



EUROPEAN UNION

Co-financed by the European Regional Development Fund

Inspire Policy Making with Territorial Evidence

POLICY BRIEF

Cross-border monitoring and observation in Europe

Cross-border regions reflect, almost to the same extent, both national character and regional diversity. These regions are cultural melting pots, as a result of close cooperation and cultural exchanges between border regions. Consequently, border regions have proved to be **‘far from peripheral, but a successful laboratory of European integration and territorial cohesion’**¹.

Cross-border regions are places of innovation and cooperation, with interdependencies that define territories and communities; however, they are also places of many interactions between different national laws and regional or local specificities. One important issue that often arises for these areas, as a vital step in maintaining a good operational climate, is whether the interactions between cross-border areas are being monitored at national/regional level or are only locally observed.

However, so far, research has underlined that access to relevant data sets for cross-border regions is still limited, ‘as transnational, national and regional data referring to cross-border territories is not structurally available for several organisational and methodological reasons’². Nevertheless, as this is a growing need, and some good examples are already set in place, the opportunity to scale up and build up a comprehensive, **pan-European cross-border observation and monitoring approach** is being supported at many levels, from European to local, as it could play an important role in removing obstacles and enhancing cohesion, advocating that all territorial data collected should be integrated at EU level.

In this intricate context, this policy brief explores the main takeaways from research studies done at EU level, compiling the most relevant EU documents, as ESPON – European Territorial Observation Network – aims to support the upscaling of good practices for cross-border monitoring and observation to pan-European level. With this policy brief, ESPON intends to further explore and define the possible pathways for a harmonised and enhanced collection of territorial evidence, structured at EU level, to inform more effective policymaking and consolidate cross-border cooperation.

KEY LESSONS

- **Looking at why a pan-European system for monitoring and observation cross-border regions should be developed.** Collect quality data sets and indicators to develop effective evidence-based policies for cross-border regions, overcoming obstacles and capitalising on opportunities while ensuring effective pan-European coordination.
- **Looking at what to observe and monitor at pan-European level.** Collect adequate data sets for the relevant administrative levels. Monitor and observe interactions, flows and exchanges.
- **Looking at how to develop a pan-European harmonised approach.** Promote and scale up good practices, such as national, cross-border and regional initiatives at EU level, to capitalise on existing knowledge and enhance coordination and collaboration at border level. Call on European coordination and involve national, regional and local stakeholders, as well as cross-border networks.

¹ MOT and BBSR (2019), *France-Germany Cross-border Observation at the Heart of Europe* (<http://www.espaces-transfrontaliers.org/en/the-mot/public/france-germany-cross-border-observation-at-the-heart-of-europe/>).

² van der Valk, J. (2020), *Cross-Border Impact Assessment 2019 – Dossier 5: Cross-border monitoring – A real challenge*, Maastricht: Institute for Transnational and Eu Regional Cross Border Cooperation and Mobility, Maastricht University.

Foreword

Pan-European cross-border observation and monitoring – still a system to aspire to

On the path to achieving a Europe without borders, as envisaged in EU strategies and documents, (long-standing) forms of cooperation between Member States and/or between the border regions have been developed and consequently transposed into tangible actions. Furthermore, in the context of the European integration process and the completion of the European Single Market, the number of interactions and flows within EU internal and external border regions (by reducing overall formalities, time and costs) has been only increasing.

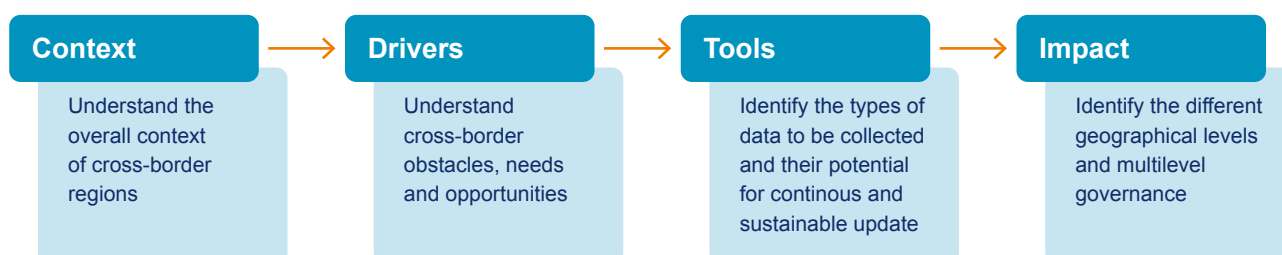
In 2017, the European Commission (2017), acknowledged that some measures that go beyond European funding were needed and highlighted ways in which the EU and its Member States could 'reduce the complexity, length and costs of cross-border interaction and promote the pooling of services along internal borders'. Thus, the Commission identified 10 concrete actions 'as having great potentials to remove further hurdles'. Among these actions, one specifically referred to establishing a fully functional, working, **pan-European network** that can **monitor and observe flows within cross-border regions** as an essential, logical, next step within a fast-changing context. Five years later, the European Commission has revisited this communication within a new report (European Commission, 2021a), highlighting once more that cross-border cooperation is an important factor contributing to sustainable regional development and to the implementation of cohesion policies

(and more specifically in the context created by the COVID-19 pandemic).

Consequently, this paper sets out to understand the status quo in cross-border monitoring and observation and to identify some key lessons that could be used to set up an integrated pan-European approach, especially in creating common methodologies and frameworks for generating data sets, taking into consideration both the limitations and the requirements of taking on such an endeavour.

Potential contributions of ESPON – European Territorial Observation Network

Building on both extensive research and direct consultations with relevant stakeholders, this policy brief aims to further consolidate and support the work done on the **development of an integrated and harmonised approach for cross-border observation and monitoring**. In doing so, this paper explores both processes and operational aspects, as this exercise requires a coordinated and overarching perspective, given the complexity of factors and institutions to be considered. To extract the key lessons of this complex topic, the following main points are analysed to understand the necessity and the potential benefits of establishing a pan-European approach for cross-border monitoring and observation.



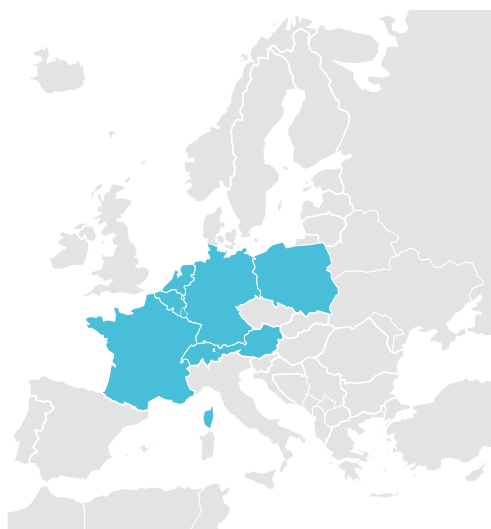
1. Cross-border observation and monitoring – a combination of top-down and bottom-up initiatives

Building evidence of cross-border interaction to inform decision-making is one of the European Commission's priorities, and in that sense some steps have already been taken, such as implementing a pilot project in cooperation with statistical offices 'to explore best ways to identify flows of cross-border workers throughout the EU and Eurostat releasing an improved a set of regional tables from the European Labour Force Survey, to provide richer information on cross-border labour' (European Commission, 2021a).

Nonetheless, one of the most important steps taken in improving the conditions for an efficient system for cross-border observation and monitoring is 'establishing an informal network of cross-border statistical offices and regional data portals to investigate good practices, in order to develop cross-border data' (European Commission, 2021a). Endeavours³ taken on by the Transfrontier Operational Mission (Mission Opérationnelle Transfrontalière (MOT))⁴

and the Interministerial Delegation of Land Planning and Regional Attractiveness (Délégation interministérielle à l'aménagement du territoire et à l'attractivité régionale (DATAR), former ANCT), alongside the Federal Institute for Research on Building, Urban Affairs and Spatial Development (Bundesinstitut für Bau-, Stadt- und Raumforschung (BBSR)⁵), and supported by the European Commission, have resulted in several large-scale initiatives that focus on monitoring and observation of cross-border flows; out of these initiatives, the European Cross-Border Monitoring Network (BBSR, 2020) has the largest territorial coverage (Box 1). This network was set up in 2018 and is the direct outcome of the pilot project 'Border Region Data Collection'. Since then, the network has concentrated its efforts on identifying the technical possibilities for data collection, overcoming challenges as well as proposing an organisational framework for observing and monitoring the specific border regions.

Country coverage of the European Cross-Border Monitoring Network



Austria, France, Germany, the Netherlands, Poland and Switzerland have signed a memorandum, committing themselves to working together to improve the situation of cross-border data. Alongside the national and regional representatives, the network includes some other institutions with relevant activity in territorial monitoring and data production in relation to cross-border areas: Statistics Poland, Statistics Netherlands, National Institute of Statistics and Economic Studies (INSEE), Regional Office for Spatial Planning of the Westpomeranian Voivodeship, Mission Opérationnelle Transfrontalière (MOT), Bundesinstitut für Bau-, Stadt- und Raumforschung (BBSR), Department of Spatial Planning of the Ministry of Energy and Spatial Planning, Agence nationale de la cohésion des territoires, Austrian Institute for Regional Studies (ÖIR), Landesbetrieb Information und Technik Nordrhein-Westfalen (IT.NRW), BBSR, UniGR-Center for Border Studies (UniGR-CBS), Federal Employment Agency, Federal Office for Spatial Development (ARE) (Swiss government), Federal Statistical Office (Swiss government), Observatoire interrégional du marché de l'emploi (OIE), Institute for Territorial Development (IRT), Système d'Information Géographique de la Grande Région (SIG-GR), and Regionaler Planungsverband Oberlausitz-Niederschlesien.

³ The European seminar on cross-border territory observation took place on 10 December 2012 in Nancy, France. See MOT (2014).

⁴ <http://www.espaces-transfrontaliers.org/>

⁵ https://www.bbsr.bund.de/BBSR/EN/home/_node.html

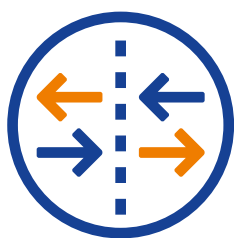
Some of the main messages that the network has conveyed so far support the necessity of upscaling good practices at EU level to achieve a sound, common approach (BBSR, 2020).

- 'Existing monitoring activities are currently being constrained by the limits of cross-border statistics: lack of comparability, of availability, of accessibility or of appropriate indicators are common issues encountered by data users and decision-makers at the cross-border scale.'
- 'There is a consensus (among the members) that an improvement of the situation is not possible without further cooperation. The harmonisation (or, at least, convergence) of data and the definition of indicators can be reached with increased communication among data providers, and also between data providers and data users. It requires intensified transversal exchanges between European stakeholders at the regional and national level.'
- 'Existing national and regional initiatives also need to complement each other. In this context, the creation of a network for cross-border monitoring appeared to be necessary to structure long-term cooperation and facilitate communication between relevant stakeholders'
- 'Build on existing data and methods and expand them step by step. Developing cross-border statistics should be seen as an innovation process. Innovation is best organised through collaboration, which in turn can be achieved only on the basis of real commitment of the parties involved and not by forcing parties to cooperate.'

Further steps are still required to consolidate a pan-European approach, as the need for integration and harmonisation of cross-border monitoring and observation is substantiated in the discourses of active cross-border networks (such as the Association of European Border Regions (AEBR)) as well as in the discourses of other EU institutions. 'For example⁶, in 2018, the European Court of Auditors published a report on labour mobility, which translated part of their recommendations as requirements in future EURES-projects – to gather and analyse evidence on cross-border mobility in the cross-border region in general by assembling concrete, up-to-date information involving:

'A) Data or other indications relating to the current state of play: the direction of current mobility flows, the economic relevance of mobility flows in the cross-border region; the current sectors and occupations with higher mobility rates (by participating region); the (categories of) employers employing frontier workers (by participating region); the number and profile of current frontier workers in the cross-border region (occupation, level of skills, education, age, gender), by participating region; the obstacles to mobility'

'and B) Data, other indications and assessments relating to the future potential: The sectors and occupations with a lack of qualified staff (by participating region); The profiles of job seekers who currently experience difficulties in finding a job in their region of the partnership (by occupation, qualification level, contract duration) by participating region; the categories and number of potential employers which could be interested in recruiting frontier workers in the future (by participating region).'



The role of cross-border monitoring and observation is also emphasised in the **France-Germany Cross-border Observation at the Heart of Europe** report (MOT and BBSR, 2019). The two partners take an additional step, outlining **a list of potential benefits** for setting up such a system:

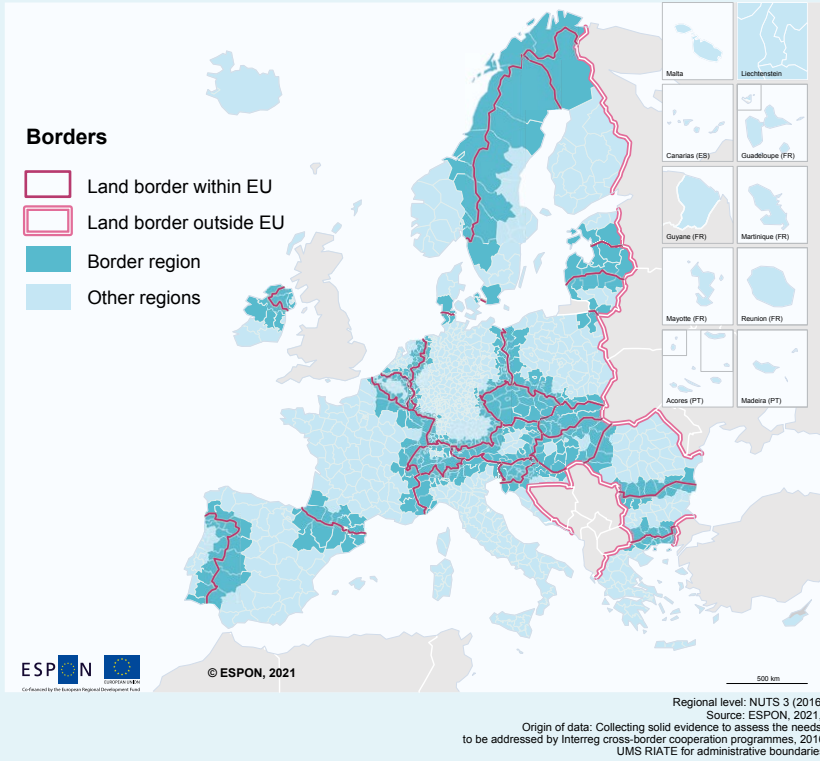
- 'As evidence supporting the pertinence to ensure their development and governance.'
- 'To highlight their specific features, their potentials and their needs so as to take more effective action within them at the different territorial levels.'
- 'To compare them with other territories in order to assess the equity of the public policies applied to them (handicaps of cross-border territories compared with others).'

⁶ van der Valk, J. (2020), Cross-Border Impact Assessment 2019 – Dossier 5: Cross-border monitoring – A real challenge, Maastricht: Institute for Transnational and Eu Regional Cross Border Cooperation and Mobility, Maastricht University.

The wealth of EU border regions – what is to be observed and monitored

For the territory covered by EU Member States, Andorra, Liechtenstein, Norway, Switzerland and the United Kingdom, in total, there were 62 border regions identified, of which 45 were on land borders (Map 1) and 17 were on maritime borders (Map 2) (DG Regional and Urban Policy, 2016).

Land borders



Important facts and figures

EUROPEAN UNION BORDER REGIONS:



INTERNAL BORDER REGIONS COVER 40 % OF THE EU



PRODUCE 30 % OF THE EU'S GDP



HOUSE 30 % OF EU POPULATION

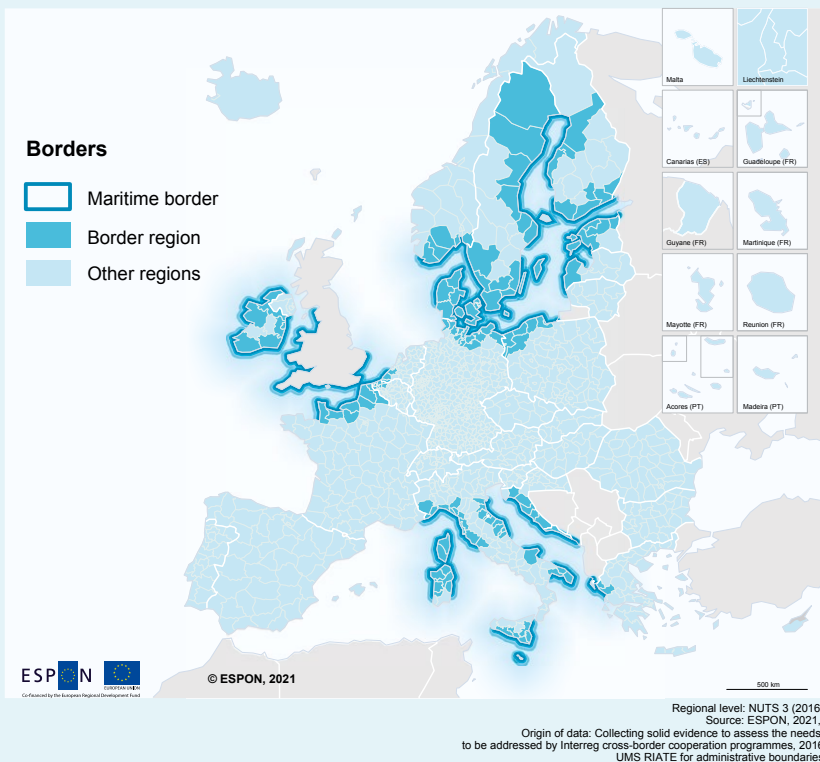


HOST ~ 2 MILLION CROSS-BORDER COMMUTERS



BORDERLINES ONCE VIEWED AS TERRITORIAL BARRIERS ARE NOW SLOWLY SMUDGED BY GROWING REGIONAL AND LOCAL INTERACTIONS

Maritime borders



GDP, gross domestic product.

Source: Data are from European Commission (2017).

Understanding the obstacles, needs and opportunities of cross-border regions

Often, cooperation at cross-border level requires that stakeholders identify both the (common/different) needs and the obstacles to be addressed. Cooperation might occur at different administrative levels, for example under the national umbrella and as joint local targeted action. For Europe, there are many good examples that could be listed in regard to setting up sound forms of cross-border cooperation (Figure 2; European Commission, 2015; Wassenburg and Reitel, 2020).

Cooperation takes many forms and, regardless of institutional arrangements, requires that some preparatory steps are made in advance; these steps are always linked to assessing the existing situation and determining the priorities. In addition, although cooperation occurs more organically at cross-border level, rendering it fully operational, by finding practical solutions for overcoming data

availability obstacles, the situation changes for higher levels, such as national or EU level, because of the diversity of organisational frameworks, making data collection on cross-border needs, obstacles or opportunities scarce and disparate.

Restricted to administrative boundaries (national, regional or local), data collection at border level is insufficient, and it is mainly based on national statistical data sets. However, the limitations go beyond administrative borders, as these data sets do not record the high levels of flows and interactions that happen each day across and within border areas. Therefore, to get a clear picture of what needs to be addressed exactly in these regions and how to enhance their potential, **territorial monitoring and observation** becomes necessary, even more so in the future context in which the funding available will be directly aimed at developing an integrated approach for the benefit of cross-border regions.

Figure 2.



(I) the first steps in setting up a form of cross border cooperation can be traced back to the post-war recovery period when the transitional Netherlands–Belgium–Luxembourg Customs Convention was signed on 5 September 1944; in 1948, the Benelux Customs Union became operative; in 1953, they agreed on a protocol to coordinate economic and social policy, followed by Benelux Economic Union Treaty, signed in 1958.



(II) then in early 1950s, neighbouring countries, such as Netherlands–Germany or Germany–France–Switzerland, initiated their collaboration; later on, the cooperation has been extended to a bigger group of countries comprised of Belgium–France–Switzerland–Germany–Netherlands–Luxembourg;



(III) the Nordic countries (Denmark – Sweden – Norway - Iceland group) have set up their regional cooperation in the 1960s and 1970s; this group has taken one step further, establishing an official body for inter-governmental cooperation – The Nordic Council of Ministers – in 1971;



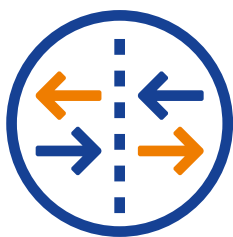
(IV) as a result of the regional initiatives mentioned above, from the 1980s, European institutions began to provide legal and financial support for cross-border cooperation; this has created the premises for developing new initiatives, which initially phase expanded along country borders of Western Europe;



(V) after the 1990s, the EU enlargement process has allowed for its new members, from Central and Eastern Europe, to experience cross border cooperation in a less rigid format; compared to the Western model, the CEE regional initiatives are still less frequent or less strong in terms of institutional arrangements.

Source: Compiled by ESPON

Benelux, Economic Union of Belgium, Luxembourg and the Netherlands; CEE, central and eastern Europe.



Collecting data and evidence on border obstacles is the first necessary step towards resolving them [and unlocking cross-border development potential] but only limited resources are invested in collecting and analysing information on border difficulties and complexities.

[...]

Similarly, the limited availability of statistical and geospatial data on cross-border flows reduces the scope for genuine cross-border policy development and decision-making.

[...]

Statistical and geospatial data describing cross-border flows and phenomena is not always sufficiently available or standardised to allow policymakers to take informed decisions.

European Commission (2017)

Day-to-day problem-solving is the source of innovative approaches, especially considering that border regions are facing a diversity of obstacles in different sectors. As a common practice, when a need emerges, the necessary data are collected through informal/temporary partnerships and support informed decisions. However, in the absence of an integrated framework and methodological approach,

this method overlooks long-term sustainability and effectiveness, remaining limited to small, defined territories. Thus, in the long term, setting up a **cross-border common framework for observation and monitoring at EU level could also prove to be a very useful tool in surmounting obstacles** (Figure 3).

Figure 3.

OBSTACLES IDENTIFIED FOR BORDER REGIONS (AT EUROPEAN LEVEL):	WHAT TO MONITOR AND OBSERVE WITHIN THE NETWORK	POSSIBLE OUTCOMES FORM M&O CROSS-BORDER INTERACTIONS
Geographic / physical obstacles: borders are set along different geographies, and this may limit and/or constraint mobility or accessibility. The physical infrastructure in these areas could be underdeveloped or underused.	M&O the degree / intensity of usage of the infrastructure; M&O mobility for persons and goods; M&O accessibility by means of transportation or to broad band access, etc.	Improved mobility / accessibility; effective resource deployment in the most relevant areas / segments, etc.
Socioeconomic obstacles / disparities: ageing population, high migration levels / depopulated areas, high level of unemployment, low capital investments, unequal distribution of income, etc.	M&O demographic imbalances, M&O unemployment rate; M&O commuter by place of residence and place of work, etc.	Improved sociodemographic conditions; lower unemployment rates and covering market necessities (linking job opportunities to jobseeker's), etc.
Administrative, institutional and governance obstacles: lack of common arrangements in institutional terms, different takes on governance, different levels of competencies at local / regional levels, different takes on risk management, etc.;	M&O administrative interactions; M&O number of projects implemented through cooperation and their degree of success, etc.	Improved and efficient common institutional arrangements; reduced risks when implementing common projects
Cultural obstacles: language differences, historic divergences or different culture habits manifesting, etc.;	M&O cultural interactions or number of joint activities; M&O tourism activities related to cultural events and activities, etc.	Overcoming cultural differences
Public services provision: limited access or lack of service provision (education, health, public transport, spatial planning, tourism, labour market, communication, environmental protection, civil protection, etc.).	M&O catchment area variation; M&O number of subscriptions to the same service from national and bordering countries, etc.	Improved and sustainable access to public service provision

M&O, monitoring and observing.

Sources: Compiled by ESPON and based on the cross-border obstacles identified in EU-wide studies, such as ESPON (2018), or DG Regional and Urban Policy (2016).

1.1.

Identify what data sets are to be collected on cross-border interactions and flows

To understand how the interactions are being monitored, one turns their eye to the dedicated, EU-wide studies, such as *Border Region Data Collection* (European Commission, 2018), the Cross-border Public Services (CPS) project (ESPON, 2018), the Territorial Impact Assessment for Cross-Border Cooperation (ESPON, 2019a), and the analysis on the potential of big data for integrated territorial policy development in the European growth corridors (ESPON, 2019b), as these have directly contributed to clarifying some important aspects of cross-border monitoring and observation while developing easily accessible, integrated, databases or methodological frameworks.

Exploring the territorial patterns that emerge in border regions is an important topic of interest for policymakers and stakeholders, as these territories keep on developing, fostering innovations and a skilled (commuting) labour force. However, for a long time, development policies for border regions have relied only on data collected at national level or on occasional observations, and less on comprehensive data sets collected at regional border level. Moreover, proper, crucial data on flows in border regions (collected in an integrated and comparable manner at European level) for the various NUTS levels, are currently unavailable.

Nevertheless, there is no shortage of good practices, and **scaling them up in a pan-European context** goes far beyond analysing needs or just using the limited number of data available at present – it aims to **harmonise data collection, and organise and make data accessible to a wider audience, in an efficient manner.**

CASE STUDY 1

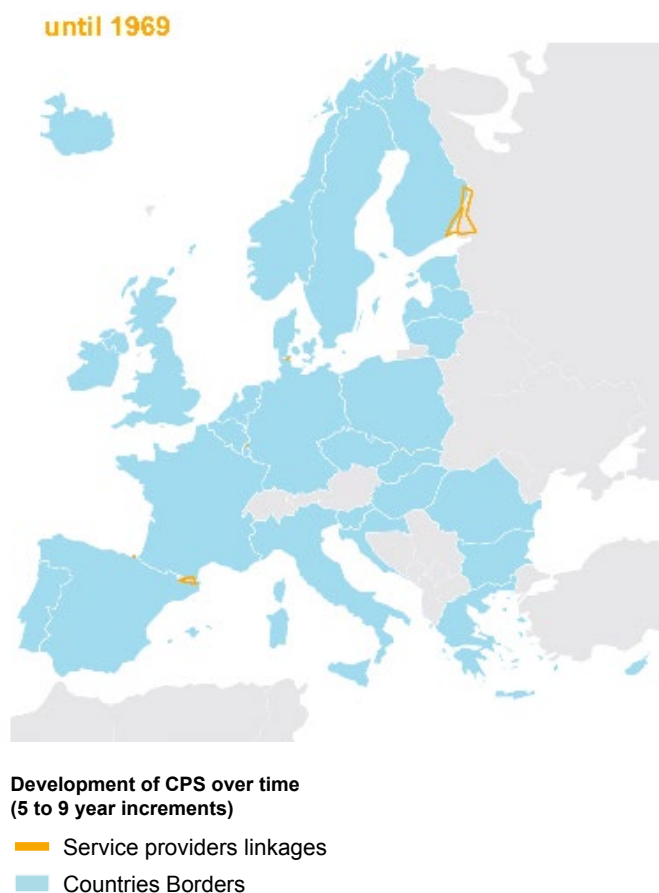
ESPON CPS - Cross-border Public Services (2021) – a continuous effort in creating an integrated, complete database at EU level

The initial CPS (2018) study produced a first comprehensive overview of CPS across Europe (Figure 4). This was one of the first attempts done for the entire EU territory (including EU neighbouring countries); it was also the most extensive one carried out. The project was divided into two main sections: first, it aimed to create an integrated common methodological approach for defining CPS, bringing to light harmonisation challenges; and, second, based on that definition, it aimed to design a method to collect, in an integrated and efficient manner, the necessary data to develop a comprehensive inventory of CPS at EU level.

The data collection proved to be very challenging because of the complexity of the scope and the pan-European coverage. The access to data was fairly limited, as no database provided sufficient information about CPS in general. Therefore, the main data sources used for this inventory were obtained by conducting (1) a comprehensive **online survey**, (2) **interviews and workshops** with stakeholders, practitioners and experts involved in the case studies, and (3) a **desk review** of the literature, documents and online sources. The desk review produced an extensive list of secondary sources, so only examples of CPS from inventories gathered by actors with European coverage were extracted (e.g. examples from the Directorate-General (DG) for Regional and Urban Policy, DG Employment, Social Affairs and Inclusion and the database for LIFE projects, lists of examples from the European Committee of the Regions, AEBR, MOT, the Central European Service for Cross-Border Initiatives, the Keep database for Interreg Europe projects and documents from the Economic Union of Belgium, Luxembourg and the Netherlands, and examples found in recent reports at European and national levels, etc.). As a result, an inventory was compiled, gathering 579 CPS.

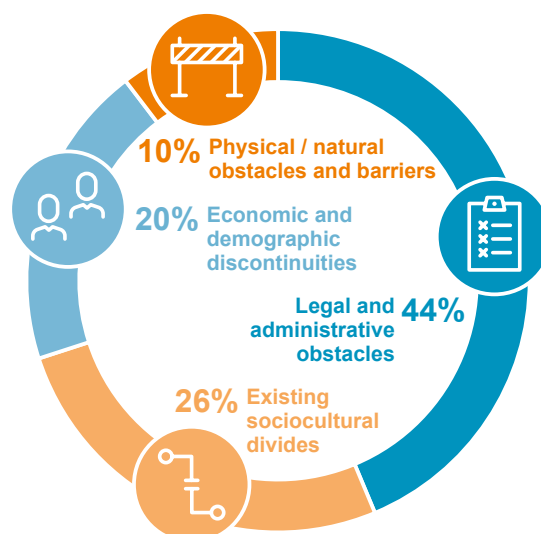
Since compiling this first inventory, the study has identified future additional steps that are necessary to defining the complete picture: (1) expand the CPS database along all European internal and external borders; and (2) update the CPS database on a regular basis, as new CPS are being established and existing CPS may cease for different reasons.

Figure 4.
Development of CPS provision in Europe



‘When analysing the evolution of CPS, more CPS have been established after 2000 than during previous decades, as a direct result of EU expansion. Therefore, the increasing number is due to more frequent introduction of CPS involving Eastern European countries. The number of CPS in Europe is slowly and steadily increasing, with an average of 5 to 10 new CPS per year.’

Obstacles encountered when setting up a CPS (share of the total responses):



Source: 2018 ESPON CPS project.

The results of this project proved to be valuable, as a debate was sparked around the topic further highlighting the importance of data availability. As a consequence of this debate, DG Regional and Urban Policy and ESPON have launched two projects, which have been developed through a collaborative, coordinated and complementary effort, as a follow-up to the CPS (2021) study. Their aim is to (1) consolidate and validate the conceptual common definition of CPS together with relevant stakeholders and networks involved, (2) develop a system for the continuous update and monitoring of the compiled inventory of CPS, and (3) upgrade the pan-European knowledge base on CPS. The projects are expected to finish in the second half of 2022.

Highlighted as one of the biggest challenges, the lack of data availability could be linked to two major constraints.

- 1. Administrative competencies and territorial coverage.** Observing, monitoring and assessing the impact of so many types of cooperation that go beyond formal borders cannot be done by collecting data from one side alone or collecting data only at national level, especially as national statistical offices are not officially mandated to gather cross-border data.
- 2. Harmonising data collections, frameworks and methodologies.** The interactions, which occur on so many levels, involving so many stakeholders, cannot be accounted for without a proper, integrated methodology

for identifying, collecting, inventorying, analysing and evaluating data.

The need for data has only increased, as the number of cross-border forms of cooperation has doubled owing to an increasing number of exchanges at and between border regions. However, recent developments, such as the COVID-19 pandemic, have highlighted a more acute need to coordinate measures and actions between neighbouring states and at EU level. The rapid proliferation of this virus forced decision-makers to adopt a new type of emergency response, which was very drastic and stringent. Some of the measures taken were aimed directly at border regions, diminishing to a minimum or even ceasing any exchanges

between them. This situation brought to light an unusual new reality, limiting the mobility of people or goods, highlighting all the restrictions and limitations that these border regions have struggled to erase or minimise. For people living in some EU cross-border regions, such as the Nordic countries, this was an unfronted situation, because the borders had not been closed in the past 50 years.

The first empirical report on this topic (DG Regional and Urban Policy, 2021), with a clear focus on assessing the effects of border closures on cross-border regions, drawing lessons from this and introducing recommendations for the future, covering March to June 2020, was developed by MOT on behalf of DG Regional and Urban Policy. Some of the conclusions presented in the report have addressed directly the accessibility and availability of data, emphasising the need for coordination at local and national levels and recommending that, for border level, there should be developed observatories delivering sound and harmonised cross-border data, allowing a common understanding to be built and reinforcing monitoring of cross-border cooperation

through a multi-level governance framework (DG Regional and Urban Policy, 2021).

Consequently, it may be argued that the COVID-19 pandemic has only accentuated the importance of data availability at cross-border level (especially in public service provision, such as emergency response, health, labour market, transport or institutional cooperation) as a prerequisite for good cooperation and coordination at all administrative levels. In accordance with this argument, it can be further reasoned that targeted and flexible actions could have been better supported and addressed by using readily available data on territorial evidence – data collected through a monitoring and observation system implemented at cross-border level.

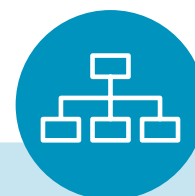
Approaching the monitoring and observation of cross-border flows and linkages at EU level in a harmonised way could help address the hurdles for border regions in a practical manner. **But what kind of data may be of use in such an approach?** Figure 5 presents the two types of data.

Figure 5.



Quantitative data

Databases and statistical indicators from both national and regional databases. These indicators need to be collected on both sides of the border, are at the centre of analyses and could be grouped under the following main categories: (1) sociodemographic (population volumes, demographic structure, etc.); (2) socioeconomic (economy, employment, quality of life and housing, amenities, property prices, fiscal and social conditions, etc.); and (3) material and countable cross-border flows that shape cross-border territories (labour force, for example).



Qualitative data

Various complex data sets: such as ‘procedures for cooperation, multi-criterion analysis of cross-border projects and problems, analysis of political, administrative, and cultural systems which meet at the border and which have to be harmonized’; These data sets need to be collected using the same methodology for both sides of the border, a procedure that entails, for some, setting up prior cooperation agreements, but also understanding the specific needs of their border regions.

Sources: Compiled by ESPON and based on MOT, 2014 – *The MOT Guides No. 9 - Observation of cross-border territories* (https://ec.europa.eu/futurium/en/system/files/ged/cahiers_de_la_mot_9_en.pdf)

1.2.

Adopt a multi-level approach to collecting data for cross-border observation and monitoring

Collecting and producing reliable databases are linked directly to competencies of different administrative levels (from macro- to microscale). In addition, although it may be argued that most of the data sets needed for EU cross-border observation and monitoring could be made available, as they are nationally produced in statistical institutions, there are still some issues on the methodological side connected to harmonisation and ensuring comparability between indicators. Hence, because of the complexity of the task, the data collection for cross-border regions, depending on the indicators and impact scale, should be done at different levels: **European, national and subnational**.

In this process, the following relevant stakeholders are directly involved in data production or collection:

- **EU institutions or actors with EU coverage**, such as Eurostat, European-level cross-border coordination points, and different European-funded programmes (such as DG Regional and Urban Policy, Interreg, ESPON) that already play an important role in cross-border observation and monitoring;
- **cross-border bodies and networks** that cover most of the EU:
 - Association of European Border Regions (AEBR/AGEG/ARFE),⁷ being one of the most prominent examples, encompassing circa 100 members, border and cross-border regions in the EU Member States and the Council of Europe, European Cross-Border Monitoring Network, etc.;
- **national, regional and cross-border structures**:
 - from ministries to relevant national agencies and institutes dealing with statistics in EU Member States – national statistical institutes or agencies constitute one of the most important players, as their role is as important in collecting the data as it is in developing harmonised methodologies for cross-border regions – and dedicated structures that deal with cross-border issues (such as MOT,⁸ BBSR,⁹ and the Central European Service for Cross-border Initiatives (CESCI)¹⁰);
- **local authorities, stakeholders and service providers, non-governmental organisations, and local knowledge-producing institutes** (universities, research institutes, etc.).

Thus, the different layers of data collection could be grouped as follows.

Europe-wide data sets



Statistical data sets that are produced at EU level derive from national databases, collected and harmonised through Eurostat coordination, and published in the main reference document – the ‘*Eurostat Statistical Yearbook*’ (though without an explicit cross-border perspective). In addition to these, so far, cross-border-specific data sets have been produced under different initiatives or projects, and have been cited as reliable sources:

- reports on economic, social and territorial cohesion developed by European Commission DG Regional and Urban Policy, **with specific analyses targeting border regions** (for example **Border Region Data collection** – a joint effort implemented under the leadership of CBS (NL) and involving key players in CBC data production such as national statistical offices from DE, BE, FR, PL, IT, SI and DK), 2018; **The effects of COVID-19 induced border closures on cross-border regions**, 2020, launched by the European Commission and implemented by the MOT; **b-solutions – Solving border obstacles: a compendium of 43 cases**, 2020; **Comprehensive analysis of the existing cross-border rail transport connections and missing links on the internal EU borders**, 2018; **Easing legal and administrative obstacles in EU border regions**, 2017; **Collecting solid evidence to assess the needs to be addressed by Interreg cross-border cooperation programmes**, 2016);
- thematic studies, with a territorial perspective on monitoring and observation developed by ESPON (including projects such as the 2018 **CPS** project, the European **Territorial Monitoring System** (2014), the pilot for the transnational cooperation region project **Territorial Monitoring for the Baltic Sea Region** (2013) and the **Cross-border and transnational cooperation regions** project (2012)).

⁷ <https://www.aebr.eu/>

⁸ <http://www.espaces-transfrontaliers.org/>

⁹ <https://www.bbsr.bund.de/>

¹⁰ <https://cesci-net.eu/>

When looking at EU level, the following different data sources¹¹ with Europe-wide coverage could be further used to access specific data on border regions, provided that their (current) limitations are to be overcome in the future (such as for the 2031 Census).

- **[Quantitative data] The European Union Labour Force Survey** is conducted in all EU Member States,¹² four candidate countries and three countries of the European Free Trade Association in accordance with Council Regulation (EC) No. 577/98 of 9 March 1998¹³. At the moment, the survey (for scientific purposes) contains microdata for all Member States, as well as for Iceland, Norway, Switzerland and the United Kingdom. This is a good example of a harmonised data set, using common classifications (such as the Statistical Classification of Economic Activities in the European Community (NACE), the International Standard Classification of Occupations (ISCO), International Standard Classification of Education, NUTS) while collecting the same set of indicators in each country.¹⁴ However, as the data set is available only at national or regional level,¹⁵ this does not allow the required geographical granularity to obtain valuable evidence for border regions. This is a valuable source of data, on which to build a more refined structure, listing quantitative data sets, but to which some other layers should be added to reflect the interactions or flows on both sides of border regions.
- **[Quantitative data] Administrative data** are collected and used nationally and locally to produce policies, statistics and budgetary prognoses (e.g. income data used for fiscal provisions). When analysing these kinds of data sets, one first looks at their availability and then at the methodology for collecting and aggregating them; these data sets could provide valuable information regarding flows (such as number of incoming and outgoing workers). The information is not directly accessible (i.e. in an online integrated database), and it requires further aggregation, as it needs to be gathered from various sources and, most of all, it needs to be assembled based on a harmonised methodology for all border regions.
- **[Qualitative data] Unconventional data (including big data)** cover both the volume and the complexity of the available data (that are continually created, distributed and stored), as well as the data sets that are too large for traditional processing systems and thus require new technologies to generate insights and produce evidence derived from their analysis. 'The combination of the trend of digitizing administrative data, collecting data through diverse devices and rapid developments in data storage has led to the establishment of numerous big data and open data initiatives at varied governmental scales, leading to interesting possibilities regarding spatial, sectoral, and temporal integrative policymaking processes' (ESPON, 2019b). Big data and artificial intelligence-based analytics are expected to be increasingly used in all forms of organisations, 'due to rapid development and deployment of advanced tools, as more public and private organisations begin using big data to inform their actions. There are four main areas of activity where available tools for big data could be found: infrastructure and analytics; applications targeted to enterprises or industries; tools, software, coordination, and cross-fertilisation from open-source activities; and data sources for various kinds of data objects and data resources such as services, schools, and research. The large, available, amount of data is bringing vast opportunity for usage to policymakers, their organizations, and the people they serve', including for those involved in cross-border cooperation (ESPON, 2019b).
- **[Qualitative data] Mobile phone data – call detail records (CDRs)** – seem to be one of the most promising sources. 'The availability of these data stimulated the research for increasingly performative data mining algorithms, customized for studying people habits, mobility patterns, for environmental monitoring and to identify or predict events, etc.' (European Commission, 2018). New ways of collecting in-flow and out-flow data by using CDRs could present an opportunity to 'estimate location of the devices on a low regional level in a certain moment. Moreover, CDR-data is a global standard used by all the mobile phone providers' (European Commission, 2018).

¹¹ The study developed by the European Commission on border region data collection was the first to explore some of the most relevant aspects that arise when faced with the need to access data at cross-border level (European Commission, 2018). In addition, the ESPON (2019b) targeted analysis investigated the degree to which new 'big data' collection approaches can be used to enrich existing territorial policies and provide more up-to-date evidence.

¹² Including the United Kingdom until 2020.

¹³ Council Regulation (EC) No 577/98 of 9 March 1998 on the organisation of a labour force sample survey in the Community OJ L 77, 14.3.1998 (<https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:31998R0577&from=EN>)

¹⁴ <https://ec.europa.eu/eurostat/web/microdata/european-union-labour-force-survey>

¹⁵ Information on data details: age – by five-year bands; nationality/country of birth – up to 15 predefined groups; NACE – at one-digit level; ISCO – at three-digit level; income – only provided as (national) deciles and from 2009; no real figures available; region – NUTS 2; HHNUM – household numbers are randomised per data set, not allowing respondents to be tracked over time (Eurostat, n.d.).

This standard enables statistics based on mobile phone data to be produced using the same methodology across the globe. The European Commission study on border data collection (European Commission, 2018) proved to be a front runner, as it assessed the availability and quality of data provided, and developed new methods for collecting data from different sources, for different countries and with relevance to border regions, but also

explored new connections and intercorrelations with ESSnet (European Statistical System network) for future developments. In this respect, the study highlighted the limitations in accessing the data that came from working with a private provider, which led to longer waiting time or limited or no access to microdata.¹⁶

CASE STUDY 2

ESPON (2019b) – exploring new pathways to access complex data sets

The study¹⁷ covering the Northern Growth Zone¹⁸ focused on researching and evaluating new available data sources, by looking at how to use the potential of big data to better inform territorial policies in European growth corridors. The study argued that shortening production time in obtaining various indicators would benefit only decision-makers, by allowing them to access up-to-date information regarding a given policy domain; however, in turn, this would also entail public sector actors developing their capacities and practices for utilising big data, as data continue to grow in strength, speed and scope. Decision-making based on data, however, is not straightforward: data sets require constant attention and effort to be translated into actionable insights.

The data and methods used in this study were versatile, as the study had to cover three main policy themes: (1) infrastructure and connectivity planning; (2) economic development and (3) land use planning. A conceptual framework was developed to support the identification of data sets for comprehensively describing flows and interactions along European growth corridors (e.g. transport flows, social and intellectual networks, and services). The proposed framework has been tested through case studies that were exploring fluctuation levels of national transport and commuting, project network analysis, and passive mobile positioning data for transport infrastructure analysis. These cases introduced new pathways for analysing, integrating and utilising big data to widen the horizon of new functional geographies.

Within the methodological framework, the study highlighted:

- the importance of seeking variety in the sourcing, production and management of data for analysis, as a base for evidence-based policymaking/decision-making;
- the importance of combing not only different data sets (describing their diverse characteristics) but also conventional and unconventional (or new) data sets, in seeking to understand complex interactions;
- the necessity of creating public–private partnerships at diverse scales of development to utilise the potential of big data;
- the necessity of developing collaborative platforms, to create public value derived from new data sources, taking another step in further defining the important role that EU institutions and statistical offices (together with research organisations) will play in exploring and utilising the potential of big data.

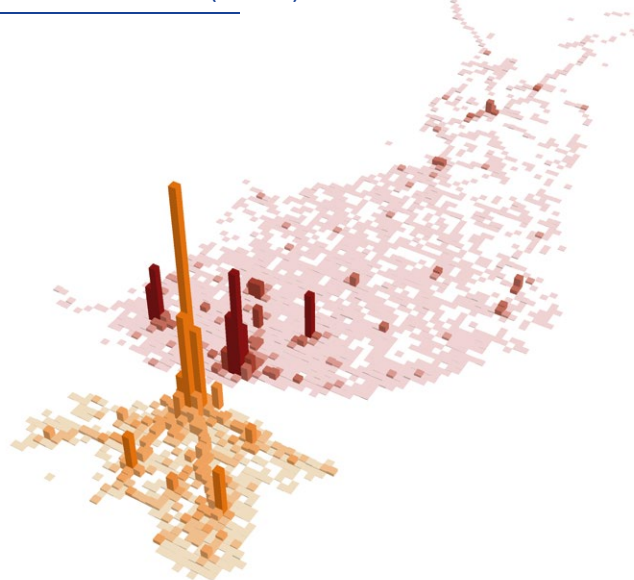
¹⁶ As a next step of the mentioned study, Statistics Netherlands was able to further develop the methodology and produce results in the context of another project for DG Regional and Urban Policy: ‘City data from LFS and big data’. The main findings of this study indicate that ‘statistical institutes will never be able to acquire mobile phone micro data because of legal, privacy and ethical reasons. They will have to settle with receiving anonymised aggregated information from Mobile Network Operators (MNO’s) as input to produce statistics. Furthermore, purchasing such an information is not a valid option for producing official statistics. An alternative is that this information is provided within the context of a cooperation agreement’ (European Commission, 2019). Moreover, the community of statistical institutes (involved in this study) were able to develop and maintain a methodology as an open standard on how to produce statistics from anonymised aggregated mobile phone data.

¹⁷ For more information, please consult ESPON (2019b).

¹⁸ The Northern Growth Zone covers the 13 major cities and the six regions of South Finland, linking together the EU, Scandinavian and Russian markets through the Trans-European Transport Network (TEN-T) Scandinavian–Mediterranean Core Network Corridor; furthermore, the Helsinki region hub also links the Scandinavian–Mediterranean Corridor to the North Sea–Baltic Corridor. For more information, please visit the dedicated website (<https://www.turku.fi/en/northern-growth-zone>).

Box 2.

Percentage of tourists trips of Finns to Estonia (orange) and Estonians to Finland (dark red)



ESPON   © ESPON, 2019
Co-funded by the European Regional Development Fund

Sources: ESPON (2019b)

'The mobile positioning data was used to produce insights into cross-border movements as aggregated mobility flows. Such cross-border movements can be assessed based on roaming data (incoming and outgoing). Data from mobile operator(s) in Estonia can describe inbound flows of people from other countries visiting Estonia, and outbound flows of people from Estonia to other nations.

The volume of mobility flows through European territory could be estimated by expanding this model, and making it accessible, combining, and analysing data from mobile network operators in several nations. Those insights could be used by many public bodies to create evidence-based policies. Additionally, mobile positioning data allows segmentation of the flows based on trip characteristics such as frequency and duration (for example, number of tourists, transnationals, commuters, long-term stayers, all can be distinguished using such variables).'

National data sets

Many relevant indicators are to be found in national databases and are not included as regional indicators by Eurostat. At this particular level, there is potential to create a validated, integrated cross-border monitoring and observation system, as these databases are updated on a regular basis (yearly or quarterly). However, many of the relevant indicators are calculated using different methodologies or methods, with some being measured from time to time (once every 10 years in the census, for example) and others not being measured at all in some countries (for example, commuting flows are measured differently from country to country).

Against this complex background, there are many examples of good practice that has been established to overcome the obstacles to cross-border data collection on territorial monitoring and observation.



- Between the **Nordic countries – Denmark, Finland, Iceland, Norway and Sweden** – the methodology for transnational spatial observation is harmonised, and, on a regular basis, Nordregio¹⁹ publishes a report regarding the current situation of the participant states, but without an explicit analytical focus on border regions. Nonetheless, Nordregio is one of the key institutions producing relevant (targeted) evidence on cross-border cooperation.
- **France** has a dedicated structure – MOT – that was established in 1997 and that has a specific role in supporting project implementation, looking after the interests of cross-border territories, and acting as a network for actors and experiences. It is the interface between different stakeholders, to help them find the right solutions at the right levels. MOT has a defined role and defined tasks in observing border regions on both sides of the French national border. MOT has published two editions of an atlas of cross-border cooperation (2002 and 2007)

¹⁹ Nordregio, established by the Nordic Council of Ministers, acts as a leading Nordic and European research centre for regional development and planning. It conducts applied research, addressing current issues from both a research perspective and the viewpoint of policymakers and practitioners. Nordregio's primary research focus and competence areas are regional rural and demographic development; urban planning and sustainable development; regional innovation and green growth; and governance and policy – regional reforms and strategies. See Nordregio's website for more information (<https://nordregio.org/about/>).

showing several cross-border maps on the French borders. In 2007–2011, MOT, alongside the French Network of Urban Planning Agencies (FNAU), was commissioned by DATAR (formerly French National Agency for the Cohesion of Territories - ANCT) to develop exploratory studies in regard to monitoring 10 cross-border urban areas on the French border. Following this work, MOT and FNAU organised the first European seminar on cross-border observation in Nancy, in 2012. The conclusion of this seminar was translated into an agreement between state representatives supporting the need to coordinate the statistical observation procedures of border territories and establishing, by DATAR, a cross-border strategic committee on cross-border observation. Since 2013, the committee, composed of state representatives, statistical institutes neighbouring France and DG Regional and Urban Policy, has met many times, and its activity is planned to resume in 2021.

- **Germany** is about to establish a system for cross-border spatial monitoring after implementing the Demonstration Project of Spatial Planning (MORO). This system includes neighbouring countries: Austria, Belgium, Czechia, Denmark, France, Luxembourg, the Netherlands, Poland and Switzerland. In the project, the German 'model regions have developed publicly accessible geoportals that provide information on the region and its spatial development to interested people using statistical indicators and (partially interactive) maps. The "GIS-GR" (the Geographic Information System for the Greater Region), as well as the geoportals "GISOR/GeoRhena" and "DACH+ Raumentwicklung und Raumbewachung" play a pioneering role in Germany with respect to developing cross-border WebGIS' (BBSR, 2019).
- **Hungary**, following the French model, has established the CESCO in Budapest, whose main objective is to provide professional support for cross-border cooperation along the Hungarian borders and in central and south-eastern Europe. Without any specific focus on monitoring and observation, CESCO still plays an important role as a key regional stakeholder in central and eastern Europe, by conducting applied research on cross-border issues, and cross-border strategic planning and development of methodologies related to planning and mediation between the different levels of governance on cross-border issues, developing knowledge-sharing tools, publishing methodologies, conducting European Grouping of Territorial Cooperation monitoring, keeping track of legal accessibility (list of obstacles), and developing integrated cross-border (regional) strategies or territorial analyses of cross-border cooperation programmes.

Subnational data sets

NUTS 3 or LAU levels (European Commission, 2018) (as a more detailed geographical level) are the ideally preferred levels for collecting cross-border data. However, retrieving the same data from two sides of the border, without any harmonised methodology applied beforehand, has proven to be impossible. One 'can note that the sizes of the NUTS 3 regions differ quite strongly between the countries considered [...] This means that the granularity of NUTS 3 data differs considerably per region' (European Commission, 2018). This renders the data insufficient at times.



CASE STUDY 3

BBSR (2019) – creating an integrated system for cross-border monitoring and observation

In Germany, territorial monitoring has been under the supervision of BBSR since 1990, and since 2008 cross-border monitoring has occupied an important space in this monitoring process. By launching the MORO project on spatial monitoring in Germany and neighbouring regions in 2015, Germany aimed to create a unified monitoring system for its cross-border regions – first at its internal borders and then at its external borders. The MORO study is of relevance to this current policy brief, as it shifts the perspective from national level to European level in gathering statistical information, by integrating different data sets specific to border regions.

The main tasks of the MORO project included producing a comprehensive catalogue of requirements and deriving an appropriate data and indicator model for cross-border spatial monitoring; creating practical evidence of the benefits, by producing a prototype of the spatial monitoring report for Germany, with a cross-border perspective; and, finally, formulating recommendations on how to implement the system (while paying particular attention to possible cooperation between institutional actors). This multilevel analysis (national and regional) aimed both to reflect cross-border connections and interdependences, and to define the model indicators relevant to their sectoral fields/domains of research. However, this kind of endeavour could not have been taken on without the involvement of regional political decision-makers and national statistical institutions.

The main conclusions of the study revolve around the following central themes.

- Create a solid, common base for gathering data at all administrative levels (from local to national) to achieve, steer and maintain sound cross-border cooperation.
 - There is no ‘one-size-fits-all’ solution for cross-border spatial monitoring at every spatial level, and hence ‘different spatial levels require different spatial and functional resolutions for the observed themes’ (BBSR, 2019). Some aspects are better reflected at NUTS 3 or LAU level, meanwhile others are better observed from higher tiers of interaction.
 - ‘Continuous spatial monitoring is a key element of providing information on spatial structures’ and developments at national level, using a widespread system of indicators that are accessible online (BBSR, 2019); however, to make use of these data at cross-border level, there is still the need for data harmonisation, as, for example, for labour market and cross-border commuters.
-

2. Cross-border observation and monitoring: key lessons for a harmonised approach at EU level

As described before, cross-border regions are places of multiple interactions between various stakeholders and of experiments and innovation, but also places of high fragility. Given this, cross-border monitoring and observation is beginning to be addressed by different initiatives at European level, as it is one of the main issues on the political agenda. This aspect is highlighted at different levels, from cross-border regions and cross-border networks to EU institutions, such as the European Commission or the European Court of Auditors (in their recently published reports; European Commission, 2021a; European Court of Auditors, 2021).

In the report on **EU funding for cross-border regions needing better focus** (European Court of Auditors, 2021), the European Commission has underlined that a ‘number of actions focused on cross-border data collection (such as cooperation projects with national statistical offices and analysis and studies for specific sectors like rail, health and other public services)’ are being implemented, yet the need ‘to develop **stronger data and knowledge of cross-border territories remains one of the priorities**’ for the 2021–2027 programming period. This is due to the **lack of statistical data, which continues to be an issue**, and the observation that collecting data is ‘a **long-term effort with no quick solutions**’. To overcome these obstacles, ‘the Commission reaffirms its active **support for the ongoing initiatives in this respect at EU level** and for developing new data, pointing out that the regional statistics department at Eurostat has set up a working group to further develop cross-border statistics on cross-border cities and functional urban areas.’

Furthermore, the report by the Commission on **EU border regions** (2021a) was issued only to highlight the fact that ‘**the Commission will continue to support the work of statistical offices in producing and analysing cross-border data for evidence-based policy making**’, as well as support the important work carried out by the European Cross-border Monitoring Network.

Although some of the border areas are cooperating on many levels, when it comes to **setting up an integrated cross-border observation and monitoring system at EU level**, there are still lots of ‘limitations in the availability of cross-border regional statistics’, and, most of all, ‘differences in data collection methods between Member States, and insufficient cross-border statistical coordination’ (European Court of Auditors, 2021). For some border regions, some of the limitations have been partially addressed (although

there is still much room for improvement even in those areas), whereas for other border regions the interactions and flows are monitored very little.

Aligning with the positions taken by both EU and cross-border stakeholders, in a complementary and well-timed effort, ESPON also intends, through this paper, to outline some key areas to which it could actively contribute (**detailed below**). This outlook has been designed by taking into consideration three central aspects – **what** type of statistical products to use, **how** to harmonise methodologies and **who** to involve in the process (institutions) – as developing a harmonised, integrated approach at EU level is directly linked to ‘making the border areas fully functional and more resilient’ (European Commission, 2021b).

PROMOTE AND SCALE-UP GOOD PRACTICES AT EU LEVEL ON MULTILEVEL COOPERATION FOR CROSS-BORDER MONITORING AND OBSERVATION



As cooperation is already occurring, and border regions are working together in implementing common projects, best practices can be visible throughout the EU. Consolidating an EU-wide **cross-border monitoring and observation system** could be done in a two-fold approach: (1) by further supporting the actions and initiatives of well-functioning, existing operational networks – such as the European Cross-Border Monitoring Network; and (2) by capitalising on good practices and disseminating the knowledge and experience cumulated towards less experienced cross-border areas.

ENABLE A MULTILEVEL APPROACH FOR CROSS-BORDER MONITORING AND OBSERVATION



Ensuring geographically balanced coverage for cross-border regions observation and monitoring requires good collaboration between different territorial levels and public and private institutions, calling on multi-level and multistakeholders’ governance. The benefits of having a multilayered set-up have been listed explicitly in many studies and research papers: develop tailored and evidence-based policies, enhance cooperation, **enable timely reaction and address the most urgent issues in an efficient manner, or develop projects with long-term sustainability in cross-border regions**.

DEVELOP A COMMON METHODOLOGICAL FRAMEWORK FOR MONITORING AND OBSERVATION AGREED UPON BETWEEN RELEVANT STAKEHOLDERS, AT EUROPEAN LEVEL



The need to develop common frameworks and methodologies within a pan-European approach is indisputable. Integrating the information on all different initiatives/interactions that are happening on a daily basis in cross-border regions could either further support short-term actions needed to ease the flows or support long-term actions dedicated to cross-border regions, for example.

Harmonising relevant data sets to be used for cross-border monitoring and observation at a pan-European level, involving a high number of stakeholders, is a very complicated task. This task would need a double approach from both a top-down and a bottom-up perspective: obtaining political commitment is a prerequisite for equal involvement, meanwhile sharing relevant local stakeholders' experiences and practices could boost implementation.

IDENTIFY THEMATIC PRIORITIES FOR BORDER REGIONS



Not all border regions have the same needs, and therefore they require different indicators in the process of monitoring and observation. In addition, different priorities are being addressed by different stakeholders and policymakers. Thus, identifying sets of thematic priorities is inherent in creating good data sets that match both needs and possibilities.

More specifically, one does not need to access local, detailed data when dealing with macropolicies but, instead, needs to access them when implementing specific projects or when monitoring the impact of different investments. As a result, layering the data sets at different administrative levels is imperative, in order to put together a robust structure that is also manageable. For example, registering the flows of cross-border workers or tourists or the number of temporary residential permits issued should be done not only when the census is collected but on a regular basis, as this affects greatly the management and development of border regions.

CREATE COMPARABLE, UPDATABLE AND RELIABLE DATA SETS



Regardless of the way the data are collected and integrated, this will have to be set up as an ongoing process and become a regular presence in the mandate of the European/national statistical community. In addition, since there are so many data available and collected at all administrative tiers – European, national, and subnational – a pragmatic view could indicate a twofold approach.

Support and disseminate the work of official statistical data. National statistical institutes are the most experienced and could provide the best solutions for creating the relevant data sets for the monitoring and observation of cross-border regions, provided that statistical data and methods of data collection are harmonised.

In this respect, the quality and availability of data and indicators should be improved by:

- covering the gaps in the existing data;
- extracting the best data needed in relation to cross-border regions from both national and subnational databases;
- integrating the databases, maximising the existing options.

Explore and utilise emerging new data sources, providing factual, objective, reliable information and statistical data sets. New technological developments have enabled further exploration of new possibilities in collecting territorial evidence for cross-border flows and interactions. Since (public) service provision is entrusted to private operators, pairing up with them to get access to granular data/microdata seems to be a good option; many of the operators (especially those using information and communications technology infrastructure) have both the know-how to collect and the power to store the databases. Furthermore, these databases are operated on a daily basis, and could easily be used to assess the flows, interactions and exchanges (by exploring big data, such as mobile phone data, traffic loop data or satellite data). This could prove to be valuable when filling in the gaps of existing traditional statistical data sets, complementing EC's activities and liaising them with Eurostat and NSI.

References

- BBSR (2019), 'Spatial monitoring Germany and neighbouring regions – Spatial structures and linkages', *MORO Praxis*, 12. (<https://bit.ly/3xKF7MY>)
- BBSR (2020), 'European Cross-border Monitoring Network', 31 January 2020 (<https://www.bbsr.bund.de/BBSR/EN/research/specialist-articles/spatial-development/eu-council-presidency/network-crossborderdata/main.html>).
- CESCI (2015a), 'Contribution paper of CESCO to the public consultation on cross-border obstacles – 1. Harmonisation of databases', Budapest: CESCO (https://budapest.cesci-net.eu/wp-content/uploads/_publications/Obstacles_data_CESCO.pdf)
- CESCO (2015b), *Crossing the Borders – Studies on cross-border cooperation within the Danube region*, Budapest: CESCO (<https://budapest.cesci-net.eu/en/crossing-the-borders-studies/>).
- CESCO (2019), *Analysis of Territorial Challenges, Needs and Potentials of the Danube Region and Strategic Options in view of the Transnational Cooperation for the Period 2021–2027*, Budapest: CESCO (<https://budapest.cesci-net.eu/en/analysis-of-territorial-challenges-needs-and-potentials-of-the-danube-region-and-strategic-options-in-view-of-the-transnational-cooperation-for-the-period-2021-2027/>).
- CVCE.eu (2016), 'Benelux' (<https://www.cvce.eu/en/education/unit-content/-/unit/026961fe-0d57-4314-a40a-a4ac066a1801/c28bd41d-7e26-48bf-b9a6-1cce7cc5eb70>).
- DG Regional and Urban Policy (2016), *Collecting Solid Evidence to Assess the Needs to be Addressed by Interreg Cross-border Cooperation Programmes – Final report*, Luxembourg: Publications Office of the European Union (https://ec.europa.eu/regional_policy/sources/docgener/studies/pdf/cross_border/border_regions_final_report.pdf).
- DG Regional and Urban Policy (2017), *Easing Legal and Administrative Obstacles in EU Border Regions*, Brussels: European Commission (https://ec.europa.eu/regional_policy/sources/docgener/studies/pdf/obstacle_border/final_report.pdf).
- DG Regional and Urban Policy (2018), *Comprehensive Analysis of the Existing Cross-border Rail Transport Connections and Missing Links on the Internal EU Borders*, Brussels: European Commission (https://ec.europa.eu/regional_policy/sources/docgener/studies/pdf/cb_rail_connections_en.pdf).
- DG Regional and Urban Policy (2020), *B-solutions – Solving border obstacles: A compendium of 43 cases*, Luxembourg: Publications Office of the European Union (<https://bit.ly/3AFDOB3>).
- DG Regional and Urban Policy (2021), *The Effects of COVID-19 Induced Border Closures on Cross-Border Regions – An empirical report covering the period March to June 2020*, Luxembourg: Publications Office of the European Union (<https://op.europa.eu/en/publication-detail/-/publication/46250564-669a-11eb-aeb5-01aa75ed71a1/language-en>).
- ECTC Monitor (2021), 'ECTC-Monitor – Analyze, inform and support' (<https://egtcmirror.cesci-net.eu/en/>).
- ESPON (2018), 'CPS – Cross-border Public Services' (<https://www.espon.eu/CPS>).
- ESPON (2019a), 'TIA CBC – Territorial Impact Assessment for Cross-Border Cooperation' (<https://www.espon.eu/TIA-CBC>).
- ESPON (2019b), 'Big data – Potentials of big data for integrated territorial policy development in the European growth corridors' (<https://www.espon.eu/big-data-corridors>).
- European Commission (2015), *Territorial Cooperation in Europe – A historical perspective*, Luxembourg: Publications Office of the European Union (https://ec.europa.eu/regional_policy/sources/information/pdf/brochures/interreg_25years_en.pdf).
- European Commission (2017), Communication from the Commission to the Council and the European Parliament – Boosting growth and cohesion in EU border regions, COM(2017) 534 final, Brussels, 20.9.2017 (https://ec.europa.eu/regional_policy/sources/docoffic/2014/boosting_growth/com_boosting_borders.pdf).
- European Commission (2018), *Border Region Data Collection – Project no 2016CE16BAT105 – Final report*, Luxembourg: Publications Office of the European Union (https://ec.europa.eu/regional_policy/sources/docgener/studies/pdf/border_data_collect_en.pdf).

European Commission (2019), *City Data from LFS and Big Data – Final report*, Luxembourg: Publications Office of the European Union (https://ec.europa.eu/regional_policy/sources/docgener/studies/pdf/city_data_en.pdf).

European Commission (2021a), Report from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions – EU border regions: Living labs of European integration, COM(2021) 393 final, Brussels, 14.7.2021 (<https://data.consilium.europa.eu/doc/document/ST-10819-2021-INIT/en/pdf>).

European Commission (2021b), Communication from the Commission to the European Parliament and the Council – ‘A strategy towards a fully functioning and resilient Schengen area’, COM(2021) 277 final, Brussels, 2.6.2021 (https://ec.europa.eu/home-affairs/sites/default/files/pdf/02062021_strategy_towards_fully_functioning_and_resilient_schengen_area_com-2021-277_en.pdf).

European Court of Auditors (2021), *Special Report – Interreg cooperation: The potential of the European Union’s cross-border regions has not yet been fully unlocked*, Luxembourg, European Court of Auditors (https://www.eca.europa.eu/Lists/ECADocuments/SR21_14/SR_cross-border_EN.pdf).

Eurostat (n.d.), ‘European Union Labour Force Survey (EU LFS)’ (<https://ec.europa.eu/eurostat/web/microdata/european-union-labour-force-survey>).

MOT (n.d.), ‘Plateforme du Comité stratégique transfrontalier sur l’observation’ (<http://www.espaces-transfrontaliers.org/activites-ue/comite-strategique-transfrontalier/>).

MOT (2014), *The MOT Guides – Observation of Cross-border Territories – No. 9* (http://www.espaces-transfrontaliers.org/fileadmin/user_upload/documents/Documents_MOT/Cahiers/Cahiers_de_la_MOT_9_EN.pdf).

MOT and BBSR (2019), *France-Germany Cross-border Observation at the Heart of Europe* (<http://www.espaces-transfrontaliers.org/en/the-mot/public/france-germany-cross-border-observation-at-the-heart-of-europe/>).

Ocskay, G. (2020), ‘Cross-Border Territorial Impact Assessment’, in Medeiros, E. (ed.), *Territorial Impact Assessment*, Cham: Springer (https://doi.org/10.1007/978-3-030-54502-4_7).

van der Valk, J. (2020), *Cross-Border Impact Assessment 2019 – Dossier 5: Cross-border monitoring – A real challenge*, Maastricht: Institute for Transnational and Eu Regional Cross Border Cooperation and Mobility, Maastricht University. (https://ec.europa.eu/futurium/en/system/files/ged/en_fd19_dossier_5_data_final_1.pdf)

Wassenburg and Reitel (eds) (2020), *Critical Dictionary on Borders, Cross-border Cooperation and European Integration*, Bern: Peter Lang Publishing.

ESPON 2020

ESPON EGTC

4 rue Erasme, L-1468 Luxembourg
Grand Duchy of Luxembourg
Phone: +352 20 600 280
Email: info@espon.eu
www.espon.eu

The ESPON EGTC is the single beneficiary of the ESPON 2020 cooperation programme. The single operation within the programme is implemented by the ESPON EGTC and co-financed by the European Regional Development Fund, the EU Member States and the partner states, Iceland, Liechtenstein, Norway and Switzerland.

Acknowledgements:

Ricardo FERREIRA and Nathalie VERSHELDE (European Commission - Directorate-General for Regional and Urban Policy - Deputy Director-General for Implementation - European Territorial Cooperation, Macro-regions, Interreg and Programme Implementation I - Interreg, Cross-Border Cooperation, Internal Borders - REGIO.D.2)
Claire DUVERNET, Jens KURNOL and Volker SCHMIDT-SEIWERT (Bundesinstitut für Bau-, Stadt- und Raumforschung – BBSR)
Mátyás JASCHITZ and Gyula OCSKAY (Central European Service for Cross-Border Initiatives – CESCOI)
Aurélien BISCAUT, Jean PEYRONY and Jean RUBIO (Mission Opérationnelle Transfrontalière – MOT)

Disclaimer:

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

ISBN: 978-2-919816-09-5

© ESPON, 2021

Editorial team:

Wiktor Szydarowski, Nicolas Rossignol, Andreea China and Silvia Pierik

Published in August 2021

