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EUROPEAN UNION

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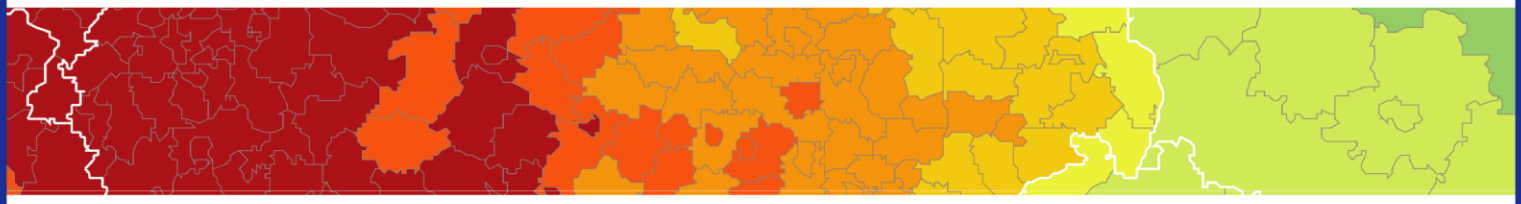
Inspire policy making by territorial evidence



Urban-rural Connectivity in Non-metropolitan Regions (URRUC)

Targeted Analysis Activity

Annex I: Contextualisation

5/06/2019

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This delivery does not necessarily reflect the opinion of the members of the ESPON 2020 Monitoring Committee.

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Information on ESPON and its projects can be found on www.espon.eu.

The web site provides the possibility to download and examine the most recent documents produced by finalised and ongoing ESPON projects.

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Abbreviations

DG	Directorate-General
EFTA	European Free Trade Association
EC	European Commission
EU	European Union
ECF	European Cohesion Fund
ERDF	European Regional Development Fund
ESPON	European Territorial Observatory Network
EU	European Union
GNI	Gross National Income
LAU	Local Administrative Unit
NACE	Nomenclature statistique des activités économiques dans la Communauté européenne
NMR	Non Metropolitan Regions
NUTS	Nomenclature of Territorial Units for Statistics
OECD	Organisation for Economic Co-operation and Development
UK	United Kingdon
URRUC	Urban-rural Connectivity in Non-metropolitan Regions

1 Introduction

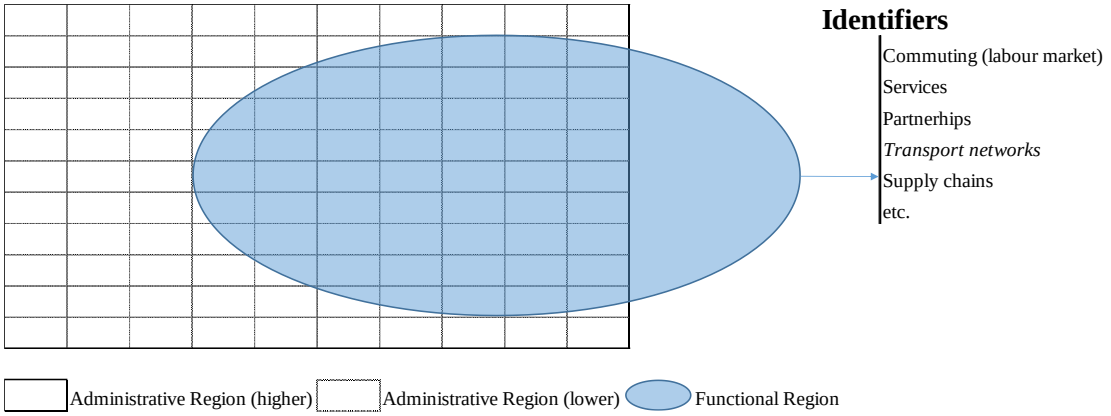
Urban and rural areas are increasingly connected and integrated, socially and economically. A recent OECD report shows that 80% of the rural population lives close to cities. The traditional split between urban and rural areas in Europe is no longer relevant. The lines have been blurred, initially by industrialising processes and later by improved transport and communications, de-regulation in property markets and emergent information technology. Also, there is no longer a clear difference in administration of urban and rural areas. Urban rural relationships require improved interaction, with urban centres providing services, cultural activities, infrastructure and access to labour markets, while rural zones offer in return agricultural produce, as well as access to leisure activities and green spaces for urban consumers. This co-operation will support sustainable development opportunities by offering new opportunities to work together, for example, in the fields of traffic and transport, new technologies and business, food and nutrition, climate change, energy supply or tourism (METPEX, 2011). The level at which these interactions are analysed and understood is critical to appropriately identify how to best foster these linkages and develop them for the benefit of those living in these areas.

1.1 The concept of a functional region

Studies of competitiveness and economic development have tended to focus on the nation state as the unit of analysis, and on national advances and state level policies as drivers of economic activity. However, there are significant differences in economic performance across regions in virtually every nation. This suggests that many of the essential determinants of economic performance are to be found at the regional level (Porter, 2003). By extension it makes sense that to understand and improve the economic performance of a region, focus should be placed on actors and stakeholders active at this level. A key concept that underpins this approach is that of ‘functional regions’, defined by socio-economic integration rather than administrative boundaries (EPRS, 2016). In terms of understanding Urban-rural connections and how they interact, it is beneficial to consider areas such as non-metropolitan regions as integrated functional regions, located, sometimes only partially, within a mixed policy environment made up of a range of actors up to and including supranational, national, regional and local levels. This can be broadly interpreted as higher and lower levels of administration, as shown by Fig 1 below

A core activity in URRUC was exploring the institutional framework within which each of the partner regions operated, to better understand how policy was determined and implemented in these areas, with obvious implications for transport and accessibility. In addition to understanding the policy environment, additional focus was placed on contextualising and comparing data from each of the territories.

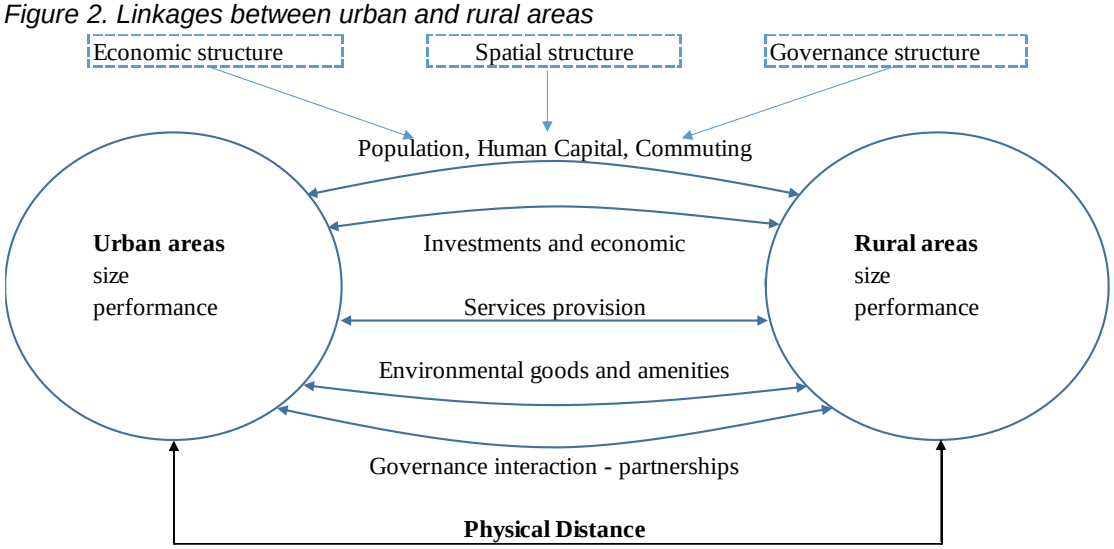
Figure 1. Illustration of a functional region



Source: EC, 2016

Organisations like the OECD have interpreted urban-rural linkages within functional regions to be collated under three categories; economic structure, spatial structure and governance structure, as shown in Fig 2. From a policy perspective, supporting the diversification of rural economies and strengthening the role of urban centres where these activities take place is central to positive rural-urban linkages. To be successful, there is a need for a better fit between national and sectoral policies and local development strategies.

Figure 2. Linkages between urban and rural areas



Source: Tacoli, C., 2015

1.2 Classifying Non-Metropolitan Regions

To date considerable focus has been placed on the functionality of metropolitan regions when examining urban-rural linkages. However, there is a growing appreciation for the challenges and opportunities associated with non-metropolitan regions in promoting transport connectivity and accessibility between rural and urban areas. Some explanation of what constitutes a Non-Metropolitan Region is required here. In sum, they are identifiable areas

where the urban centre of the region is not significant in terms of population to be classified as metropolitan. Building on categorisations created by the OECD and DG Regional and Urban Policy, Eurostat defines Metro regions as NUTS 3 regions, or groupings of NUTS 3 regions, representing all functional urban areas of more than 250 000 inhabitants (Eurostat, 2012). NMRs are those areas with less than 250,000 peoples that are not attached to metropolitan regions, i.e. the functionality and linkages within the region are dependent on less significant urban centres.

The typology distinguishes three types of metro regions: capital city regions; second-tier metro regions and smaller metro regions.[1] Large differences in levels of development are a common phenomenon, especially when comparing metropolitan and non-metropolitan areas. Taking into account the perspective of a regional policy makers, development and funding typically concentrates in regional capital cities (Soltys, 2015). Larger urban centres have bigger, more varied labour pools living in close proximity allowing better matching and learning by experience, better sharing of inputs and services supporting firms, as well as more concentrated infrastructure. A number of recent European projects have attempted to expand on the ideas underpinning NMR classifications. In establishing regional typologies, much of the existing work has focused on defining locations by their geographical or territorial features. For example, Dijkstra Poelman (2011) developed a model of urban-rural typology for NUTS 3 locations which categorises regions[2] as:

- Predominantly urban
- Intermediate, close to a city
- Intermediate, remote
- Predominantly rural, close to a city
- Predominantly rural, remote

However, such classifications overlook more complicated explanations of what constitutes an attached or functional region. In the case of the URRUC project one example of a territory that is considered small metro region according to EU classifications is that of San Marina in the Valencian community, in Spain. Case-study areas in URRUC project are LAU 1 according to NUTS classifications, with the exception of Västerbotten.

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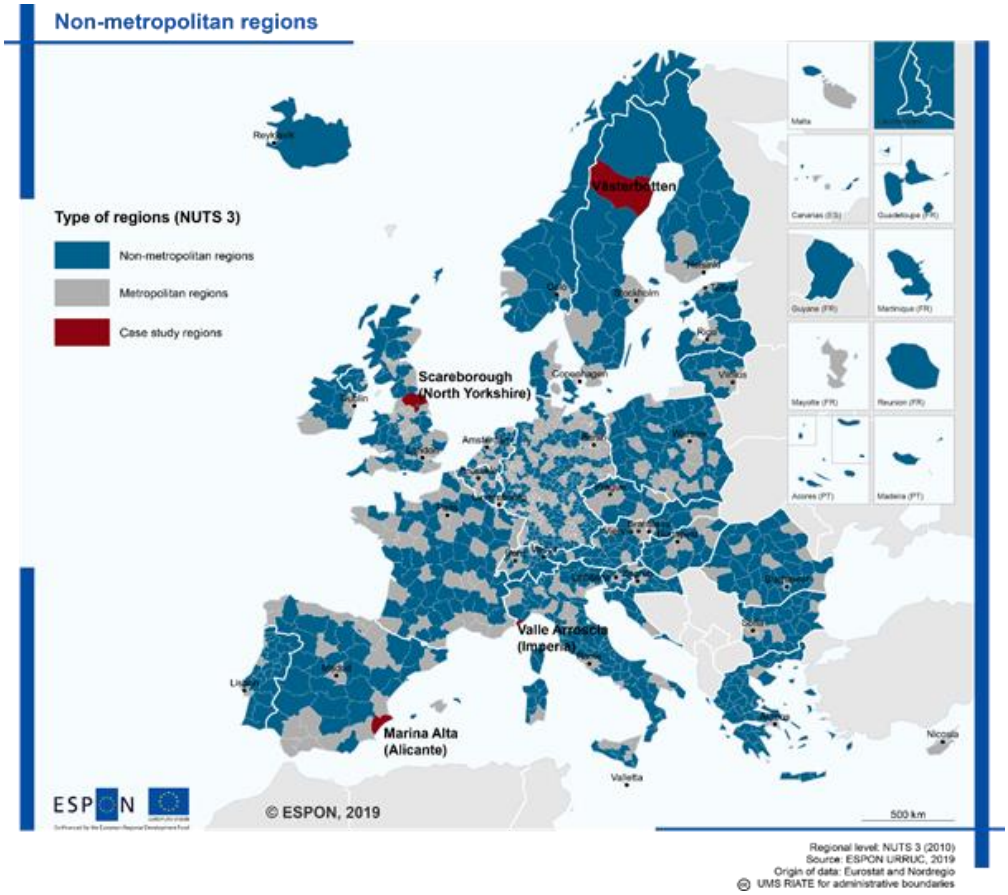
[1] The capital city region includes the national capital. Second-tier metro regions are the group of largest cities in the country excluding the capital. Urban regions represent urban centres of 50,000 or more inhabitants (which also define cities) and/or urban clusters of 5,000 or more inhabitants (which also define towns and suburbs).

[2] To define these locations the model makes use of population sizes rather than economic aspects. This typology of urban-rural location considers an area as ‘rural’ if the rural population is 50%, or greater, of the total area. A location is ‘urban’ if the rural population is less than 20% of the total number. These classifications, whilst providing important categorisations for different regions, do not take into consideration economic activity or industrial structure. Hence, regions may be considered as, for example, predominantly rural and remote, but at the same time, they may have different economic structures, growth levels, and future prospects.

Map 1. Partner territories involved in URRUC



Source: Nordregio, 2019

The definition was introduced in 2004 by Eurostat, the statistical agency of the European Union, in agreement with the national statistics offices in the member states. Eurostat data is provided on cities in the EU, its candidate countries and EFTA countries. Several cities were excluded by definition from the 2004 list of on technical, definitional grounds, such as the coincidence of the metropolitan area with the urban zone. Eurostat's objective was to have an area from which a significant share of the residents commutes into the city, a concept known as the "functional urban region." To ensure good data availability, Eurostat adjusts the boundaries to administrative boundaries that approximate to the functional urban region.

In Spain the criterion used by Spanish institutions to define metropolitan areas is often the European one. But other criteria, particular to Spain and widely used by academics, view Marina Alta as disconnected from the metro city of Alicante and instead see Dènia, Xàbia or Calp as the main urban centres for the territory (Boix, 2006; Feria 2008; 2010a; 2010b). In another study, by Cladera, Moix and Arellanos (2011) from the Catalonian Polytechnic University, it is concluded that the limit of metropolitan areas is 500,000 habitants in the area surrounding provinces' capital cities. In this case, the city of Alicante and its surroundings constitutes a metropolitan area, but the area of influence does not include Marina Alta County, as Marina Alta is far enough to "escape" its direct area of influence. As long as the

definition varies between the methodology and the scale used, Marina Alta does not fit neatly within the definition of a small metro region and in fact could easily be perceived as a NMR. Within the URRUC project commuting maps and stakeholder evidence would suggest that residents in the territory travel to the coast for employment and access to core services, to urban centres such as Denia, Xàbia or Calp. The importance of Marina Alta to the project then is show how functional regions and territories are as important to out understanding of what defines a NMR or metro region as population metrics. This is why it is necessary to build on previous projects with a more specific focus in terms of regions and their functional nature.

There are a number of ESPON projects which have investigated urban-rural accessibility or typologies. For instance, the EDORA project builds upon the Dijkstra Poelman framework by establishing categories based on accessibility. However, EDORA makes reference to the type of economic activities undertaken in NUTS3 locations. These are categorised as: Agrarian; Consumption Countryside; Diversified (strong secondary sector); Diversified (strong private services sector). As such, this investigation is able to consider variances in the level of economic performance in these regions. Meanwhile the TIPSE project provides an overview of poverty by region, creating a framework to help guide policy interventions in this area. However, it does not consider wider economic or industrial developments. Other key projects cited in the literature review include PURR which considers the potential of rural regions. This includes a ‘pyramid’ model which includes the processes and dynamics of rural change at the bottom, which in itself includes factors such as business development and employment. Other factors in the pyramid are the spectrum of rural knowledge, territorial assets (people, place, and power) with rural potentials at its apex.

In contrast to the above projects, and others cited in the literature review, there are fewer examples of studies seeking to segment non-metropolitan regions by their economic performance. Two key examples of this approach are:

1. Dijkstra and Ruiz (2010): Provide an extended regional typology which is applied to the EU. This contrasts with existing geographically based analysis by including distances from key services. It takes into consideration ‘economic agglomerations’ in neighbouring areas which helps to explain population movements and underlines how remote rural regions face specific challenges in terms of employment opportunities and accessibility

2. Soltys and Dorocki (2016): Provides a detailed economic typology of NMRS. They use twenty-four different variables in order to categorise NMRs, variables that conform to EU NACE indicators. These variables cover the level of socio-economic development, the dynamics of economic and socio-economic development, and the intensity of use of space. Under these headings key criteria included GDP, population density, growth in value added for different industrial sectors, rates of migration and the size of labour force

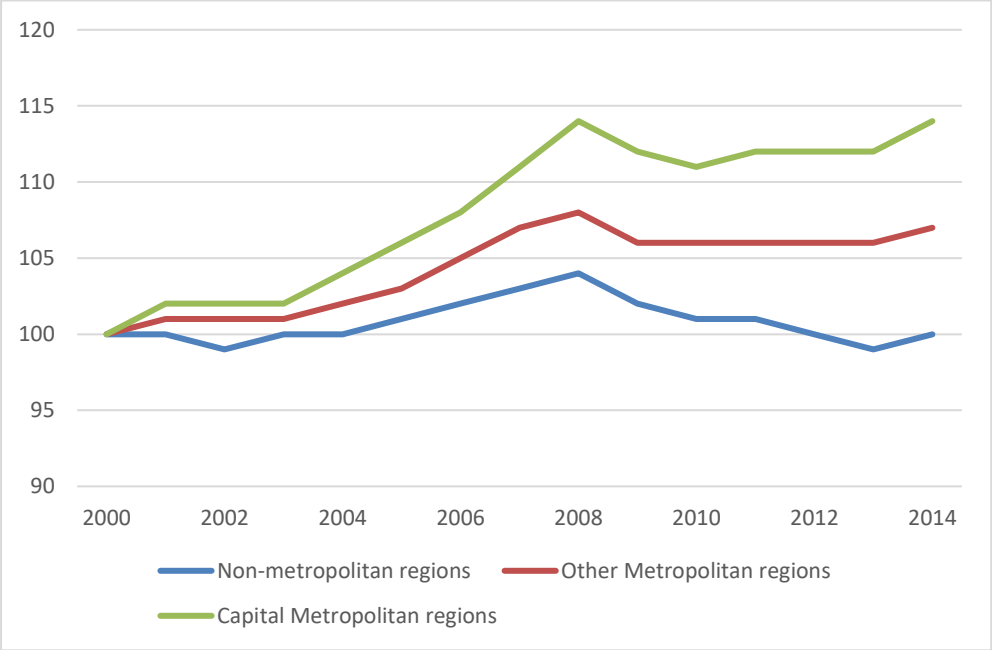
These studies are mostly based on the collection of statistical data which covers a period of approximately a decade. This supports the use of the 2007/8 financial crisis as an appropriate starting point for statistical analysis. However, somewhat problematically, this approach does not include forthcoming or planned changes concerning economic structure or infrastructure. Still, the use of variables such as GDP, and changes in the size of the population or labour force, provide an alternative perspective to those studies which solely use population figures as the source of their definitions. Understanding the growth and development dynamics to NMRs is key to improving accessibility and connectivity in these areas.

For example, if a lack of endogenous growth factors creates a barrier to initiating growth from the inside, arguably external intervention in regional policy affecting NMRs is needed to overcome this barrier. However, such intervention needs to be well-considered and focused to maximise its impact. In particular there is an argument that improving transport accessibility and connectivity within NMRs would stimulate economic development in these areas as well as advancing well-being for those in isolated, remote NMRs. Understanding the relationship between non-metropolitan urban centres and rural populations connected to these towns and cities is, therefore, central to this project.

2 The challenge for Non-Metropolitan regions

The Seventh report on economic, social and territorial cohesion (DG, 2017) shows that in 2014, metropolitan regions accounted for 58 per cent of population in the EU, 61 per cent of employment and 67 per cent of GDP. There are significantly different employment rates in European metropolitan regions versus non-metropolitan areas as shown in Fig 3.

Figure 3. Change in total employment (numbers employed) in metro regions, 2000-14



Source: EC, 2107

Using 2000 as a base year and setting the base index to 100, it can be seen that the rate of employment in EU 15[3] increased much more rapidly in capital metropolitan regions and other metropolitan regions than in non-metropolitan regions during the same period. The rate of employment in rural areas in all these regions was even lower, though productivity was increasing through improved processes and breakthroughs in technology.

Firm composition is also notably different in non-metropolitan regions. Porter (2003) divides industry locating in regions into three broad categories;

- *Local* industry, that serves the needs of the local population and has an even spread of employment across regions
- *Resource dependent* industry that locates to avail of a nearby strategic resource and concentrates employment near that resource

[3] The 15 member states prior to expansion of the EU in 2004.

- *Traded* industry sell products and services across regions and often to other countries. They locate in a particular region based on broader competitive considerations, with corresponding variations in employment concentration

Traded industries in particular tend to be bigger employers of labour and have a significant impact on the relative affluence of a region. Regions with smaller populations or smaller urban centres tend to fall outside the range of regions where traded industry locate, instead tending to obtain local products and services from adjacent areas. Firms, especially large ones, may locate in more urbanised areas to benefit from agglomeration economies, the three main sources of these being matching, sharing and learning (Puga, 2010). Larger urban centres have bigger, more varied labour pools living in close proximity allowing better matching and learning by experience, better sharing of inputs and services supporting firms, as well as more concentrated infrastructure.

This view is underpinned by recent returns for non-metropolitan regions; in terms of firms in the EU 15, those in metropolitan regions, particularly in capital city metropolitan regions, are larger on average in terms of employment than those in non-metropolitan regions. Furthermore, competition and churn were more noted in metropolitan regions in the EU 15, leading to more high growth firms being located in these areas (DG, 2017). What is evident from these figures is that there is no overall convergence between metropolitan and non-metropolitan regions which remain comparatively under-developed and disadvantaged, demonstrating the need for improving and optimising policy-making in these areas.

If a lack of endogenous growth factors creates a barrier to initiating growth from the inside, arguably external intervention in regional policy is needed to overcome this barrier. However, such intervention needs to be well-considered and focused to maximise its impact. In particular there is an argument that improving transport accessibility and connectivity within non-metropolitan regions would stimulate economic development in non-metropolitan regions as well as advancing well-being for those in isolated, remote areas. Understanding the relationship between non-metropolitan urban centres and rural populations connected to these towns and cities is, therefore, central to this project.

3 Review of transport and accessibility studies in European non-metropolitan regions

Since mobility and accessibility issues are core to the socio-economic development of territories and quality of life of their inhabitants, several studies and research projects on the matter have been developed in recent years, at different scales and focusing on various aspects of this key theme. The search for previous and ongoing research projects related to transport and accessibility studies in European non-metropolitan regions has been narrowed according to two main criteria:

- Focus on the last decade. This choice stems from two main considerations, both of them regarding the evolution of mobility patterns but from two different points of view: on the one hand, that of travel demand, with socioeconomic conditions and users' needs that are constantly evolving; on the other hand, that of transport provision, especially for innovative transport solutions.
- Focus on interregional and transnational cooperation projects. In order to get wide-ranging and transferable outcomes to inform URRUC and further research on these issues, the review focused on interregional and transnational cooperation projects, avoiding cross-border, national and local ones.

The first group of relevant reports features a number of ESPON research projects, both Targeted Analyses (TA) and Applied Researches (AR), focused on rural, mountain and peripheral areas:

- TA PURR - Potential of Rural Regions (2010-2012) creates and tests new ways to explore the territorial potentials of some rural areas and small and medium-sized towns
- AR EDORA - European Development Opportunities in Rural Areas (2008-2010) provides evidence on the development opportunities of diverse types of European rural areas
- AR TIPSE - Territorial Dimension of Poverty and Social Exclusion in Europe (2012-2014) analyses territories that are confronted with high degrees of poverty or social exclusion

Other relevant projects include AR FOCI "Future Orientation for Cities" (2008-2010) and TA SPIMA "Spatial Dynamics and Strategic Planning in Metropolitan Areas" (2016-2017). These projects do not focus on rural areas but do deal with urban-rural relationships by stressing the importance of regional collaboration. For the second group of projects looking at accessibility and transport we focused on relevant ESPON projects that are of interest for URRUC, among which in particular include AR TIPTAP "Territorial Impact Package for Transport and

Agricultural Policies" (2008-2010), that developed a tool for the ex-ante assessment of territorial impacts of transport and agricultural policies. Finally, in terms of research projects on accessibility and mobility in non-metropolitan and weak demand areas, there were numerous, relevant projects, captured below.

- Even if each of the projects that have been reviewed has its own specific focus, objectives, territories and results, there are some recurring elements, upon which to build the next stages of the URRUC research, detailed here:
- Most of them propose a set of indicators and/or toolboxes for the analysis and evaluation of such areas and of transport policies that can be of help for URRUC case studies analyses
- The need to introduce innovative and flexible solutions in order to efficiently satisfy demand in these areas is widely acknowledged
- The importance of ICT both optimise mobility demand and provision (e.g. infomobility-enabled ride sharing systems, traffic assistance using mobile phone tracking, and to reduce the need to travel, e.g. through dematerialization of services)
- Soft measures and demand management initiatives are frequently prioritised over infrastructural provision
- Participation, involvement, communication and education are acknowledged as crucial

Some of the reviewed projects also provide extensive reviews of policy measures and good practices for urban-rural connectivity and mobility issues in remote areas (in particular: Peripheral Access, Access2Mountain, Move on Green, Limit4Weda). Overall, from the analysed research projects on urban-rural connectivity in non-metropolitan regions the URRUC team will benefit from:

1. In depth analyses juxtaposed to considerations of recurring general issues, as well as approaches to analyse and evaluate urban-rural connectivity matters
2. Policy guidelines and measures to improve accessibility such as: multimodal transport, flexible transport systems, sustainable touristic mobility, public transport promotion via communication and participation strategies (e.g. active mobility campaigns), etc.
3. Potential relations and synergies with stakeholders and research organisations of both completed and ongoing projects.

The research projects on accessibility and mobility in non-metropolitan and weak demand areas (completed and ongoing) identified as most relevant by the team were;

- Interreg IVC FLIPPER - Flexible Transport Services and ICT platform for Eco-Mobility in urban and rural European areas (2008-2011), aimed to transfer experience, knowledge and good practices about Flexible Transport Services (FTS) among different EU Regions, to increase the social inclusion of disadvantaged areas encouraging sustainable growth.
- Interreg North Sea Region ITRACT - Improving Transport and Accessibility through new Communication Technologies (2012-2014), that develops and tests innovative tools (novel ICT applications) for efficient, user-and environment-friendly transport networks, improving the virtual and physical modes of transport by bringing together technology (ICT, satellite, wireless broadband and sensor technology) and socio-economic experts.
- Interreg IVC MOVE ON GREEN – Improving sustainable transport in rural areas (2012-2014), aimed to improve the design and effectiveness of regional policies on sustainable transport in rural and mountain areas; it provides a set of policy guidelines and a collection of good practices.
- Intelligent Energy Europe SMARTMOVE – promoting public transport use in rural areas (2014-2016): analysed and tested the effectiveness of active mobility consultancy campaigns (AMC), as a means of collecting passenger feedback and attracting new users to rural public transport services, also giving public transport operators an insight into the demands of current passengers and the views to those who do not use public transport.
- MED LIMIT4WEDA - Light Mobility and Information Technology for Weak Demand Areas (2010-2013), aimed to enhance mobility between rural and urban areas, through research, analysis and test of the possible technologies and their application for innovative transport solutions.
- South East Europe ACCESS2MOUNTAIN - Sustainable Mobility and Tourism in Sensitive Areas of the Alps and the Carpathians (2011-2014), aimed to achieve durable, environmentally friendly tourism, as well as to ensure accessibility and connection to, between and in sensitive regions of the Alps and the Carpathians.
- Intelligent Energy Europe STARTER - Sustainable Transport for Areas with Tourism through Energy Reduction, aimed to promote energy efficient and sustainable mobility through the cooperation of local parties. Develops and applies the concept of 'Local Travel Plan Networks (LTPN)', meant to engage stakeholders in the adoption of a common strategy, providing residents and tourists with alternative solutions for transport.
- Interreg Central Europe RUMOBIL (2016-2019): supports transnational cooperation between public authorities and their transport entities confronted with the challenge to respond to pressures on regional public transport systems in peripheral areas. The main outputs: pilot actions, strategy and policy-decisions to implement this strategy through an improvement transport plans. Testing a number of innovative applications

during a period of 12 to 18 months: how sparsely populated peripheral areas can be better linked to a primary, secondary or tertiary transport node (access to European and national passenger transport networks).

- Interreg North Sea Region GPATRA - Green Passenger Transport in Rural Areas (2017-2021), aimed to promote green transport and mobility by enhancing the capacity of authorities to reduce CO2 from personal transport in remote, rural and island areas. It will embed more zero emission vehicles in rural transport systems and improve available passenger transport resources.
- Interreg Europe OPTITRANS - Optimisation of Public Transport Policies for Green Mobility (2017-2021), that seeks to improve public transport policies in order to reduce the carbon footprint of mobility in peripheral and rural areas, by including new trends and developments such as better integration of low-carbon modes, ticketing and timetables, use of ICT, higher passenger comfort and better image of public transport.
- Interreg Central Europe PERIPHERAL ACCESS - Transnational cooperation and partnership for better public transport in peripheral and cross-border regions (2017-2020), aimed to analyse mobility issues in rural, remotely located or border regions and to derive concrete action plans and implement innovative pilot actions in three fields: multimodality and integrated transport; enhanced use of intelligent communication technology and intelligent technology system; and better cooperation through transport associations and cross-border marketing.

4 Policy context to transport provision by relevant authorities in non-metropolitan areas

The main focus of transport policies in the European Union can be captured under two broad objectives:

- The development of a Trans-European Transport Network with better integrated road, rail, air and water transport systems. The aim here is to eliminate congestion and bottlenecks, but also to improve existing or lapsed travel routes
- To promote the integration of different sectors and regions through high quality construction and interconnections

In addition there are a number of intersecting interests that serve to influence transport policy and transport provision. For example, the European Environment Agency (2016) states that one of the main objectives for transport networks is to promote the ecological choice that contributes a significant improvement to the quality of life, allows an adequate mobility, combines several forms of transport, reduces the consumption of fuel and, finally, satisfies mobility. As part of this process of expanding and integrating the European transport network, the European Union has created a European single transport zone that has fair conditions of competition in the different modes of transport. In the white paper "Roadmap towards a Single European Area of Transport" (2011), measures that were proposed included:

- Elimination of persistent congestion points, creating multimodal axes
- Improved infrastructures in member countries
- Placing an emphasis on research, innovation, investment in transportation so as not to depend on oil, to achieve decarbonisation without reducing mobility
- Connecting all corners of Europe by adding cross-border links, thus improving the different means of transport, creating a main network for the year 2030

By creating a single European transport space, which contributes to competitiveness by optimising the overall performance of the transport sector, it opens access to markets and infrastructures, eliminating technical and administrative obstacles to competition. Further, EU policy aims to reduce emissions caused by transport, while also encouraging greater use of cleaner forms of transport, as part of its aim to address climate change. The paper also promotes alternative transport solutions, that is, transport by rail and waterways, creating framework conditions for the use of interoperable and multimodal intelligent systems for the preparation of schedules, information, online booking systems and the issuing of smart tickets. For dominant forms of transport the goal also includes the development and incorporation of new engines and less polluting fuels. To achieve these ambitions the

commission has established financial support procedures and mechanisms at European level, preparing mobility audits and urban mobility plans to create a European mobility marker, based on common objectives. This includes the application of urban mobility plans in European cities, encouraging large companies to develop business management plans for mobility.

In coastal areas, and therefore of relevance to the 4 stakeholder regions, at certain times of the year traffic tends to congest due to seasonal and tourist demand. To address these challenges it was determined that more efficient entry points were necessary, developing adequate infrastructure for all types of vehicles, while also encouraging a greater proportion of journeys be made by public transport, complementing these efforts by increasing the density and frequency of service by public transport. In relation to maritime transport, European policy aims to guarantee quality and innovation to keep the maritime transport updated with advances in ship design, technology and operating procedures. This includes applying safety standards in ships and port facilities, thus ensuring the protection of the large number of ships arriving at the port, or in transit in European waters. A substantial investment, approximately €26,000 million of the "Connect Europe" scheme has been allocated to transport during the budget period 2014-2020, destined to investment in infrastructures, energy and information and communication technology.

Community co-financing with cohesion instruments is used for investments in infrastructure and rolling stock, i.e. clean buses, trolleybuses, trams, subways and suburban railways, thus forming the integrated and user-friendly urban transport system. Further, the European Regional Development Fund subsidises sustainable urban transport projects and projects related to intelligent transport systems. The European Investment Bank grants loans for urban transport projects such as construction, expansion or rehabilitation of collective transport infrastructure. Moreover, the European Commission, through the process for Sustainable Urban Mobility (SUMP) helps cities to test political and technological measures aimed at achieving a more sustainable, clean and efficient transport. The European Commission is also investing in research on topics related to transport. For example, the Seventh Framework Program for Research and Technological Development promoted technological development, research and demonstration activities on energy aspects of transport, clean urban transport and sustainable urban mobility for all citizens. FP7 also subsidizes the theme of ICT, activities related to mobility and services. The Program for Innovation and Competitiveness finances the “Smart Energy – Europe” program together with the ALTENER and STEER subprograms, initiatives related to new and renewable energy sources, the promotion of alternative fuels and the promotion of energy efficiency in transportation.

The numerous lines of financing of the European Union will allow the development of innovative actions in terms of accessibility, including the different programs at European level:

- HORIZON 2020. Greater community initiative to support and promote R & D
- The JTI Joint Technology Initiative.

- Innovative urban actions. Resources used to combat urban challenges.

In the same way, the FEDER funds will also be used to identify accessibility gaps and the means to fill them. The European Union Encourages the search for innovative and ambitious solutions in terms of urban transport with a view to cities that are less polluting and more accessible in order to make traffic more fluid.

5 European transport and accessibility Cohesion Policy

The analysis of the EU CP impact in connectivity of NMR is split across the two main funds that promote transport and accessibility policies at EU level: ECF and ERDF. These funds integrate the main EU strategies dealing with connectivity issues, which also impact on NMRs. The assessment of ECF and ERDF, as well as programs and projects realized within these two policy frameworks, has been carried on through the analysis of the main qualitative and quantitative indicators of impact and output.

5.1 Cohesion Fund (ECF) assessment

Objectives funded: The ECF aims to reduce economic and social disparities and to promote sustainable development, through financing Member States whose GNI is less than 90% of the EU average. In order to evaluate this fund, outputs and outcomes have been taken into account. It includes two policy axes: 1) 30 priority projects of the Trans-European Transport Networks, proposed by Member States and co-funded by the CEF; 2) transport projects that impact positively in developing rail transport, supporting intermodality and strengthening public transport. The ECF is strategic for rural-urban connection because it provides support for the European transport infrastructures network, including ensuring regional and local access, while the CEF focuses in particular on the "core transport network".

Total Funding: €63.3 billion (the 13.7% of total ESIF). €11.3 billion finances the 30 priority projects together with the CEF, while €32.5 of 63.4 billion of the ECF is directed to the thematic objective Network Infrastructures in Transport and Energy.

Main outputs: Installation of digital-radio based signalling system, renovating and building equipment for heating, lighting, and sanitation, including in commercial areas.

Table 1. Infrastructures funded by the ECF: Rail, Road

	RAIL TEN-T: new	**RAIL TEN-T Reconstructed**	**ROAD: TEN-T new**	**ROAD: TEN-T reconstructed**
Planned	64 km	2 099 km	1 681 km	643 km
Decided	16 km	1 387 km	1 668 km	616 km
Implemented		281 km	336 km	

Source: ESIF data (2019)

5.2 European Regional Development Fund (ERDF) assessment

Objectives funded: The ERDF aims to strengthen economic and social cohesion between the EU regions. The key priorities of the ERDF are 1) Innovation and research; 2) The digital

agenda; 3) Support for small and medium-sized enterprises (SMEs) and 4) The low-carbon economy, which must represent the 20% of funding in more developed regions, 15% in transition regions and 12% in less developed regions. More, less and in transition regions represent three different categories of EU regions in the ERDF.

Total Funding is €279.7 billion (the 43,3% of the ESIF).

Main outputs: infrastructures: roads, railway, tunnel, new tracks, construction, reconstruction and reconditioning. Improvements to the electric lines and communication systems, or roads and railway network. Bypass construction or extension.

Table 2. Infrastructures funded by the ERDF: Broadband, Rail

	Broadband access (households)	**RAIL: new (km)**	**RAIL: TEN-T new (km)**	**RAIL: Reconstructed (km)**	**RAIL: TEN-T Reconstructed (Km)**
Planned	14.538.844	868	1.167	3.901	1.608
Decided	4.353.292			1.318	317
Implemented	226.879				

Source: ESIF data (2019)

Table 3. Infrastructures funded by the ERDF: Road

	ROAD: New	**ROAD: TEN-T new**	**ROAD: Reconstructed**	**ROAD: TEN-T reconstructed**
Planned	1.423 km	327 km	8.689 km	127 km
Decided	1.468 km	543 km	6.087 km	75 km
Implemented	158 km	54 km	588 km	

Source: ESIF data (2019)

5.3 Outcomes, strengths and weaknesses of EU Cohesion Policy

ECF Outcomes and Strengths:

1. **Improved efficiency** of the European transport network;
2. **Smoother flows of people and freight**, both within the region and beyond;
3. ECF also **stimulated multimodality** projects, making it easier for users to swap between different transport modes
4. Shift towards **low-emission public transport**, generating benefits to the environment in terms of energy efficiency and use of renewable energy.

5. A sizeable amount of ECF funding is dedicated to transport projects that permit the construction of infrastructure, substantially **reducing development gaps** among European regions.
6. ECF funding has **mobilised public national and regional financing**, funding infrastructure projects that otherwise wouldn't have been realised.
7. Construction of road and railway infrastructures that **connected many NMRs to the national and international networks**.
8. Integration of many local and national roads and railway networks **improving accessibility to the Trans-European Transport Network**.
9. **Safer roads and railways** and enhanced comfort levels for transit and long-distance traffic.
10. **Shortening of journey times** in many NMRs.
11. Improvement of **freight transport by rail**.
12. **Increased competitiveness** and the improvement of transport infrastructure in **local economies and businesses**, by attracting more capital investment and tourists.
13. **Reduction of traffic inside urban areas** of many villages and towns through the construction of high-speed roads outside the settlements, generating **positive impacts** on the environment and **quality of life** for area residents, reducing noise levels and greenhouse gas emissions.

ERDF Outcomes and Strengths:

The ERDF achieved some important goals, such as:

1. **Eliminated bottlenecks** and **increased accessibility** in regions through infrastructural development
2. **Strengthened territorial cohesion** and transport links with important urban centres
3. **Made faster** commuters long-distance road and train **journeys**
4. **Shifted** passengers and freight transport **from road to rail** and other modes
5. **Improved** rail **connections** between important seaports
6. Further **developed freight transport** links between sea and rail
7. **Enhanced the competitiveness and sustainability of railways** as an environmentally friendly means of transport for passengers and freight.
8. **Strengthened connections** to core **Trans-European Transport Network** centres

9. **Lowered noise** levels, reduced local traffic **congestion** and cut **emissions**
10. **Improved** cities **connections** with national and international road networks
11. **Increased the attractiveness** of territories through infrastructural construction
12. **Fostered job** creation, **social** and **economic development** through transport solutions
13. **Reduced** air and noise **pollution**.
14. **Adapted** transport **infrastructure,** improving accessibility for reduced mobility people
15. **Developed** a **multimodal transport system** of high durability, quality and efficiency
16. **Enhanced regional mobility** by connecting rural and urban areas
17. **Improved** road and rail **safety** and reduced the risk of accidents
18. **Connected** important transport to economic and industrial **hubs**
19. **Boosted the exchange of information** across countries and regions
20. **Encouraged awareness, capacity-building, planning and assessing methods** of regional development in countries and regions where limited or non-existent

Weaknesses of EU Cohesion Policy:

1. **Legislation and markets** seems to **fail in the inclusion of sustainable mobility** technologies and the implementation of **multimodal** and cross-border transport
2. **Multimodal systems and innovative transport** solutions are not yet well and widely **integrated** in EU transport policy and funding, more concentrated in CEF. Funding scarcely impacted the connectivity of the transport system, generating inefficiencies
3. Generally, the **coordination between local and EU policy-makers in transport planning appeared weak**. EU priorities and programmes and local development plans (where existing) are often disconnected. This creates significant disparities between less and stronger governance regions
4. **Weak coherence and integration** between rural policy and other regional policy fund
5. In some of the projects audited (24 ERDF/ECF) a **lack of achievement** of the intended **results** have been found. Also, the **average cost increased** 23% and there were average delays of 41% compared to the initial deadline
6. **Concentration of funds** in the **construction** of infrastructures with limited analysis of travel patterns and transport demand, essential for transport planning

7. **Funding is principally directed to** the improvement of **the general efficiency** of the road or rail network **rather than on equity investment**, even though in some cases road or rail construction could lead to an improvement in connectivity in rural areas

8. In EU Cohesion Policy planning the acknowledgement of **particular rural issues** in planning transport projects is not clear. Rural areas present different problems related to **territorial specificities** that differentiate them from urban and peri-urban areas

9. **Few actions** directed **to enhance sustainable**, **climate resilient**, **intelligent** and **intermodal** national, regional and **local mobility**. Projects usually have as a main objective building infrastructure but not creating systems and models of transport

10. In some cases the **lack of institutional capacity** has prevented policy from being effective and institution building has not succeeded.

11. The enforcement of a given template of NUTS 2 Regions is not effective when regions lack political legitimacy. In the **absence of a high-level cultural and political compromise** on a policy model, strategies, both at EU and Member States (Regions) level, often lack clear-cut objectives and a justification

12. The **territorial or place-based perspective** (that cohesion policy has helped bring about) is sometimes **vague**: insufficient attention is paid to its central tenet according to which public goods and services and institutions must be tailored to specific contexts by eliciting and aggregating local knowledge and preferences

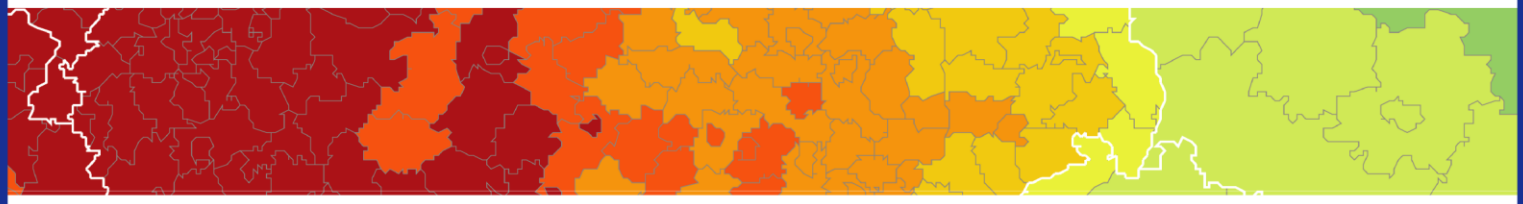
13. **Specific objectives and targets**, relevant for EU citizens' well-being, are often mentioned only as **part of a compliance exercise**

14. The **controversial quality** and very **limited role** played by **outcome indicators and targets** prevents this tool from providing focus and incentives for good performance. Moreover, **EU funded projects** have a **scarce focus** on delivering results

15. **Prevalence** of a **top-down** experimental **approaches** are not completely adequate

References

- BOIX, R. Concepto y Delimitación de áreas metropolitanas: una aplicación a las áreas metropolitanas de España. In Seminario Centro de Estudios Andaluces. Las grandes áreas metropolitanas españolas en una perspectiva comparada. Sevilla: Consejería de Presidencia, 2007.
- Cladera, J, Moix and Arellanos, B (2011) Catalonian Polytechnic University
- Dijkstra L, Poelman H (2014) *A Harmonised Definition of Cities and Rural Areas: The New Degree of Urbanization*, Working Papers 01/2014. European Commission.
- Directorate-General for Regional and Urban Policy, 2017, Seventh report on economic, social and territorial cohesion.
- ESPON & Nordregio (2014), TIPSE – Territorial dimension of policy and social exclusion in Europe. Luxembourg, ESPON.
- ESPON & Norwegian Institute for Urban and Regional Research (2012). PURR - Potential of Rural Regions. Luxembourg, ESPON.
- ESPON & University of the Highlands and Islands (2011), EDORA – European development opportunities in rural areas. Luxembourg, ESPON.
- European Commission FP7, 2011. MEasurement Tool to determine the quality of Passenger EXperience (METPEX).
- European Parliamentary Research Service, Bridging the rural-urban divide: Rural-urban partnerships in the EU, 2016
- Eurostat, 2012, Territorial typologies for European cities and metropolitan regions
- Feria, J. M. (a). La delimitación y organización espacial de las áreas metropolitanas españolas: una perspectiva desde la movilidad residencia-trabajo. Ciudad y Territorio. Estudios Territoriales, 2010, vol. XLII, nº 164, p. 189-210.
- Feria, J. M. (b). La movilidad residencial y los procesos de urbanización metropolitanos en España. In FERIA, J. M. y ALBERTOS, J.M. (ed). La Ciudad Metropolitana en España: procesos urbanos en los inicios del siglo XXI. Pamplona: Civitas-Thomson Reuters, 2010, p. 23-47
- Porter, M., 2003. The economic performance of regions. Regional studies, 37(6-7), pp.549-578.
- Puga, D., 2010. The magnitude and causes of agglomeration economies. Journal of Regional Science, 50 (1), pp. 203-219.
- Soltys, J, 2015, Typology of low developed non-metropolitan sub-regions in the European Union. Local and Regional Economy in Theory and Practice (394), pp 153-65.



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