81	0.71	1,346.60	25.43	3,948.65	74.57	5,295.26
Total countries	74,734.79	45.33	28.70	14,604.09	8.86	5.61	10,423.85	6.32	4.00	48,861.87	29.64	18.76	16,252.72	9.86	6.24	164,877.32	63.31	95,536.75	36.69	260,414.08
Cross-border	1,039.23	28.66	13.32	552.38	15.23	7.08	332.20	9.16	4.26	1,256.58	34.66	16.11	445.54	12.29	5.71	3,625.94	46.49	4,173.34	53.51	7,799.28
TOTAL (countries and cross-border)	75,774.02	44.97	28.25	15,156.47	8.99	5.65	10,756.05	6.38	4.01	50,118.46	29.74	18.69	16,698.26	9.91	6.23	168,503.26	62.82	99,710.10	37.18	268,213.36

Source: Authors based on DG REGIO data

Table 16: Allocation of ERDF in Telecommunication subsectors (% on the total of the sector) in the period 2000-2006

Country	Basic infrastructure	Information and Communication Technology (including security and safe transmission measures)	Services and applications for SMEs (electronic commerce and transactions, education and training, networking)	Services and applications for the citizen (health, administration, education)	Telecommunications infrastructure and information society - others	Total
AT	34.56%	8.60%	24.10%	32.75%	0.00%	13,390,293.10
BE	67.49%	4.70%	23.89%	3.93%	0.00%	32,689,688.75
CY	0.00%	0.00%	0.00%	100.00%	0.00%	2,671,529.14
CZ	22.07%	56.73%	0.31%	13.13%	7.76%	43,587,329.85
DE	12.74%	34.86%	12.99%	21.42%	17.99%	221,644,337.06
DK	0.00%	0.00%	0.00%	0.00%	100.00%	16,951,261.49
EE	0.00%	11.66%	9.30%	79.04%	0.00%	6,711,886.60
ES	14.08%	11.02%	11.31%	62.39%	1.21%	939,849,334.26
EU cross-border cooperation (CB+RG)	15.91%	24.23%	19.18%	25.31%	15.38%	531,588,383.77
FI	48.66%	0.00%	48.84%	2.50%	0.00%	37,980,287.60
FR	44.78%	12.10%	13.36%	14.34%	15.42%	526,905,882.70
GR	18.10%	18.15%	18.22%	45.40%	0.13%	1,344,752,727.20
HU	35.04%	0.00%	64.96%	0.00%	0.00%	94,442,328.00
IE	0.00%	100.00%	0.00%	0.00%	0.00%	90,412,800.00
IT	25.49%	37.01%	14.66%	8.38%	14.46%	1,221,540,689.68
LT	38.92%	0.00%	0.00%	61.08%	0.00%	52,031,057.94
LU	0.00%	0.00%	0.00%	0.00%	100.00%	2,359,200.00
LV	100.00%	0.00%	0.00%	0.00%	0.00%	20,381,000.00
MT	0.00%	14.40%	12.26%	73.33%	0.00%	650,850.00
NL	18.36%	18.83%	46.27%	16.53%	0.00%	59,211,025.05
PL	32.62%	32.62%	28.82%	5.94%	0.00%	523,175,749.51
PT	10.94%	29.46%	9.49%	43.92%	6.18%	600,692,348.89
SE	0.00%	0.00%	0.00%	1.61%	98.39%	89,320,308.91
SI	0.00%	0.00%	0.00%	0.00%	100.00%	12,187,993.72
SK	0.00%	0.00%	3.12%	96.88%	0.00%	10,607,682.75
UK	5.19%	20.66%	41.62%	26.18%	6.34%	480,848,812.97

Source: Authors based on DG REGIO data

Table 17: Allocation of ERDF in Telecommunication subsectors (% on the total of the sector) in the period 2007-2013

Country	Telephone infrastructures (including broadband networks)	Information and communication technologies (including security and safe transmission measures)	Information and communication technologies (TEN- ICT)	Services and applications for SMEs (e- commerce, education and training, networking, etc.)	Other measures for improving access to and efficient use of ICT by SMEs	Services and applications for citizens (e-health, e-government, e- learning, e- inclusion, etc.)	Total
AT	2.63%	22.20%	0.00%	40.25%	34.92%	0.00%	19,070,085
BE	73.63%	4.83%	0.00%	7.25%	14.30%	0.00%	20,697,679
BG	18.87%	4.72%	0.00%	44.20%	32.21%	0.00%	72,121,877
CY	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	15,300,000
CZ	0.00%	15.46%	9.40%	11.24%	13.36%	50.54%	1,011,101,616
DE	5.64%	47.24%	1.09%	24.72%	1.34%	19.97%	339,308,803
DK	25.00%	25.00%	0.00%	25.00%	25.00%	0.00%	33,086,388
EE	0.00%	16.32%	0.00%	0.00%	0.00%	83.68%	74,846,932
ES	14.43%	9.54%	0.00%	8.64%	2.28%	65.11%	1,138,041,876
EU cross-border cooperation	9.98%	25.09%	6.66%	18.02%	14.84%	25.41%	552,382,459
FI	1.13%	12.54%	0.00%	17.58%	38.29%	30.46%	143,534,860
FR	17.21%	20.65%	9.76%	13.06%	10.64%	28.68%	626,961,222
GR	13.54%	7.46%	3.96%	12.44%	15.89%	46.71%	1,556,701,060
HU	0.00%	52.81%	0.00%	0.42%	14.56%	32.21%	749,488,596
IE	55.56%	0.00%	0.00%	0.00%	44.44%	0.00%	36,000,000
IT	10.12%	45.23%	10.35%	9.75%	5.47%	19.08%	1,621,073,642
LT	18.00%	23.00%	0.00%	17.00%	0.00%	42.00%	240,086,875
LU	0.00%	40.00%	20.00%	20.00%	20.00%	0.00%	1,262,184
LV	10.13%	87.95%	0.00%	0.00%	0.00%	1.92%	189,364,001
MT	0.00%	0.00%	0.00%	0.00%	7.41%	92.59%	27,000,000
NL	0.00%	23.67%	8.51%	27.06%	24.62%	16.14%	67,224,000
PL	26.50%	14.07%	0.90%	21.36%	11.35%	25.81%	3,714,349,969
PT	10.50%	39.23%	0.87%	7.21%	7.97%	34.22%	689,535,699
RO	20.37%	2.25%	0.00%	25.84%	17.08%	34.45%	444,854,394
SE	29.47%	13.17%	12.49%	25.30%	10.21%	9.35%	102,373,874
SI	64.47%	9.21%	0.00%	17.76%	8.56%	0.00%	108,596,729
SK	6.94%	43.04%	0.28%	0.91%	0.00%	48.83%	1,163,538,776
UK	21.44%	11.75%	6.76%	34.82%	17.95%	7.28%	398,568,858

Source: Authors based on DG REGIO data

Table 18: Allocation of ERDF in Social infrastructures subsectors (% on the total of the sector) in the period 2007-2013

Country	Education infrastructure	Health infrastructure	Childcare infrastructure	Housing infrastructure	Other social infrastructure	Total
AT	100.00%	0.00%	0.00%	0.00%	0.00%	398,400
BE	0.00%	0.00%	100.00%	0.00%	0.00%	1,727,774
BG	29.92%	28.48%	17.38%	13.12%	11.10%	246,356,121
CY	100.00%	0.00%	0.00%	0.00%	0.00%	9,670,000
CZ	31.95%	35.39%	5.13%	0.00%	27.52%	1,221,324,400
DE	91.64%	3.29%	2.76%	0.00%	2.31%	533,705,999
DK	0.00%	0.00%	0.00%	0.00%	0.00%	
EE	51.09%	28.14%	4.65%	1.53%	14.59%	517,869,185
ES	50.42%	36.64%	2.98%	0.00%	9.95%	847,918,022
EU cross-border cooperation	13.69%	21.06%	2.43%	0.21%	62.61%	445,540,536
FI	0.00%	0.00%	0.00%	0.00%	0.00%	
FR	77.42%	6.68%	1.69%	0.00%	14.21%	269,453,710
GR	57.59%	29.41%	3.35%	0.00%	9.64%	1,404,781,744
HU	24.74%	53.52%	3.07%	4.96%	13.72%	2,497,062,406
IE	0.00%	0.00%	0.00%	0.00%	0.00%	
IT	22.27%	20.64%	9.62%	10.33%	37.13%	1,076,131,259
LT	50.00%	30.81%	0.00%	7.56%	11.63%	779,136,281
LU	0.00%	0.00%	0.00%	0.00%	0.00%	
LV	48.53%	39.40%	5.69%	5.70%	0.69%	526,132,597
MT	43.16%	48.92%	2.17%	1.44%	4.32%	59,080,000
NL	41.89%	0.00%	0.00%	0.00%	58.11%	12,335,000
PL	46.06%	34.68%	1.48%	8.90%	8.88%	2,732,672,596
PT	54.44%	18.69%	0.60%	0.36%	25.92%	1,722,876,462
RO	38.79%	26.26%	0.00%	19.89%	15.05%	561,884,077
SE	0.00%	0.00%	0.00%	0.00%	0.00%	
SI	15.77%	15.77%	0.00%	0.00%	68.45%	98,181,098
SK	47.30%	22.09%	5.47%	6.93%	18.20%	1,096,175,000
UK	100.00%	0.00%	0.00%	0.00%	0.00%	37,849,428

Source: Authors based on DG REGIO data

Table 19: Allocation of ERDF in Environment subsectors (% on the total of the sector) in the period 2000-2006

Country	Air	Noise	Drinking water (collection, storage, treatment and distribution)	Sewerage and purification	Urban and industrial waste (including hospital and dangerous waste)	Environmental infrastructure (including water)	Total
AT	0.00%	5.11%	40.80%	54.09%	0.00%	0.00%	9,092,810.16
BE	0.00%	0.00%	21.25%	24.87%	29.38%	24.50%	19,192,142.45
CY	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00
CZ	5.85%	6.49%	10.80%	61.19%	15.67%	0.00%	104,200,165.30
DE	1.51%	0.24%	12.89%	59.37%	13.61%	12.39%	1,498,747,460.97
DK	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	5,030,090.85
EE	0.00%	0.00%	0.00%	28.20%	71.80%	0.00%	3,337,927.95
ES	0.39%	0.02%	28.21%	26.44%	5.51%	39.42%	4,290,594,015.54
EU cross-border cooperation (CB+RG)	4.91%	3.07%	30.27%	23.53%	28.16%	10.06%	251,307,035.77
FI	0.00%	0.00%	0.00%	30.79%	23.83%	45.38%	26,108,800.00
FR	4.01%	0.13%	30.70%	16.61%	15.38%	33.17%	677,605,604.98
GR	1.25%	0.32%	30.85%	34.74%	32.60%	0.24%	920,277,112.60
HU	2.58%	2.58%	16.81%	50.44%	27.58%	0.00%	64,112,235.00
IE	0.02%	0.00%	26.94%	35.58%	37.46%	0.00%	215,227,728.18
IT	6.29%	1.48%	28.75%	38.14%	16.11%	9.24%	1,938,824,705.05
LT	0.00%	0.00%	38.72%	38.72%	22.56%	0.00%	6,611,113.84
LU	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	4,725,092.50
LV	0.00%	0.00%	38.06%	38.06%	23.88%	0.00%	29,552,450.00
MT	36.84%	0.00%	21.05%	26.32%	15.79%	0.00%	19,291,645.25
NL	1.10%	1.10%	3.31%	10.74%	83.73%	0.00%	6,754,072.20
PL	24.28%	0.00%	24.28%	27.15%	24.28%	0.00%	397,692,081.00
PT	0.91%	0.91%	31.67%	52.02%	6.15%	8.33%	837,584,234.20
SE	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	4,970,544.35
SI	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	8,304,972.97
SK	24.89%	0.00%	25.09%	25.09%	24.93%	0.00%	91,727,041.00
UK	0.00%	0.00%	53.55%	28.94%	11.26%	6.25%	149,981,935.60

Source: Authors based on DG REGIO data

Table 20: Allocation of ERDF in Environment subsectors (% on the total of the sector) in the period 2007-2013

Country	Air quality	Integrated prevention and pollution control	Management and distribution of water (drink water)	Water treatment (waste water)	Management of household and industrial waste	Mitigation and adaption to climate change	Rehabilitation of industrial sites and contaminated land	Promotion of biodiversity and nature protection (including Natura 2000)	Promotion of clean urban transport	Risk prevention (...)	Other measures to preserve the environment and prevent risks	Total
AT	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	0.00%	9,074,950
BE	2.29%	0.00%	0.00%	1.53%	3.64%	1.53%	2.29%	82.51%	1.61%	6.14%	0.00%	65,503,731
BG	0.00%	0.00%	10.89%	50.27%	19.66%	0.00%	7.09%	5.29%	4.45%	2.36%	0.00%	1,528,588,192
CY	0.00%	0.00%	0.00%	4.73%	69.77%	0.00%	8.98%	0.00%	16.52%	0.00%	0.00%	179,865,000
CZ	5.90%	3.75%	9.36%	31.43%	12.16%	0.00%	10.82%	14.16%	4.70%	7.55%	0.18%	4,279,258,090
DE	1.23%	1.09%	2.23%	23.43%	3.27%	0.84%	21.78%	3.46%	3.00%	36.03%	3.63%	1,461,435,305
DK	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
EE	1.80%	0.00%	26.94%	26.94%	9.29%	0.00%	18.24%	2.87%	0.00%	5.07%	8.87%	756,889,037
ES	0.32%	0.94%	31.40%	32.13%	7.30%	0.11%	2.93%	10.78%	2.19%	11.30%	0.59%	6,326,672,889
EU cross-border cooperation	3.20%	9.82%	4.54%	8.56%	3.59%	6.58%	3.76%	13.43%	3.40%	20.16%	22.95%	1,256,583,433
FI	0.00%	0.00%	9.78%	18.48%	0.00%	2.37%	6.16%	5.75%	5.75%	10.58%	41.13%	33,626,083
FR	0.68%	0.98%	12.72%	10.53%	11.19%	1.57%	7.20%	14.58%	14.93%	16.51%	9.12%	1,201,959,369
GR	0.67%	0.12%	12.89%	26.65%	12.22%	0.14%	0.74%	5.08%	24.71%	13.55%	3.23%	3,536,462,000
HU	0.00%	0.53%	10.04%	22.64%	6.11%	0.00%	7.93%	2.10%	28.42%	16.18%	6.05%	5,993,889,990
IE	0.00%	0.00%	16.39%	16.39%	0.00%	0.00%	0.00%	0.00%	67.21%	0.00%	0.00%	24,400,000
IT	2.40%	4.43%	15.05%	9.88%	14.66%	4.20%	12.94%	2.48%	11.28%	17.18%	5.50%	2,305,860,159
LT	18.32%	0.00%	14.68%	22.02%	29.80%	0.00%	1.55%	9.29%	4.34%	0.00%	0.00%	936,253,959
LU	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	0.00%	3,786,550
LV	0.00%	0.00%	71.02%	0.00%	16.34%	0.00%	6.18%	3.28%	0.00%	3.18%	0.00%	792,693,781
MT	8.89%	0.18%	1.78%	17.78%	23.11%	0.00%	20.20%	0.71%	1.67%	24.89%	0.79%	239,060,000
NL	4.70%	0.00%	0.00%	3.32%	3.95%	1.48%	46.40%	8.47%	24.32%	0.00%	7.37%	67,545,000
PL	1.34%	0.88%	5.66%	35.93%	14.89%	0.00%	3.16%	1.53%	26.44%	9.35%	0.82%	8,808,773,995
PT	0.30%	0.94%	25.21%	29.83%	8.57%	0.14%	7.34%	1.80%	1.10%	19.64%	5.14%	2,615,231,327
RO	2.93%	2.70%	29.60%	29.60%	16.90%	0.00%	6.75%	3.67%	0.00%	5.13%	2.72%	4,690,118,408
SE	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	13,741,278
SI	0.00%	0.00%	29.35%	20.40%	26.71%	0.00%	0.00%	6.44%	4.43%	12.67%	0.00%	769,537,179
SK	6.85%	0.00%	10.66%	37.08%	19.76%	1.06%	6.99%	1.63%	2.23%	6.43%	7.29%	1,865,300,000
UK	0.00%	0.00%	0.00%	0.00%	5.68%	15.58%	46.85%	0.02%	26.68%	0.02%	5.17%	356,345,960

Source: Authors based on DG REGIO data

Table 21: Allocation of ERDF in Energy subsectors (% on the total of the sector) in the period 2000-06

Country	Electricity, gas, petrol, solid fuel	Energy infrastructures (production, delivery)	Renewable sources of energy (solar power, wind power, hydro-electricity, biomass)	Energy efficiency, cogeneration, energy control	Total
AT	0.00%	0.00%	84.19%	15.81%	18,892,271.75
BE	0.00%	22.64%	30.98%	46.38%	11,345,073.95
CY	0.00%	0.00%	0.00%	0.00%	0.00
CZ	0.00%	0.00%	64.33%	35.67%	24,978,540.50
DE	0.00%	9.72%	68.89%	21.39%	55,954,821.21
DK	0.00%	100.00%	0.00%	0.00%	2,716,802.91
EE	17.34%	0.00%	35.33%	47.33%	5,427,174.16
ES	53.76%	2.76%	25.12%	18.36%	226,644,908.93
EU cross-border cooperation (CB+RG)	10.46%	5.60%	68.97%	14.97%	77,553,524.93
FI	0.00%	0.00%	97.73%	2.27%	8,413,870.00
FR	21.46%	25.45%	30.32%	22.77%	113,143,382.25
GR	68.59%	1.44%	5.93%	24.03%	178,574,998.27
HU	0.00%	0.00%	60.00%	40.00%	15,165,047.00
IE	0.00%	0.00%	0.00%	100.00%	22,864,270.00
IT	25.33%	2.20%	55.72%	16.76%	290,044,362.18
LT	27.00%	0.00%	20.00%	53.00%	60,029,581.00
LU	0.00%	100.00%	0.00%	0.00%	4,725,092.50
LV	0.00%	0.00%	0.00%	100.00%	19,705,573.66
MT	0.00%	0.00%	100.00%	0.00%	203,069.95
NL	0.00%	0.00%	19.60%	80.40%	1,013,174.40
PL	0.00%	0.00%	89.43%	10.57%	107,981,180.49
PT	0.00%	91.84%	8.16%	0.00%	387,617,712.54
SE	0.00%	79.14%	20.86%	0.00%	6,892,323.76
SI	0.00%	100.00%	0.00%	0.00%	8,304,972.97
SK	33.33%	0.00%	33.33%	33.33%	4,759,831.86
UK	33.99%	5.22%	28.09%	32.70%	74,194,462.80

Source: Authors based on DG REGIO data

Table 22: Allocation of ERDF in Energy subsectors (% on the total of the sector) in the period 2007-2013

Country	Electricity	Electricity (TEN-E)	Natural gas	Natural gas (TEN-E)	Petroleum products	Petroleum products (TEN-E)	Renewable energy: wind	Renewable energy: solar	Renewable energy: biomass	Renewable energy: hydroelectric, geothermal and other	Energy efficiency, co-generation, energy management	Total
AT	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.22%	21.99%	57.00%	1.08%	19.73%	30,193,421
BE	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	45.89%	0.00%	0.00%	54.11%	25,827,642
BG	0.00%	0.00%	20.99%	0.00%	0.00%	0.00%	11.42%	14.66%	0.00%	1.27%	51.66%	243,152,398
CY	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	5,950,000
CZ	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	5.74%	9.17%	24.02%	8.79%	52.28%	1,190,031,303
DE	0.19%	0.00%	0.00%	0.00%	0.00%	0.00%	5.36%	9.93%	16.83%	15.07%	52.62%	479,129,265
DK	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
EE	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	9.24%	0.00%	4.62%	0.00%	86.14%	73,575,090
ES	17.06%	0.00%	2.13%	11.93%	0.49%	0.00%	0.75%	23.30%	10.16%	2.17%	32.01%	461,210,310
EU cross-border cooperation	0.27%	0.00%	0.09%	0.00%	0.09%	0.00%	14.11%	14.85%	23.71%	14.53%	32.35%	332,204,264
FI	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.77%	1.75%	29.40%	13.10%	53.96%	44,926,164
FR	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	6.72%	19.21%	29.10%	10.52%	34.46%	557,541,247
GR	8.31%	9.40%	13.01%	9.62%	1.44%	0.00%	13.09%	5.64%	4.37%	23.74%	11.38%	625,182,500
HU	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	6.96%	7.99%	31.66%	9.89%	43.50%	359,092,004
IE	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	38,000,000
IT	0.00%	0.00%	1.71%	0.00%	0.00%	0.00%	4.02%	17.69%	20.58%	13.66%	42.34%	1,874,968,666
LT	10.06%	0.00%	6.10%	0.00%	0.00%	0.00%	0.00%	0.00%	8.40%	0.00%	75.43%	437,430,965
LU	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	11.11%	22.22%	22.22%	22.22%	22.22%	2,271,929
LV	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	7.85%	0.00%	19.37%	25.51%	47.27%	127,400,000
MT	2.44%	0.00%	0.00%	0.00%	0.00%	0.00%	23.97%	23.97%	4.88%	0.00%	44.75%	34,840,000
NL	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	10.22%	7.59%	14.23%	10.91%	57.05%	49,393,000
PL	2.62%	9.30%	18.84%	8.96%	6.89%	0.00%	10.26%	2.67%	15.29%	6.73%	18.44%	2,219,786,983
PT	0.00%	0.00%	6.71%	0.00%	0.00%	0.00%	12.44%	7.41%	8.80%	10.20%	54.44%	269,356,221
RO	5.82%	7.93%	3.49%	7.93%	1.16%	0.00%	9.52%	3.17%	7.93%	11.10%	41.94%	603,764,705
SE	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	20.08%	17.61%	28.78%	18.61%	14.91%	61,516,737
SI	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	16.94%	13.32%	3.63%	66.11%	159,886,553
SK	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	14.49%	14.54%	24.43%	46.54%	168,836,400
UK	0.82%	0.00%	0.00%	0.00%	0.00%	0.00%	11.92%	7.49%	13.04%	16.30%	50.43%	280,583,100

Source: Authors based on DG REGIO data

Table 23: Allocation of ERDF in Transport subsectors (% on the total of the sector) in the period 2000-2006

Country	Air-ports	Ports	Motorways	National roads	Regional/local roads	Cycle tracks	Roads (other)	Rail	Water-ways	Multimodal Transport	Urban Transport	Intelligent Transport Systems	Other transport infrastructures	Total
AT	25.46 %	25.46%	0.00%	0.00%	0.00%	0.00%	0.18%	26.31%	0.00%	1.28%	21.31%	0.00%	0.00%	5,272,016.00
BE	0.00%	0.00%	0.00%	0.00%	0.00%	0.34%	12.09%	3.60%	0.00%	4.25%	1.87%	0.45%	77.40%	27,419,299.08
CY	0.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1,679,968.50
CZ	1.58%	1.58%	0.00%	0.00%	0.00%	0.00%	54.93%	14.19%	1.58%	1.08%	19.37%	5.70%	0.00%	266,625,328.40
DE	0.15%	1.30%	16.15%	0.00%	10.21%	0.49%	49.87%	20.43%	0.57%	0.46%	0.04%	0.20%	0.12%	3,493,850,449.30
DK	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	3,569,725.24
EE	5.64%	31.26%	0.00%	43.48%	9.16%	0.00%	0.00%	1.61%	8.86%	0.00%	0.00%	0.00%	0.00%	33,189,775.24
ES	3.39%	5.44%	2.44%	11.81%	14.71%	0.07%	29.24%	30.83%	0.00%	1.23%	0.68%	0.00%	0.17%	10,312,018,439.97
EU cross-border cooperation (CB+RG)	2.49%	8.31%	11.92%	5.99%	2.91%	1.77%	26.67%	5.71%	6.01%	6.84%	6.56%	5.18%	9.64%	803,327,061.56
FI	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	43.06%	0.00%	0.00%	21.89%	0.00%	0.00%	35.05%	31,017,300.00
FR	4.18%	22.98%	1.11%	15.51%	5.06%	0.85%	11.29%	4.75%	1.55%	10.82%	1.77%	0.23%	19.92%	1,074,634,814.54
GR	2.22%	4.65%	42.58%	0.92%	3.07%	0.03%	15.05%	24.23%	0.00%	0.30%	5.10%	0.58%	1.26%	6,736,001,140.05
HU	0.00%	3.80%	0.00%	28.88%	55.94%	0.00%	0.00%	4.28%	0.00%	3.80%	3.31%	0.00%	0.00%	275,709,936.00
IE	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	68.80%	0.00%	0.00%	0.00%	31.20%	0.00%	0.00%	1,134,379,407.00
IT	7.80%	8.89%	9.19%	9.50%	11.12%	0.24%	1.52%	35.55%	0.00%	6.93%	8.34%	0.05%	0.89%	3,782,233,275.95
LT	8.00%	2.00%	0.00%	0.00%	0.00%	0.00%	41.00%	23.00%	2.00%	0.00%	24.00%	0.00%	0.00%	142,355,859.00
LU	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	2,359,200.00
LV	0.00%	3.95%	0.00%	0.00%	0.00%	0.00%	51.63%	12.90%	0.00%	0.00%	31.52%	0.00%	0.00%	93,752,600.00
MT	0.00%	11.21%	0.00%	0.00%	0.00%	0.00%	88.79%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	12,376,500.00
NL	0.00%	9.44%	1.20%	0.00%	11.51%	19.49%	4.14%	6.22%	9.28%	12.48%	25.17%	1.06%	0.00%	51,806,284.40
PL	0.00%	1.31%	5.21%	19.66%	0.00%	0.00%	21.00%	16.74%	1.31%	1.68%	15.66%	17.43%	0.00%	2,172,004,353.56
PT	0.00%	2.27%	0.00%	0.00%	4.68%	0.00%	49.64%	4.97%	0.57%	15.26%	15.96%	0.37%	6.29%	3,228,874,127.76
SE	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	75,277,691.90
SI	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	8,310,788.77
SK	1.76%	0.00%	0.00%	2.89%	4.84%	1.82%	61.03%	27.67%	0.00%	0.00%	0.00%	0.00%	0.00%	242,817,600.63
UK	5.28%	10.14%	10.37%	2.60%	2.08%	0.18%	24.32%	12.13%	0.00%	11.83%	19.62%	0.00%	1.44%	582,266,552.75

Source: Authors based on DG REGIO data

Table 24: Allocation of ERDF in Transport subsectors (% on the total of the sector) in the period 2007-2013

Country	Air-ports	Ports	Motor-ways	Motor-ways (TEN-T)	National roads	Regional/local roads	Cycle tracks	Rail-ways	Rail-ways (TEN-T)	Mobile rail assets	Mobile rail assets (TEN-T)	Inland water-ways (regional and local)	Inland water-ways (TEN-T)	Multi-modal transport	Multi-modal transport (TEN-T)	Urban transport	Intelligent transport systems	Total
AT	0.00%	33.50%	0.00%	0.00%	0.00%	0.00%	0.00%	35.89%	0.00%	0.00%	0.00%	0.00%	0.00%	13.16%	0.00%	0.00%	17.45%	8,358,808
BE	0.00%	3.72%	0.00%	0.00%	0.00%	26.45%	0.00%	0.00%	0.00%	0.00%	0.00%	28.77%	0.00%	37.33%	0.00%	0.00%	3.72%	53,714,153
BG	0.00%	0.00%	0.00%	33.80%	18.95%	2.84%	0.27%	0.00%	24.24%	0.00%	0.00%	0.00%	6.13%	8.23%	1.15%	2.13%	2.26%	1,913,797,072
CY	0.00%	44.29%	41.45%	0.00%	0.00%	14.26%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	59,609,484
CZ	1.41%	0.00%	7.49%	20.22%	6.49%	15.90%	1.56%	5.88%	28.65%	1.84%	0.50%	0.06%	1.17%	0.18%	0.18%	6.21%	2.28%	7,515,029,916
DE	0.02%	2.95%	14.81%	0.07%	11.81%	35.97%	3.16%	2.54%	22.69%	0.00%	0.00%	0.56%	2.95%	2.32%	0.00%	0.00%	0.16%	3,149,284,628
DK	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
EE	1.84%	6.06%	0.00%	31.19%	5.05%	4.92%	0.00%	3.20%	19.55%	0.00%	4.40%	0.00%	1.03%	0.00%	0.00%	22.29%	0.47%	682,246,496
ES	3.73%	15.11%	9.66%	8.02%	0.75%	10.15%	0.01%	6.16%	42.31%	0.00%	0.00%	0.00%	0.00%	2.56%	0.21%	0.81%	0.53%	7,375,709,450
EU cross-border cooperation	2.14%	8.43%	0.13%	2.28%	0.67%	25.61%	8.51%	5.22%	1.43%	0.32%	0.63%	3.65%	2.54%	15.34%	4.86%	5.50%	12.73%	1,039,228,226
FI	0.00%	0.00%	0.00%	0.00%	12.85%	23.56%	0.00%	0.00%	29.88%	0.00%	0.00%	0.00%	0.00%	33.71%	0.00%	0.00%	0.00%	34,133,368
FR	2.06%	14.00%	12.08%	0.00%	0.00%	2.74%	0.32%	33.17%	1.50%	0.00%	0.00%	1.97%	0.00%	24.75%	1.40%	4.32%	1.70%	926,806,258
GR	3.90%	5.39%	3.86%	43.03%	11.50%	12.42%	0.03%	0.94%	14.70%	0.00%	0.00%	0.01%	0.00%	2.80%	0.48%	0.92%	0.01%	5,183,635,000
HU	0.00%	0.00%	2.26%	21.54%	27.08%	11.76%	2.78%	0.00%	30.19%	0.00%	0.00%	0.00%	1.16%	2.93%	0.00%	0.00%	0.30%	5,490,167,999
IE	0.00%	0.00%	0.00%	0.00%	75.76%	0.00%	0.00%	24.24%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	26,400,000
IT	3.71%	15.20%	2.83%	0.89%	7.64%	5.44%	0.61%	33.12%	14.70%	1.17%	0.00%	0.57%	0.00%	6.48%	0.19%	5.06%	2.39%	3,847,290,178
LT	3.14%	6.21%	0.00%	15.20%	25.80%	3.24%	0.00%	1.50%	34.99%	0.53%	0.00%	0.00%	0.38%	0.00%	4.16%	4.86%	0.00%	1,530,173,212
LU	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
LV	6.69%	15.59%	25.32%	18.61%	0.00%	0.00%	0.00%	12.05%	9.79%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	11.86%	0.09%	1,173,290,983
MT	0.00%	24.96%	0.00%	52.63%	5.32%	13.84%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.36%	0.00%	0.00%	1.90%	184,303,051
NL	0.00%	7.25%	0.00%	0.00%	0.00%	14.12%	11.32%	2.12%	0.00%	0.00%	0.00%	0.00%	0.00%	25.22%	0.00%	19.47%	20.49%	39,864,500
PL	2.77%	1.96%	7.61%	33.98%	10.26%	14.78%	0.45%	3.62%	17.21%	1.20%	2.14%	0.44%	0.00%	0.29%	0.49%	1.22%	1.58%	22,677,477,347
PT	7.83%	7.31%	9.72%	0.00%	10.03%	10.13%	0.67%	6.07%	43.46%	0.00%	0.00%	1.68%	0.00%	1.12%	0.36%	0.85%	0.78%	2,785,246,769
RO	0.77%	2.53%	0.00%	29.51%	9.82%	14.23%	0.00%	3.52%	28.72%	0.00%	2.53%	0.00%	3.65%	0.00%	0.24%	2.10%	2.38%	5,330,294,839
SE	5.30%	9.31%	1.23%	0.00%	1.70%	10.99%	0.75%	16.86%	0.00%	1.50%	0.00%	0.00%	0.00%	24.12%	0.00%	5.66%	22.58%	63,200,248
SI	3.10%	4.13%	0.00%	20.97%	18.67%	4.40%	0.57%	0.00%	45.59%	0.00%	0.00%	0.00%	0.00%	0.38%	0.00%	0.00%	2.20%	986,204,107
SK	0.00%	0.00%	15.30%	28.39%	6.32%	7.36%	0.15%	0.00%	34.01%	2.58%	0.00%	0.00%	0.00%	0.00%	3.00%	2.61%	0.28%	3,425,301,026
UK	8.42%	6.82%	0.50%	12.11%	0.75%	5.93%	2.31%	22.30%	0.00%	0.73%	0.00%	0.00%	0.00%	35.74%	0.00%	3.29%	1.10%	273,255,677

Source: Authors based on DG REGIO data

ANNEX III: METHODOLOGY FOR THE SELECTION OF THE 27 CASE STUDIES

The methodology required by Terms of Reference for the 27 case studies – one for each Member State – to be selected according to rigorous and well-defined criteria. Besides ensuring a good balance among SG(E)I sectors and their respective subsectors²³¹, the following additional criteria were taken into account:

- **The financial instrument through which the project co-financed under the SF was delivered.** Accordingly, the selection has taken into account projects financed as a standalone initiative (major projects) or as part of a wider national or regional strategy (national and regional objective 1 or 2 programmes), as well as financed within community initiatives.
- **The fund financing the project.** The selection has been focused mainly on projects co-financed by the ERDF and the Cohesion Fund, since it is acknowledged that the ESF does not finance SG(E)I. For EU-12, projects financed by ISPA before 2004 have been selected in some cases.
- **The programming period.** To deal with completed (or almost completed) projects, the selection of the project was focused mainly on projects carried out during the 2000–2006 programming period. However, since this study is also forward looking, a number of cases co-financed under the 2007–2013 programming period have been also considered.
- **Thematic focus.** As required by the specifications of the study, the selection has focused on projects relevant for the following thematic issues: affordability, governance (stakeholder involvement in the provision of SG(E)I), the ageing population, cross-border cooperation and geographical remoteness.

To identify a project for each Member State, by respecting all the required selection criteria, the following selection procedure was adopted:

- At a first attempt, attention was paid to the allocation of ERDF and Cohesion Fund expenditure in the sectors identified as relevant in the context of SGI, namely transport, telecommunications and information, energy, environment, social and healthcare. The same kinds of information for each Member State have been processed to provide a comprehensive picture of the relevance of ERDF and Cohesion Fund expenditure for the provision of SG(E)I at the subsector level and to understand which sectors and subsectors of SGI were mainly concerned by these funds. This screening has helped identify a range of potential sectors and subsectors for each Member State to select the project.
- To select the project, a combination of “top-down” and “bottom-up” approaches was adopted to ensure the highest level of quality and consistency among the case

²³¹ According to the EC Regulations No. 438/2001 and No. 1828/2006 SG(E)I sectors identified are: **Transport:** railways, mobile rail assets, national roads, regional/local roads, motorways, airports, ports, waterways, urban transport, multimodal transport, intelligent transport systems, cycle tracks; **Telecommunications:** telephone basic infrastructure, ICT, services and applications for citizens/SMEs; **Energy:** electricity, natural gas, petrol, solid fuel, renewable source of energy, energy efficiency, cogeneration, energy control; **Environment:** air quality, noise reduction, urban and industrial waste management, drinking water, water treatment, sewerage and purification, integrated prevention and pollution control, mitigation and adaptation to climate change, rehabilitation of industrial sites and contaminated land, risk prevention; **Social Infrastructures:** hospital infrastructure, education infrastructure, childcare infrastructure.

studies, as well as accurate data gathering. A preliminary list of projects was identified by the core team by looking at the success stories uploaded on DG Regio website, DG Regio publications²³² and other internal sources.²³³ This list has been circulated among country experts and on the basis of their suggestions, stemming from the information collected by the managing authority, a project for each Member State was selected.

Once selected the projects, a common template was provided to the country experts to guide them in carrying out their case study.

²³² http://ec.europa.eu/regional_policy/cooperation/interregional/ecochange/index_en.cfm.

http://ec.europa.eu/regional_policy/projects/stories/index_en.cfm.

http://ec.europa.eu/regional_policy/projects/stories/archive_en.cfm.

²³³ EC, DG Regional Policy, major projects database.

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