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Inspire Policy Making with Territorial Evidence

WORKING PAPER

Indicators for integrated territorial and urban development

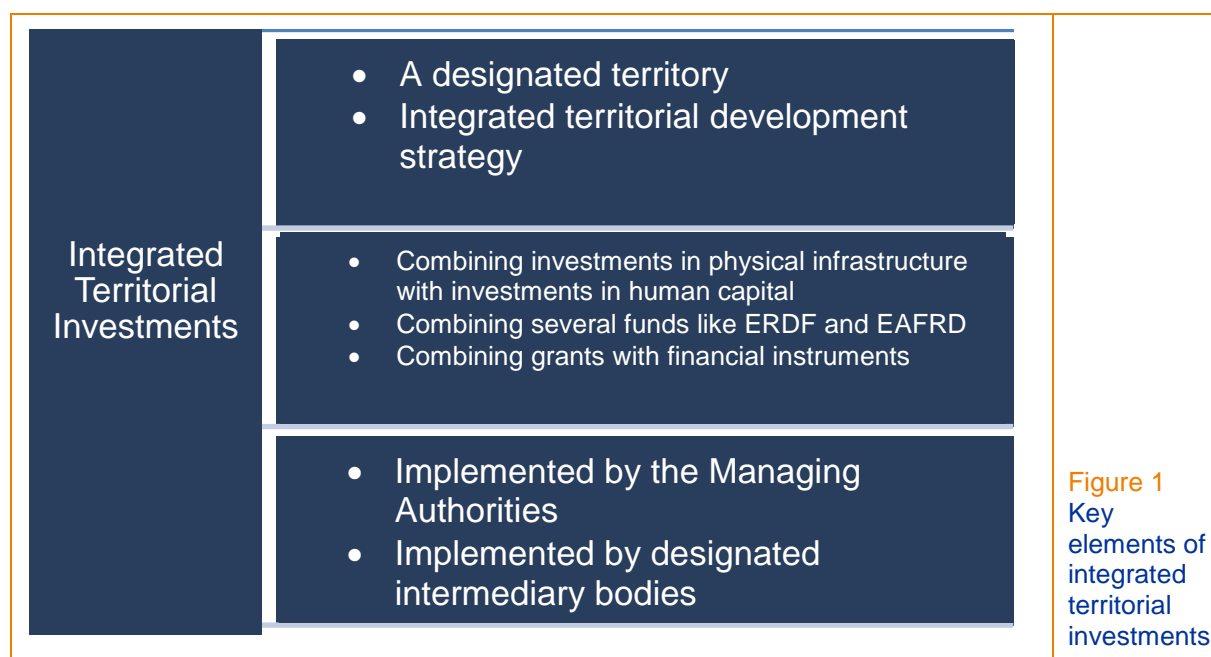
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1. Introduction

According to the Territorial Agenda 2020 (TA 2020), two of the territorial priorities for the development of the European Union are promotion of polycentric and balanced territorial development and use of European Union funding for integrated development in cities, rural areas and specific regions. At the same time, TA 2020 stresses the need for improved monitoring and evaluation of the performance of territorial cohesion efforts. Consequently, the European Commission has suggested a more results-oriented approach for EU cohesion funding in its legislative proposals for 2014-2020. Thus, selecting indicators and methods to measure the impact (results) of investments for integrated territorial and urban development is a vital step in further promotion of an integrated place-based approach.

Under the Cohesion Policy for 2014-2020, integrated territorial and urban development has gained a new momentum. The Common Provisions Regulation (No 1303/2013) has introduced new tools that can be used to implement territorial strategies in an integrated manner by combining several funds and thematic objectives and addressing the development of a territory across sectors, namely community-led local development (Articles 32-35) and integrated territorial investments (Article 36). The Regulation on the European Regional Development Fund (ERDF) explicitly lays down that at least 5 % of the ERDF resources allocated at national level for the Investment for growth and jobs goal shall be allocated to integrated actions for sustainable urban development (Article 7, Regulation No 1301/2013). In this case, it can be done through integrated territorial investments or specific operational programme, or a specific priority axis. As far as integrated territorial investments are concerned, three elements need to be present (Figure 1).



Source: Made by the ESPON EGTC based on the DG REGIO integrated territorial investment factsheet ⁽¹⁾

As there is a lot of flexibility in the ways integrated territorial investments and other instruments for integrated actions can be implemented, the European Commission has done a lot to promote the potential management structure ⁽²⁾. Studies ⁽³⁾ have shown that integrated territorial investments and

⁽¹⁾ European Commission. 2014. "Integrated Territorial Investments: A Factsheet."
http://ec.europa.eu/regional_policy/sources/docgener/informat/2014/iti_en.pdf

⁽²⁾ De Bruijn, M. and Zuber P. 2015. *Scenarios for Integrated Territorial Investments*. European Commission. Publications Office of the European Union, Luxembourg: http://ec.europa.eu/regional_policy/sources/docoffic/official/reports/pdf/iti_en.pdf

⁽³⁾ Van der Zwet, A., Bachtler J., Ferry M., McMaster I. and Miller S. 2017. *Integrated Territorial and Urban Strategies: How Are ESIF Adding Value in 2014-2020?* Final Report to the European Commission. European Policies Research Centre. Publications Office of the European Union, Luxembourg:
http://ec.europa.eu/regional_policy/sources/docgener/studies/pdf/integrated_strategies/integrated_strategies_en.pdf;

the use of integrated priority axes have indeed become a widely used instrument in the EU Member States, implemented by means sustainable urban development strategies in relation to ERDF Article 7, or by means of integrated development strategies, which focus on territories other than cities. Currently, up to 1 000 programmed integrated territorial investment (ITI) and ERDF Article 7 implementation arrangements exist, and there has been an effort to build a complete and extensive pan-European database with the aim of storing information on various integrated territorial development strategies ⁽⁴⁾.

In addition, the European Commission has set up a pan-European Urban Development Network ⁽⁵⁾ in accordance with Article 9 of Regulation No 1301/2013 to facilitate development and implementation of integrated strategies. Likewise, individual Member States have expended a great deal of effort to come up with a high-quality integrated development strategy, for instance using smart specialisation, as the strategy is a precondition for using the ITI instrument.

However, to what extent is it possible to measure the move towards integrated territorial and urban development? Is the traditional way of performing monitoring and evaluation activities following the European Commission guidelines a feasible way to detect the impact of integrated territorial investments? What kind of indicators and data are needed to capture the territorial and urban development across sectors? As the implementation of the integrated development strategies is under way, it is paramount to understand the added value of investments being implemented in an integrated way.

2.

How is measuring the territorial impact of integrated investments different from any other impact measurement? Problem statement

2.1. Going beyond sectoral impact to measure effectiveness of investments at territorial level

In standard practice, the impact of investments for integrated territorial and urban development is measured and evaluated using classical sectoral indicators that measure the impact of the investments under the sectoral policies. A few illustrative examples can be mentioned that show how the impact of integrated investments is being measured in terms of the indicators:

- education – capacity of supported childcare or education infrastructure;
- health – population covered by improved health services;
- energy efficiency – decrease in annual primary energy consumption by public buildings.

This approach is not inherently wrong, as it follows the normal practice of monitoring and evaluation by putting emphasis on measuring the direct outcomes (results) of the investments. Sometimes the emphasis is narrowed down to the output indicators by over-relying on “counting” the direct outputs of the investments, for instance “km of built road”, “number of houses renovated” or “number of people instructed”.

However, in that way, the actual impact of the investments on the territory is overlooked. There is a need for a stronger focus on how to link integrated territorial investments with the impact on development in the territory across sectors.

Heil, P. and Tétényi T. 2016. *The Use of New Provisions During the Programming Phase of the European Structural and Investment Funds*. Final Report to the European Commission. Altus Framework Consortium. Publications Office of the European Union, Luxembourg:

http://ec.europa.eu/regional_policy/sources/policy/how/studies_integration/new_provision_prog_esif_report_en.pdf.

⁽⁴⁾ Van der Zwet et al. 2017

⁽⁵⁾ See: http://ec.europa.eu/regional_policy/en/policy/themes/urban-development/network/

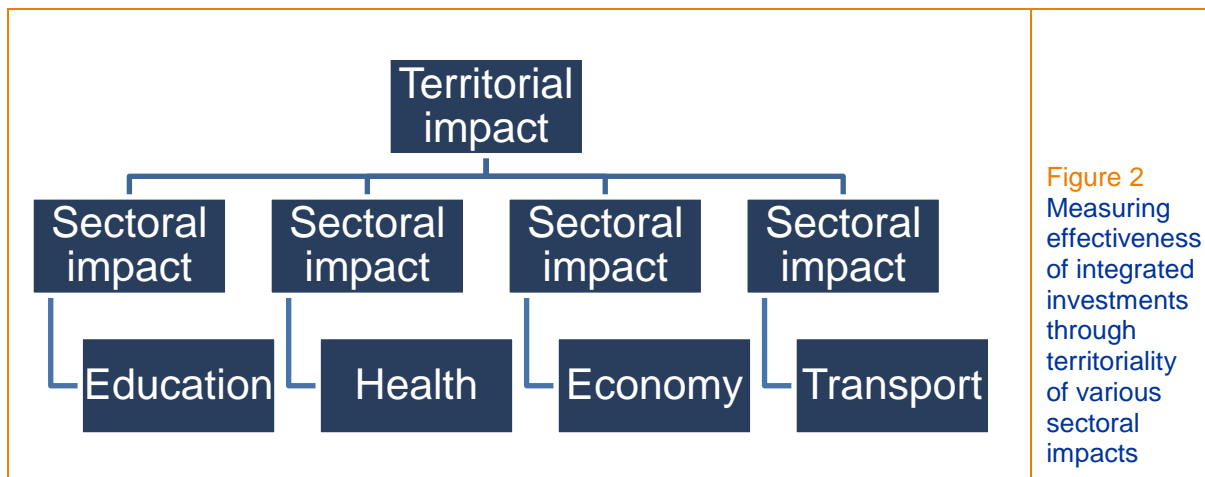


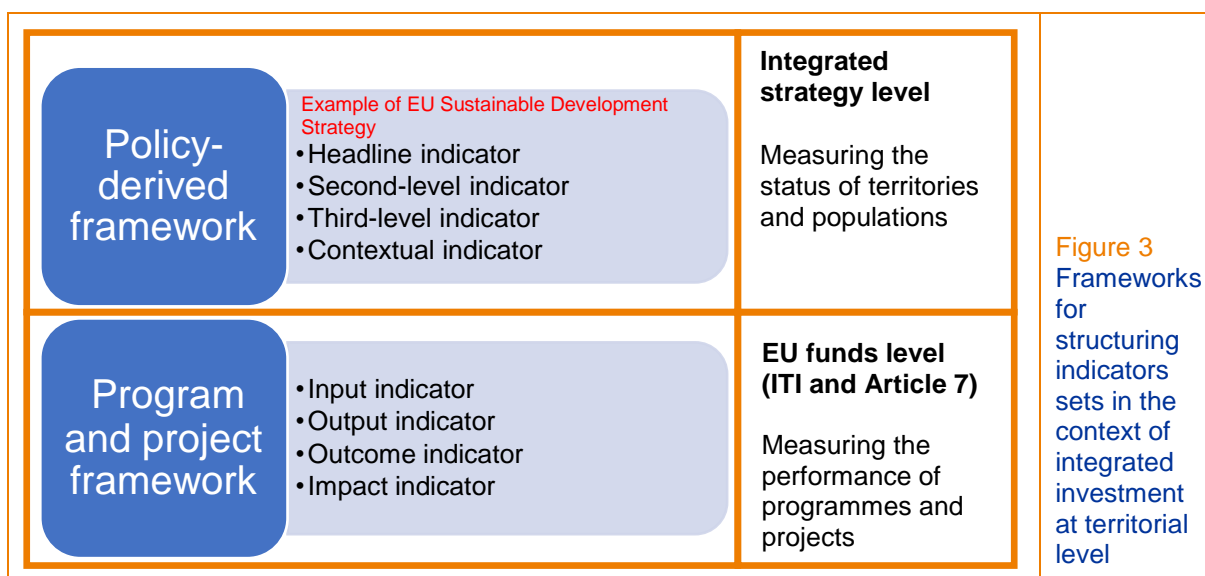
Figure 2
Measuring effectiveness of integrated investments through territoriality of various sectoral impacts

Source: Made by the ESPON EGTC

2.2. Distinguishing between indicator frameworks and measurement levels

Integrated investments at territorial level also pose a challenge in terms of the complexity involved regarding the content, the scale and the implementation mechanism. Thus, when it comes to measuring the impact of such investments, contextualisation and choice of indicators can cause confusion.

Indicators relevant to measuring the impact of integrated investments at territorial level are a mixture of indicators related to the programme and project framework for which the EU funding is used, and indicators which are normally used to measure the overall effectiveness of the integrated strategies. It is also pointed out in the research of the European Commission that the indicators are a mixture of those used for the operational programmes and others that are specific to strategies ⁽⁶⁾.



Source: Made by the ESPON EGTC, based on Eurostat, 2014 ⁽⁷⁾ and Friedman, 2015 ⁽⁸⁾

Thus, as a result, a long list of indicators is used and their meaning becomes unclear when the territorial impact needs to be presented. There is a need for a short list of indicators which reflects the impact of the integrated investments on an aggregate level. More importantly, the main element that helps to make

⁽⁶⁾ Van der Zwet et al. 2017

⁽⁷⁾ Eurostat. 2014. *Towards a Harmonised Methodology for Statistical Indicators: Indicator Typologies and Terminologies.* <http://ec.europa.eu/eurostat/web/products-manuals-and-guidelines/-/KS-GQ-14-011>.

⁽⁸⁾ Friedman, Mark. 2015. *Trying Hard Is Not Good Enough 10th Anniversary Edition: How to Produce Measurable Improvements for Customers and Communities.* CreateSpace Independent Publishing Platform

work with indicators easier and more transparent is the differentiation between accountability indicators, which are used to measure change in territories and/or populations, and performance indicators, which are used to measure the direct performance of programmes and projects. This distinction is very important, as changes in territories and/or communities happen because of various policies, programmes and investments, so integrated investments at territorial level alone cannot account for substantial overall changes in the development trajectory of a territory.

3.

Options and scenarios for how to address the problem

3.1. The European Commission's framework regarding indicators and evaluation of integrated development

The guidance provided by the European Commission is not explicit on how to measure impacts of integrated investments in terms of indicators and methods. The guidance document on the monitoring and evaluation of EU funding in the 2014-2020 programming period⁽⁹⁾ mentions three possible scenarios:

- The impact of integrated investments is measured by measuring the effectiveness of sectoral investments. If these are having any impact, then it is very likely that the programme as a whole is also achieving its objectives.
- Assessment of the intervention logic looks at how the different components fit with each other and make synergies likely to occur. This type of evaluation looks more at the “integration” aspect of investments from the process point of view.
- Counterfactual impact evaluations compare the development of supported and non-supported regions. In this case, the treatment unit, instead of a person, institution or economic entity, is a territory which has received integrated territorial investments.

The counterfactual impact evaluation could look at the impact of integrated territorial investments on a territory; however, it is more appropriate for assessing large-scale programmes, as it is relatively easy to find counterfactuals. For instance, there are numerous studies which have looked at the impact of cohesion policy at the EU level⁽¹⁰⁾. These kinds of studies also end up choosing classical indicators as dependent variables in regression models (gross domestic product (GDP) per capita, gross value added per capita, labour productivity measured as GDP per employed person), thus providing little opportunity to go beyond traditional measures.

More specific guidance from the European Commission is provided on the monitoring and evaluation of investments for integrated sustainable urban development (Article 7 of the ERDF Regulation, No 1301/2013)⁽¹¹⁾. However, in terms of detail it does not go beyond a recommendation to carry out an impact assessment which needs to look at the contribution of the strategy as a whole to the urban development objectives.

However, the European Commission has developed so-called “common output indicators”, which in some ways capture the integrated urban development in terms of the impacts of the investments (see Table 1). These have been added to Annex I of Regulation No 1301/2013 and to the Annex of the Regulation covering provisions for the support from the European Regional Development Fund to the European territorial cooperation goal (No 1299/2013).

In the monitoring and evaluation guidelines, the Commission has provided guidance on the use of the common indicators, and cautions that “common indicators reflect the actions, not the objectives of a programme or of regional policy”⁽¹²⁾. In other words, these indicators reflect the direct outputs of the

⁽⁹⁾ Directorate-General for Regional and Urban Policy. 2014. *The Programming Period 2014-2020: Guidance Document on Monitoring and Evaluation*. http://ec.europa.eu/regional_policy/sources/docoffic/2014/working/wd_2014_en.pdf.

⁽¹⁰⁾ Pieńkowski, J. and Berkowitz P. 2015. *Econometric Assessments of Cohesion Policy Growth Effects: How to Make Them More Relevant for Policy Makers?* European Commission Regional Working Paper 02/2015. http://ec.europa.eu/regional_policy/sources/docgener/work/2015_02_econ_assess.pdf.

⁽¹¹⁾ European Commission. 2016. *Guidance for Member States on Integrated Sustainable Urban Development*. http://ec.europa.eu/regional_policy/sources/docgener/informat/2014/guidance_sustainable_urban_development_en.pdf

⁽¹²⁾ European Commission. 2014. *Guidance Document on Monitoring and Evaluation. Concepts and Recommendations*. http://ec.europa.eu/regional_policy/sources/docoffic/2014/working/wd_2014_en.pdf

investments and not necessarily their impacts. Nevertheless, when one looks at these indicators in terms of increase and decrease over time, they could show the extent to which the territory is becoming attractive as a place to live and do business, thus also showing the impact of the investments.

Table 1

Common indicators specific to urban development

Indicator	Measurement unit
Population living in areas with integrated urban development strategies	Person
Open space created or rehabilitated in urban areas	Square metre
Public or commercial buildings built or renovated in urban areas	Square metre
Rehabilitated housing in urban areas	Housing unit

Source: EC Regulation No 1301/2013 and EC Regulation No 1299/2013

Currently the European Commission is undertaking a stock-taking exercise across all ESI funds in order to understand the prospects for wider harmonisation of indicators and their interpretation. A broad conclusion has been reached that three levels of indicators can be identified: output indicators, direct result indicators and policy result indicators.

Table 2

European Commission's framework of action for indicators across ESI funds

Output indicators	Direct result indicators	Policy result indicators
Specific deliverables of the policy interventions	The immediate results linked to interventions	The intended outcome in terms of economic and societal challenges addressed by the policy interventions
Exploratory work for refinement and wider coverage (although not 100 %)	Exploratory work for on the feasibility of common direct result indicators	Exploratory work on the identification of common policy indicators

Source: Made by the ESPON EGTC, based on the DG REGIO Evaluation Network

When it comes to ERDF and CF, there is room to introduce common direct result and common policy result indicators, which would help to achieve harmonisation among Member States and show the impact of EU funding on the achievement of EU priorities. In this context, the European Commission will strive also to **capture the territorial dimension by the common indicators**, for instance by identifying indicators which could be used by several sectors simultaneously.

3.2. Indicators for measuring the impact of integrated investments: a view from the ESPON projects

Territorial indicators and measurement methods in the context of policy impact have been a specific focus of the ESPON programme since its inception. By now an extensive list of indicators has been developed through ESPON projects, looking at different themes and application contexts. Many are

linked to describing different policy sectors and conditions for sustainable development and territorial cohesion.

The following is a selection of indicators relevant to measuring the impact of integrated investments at territorial level; however, it has to be noted that these indicators are more capturing the policy results of the integrated investments and changes in territories and populations. Only some of these indicators could be used as direct result indicators.

ESPON INTERCO project (2013) – Indicators of Territorial Cohesion

The project identified integrated polycentric territorial development as one of the territorial objectives. During the selection of indicators, the focus was on being able to describe impacts and effects of cohesion policies. Two relevant indicators can be selected from the list, capturing the impact of integrated territorial investments.

Table 3

Selection of indicators from the ESPON INTERCO project (2013)

Indicator	Measurement unit	Calculation notes
Population potential living within 50 km	Person	Expressed as being above or below defined average figure
Net migration rate	Person	Usually expressed per thousand of population; can be positive or negative

Source: ESPON INTERCO project

Box 1

How can ESPON INTERCO project indicators be used to determine impact of integrated investments?

Rationale for using the indicator “Net migration rate” in the impact assessment

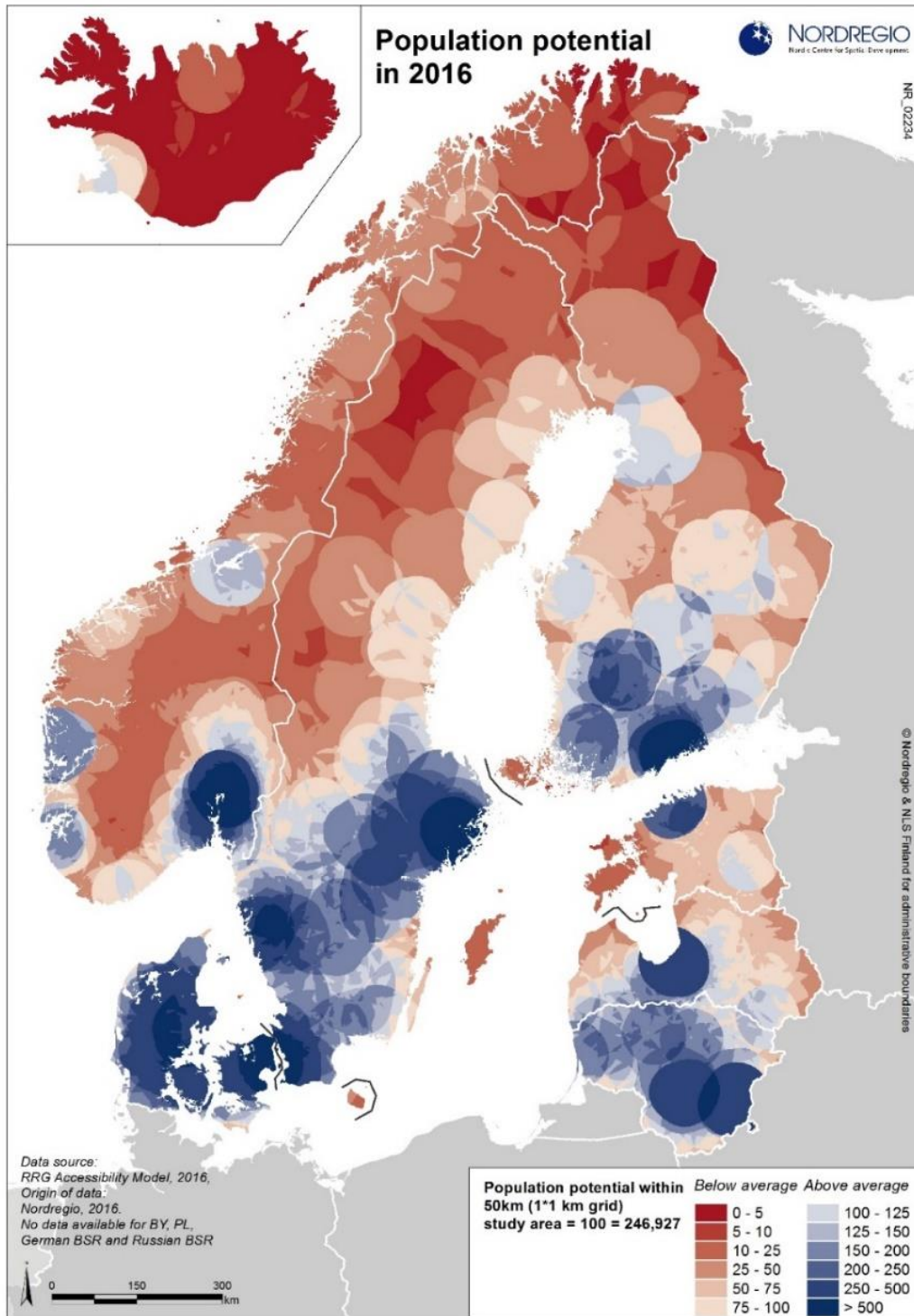
This indicator captures the net outcome of immigration and emigration in a given year. If, for instance, the emigration is exceeding immigration then the rate is negative. This indicator gives information about the impact of investments on many levels, because migration is related not only to people’s preferences and choices, but also to the attractiveness of a territory. It can be considered a proxy for the overall attractiveness of a region in terms of labour markets, education, quality of life, welfare, infrastructure, etc.

Rationale for using the indicator “Population potential living within 50 km” in the impact assessment

This is defined as the number of people within reach of 50 km airline distance for a system of 1 x 1 km (or other distribution) grid cells. For each cell the reachable population can be calculated. It is a proxy for the demand for provision of (public) services, for market potential and for polycentricity. In other words, if a territory maintains a low potential over time, the impact of investment might prove to be ineffective, as individuals and companies do not see the benefit of concentration close to development centres.

Map 1

Population potential within 50 km in Baltic Sea region (2016)



Source: Nordregio report *Trends, Challenges and Potentials in the Baltic Sea Region*, 2016.

ESPON KITCASP project (2013) – Key Indicators for Territorial Cohesion and Spatial Planning

The ESPON KITCASP targeted analysis project used an extensive consultation process within five stakeholder territories to select key indicators to measure integrated spatial development. Integrated spatial development was understood as encompassing balanced regional development and settlement infrastructure alignment, entailing well-managed and effective spatial development that is tailored to local needs ⁽¹³⁾.

Table 4**Selection of indicators from the ESPON KITCASP project (2013)**

Indicator	Measurement unit	Calculation notes
Natural population change	Person	Usually expressed per thousand of population; can be positive or negative
New completed private dwellings as a percentage of the total housing stock	%	
Modal split of passenger transport	Passenger-kilometres	Based on transport by passenger cars, buses and coaches, and trains
Access to public services (hospitals and schools)	Travel time minutes	

Source: ESPON KITCASP project

Box 2**How can ESPON KITCASP project indicators be used to determine impact of integrated investments?****Rationale for using the indicator “Natural population change” in the impact assessment**

This indicator captures the difference between the numbers of live births and deaths. At the level of impacts of integrated investments, it provides information on the extent to which the general socioeconomic conditions, infrastructure and public services are favorable for starting a family. It also shows the composition of the population and gives some information about the investments’ ability to attract younger people who would see their future in the particular territory. Overall, the indicator provides valuable information on any future developments in a territory in terms of depopulation and whether or not the investments are changing any trends in this respect.

Rationale for using the indicator “New completed private dwellings as a percentage of the total housing stock” in the impact assessment

This indicator provides an overall assessment of whether or not the level of investment and economic development is sufficient for people to decide to stay in a territory. New dwellings and capital investments indicate the attractiveness of the territory.

Rationale for using the indicator “Access to public services (hospitals and schools)” in the impact assessment

This is a classical indicator providing an understanding of whether or not public services and thus investments are organised in an effective manner in terms of geographical spread, providing transportation possibilities and ensuring proper transport networks.

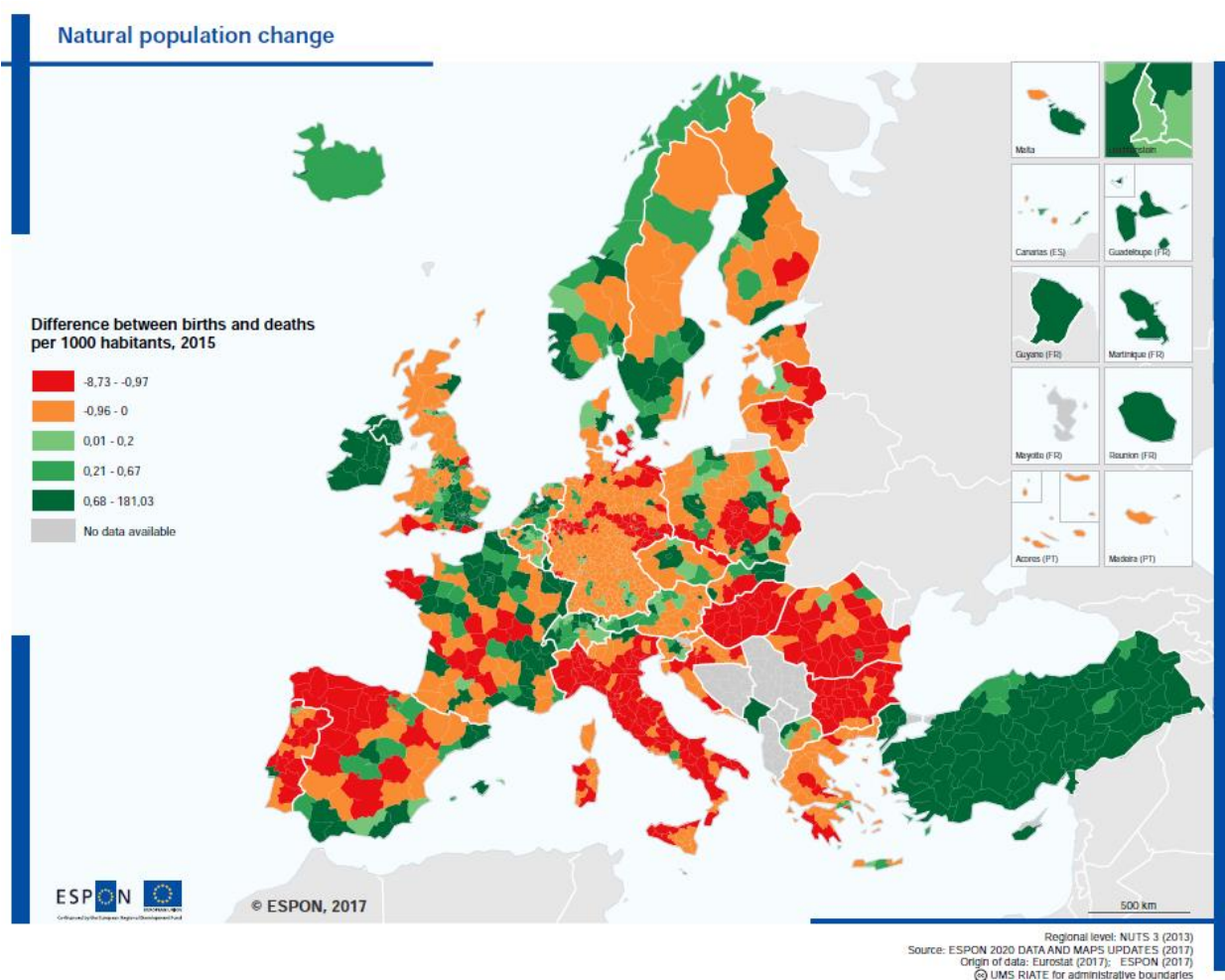
⁽¹³⁾ See: <http://airo.maynoothuniversity.ie/data-visualisations/kitcasp-espon-territorial-monitoring-indicators>

Rationale for using the indicator “Modal split of passenger transport” in the impact assessment

This is defined as the percentage share of each mode of transport in total inland transport, expressed in passenger-kilometres. This indicator, in contrast to accessibility and connectivity indicators, which are more related to the transport sector, measures overall economic and sociocultural activity. It indicates whether or not people move to do things, serving as a proxy for determining the impact of integrated investments in terms of creating vibrant and active societies.

Map 2

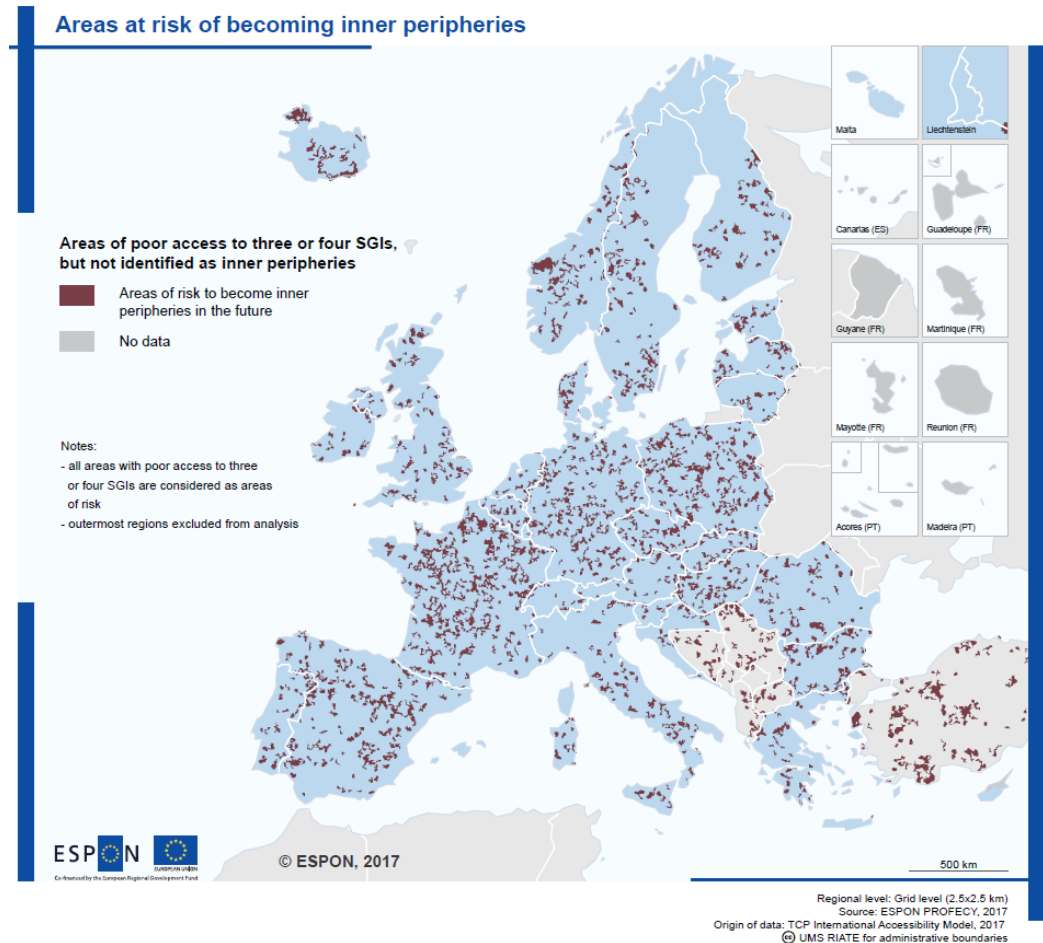
Natural population change, 2015



Source: ESPON 2020 Data and Maps Updates project, 2017

Map 3

Areas of poor access to three or four out of the main ten services of general interest (SGIs) (at risk of becoming inner peripheries)



Source: ESPON PROFECY project, 2017

ESPON SIESTA project (2013) - Spatial Indicators for the 'Europe 2020 Strategy' Territorial Analysis

The ESPON SIESTA project attempted to measure the extent to which Europe 2020 strategy targets are being achieved at a territorial level. The project came up with an extensive list of indicators and also presented an aggregate index, some of the indicators appeared in the ESPON Atlas (<http://atlas.espon.eu/>) in the chapter "Integrated View to Territorial Development".

Box 3

How can ESPON SIESTA project indicator be used to determine impact of integrated investments?

Rationale for using the indicator "Long-term unemployed persons as a proportion of total unemployed people" in the impact assessment

This indicator provides an indication of economic development and possible persistent structural problems. Unemployment as such is an inevitable shortcoming of the economic cycle; however, a large proportion of persons being unemployed for a long time can indicate social exclusion problems: economic development which is not inclusive. Thus, long-term unemployment can provide an aggregate view of the overall impact of integrated investments.

3.3. Potential use of composite indicators (indices) to measure impact of integrated investments

The indicators presented so far represent an attempt to avoid the sectoral trap and provide a perspective where a small set of indicators could be used to measure the impact of integrated investments on territorial and urban development. Composite indicators (indices) present yet another approach to measuring territorial development in a simple way through a single quantitative figure by combining several indicators into one.

When it comes to measuring impact of investments, composite indicators can provide some major challenges, so caution is necessary. The following are the major issues with using composite indicators in relation to impact assessment:

- Composite indicator typically benchmarks a territory against other territories, averages or defined targets, in a given year. However, to understand the impact of investments, change over time is more important. Even if such changes in composite indicators can be calculated, the value will depend to a great extent on the performance of other territories, thus making the actual positive impact less significant.
- Weights of the selected indicators can have a meaningful influence on the final value of the composite indicator, sometimes more profound than the indicator itself.
- Some indicators within the composite indicator might be constant over time or change slowly, so investments may have no impact on such indicators.
- The name of any widely used composite indicator might be attractive for linking it to certain policies or impacts of investments, but the actual indicators used to calculate the composite indicator, or the methods of calculation, are sometimes only a vague representation of the impact of policies or investments in question.

Nevertheless, composite indicators can present complex information in an easily understandable way. In order to detect the impact of investments on the value of a composite indicator, in practical terms it is advisable to understand the extent to which each indicator is contributing to the overall composite indicator. Often, a composite indicator consists of indicators which are not necessarily related to the particular context and content of the integrated territorial development strategies. To avoid the problem of not being able to attribute some parts of the strategy to the composite indicator (index), only relevant indicators can be selected and their contribution to the overall index calculated. Most of the methodologies used for calculating the composite indicators allow for such calculations. In this way, the potential impact of the integrated territorial investments can be more concretely specified.

The following is a description of composite indicators developed by the ESPON programme which can give a useful insight into using composite indicators.

The ESPON INTERCO project points out various composite indicators which could be used for measuring territorial cohesion. The polycentricity index is mentioned as being a suitable indicator for measuring a direction towards integrated territorial development. ESPON's 2006 project "Potentials for polycentric development in Europe" (ESPON 1.1.1.) developed a polycentricity index consisting of three subindices, each weighted equally. It combined morphological and functional polycentricity using functional urban areas. Since then, many studies have been carried out proposing methods for measuring polycentricity⁽¹⁴⁾ and there is still no conclusion on the best approach⁽¹⁵⁾. However, based on the ongoing discussion, in 2016 ESPON EGTC developed an alternative, easy-to-understand polycentricity index, which was presented in the ESPON policy brief "Polycentric Territorial Structures and Territorial Cooperation"¹⁶, (see Map 4 and Table 5 for overview).

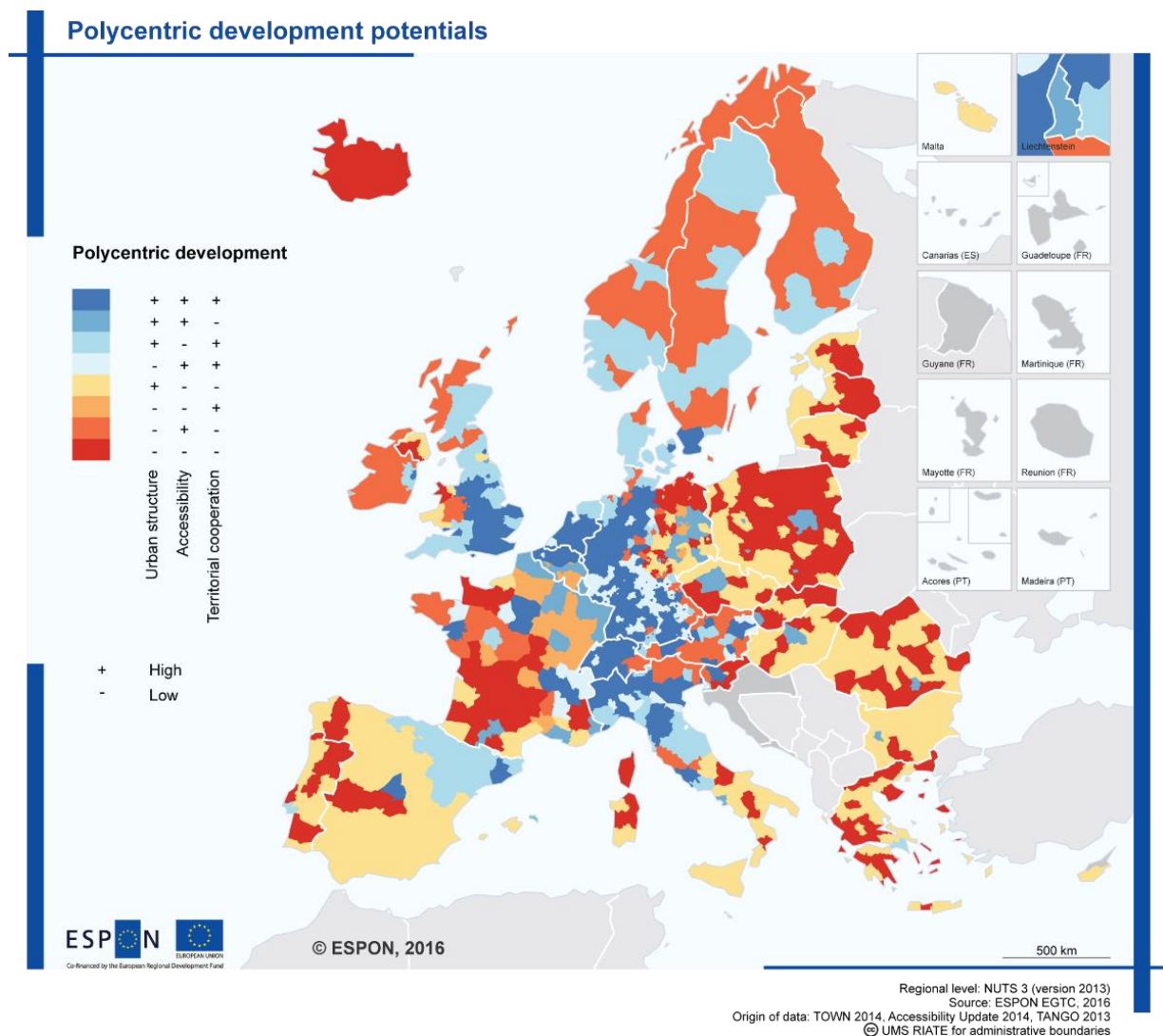
⁽¹⁴⁾ See for example Brezzi, M. and Veneri P. 2014. *Assessing Polycentric Urban Systems in the OECD: Country, Regional and Metropolitan Perspectives*. OECD Regional Development Working Paper 2014/01, OECD Publishing, Paris: http://www.oecd-ilibrary.org/urban-rural-and-regional-development/assessing-polycentric-urban-systems-in-the-oecd_5jz5mpdkmvr-en.

⁽¹⁵⁾ Rauhut, Daniel. 2017. "Polycentricity – One Concept or Many?", *European Planning Studies*, 25: 332-348. <http://www.tandfonline.com/doi/abs/10.1080/09654313.2016.1276157?journalCode=ceps20>.

⁽¹⁶⁾ ESPON. 2016. "Polycentric Territorial Structures and Territorial Cooperation." Policy brief. <https://www.espon.eu/topics-policy/publications/policy-briefs/polycentric-territorial-structures-and-territorial>.

Map 4

Potentials for further polycentric development in Europe (based on polycentricity composite indicator developed by the ESPON EGTC)



Source: ESPON EGTC policy brief “Polycentric Territorial Structures and Territorial Cooperation”, 2016

Polycentricity fosters balanced regional development and territorial cohesion. Therefore, integrated territorial investments, especially in cities, should result in territories becoming more polycentric. ESPON’s Polycentricity index can be adapted (and modified if necessary) to national contexts, taking into account data availability, and used for the purpose of measuring the impact of integrated investments.

The ESPON SeGI project “Indicators and perspectives for services of general interest in territorial cohesion and development” (2013) developed composite indicators to measure different aspects of service provision, and a grand all-encompassing composite indicator as well.

Access to services is an ultimate goal of the integrated territorial investments. Therefore, the services of general interest (SGI) index and its subindices can be used for evaluation purposes to capture the various aspects of the impact of investments. Originally the SGI index was calculated at the NUTS 2 level; therefore, where needed, the indicators in the index can be replaced with similar indicators if there are problems with data availability.

Table 5

Polycentricity indices developed during ESPON 2006 and ESPON 2020 programmes

Polycentricity index – ESPON 1.1.1. project (2005)		
Size index	Location index	Connectivity index
Rank and size distribution of population: <ul style="list-style-type: none"> - Slope of regression line (20 %) - Deviation of the largest city: primacy rate (80 %) Rank and size distribution of GDP: <ul style="list-style-type: none"> - Slope of regression line (20 %) - Deviation of the largest city: primacy rate (80 %) 	Gini coefficient of size of service areas	Correlation of population and accessibility: <ul style="list-style-type: none"> - Slope of regression line (50 %) - Gini coefficient of accessibility (50 %)
Polycentricity index – ESPON EGTC in-house elaboration (2016)		
Settlement structures	Accessibility	Territorial cooperation
Settlement types: <ul style="list-style-type: none"> - High-density urban clusters - Small and medium-sized towns - Very small towns 	Accessibility potential, multimodal (ESPON = 100)	Intensity and range of cooperation: <ul style="list-style-type: none"> - Twinning city oriented - INTERREG oriented, high level outside EU - Low range and intensity - Medium range and intensity - Hubs of territorial cooperation

Source: ESPON EGTC

The Joint Research Centre's Competence Centre on Composite Indicators and Scoreboards⁽¹⁷⁾ has vast experience in building composite indicators. It can be consulted on the best methods and approaches in terms of technicalities. It is worth mentioning that there are some concrete proposals on regional composite indicators developed by the European Commission which can serve as inspiration for developing composite indicators that could be adapted to local circumstances:

- **European Regional Competitiveness Index** (NUTS 2 level)⁽¹⁸⁾;
- **European Regional Inclusive Society Index** (NUTS 2 level)⁽¹⁹⁾;
- **European Social Progress Index** (NUTS 2 level)⁽²⁰⁾.

⁽¹⁷⁾ See: <https://ec.europa.eu/jrc/en/coin>

⁽¹⁸⁾ See: http://ec.europa.eu/regional_policy/en/information/maps/regional_competitiveness/

⁽¹⁹⁾ See: <https://ec.europa.eu/jrc/en/publication/developing-regional-inclusive-society-index-eu-literature-review-and-proposals-existing-practices>

⁽²⁰⁾ See: http://ec.europa.eu/regional_policy/en/information/maps/social_progress

Table 6

Grand composite indicator on services of general interest (SGI)

Grand SGI index		
Social SGI index		Economic SGI index
Educational SGI index	Students in pre-primary education per 100 inhabitants of age group	Length of motorways in km per 1 000 km ²
	Students in upper secondary education per 100 inhabitants of age group	High-quality ICT infrastructure: percentage of households with access to broadband
	Students in tertiary education per 100 inhabitants of age group	Persons employed per 100 000 inhabitants in public relations and consultancy
	National public expenditure on education per inhabitant	National public expenditure on economic affairs per inhabitant
Healthcare SGI index	Available hospital beds per 100 000 inhabitants	
	Physicians and doctors per 100 000 inhabitants	
	Professional nurses and midwives per 100 000 inhabitants	
	National public expenditures on healthcare per inhabitant	

Source: ESPON SeGI project

3.4. Examples from the Member states on measuring the impact of integrated investments

DG REGIO's study on integrated territorial and urban strategies looked into methodology for measuring the effectiveness of territorial provisions by depicting various countries' experiences. The study gives a useful insight into the indicators most frequently used to assess achievements of integrated territorial strategies. These indicators are a good selection to illustrate the impact of integrated territorial investments.

Table 7

Examples of frequently used indicators to assess achievements of integrated investments

Indicators	
<ul style="list-style-type: none"> Area accessible from TEN-T in 45 minutes (Brno, Czech Republic) 	<ul style="list-style-type: none"> Increase in population (Kaunas, Lithuania)
<ul style="list-style-type: none"> Length of road (Cascais, Portugal) 	<ul style="list-style-type: none"> Increased new business registrations per 1,000 inhabitants (Kaunas, Lithuania)
<ul style="list-style-type: none"> Share of public transport within total passenger transport (Brno, Czech Republic) 	<ul style="list-style-type: none"> Increased household incomes (Kaunas, Lithuania)
<ul style="list-style-type: none"> Area of regenerated open spaces and regenerated public buildings (Aurillac, France; Cascais, Portugal) 	<ul style="list-style-type: none"> Reduced air pollution (Kaunas, Lithuania)
<ul style="list-style-type: none"> Vacancy rate within city centres (Aurillac, France) 	<ul style="list-style-type: none"> Improvement in the social, economic and physical conditions in selected urban centres, based on an urban development index (Cork, Ireland)
<ul style="list-style-type: none"> Population living in areas with integrated urban development strategies (Cork, Ireland) 	<ul style="list-style-type: none"> Increased non-private-car commuting levels in the designated urban centres (Cork, Ireland)
<ul style="list-style-type: none"> Levels of satisfaction of residents living in areas covered (Cascais, Portugal) 	<ul style="list-style-type: none"> Evolution of inhabitants' perception of the enhancement of their environment (Centre-Franche-Comté Metropolitan pole, France)

Source: Assessing the performance of integrated territorial and urban strategies. Challenges, emerging approaches and options for the future; European Policies Research Centre, 2018

The report concluded that results and achievements of integrated territorial strategies are measured by using three approaches depending on the situation ⁽²¹⁾:

- **Assessments of integration**, concerning: the management and implementation responsibilities of institutions at different levels, and in different policy fields.
- **Assessments of territoriality**, concerning: the varied spatial scales at which the instruments are implemented and, potentially, effects outside the territory covered by the strategy.
- **Assessment of achievements**, concerning: performance of the strategy at project, OP, national and European levels.

⁽²¹⁾ Van der Zwet A., Ferry M. and McMaster I. 2018. *Assessing the performance of integrated territorial and urban strategies. Challenges, emerging approaches and options for the future*. Final Report to the European Commission. European Policies Research Centre. Publications Office of the European Union, Luxembourg: http://ec.europa.eu/regional_policy/en/information/publications/studies/2018/assessing-the-performance-of-integrated-territorial-and-urban-strategies

3.5. Exploring measurements methods alongside the indicators: a view from ESPON projects

ESPON's Indicators of Territorial Cohesion (INTERCO) project looked into two classical concepts which describe the regional convergence process. One of the overarching goals of integrated territorial investments is to decrease territorial disparities; thus these tools can be helpful to measure progress towards this goal. The convergence methods can be applied to the indicators mentioned above, or even sectoral indicators to understand the territorial convergence in specific development sectors.

Beta convergence is analyses on whether badly performing territories catch up faster than good performers.

Sigma convergence is analyses on how territorial disparities reduce over time.

To capture the beta or sigma convergence, simple and more advanced econometric approaches can be used ⁽²²⁾. INTERCO provided several examples of how to capture the convergence process using graphic visualisation; such approaches could be valuable for more non-technical audiences in the effort of providing more in-depth analysis to understanding impact of integrated territorial investments.

ESPON's Spatial Indicators for the "Europe 2020 Strategy" Territorial Analysis (SIESTA) project developed useful insights into how to use a clustering approach in understanding and interpreting the spatial distribution of indicators.

3.6. Methods for attributing impact of integrated investments to change in the impact indicators

Any change over time in the abovementioned ESPON indicators of integrated territorial and urban development can be theoretically attributed to the impact of the integrated investments in a given territory. However, understanding the exact attribution can be achieved only through an impact evaluation study examining the specific context and content of the integrated territorial investments and their contribution to the territorial development.

Impact evaluation and a results-oriented approach have become a major component of cohesion policy, with the European Commission providing extensive guidance ⁽²³⁾. Normally an impact evaluation falls into a category of "theory-based evaluation" or "counterfactual impact evaluation" (each having a clear set of methods). As this is well documented, there is no need to repeat the whole set of methods, but perhaps it would be valuable to single out some basic useful approaches.

Quantitative techniques

A regression type of analysis can be used to determine whether or not funding used for integrated territorial investments (independent variable), while controlling for other factors, can explain the territorial distribution of the abovementioned ESPON indicators for integrated territorial and urban development (dependent variable).

Qualitative approaches

Integrated territorial investments are complex. Therefore, sometimes people on the ground can say more about the impact by pointing out concrete examples of what has worked and what has not worked. Thus, survey data exploring people's perceptions of the achievements can be a valuable addition to the evaluation process, especially during an economic recession, when investments may not generate an instant positive effect on the economy and territorial development.

⁽²²⁾ Monfort, P. 2008. *Convergence of EU Regions: Measures and Evolution*. European Commission Working Paper 01/2008. http://ec.europa.eu/regional_policy/en/information/publications/working-papers/2008/convergence-of-eu-regions-measures-and-evolution.

⁽²³⁾ See: http://ec.europa.eu/regional_policy/en/policy/evaluations/guidance/#2 ; especially Evalsed Sourcebook on methods and techniques regarding impact evaluation: http://ec.europa.eu/regional_policy/sources/docgener/evaluation/guide/evaluation_sourcebook.pdf

Simple quantitative methods of looking at correlations

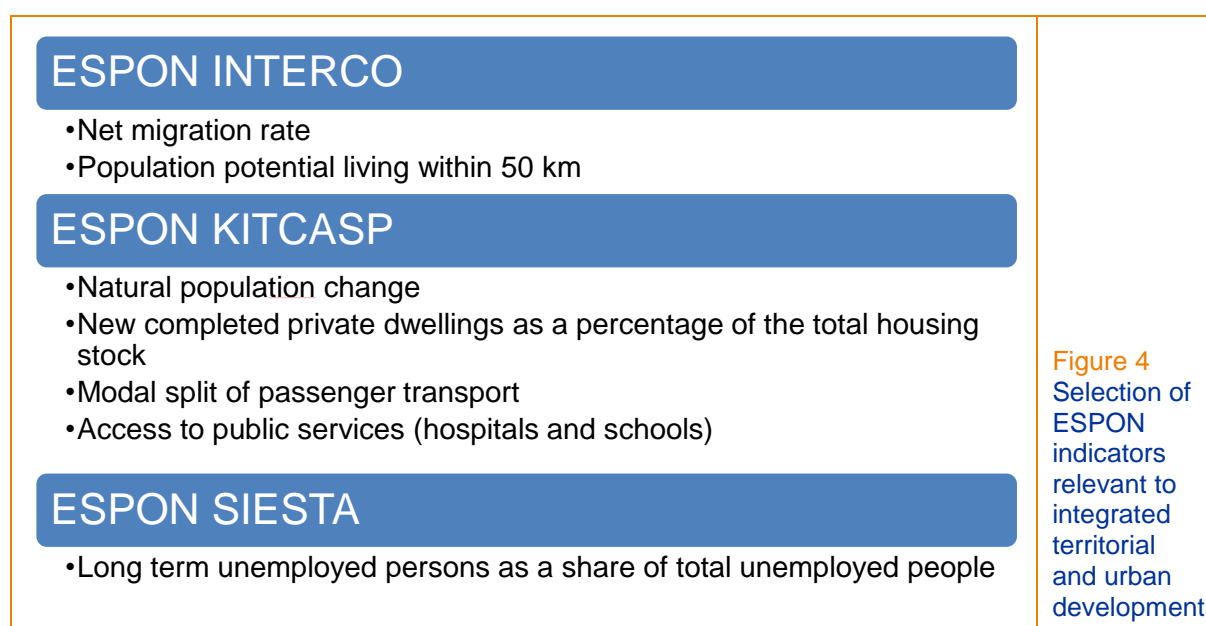
ESPON's 2006 programme already had an experience of trying to draw conclusions about the extent to which EU structural funds had an impact on territorial development (ESPON 2.2.1. project "Territorial effects of structural funds"). The study used either simple two-variable correlation or more advanced graphic mapping techniques. Here again, one of the variables could be funding used for integrated territorial investments, correlated with the abovementioned ESPON indicators for integrated territorial and urban development.

Territorial impact assessment techniques

In recent years, ESPON's territorial impact assessment (TIA) Quick Scan Methodology has become a widely used technique to determine ex ante the territorial impact of EU legislative proposals using the online TIA web tool ⁽²⁴⁾, supported by expert evaluations. ESPON's TIA Quick Scan Methodology can also be used for an ex post territorial impact assessment to determine the extent to which funding used for integrated territorial investments could have had an impact on the abovementioned ESPON indicators for integrated territorial and urban development. The TARGET TIA model ⁽²⁵⁾ has also gained wide attention as a way to measure territorial impacts. It is a new model synthesising and adding new elements to work done by ESPON on territorial impact assessments. It has also been applied to analyse territorial impacts of EU cohesion policy ⁽²⁶⁾.

3.7. Conclusions

Relying too much on sectoral indicators encourages an understanding that an integrated territorial strategy is a collection of interventions to be funded from European funds, measured using the standard EU programme indicators. Such an approach does not bring added value from the local policy point of view. The selected ESPON indicators are not necessarily direct result indicators which could be used for measuring performance of the EU funded programmes; rather, they are indicators which capture policy results and are more relevant in the ex post evaluation phase.



Source: Made by the ESPON EGTC

Understanding the context is the key to choosing appropriate indicators to be included in any strategy (programme). The following aspects can be mentioned as crucial:

⁽²⁴⁾ See: <https://www.espon.eu/tools-maps/espon-tia-tool>

⁽²⁵⁾ Medeiros, Eduardo. 2014. *Territorial Impact Assessment (TIA): The Process, Methods, Techniques*. <https://infoeuropa.eu/rocid.pt/files/database/000065001-000066000/000065239.pdf>.

⁽²⁶⁾ Medeiros, Eduardo. 2017. "European Union Cohesion Policy and Spain: A Territorial Impact Assessment." *Regional Studies*, 51: 1259-1269. <http://www.tandfonline.com/doi/abs/10.1080/00343404.2016.1187719?journalCode=cres20>.

- The actual content, territorial coverage, budget and scope of the integrated strategies;
- The purpose of the indicators – measuring achievements in territories and populations versus measuring direct performance of the EU funded programmes and projects;
- Data availability issues which put constraints on what can be measured;
- Administrative capacity of the managing institutions as well as leadership in prioritising evaluation aspects.

There are other important conclusions to take into account in the process of choosing the indicators to measure the achievements of the integrated territorial and urban investments:

- Classical indicators should not be abandoned; however, a stronger focus should be put on indicators being able to capture the spatial distribution of what the integrated investments have accomplished.
- Simplicity in choosing indicators should always be preferred. Nevertheless, using composite indicators may be a better alternative when stand-alone indicators cannot adequately communicate the overall effectiveness of the integrated investments.
- Hard indicators (based on registered data) should be complemented with softer qualitative indicators (based on people's perceptions). This approach would help engage local communities to understand the real achievements on the ground, particularly those which are less tangible and not measurable in numerical terms.
- Timing should be taken into account. Most of the indicators used for integrated territorial development require more time to capture results and impacts.

4. Policy recommendations

Currently a long list of indicators is used and their meaning becomes unclear when the territorial impact needs to be presented. There is a need for **a short list of indicators** which reflect **the impact** of the integrated investments on an aggregate level. The selected ESPON indicators for integrated territorial and urban development present such an attempt.

Indicators can be structured using different technical frameworks. However, when it comes to policy recommendations it is equally important to understand where the indicators stand in the policy cycle ⁽²⁷⁾. This has an impact on how indicators should be chosen and what could work the best. The indicators presented in this working paper should be treated more as policy assessment indicators which serve the purpose of monitoring, evaluation or benchmarking.

It is also useful to differentiate between two sorts of measurements. On the one hand, there are indicators which give information about developments in territories and for populations, and for which accountability is shared, as in general not only one policy or programme plays a role. On the other hand, there are performance indicators, which measure how policies and programmes are delivering, who is better off and what has changed as a result of each activity

4.1. EU level

The following recommendations could be put forward:

- Future European Commission monitoring and evaluation guidance materials could benefit from a more detailed focus on integrated investments at territorial level, covering the complexities of measuring the effectiveness of integrated investments at territorial level and providing some possible solutions. A possible standardised methodology for monitoring and impact assessment could also include, besides indicators, information on sources and data collection instruments.
- The indicators included in this policy brief could be used to facilitate the evaluation of the impact of the integrated territorial investments, for example along with any other relevant indicators capturing the impact of integrated investments at territorial level.

⁽²⁷⁾ Eurostat. 2017. *Towards a Harmonised Methodology for Statistical Indicators: Relevance for Policy Making*. <http://ec.europa.eu/eurostat/web/products-manuals-and-guidelines/-/KS-GQ-17-007?inheritRedirect=true>

- As the European Commission is working on expanding the list of common indicators and the content to be covered by them in the post-2020 period ⁽²⁸⁾, the indicators presented in this working paper could serve as a valuable input. There is potential to use these indicators as common indicators at the policy impact/policy result level.
- Evaluation of the impact of integrated investments at the territorial level requires a specific statistical approach, such as creating databases, using dedicated calculation programs, etc. This may not fit in the average budgets that local administrations spend on integrated urban or territorial development strategies, particularly in less developed regions. Therefore, consideration should be given to offering technical assistance, such as grants for monitoring and impact assessment.

4.2. National and regional levels

It is important to emphasise that the indicators presented in this policy brief are not necessarily direct result indicators which show the immediate results of interventions by the EU funds. Therefore, it is advisable that national and regional authorities responsible for the use of EU funds examine carefully the particular national and regional contexts and the actual content of the investments before using these indicators as direct result indicators. The following recommendations can be put forward:

- The indicators presented in this working paper can be used to observe progress towards integrated territorial development. If integrated territorial investments have been made but there are no changes in these indicators, then the impact of these investments might be questionable.
- Composite indicators (indices) can be used as an effective tool to communicate the overall effectiveness of the integrated investments, especially in cases when it is hard to find single indicators that capture territorial aspects of investments. However, the actual meaning of a composite indicator (what is being measured) should always be kept in mind to avoid over-/underestimating the effects of integrated investments.
- Selection of the “right” indicators is often seen as the answer to identifying impacts. However, it is equally important to establish a valid explanation of why certain changes in indicators can be attributed to policy actions and investments. Thus, evaluation and attribution play a critical role.
- While it would be useful to have a Europe-wide methodology and indicators list, cities/metropolitan areas are encouraged to take responsibility for formulating specific and sound visions, with tailored indicators for the main objectives/priorities, and to translate “integrated territorial development” into their specific contexts.
- Data availability in many cases might be an issue, so the indicators presented in this working paper are not an off-the-shelf solution, but need to be adjusted depending on the national context. Three criteria can help in choosing the indicators:
 1. Communication power: does the indicator communicate to a broad and diverse audience?
 2. Proxy power: is the indicator representative and does the indicator come in “herds”? Similar indicators which capture roughly the same meaning might be used as a substitute in case of data problems.
 3. Data power: are there timely and reliable data?
- Registered statistics may often prove to be a better source of data than official statistics. In many instances, information included in national registers is overlooked because of possible non-compliance with statistical standards; however, careful examination of data can remedy this problem.
- If integrated territorial development strategies cover several administrative territories, it is worth examining the spatial distribution of indicators such as dispersion and clustering.

⁽²⁸⁾ See the discussion at the EU Evaluation Network meetings (for instance http://ec.europa.eu/regional_policy/sources/docgener/evaluation/doc/27052017/work_indicators.pdf) and the ongoing DG REGIO study on common indicators: <http://www.nordregio.org/research/common-indicators/>

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