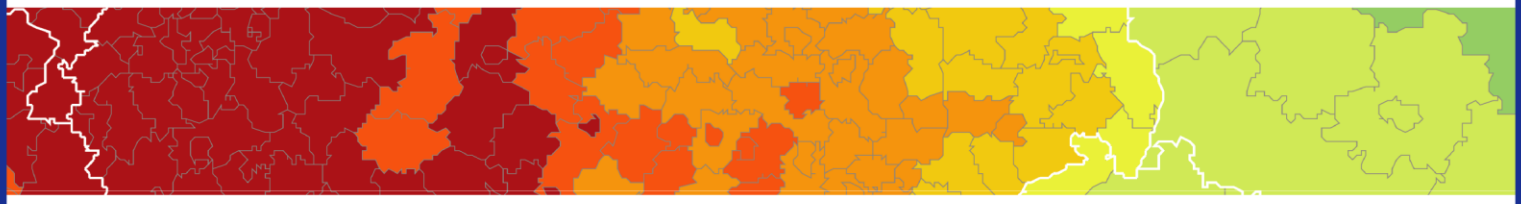
ESPON

EUROPEAN UNION

Co-financed by the European Regional Development Fund

Inspire policy making by territorial evidence



Territorial Impact Assessment for Cross-Border Cooperation

Targeted Analysis

Final Report

19/08/2019

This targeted analysis is conducted within the framework of the ESPON 2020 Cooperation Programme, partly financed by the European Regional Development Fund.

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.

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

Authors

Erich Dallhammer, Bernd Schuh, Roland Gaugitsch, Martyna Derszniak-Noirjean, ÖIR GmbH (Austria)

Martin Unfried, Maastricht University (The Netherlands)
Thomas Fischer, University of Liverpool (United Kingdom)
Dorothea Palenberg, blue! (Germany)

Advisory Group
Julia Wengert, Barbara Lugthart and Peter Paul Knol, Joint Secretariat INTERREG Germany-Netherlands; Erik Hagen and Bjorn Terje Andersen, Joint Secretariat INTERREG Sweden-Norway; Declan McGarrigle, Managing Authority INTERREG UK – Ireland Special EU Programmes Body; Graça Fonseca and Borja Navarro, Galicia-North Portugal European Grouping of Territorial Cooperation; Marcela Glodeanu and Simona Vasile, Managing Authority INTERREG Romania-Bulgaria; Marius Mladenov and Asia Hristova, National Authority INTERREG Romania-Bulgaria; Ilka Meisel and Ingo von Wirth, Managing Authority INTERREG Germany-Netherlands; Doede Sijtsma, Province Gelderland, The Netherlands; Peter Moorman, Province Overijssel, The Netherlands, Hans de Jong, Ministry of Economic Affairs and Climate, The Netherlands

ESPON EGTC: Zintis Hermansons (Project Expert) and Akos Szabo (Financial Expert)

Acknowledgements to case study authors
Martin Unfried, Vera Hark, Maastricht University (The Netherlands), Anita Schmidtleitner, blue! advancing european projects (Germany), case study Germany – The Netherlands
John Moodie, Viktor Salenius, Julien Grunfelder, Oskar Penje, Nordregio (Sweden), case study Sweden – Norway
Christine Hamza, M&E Factory (Austria, Bulgaria), Eugeniy Ivanov (Bulgaria), Alexandru Toniuc (Romania), case study Romania – Bulgaria
Marili Parissaki, Red2Red CONSULTORES S.L. (Spain), case study Spain – Portugal
Thomas Fischer, Tara Muthoora, Olivier Sykes, University of Liverpool (United Kingdom), Ainhoa Gonzalez Del Campo, University College Dublin (Ireland), case study United Kingdom – Ireland

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

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

This delivery exists only in an electronic version.

Contact: info@espon.eu

ISBN: 978-99959-55-96-0

Territorial Impact Assessment for Cross-Border Cooperation

Table of contents

List of Figures

List of Maps

List of Tables

Abbreviations

AIR	Annual Implementation Report
AT	Austria
BG	Bulgaria
CBC	Cross Border Cooperation
DE	Germany
EAFRD	European Agricultural Fund for Rural Development
EGTC	European Grouping of Territorial Cooperation
ERDF	European Regional Development Fund
ES	Spain
ESIF	European Structural and Investment Funds
ESPON	European Territorial Observatory Network
ETC	European Territorial Cooperation
EU	European Union
Eurostat	European Statistical Office
GDP	Gross Domestic Product
GNP	Gross National Product
IAM	Indicator Assessment Matrix
IE	Ireland
INTERACT	INTERACT Interreg C programme
IP	Investment Priority
IT	Italy
ITC	Information and Communications technology
ITEM	Institute for Transnational and Euregional cross-border cooperation and Mobility
JRC	Joint Research Centre
JS	Joint Secretariat
MA	Managing Author
MAPP	Method for Impact Assessment of Programmes and Projects
NGO	Non Governmental Organisation
NL	The Netherlands
NO	Norway
NUTS	Nomenclature of Territorial Units for Statistics
OP	Operational Programme
PA	Priority Axis
POCTEP	Programa Operativo de Cooperación Transfronteriza España Portugal (Operational Programme for Cross-border Cooperation Spain Portugal)
PT	Portugal
R+D+I	Research, Development, Innovation
RCI	Regional Competitiveness Index
RO	Romania
SE	Sweden
SEA	Strategic Environmental Assessment
SME	Small and Medium-sized Enterprises
SO	Specific Objective
STeMA	Sustainable Territorial environmental/economic Management Approach
TEN-T	Transeuropean Networks – Transport
TEQUILA	Territorial Efficiency Quality Identity Layered Assessment
TIA	Territorial Impact Assessment
TO	Thematic Objective
UK	United Kingdom

Executive summary

The ESPON project “Territorial Impact Assessment for Cross Border Cooperation” is a targeted analysis initiated by five INTERREG-V-A stakeholder programmes led by the Germany-Netherlands programme. It is tasked with the development and testing of a methodology for the ex post determination of the territorial impacts of Cross-Border Cooperation (CBC) programmes. Being the first project to develop a TIA methodology with such a specific focus, the study has a pilot character, with case studies from the current 2014-2020 programming period serving both as an input to the methodological development and an input to programme stakeholders’ needs in the refinement of their programmes in the upcoming period.

In the development of the methodology existing TIA approaches with different scopes (e.g. ex-ante assessments) have been screened for useful input. Several valuable methods or methodological elements could be identified, rearranged and combined with additional elements specifically developed for a CBC TIA, leading to a draft methodology that was tested in the case studies.

Given the special circumstances of a CBC-programme, the methodology had to be able to cope with various challenges, e.g. small financial size of the programmes, limited availability of data on the issues tackled by the programmes or different administrative environments in the countries involved. Therefore, the methodological development has focused on an integrated approach, relying on a mix of several methods and subsequent triangulation to assess impacts. The structured 5-step model guiding the process relies on a series of desk research tasks which were adapted and verified by expert input in a workshop setting. The combination of quantitative and qualitative methods allows for overcoming data shortages while still providing evidence-based assessments necessary for a sound and reliable result.

The case studies not only confirmed the expected challenges but also unveiled further issues. Consequently, methodological changes with regards to qualitative assessment methods, regionalization of impacts or treatment of programme monitoring data have been made to better adjust the methodology to the needs and the circumstances of CBC programmes.

The case studies represent a differentiated selection of CBC programmes in terms of geographic and thematic scope. Beyond the common methodological difficulties, the results of the TIA in the case studies show a differentiation in terms of thematic and territorial impact. This is to be expected given the diversity of the involved programmes. On the other hand, comparison of CBC impact results which address similar thematic areas also does not provide too many similarities. It suggests that the strength of impact of the five programmes cannot be directly traced back to their CBC-nature as many other factors (such as cooperation tradition, existing cooperation formats or funding from national sources) are involved.

The results of an ex post TIA have various applications: from the refinement of programming in future periods to the communication of programme impact. A guidance for using and com-

municating the results of an ex post TIA to various audiences is likewise an outcome of the project.

Main case study findings

The investigated case studies represent a quite differentiated selection of CBC programmes in terms of location in Europe, programme volume and thematic orientation. The differences in results of thematic and territorial impact can be expected given the thematic diversity of the involved programmes. Comparing areas where similar thematic priorities are set by the investigated CBC programmes, impact results also do not show many similarities. This suggests that the strength of impact in case of the five programmes cannot be directly traced back to their CBC-nature and that other factors may be involved.

Some CBC programmes experience higher impacts in areas in which other programmes register a rather lower or modest impact. For example, RO-BG and ES-PT (investigated subregions Galicia – North Portugal) programmes noted higher impact in area of cultural and natural heritage while the SE-NO (investigated subregion: Inner Scandinavia) programme observed a rather weaker impact. Similarly, SE-NO and RO-BG programmes noted high impact in regards to cross-border labour mobility. Similarities can be found in CBC programmes' positive impact on cross-border cohesion and governance which has been the case for DE-NL and ES-PT. Interestingly, however, DE-NL programme has noted a weak impact on mindset and awareness of citizens in relation to INTERREG and cross-border institutions. In case of DE-NL and RO-BG programmes weaker impact was also registered in relation to some aspects of administrative capacities and administrative cooperation such as cooperation of tax authorities, obstacles in respect to taxes and social security (DE-NL) and capacity of administrations providing public services (RO-BG).

However, the findings of programme impact on cross-border innovation are interesting. SE-NO as well as UK-IE programmes noted higher impact in the area of innovation. While ES-PT noted that the net impact in the thematic field of business innovation was low, it was pointed out that it is regarded as important by stakeholders. Similarly, in terms of quantitative approach in the DE-NL programme the impact of the programme on innovation is low, however, in the qualitative assessment (by regional stakeholders) it was considered positive. This issue can be traced back to the shortcomings of the available quantitative indicators for innovation, as those are prepared by the supplying institution (DG GROW) with a considerable time lag and only every 3 years, thus cannot capture recent developments.

No common phenomena can be identified in terms of impact on specific types of territories within the CBC programmes. Some case studies could not produce a territorial differentiation either for the whole programme area or some part of it or noted a differentiated territorial impact (DE-NL, ES-PT), identified slightly higher impact in certain thematic fields in more economically developed areas (RO-BG), others noted higher impact in urban areas (SE-NO) or in rural areas (UK-IE).

Reflection on the methodology

The developed methodology was especially valued by the stakeholders for the clear structure of the working steps. On the experience gathered by the case studies, no fundamental changes had to be applied, however initial assumptions were corrected and several substeps were adjusted and detailed.

The involvement of programme stakeholders was seen as a crucial element in the **reconstruction of intervention logics and selection of indicators**. Their detailed programme knowledge was exploited in this step.

For the **regionalization of impacts**, initial assumptions on a calculatory approach had to be somewhat revised. The possibility to pinpoint impacts to a single region is not always given, thus a more flexible approach of the determination of impact regions has been developed.

Similarly, the assumption that impact values can be created based on a **quantitative approach** in the most cases had to be corrected. Only 3 out of the more than 60 indicators within the case studies could be assessed quantitatively to the full extent (i.e. calculating net-impact values with a territorial differentiation), while other quantitative assessments could only be made e.g. for a case study area as a whole. This is to some extent connected to the timing of the TIA but also to the general data availability. Thus **qualitative methods** were stronger integrated and guidance was expanded.

Recommendations for the programmes

Based on the case studies, a number of suggestions and recommendations could be developed. In order to improve future programming, two core fields of action have been identified:

- Improving the indicator selection during the set-up of the programme, with help of the intervention logic;
- Improving the stock of indicator data which can be used for a TIA

While both of these fields of action are at least to some extent within the competence of programme authorities, cooperation with other actors is necessary. In addition, based on the experience of this project where ex post TIA methods were not used in a true ex post setting, it is further emphasized that correct timing of an ex post TIA is significant to meaningful and complete results. Several issues e.g. related to data availability could be circumvented by simply conducting the TIA at a later stage.

Selection of appropriate indicators

The case studies suggested that even result indicators often do not capture the programme effects, therefore better consideration has to be given to selection of indicators in the programming phase, including reflections how they contribute the actual programme effects.

Specific recommendations

- Compose a programme intervention logic ex ante to help select indicators that are most likely to depict CBC programme effects;

- Make use of the existing common CBC indicator lists provided in the scientific annex and, if appropriate, modify them with expert help to fit the programme context;
- Make sure that for each indicator systematic data collection is realistic.

Coordination with statistical offices and other actors

While the general lack of data covering issues specific to CBC programmes has been mentioned already, even if there is data collected, significant problems are posed by lack of coordination among statistical offices in general and among CBC programmes, programme stakeholders and statistical offices in particular. Data collection methods vary from country to country, statistical offices do not extend their collection across borders in the first place what results in data gaps. Such problems can be mitigated through cooperation with relevant actors.

Specific recommendations

- Establish a cooperation between CBC programme authorities and statistical offices in order to have a better overview of data availability as well as in regards to:
- Solutions for overcoming existing monitoring and data problems such as lack of appropriate geographical resolution as well as cross-border discrepancies in data;
- Considering data sources and geographical resolution during selection of indicators;
- Seek cooperation between actors and institutions that are responsible for data collection.

Improvements in the programme monitoring system

Related to the issue of the timing of an ex-post TIA, a common problem encountered in the case studies is the lack of up-to-date data. Project rollout time and the inherent delays of data collection by statistical offices mean that within a 6 year programming period, impact data might be available for only 1 year at the time of conducting a TIA. It is thus necessary to rely more on the programmes monitoring system with more recent data. Additionally, it is advised to improve the collection of regional attributable data, e.g. collecting expenditure data not only on the lead-stakeholder level but pinpoint it to the actual location of the project.

Specific recommendations

- Consider modifications in monitoring system in order to better account for geographical location of project outputs;
- Complement monitoring systems with the data from statistical offices as well as data collected by beneficiaries for more flexible and rapid provision of necessary data.

Timing of an ex post TIA

Given the constraints posed by slow programme rollout and delays in collection of data by statistical offices, an ex post capturing of impacts via quantitative data can only work at a late stage of programme implementation.

Specific recommendations

- Plan a TIA in line with the project rollout at a stage late enough to capture impacts
- Ensure swift collection and processing of monitoring data

1 Background and structure of the report

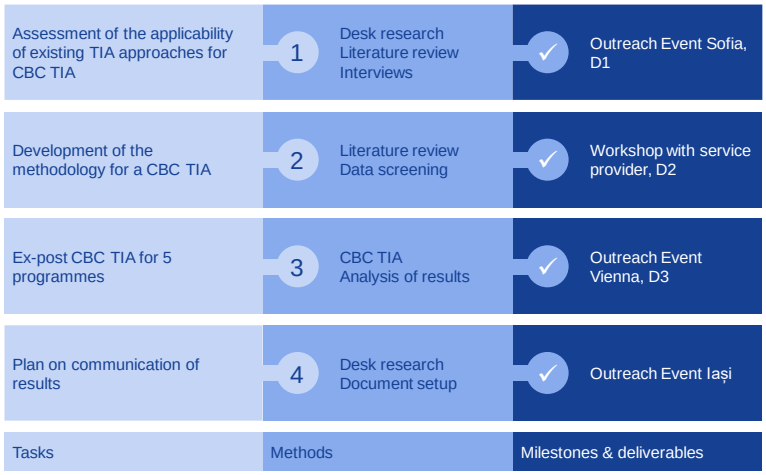
1.1 Background of the report

Cross-border cooperation (CBC) areas are specific areas that often face common challenges which are magnified by the borders and different administrative, social and economic realities as well as linguistic and geographic barriers. Cross-border related issues are relevant to a considerable number of Europeans given that, according to the estimation of the European Commission, as much as 37,5% of EU population lives along the 38 internal borders[1]. In order to mitigate the problems and contribute to European cohesion, in the current programming phase there are 57 CBC programmes (INTERREG A programmes) across the EU working within the framework of European Territorial Cooperation (ETC).

The CBC programmes try to establish a clear link from the funded projects to the programme specific objectives, which represent the needs of programme areas. Actual impacts of the interventions are based on the actions and measures within individual projects. The implementation mode, comparably small financial size in the range of programmes funded by the ESI-funds and the low numbers of beneficiaries and projects supported necessitate the development of a tailored method to assess the territorial impacts of such programmes. The aim of this project is development of a method for an ex post Territorial Impact Assessment (TIA) as part of the evaluation of CBC programmes in the current (2014-2020) and future (2021-2027 and onwards) programming periods.

Producing step-by-step instructions on how to conduct an ex post CBC TIA is the ultimate goal of the project at hand. The structure of the project is presented in the figure below.

Figure 1.1: Project structure



Source: Consortium 2019

In the first part of the project, existing TIA methodologies have been examined for their usability in an ex post CBC setting, leading to the conclusion, that some methods already contain interesting and useful elements that the methodology can build on. Based on this review as

[1] https://ec.europa.eu/regional_policy/de/policy/cooperation/european-territorial/cross-border/#1

well as work of experts an initial step-by-step ex post CBC TIA methodology has been developed. This initial proposal included a set of indicators that were selected for the specific CBC context. In the next step, the proposed methodology was applied to the five case studies. The results from this task were twofold: on the one hand, they provided an impact assessment of the CBC programmes- to the extent it was possible with the available data- as well as delivered a feedback on the CBC TIA methodology, based on which final methodology was produced. Last but not least, the project has developed a proposal on using and communicating the results of the project. The five case studies in which the method was applied were conducted on the following CBC 2014-20 programme territories:

- INTERREG V-A Germany – The Netherlands
- INTERREG V-A Sweden – Norway[2]
- INTERREG V-A Romania – Bulgaria
- INTERREG V-A United Kingdom – Ireland (Ireland – Northern Ireland, Ireland – Scotland)
- INTERREG V-A Spain – Portugal (POCTEP)[3]

1.2 Structure of the report

The final report on the ESPON CBC TIA aims to provide an overview on the results of the project. The report is structured accordingly.

Section 2 presents the final ex post CBC TIA methodology. The presentation begins with a short background on the challenges as well as development steps throughout the lifetime of the project. Next, the finalized CBC TIA methodology, as amended after the pilot case studies, is described. Finally, section 2.3 provides methodological reflections on the developed tool regarding its usability and transferability.

Section 3 provides results for each case study. The results in this section are summaries of complete case study reports, including the most important take-away points about the impact of investigated programmes with a brief comparison between programmes.

Section 4 briefly presents the collected case study data.

Section 5 provides recommendations for CBC programmes based on the conducted case studies. Considering the fact that performance of high quality ex post TIA depends on the choice of indicators and data availability, it is essential for future ex post TIAs to be able to obtain such data. In order to ensure that possibility, programmes should plan ahead monitoring and data collection. Section 5 provides useful considerations that refer not only to data collection *per se* but also to the closely linked issue of selection of indicators that takes place in the initial stages of the programme.

[2] Focusing on the Inner Scandinavia subregion

[3] Focusing on the Galicia – Northern Portugal subregion

Finally, section 6 provides comprehensive guidance on using the results of CBC TIA by CBC programme stakeholders. The guidance is produced as standalone document and serves as aid for stakeholders in not only using the results for programme implementation but also in communicating the results to different audiences.

2 CBC TIA Methodology

2.1 Development process

A methodology for an ex-post TIA for CBC has to consider numerous challenges. The usually diverse nature of CBC territories combined with a comparably small programme size (CBC programmes account for less than 2% of ESI-funds allocations across the EU) and a general problem of the lack of data in the fields targeted by CBC programmes leads to considerable difficulties when trying to capture the impacts of such programmes with a territorial scope. Those difficulties and their implications for the current project have been regarded in the methodological discussions throughout the development process,

Until the ESPON TIA CBC project no methodology has been developed specifically to deal with those issues and to conduct a TIA for CBC programmes in an ex post setting. Nonetheless, several existing TIA approaches (TIA Quick-Check, EATIA, Target_TIA, STeMA, TEQUILA, Rhomolo, SEA) provide valuable input to development of an ex post CBC TIA methodology and thus have been considered in the project. Four of those approaches have been deemed to provide no relevant input in the scope of the current project:

- *STeMA*[4], which is oriented ex-ante only, and in which TIA is only a smaller part of a bigger process, being mainly about testing indicators
- *TEQUILA*[5], which due to its orientation towards easy usability is rather inflexible to local specialities
- *Rhomolo*[6], which is a simulation model without any external input used for ex-ante situations only
- *SEA*[7], which is highly formalized with a very narrow thematic scope

Three TIA methods in particular have been identified, elements and inspirations of which have been considered in the current project:

- *TIA Quick-Check*[8], which is an ex-ante assessment tool applying the vulnerability concept, by combining the “sensitivity” of a region (represented by statistical data describing regional characteristics) with the “exposure” towards a given EU-directive, regulation or other policy measure (represented by an expert judgement on the extent and direction of the effect). It is used in an interactive workshop setting with a group of experts identifying the potential effects of the directive, regulation or policy measure in question in a systemic picture, judging on the extent and direction of the effects and discuss the subsequently produced maps showing the territorial distribution of potential impacts. The TIA Quick Check in the current project has been an inspiration for the production of a systemic picture of programme impact, the workshop setting for the identification of effects and in part the semi-quantitative approaches for net impact determination.

[4] https://www.espon.eu/programme/projects/espon-2006/coordinating-cross-thematic-projects/territorial-dimension

[5] https://www.espon.eu/programme/projects/espon-2013/applied-research/tiptap-territorial-impact-package-transport-and

[6] http://rhomolo.jrc.ec.europa.eu/

[7] http://ec.europa.eu/environment/eia/sea-legalcontext.htm

[8] https://www.espon.eu/tools-maps/espon-tia-tool

- *EATIA*[9], is designed as an assessment tool for both ex-ante and ex-post situations relying on a bottom up, participatory approach with local and/or regional authorities involved in the process. It is a purely qualitative approach relying on expert judgement. In the current project, EATIA has been an inspiration especially for the Impact Assessment Matrix which is applied in a similar way, as well as for the qualitative assessment approaches in general. Furthermore, work done for the EATIA project has been taken into consideration for the programme characterisation stage.
- *Target_TIA*[10] again is designed to be used both in ex-ante as well as in ex-post situations. It applies a multi-vector approach relying on both quantitative (statistical) and qualitative (generated by stakeholder involvement, interviews etc.) data, assessing impacts on four predefined territorial cohesion dimensions. By combining qualitative and quantitative data in a calculatory manner (a process not well documented by the authors of the methodology, thus lacking reliability), arithmetic averages for the four dimensions and finally an average impact of the whole policy in question is calculated. The impact value thus represents an average of both the qualitative and the quantitative values created. The method has been applied for assessing territorial impacts of CBC programmes before, however due to some methodological issues in terms of both reliability and reproducibility of results, some caveats to the use of such results remain. In the current project, processes applied by Target_TIA have been used as inspiration for the identification of probable effects of a given programme as well as for the characterisation of needs and measures as done at the programme characterisation stage.

Additionally, methodological input could also be gathered from the ESPON TEVI[11] project, in which the reconstruction of intervention logics has been successfully applied in order to formulate fitting indicators to capture ETC programme impacts. In the current project, input from ESPON TEVI has thus been considered for the programme characterisation template, the reconstruction of intervention logics with expert input in a workshop setting, as well as well as the assessment of indicators.

While the general development of the methodology has been done by the project core team, numerous feedback loops with ESPON EGTC as well as the programme stakeholders of the five pilot case study programmes have taken place. These included both the project steering group meetings as well as interim consultation with the lead stakeholder and an additional workshop bringing together members of the project core team with the stakeholders prior to launching the case studies.

The input gathered through those feedback loops, mainly focused on even more precise tailoring of the methodology to the stakeholder needs, has been included in the pilot methodology which was tested in the five case studies.

---

[9] https://www.espon.eu/programme/projects/espon-2013/targeted-analyses/eatia-espon-and-territorial-impact-assessment

[10]

MEDEIROS, E. (2014) Territorial Impact Assessment (TIA). Concept, Methods and Techniques. University of Lisbon. https://infoeuropa.eurocid.pt/files/database/000065001-000066000/000065239.pdf

[11] https://www.espon.eu/TEVI

The methodology has been translated into a handbook giving both methodological background as well as hands-on guidance for each step of the TIA. Supporting documents, including templates for all case study reports, excel templates for data collection and intervention logic reconstruction as well as ESPON Mapkit have been disseminated as well in order to streamline the TIA process. Several backstops with the core team have taken place, collecting feedback on the methodology and enabling necessary changes, such as adapting templates to newly surfaced needs. Additionally, several teleconferences between all case study partners and the project core team have been scheduled to exchange experiences and agree on methodological adaptations.

The feedback on methodology collected through the case studies, both through the internal backstops as well as through the final case study reports which featured a methodological commentary section, has led to the revision of several working steps of the methodology, adaption of multiple templates as well as to improved guidance for future ex post CBC TIAs.

In the following section 2.2, the revised step-by-step methodology is outlined. A more detailed description of several methods within the working steps can be found in the handbook accompanying the final delivery.

2.2 Final CBC TIA methodology

The basic structure of the methodology designed at the beginning of the development process which is oriented on 5 distinct working steps did not have to be changed after the experience gained through the case studies. Based on the feedback, however, several sub-steps as well as their weight within the process have been subject to changes. Additionally, the guidance on qualitative methods has been considerably expanded. As with the use of qualitative methods, an element of subjectivity is always included, however due to the structured approach and the clear guidance on each step of the methodology, this element can be reduced to the extent possible.. It relies on a series of clearly distinguishable working steps which are documented in a way that ensures the results are verifiable.

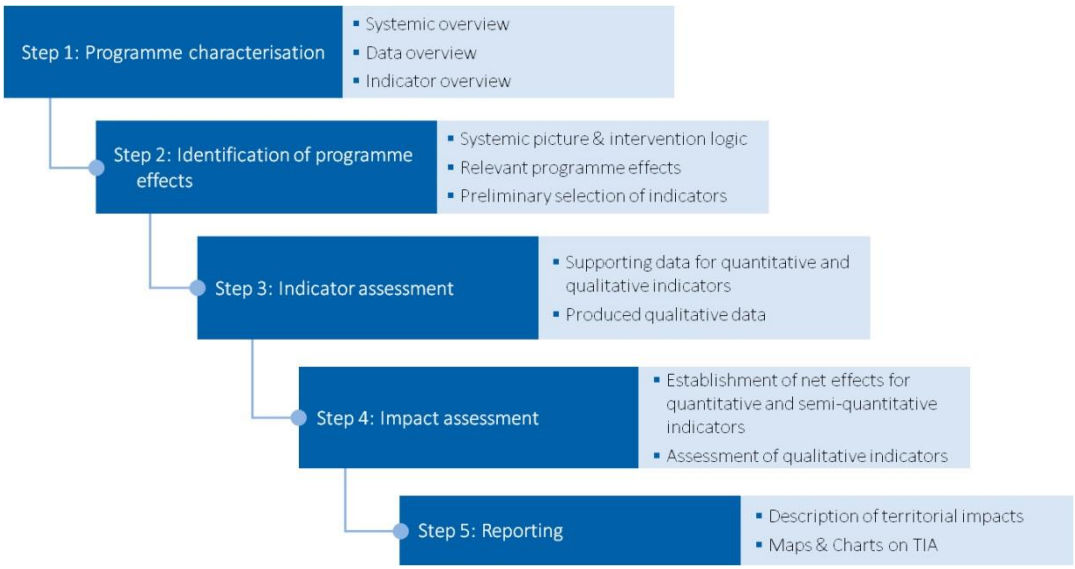
An emphasis has to be placed on the fact that a high-quality TIA can only be produced in close cooperation with the programme authorities (Managing Authority, Joint Secretariat).Their involvement is necessary due to their:

- knowledge of the programme and the activities, including their geographical pinpointing;
- access to the programmes monitoring system;
- knowledge of the programme area, relevant stakeholders & potential workshop participants.

While the programme authorities as the primary target group of a CBC TIA have an inherent interest in well-elaborated results, their active involvement is also a relevant factor for the success of the process. The TIA is a joint exercise between a service provider (responsible for the overall process, research, calculations, setup of workshops, mapping, reporting etc.), programme authorities (responsible for support in the abovementioned matters) and key stakeholders and experts (as participants in workshops and/or potential interview partners).

The five general steps of the methodology are presented in Figure 2.1. It should be noted that they do not represent a strict sequence of independent steps and it might be necessary to revisit certain steps at a later stage, or to conduct other steps early. For example, the selection and invitation of participants to the first workshop (step 2) should be done at an early stage of the TIA process, in order to avoid delays. On the other hand, it might be necessary to consult with workshop participants again when assessing indicators (Step 3), in order to collect their input.

Figure 2.1: TIA CBC working steps



Source: consortium, 2019

Given the diverse nature of both CBC programmes (thematic coverage, number of TOs, number and diversity of activities) as well as programme circumstances (such as e.g. programme area size), the methodology is not to be understood as a "recipe" which can be applied the exact same way for any CBC programme but rather as a "toolbox" out of which certain elements can be selected. For example, as elaborated below, various compositions of workshop numbers and workshop participants are possible, depending on the structure of the programme. Some elements, however, should be applied in the same way for all CBC programmes. For each working step and each sub-step a short explanation on the variability between different applications is given in the following section. Within the handbook prepared, more detailed instructions is given, also taking into account the feedback gathered in a methodological workshop. After the presentation of the step-by-step methodology, general remarks on the methodology and its application as collected within the case studies are outlined in section 2.3.

The placement of a CBC TIA in the programming cycle is furthermore discussed in section 6 identifying several scenarios for the application of a TIA. As the case studies have shown, the needs of programme stakeholders in relation to evaluation and programming do not always coincide with the requirements of a "true" ex-post TIA, thus a variety of options and their implications are outlined. The results of a TIA can for example be used as input to a larger eval-

uation effort, or as input for programming in the next period, or for the purpose of citizen oriented communication of programme results.

2.2.1 Step 1 – Programme characterisation

The purpose of the first working step is to obtain an overview of the programme and the programme area as well as the data situation for potential indicators. TIA service providers are to conduct a structured analysis of all relevant programme documents, consult with the programme authorities as well as conduct additional desk research regarding both data sources for indicators as well as general background information. All findings are then to be summarized in a programme characterisation report, a template for which is provided in the scientific annex, chapter 10. The report is to be provided to all workshop participants in Step 2, in order to familiarize them with the overview findings. The elements of the report include:

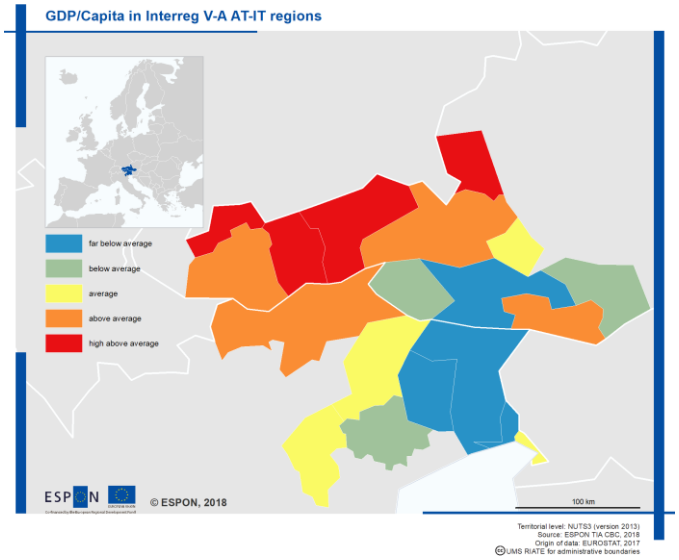
- Characterisation of the programme area
- Identification and depiction of context data
- Characterisation of the programme framework
- Reconstruction of the intervention logic
- Identification of indicators
- Assessment of data availability and data gaps

The individual elements are not to be seen as one-after-the-other steps, but should be elaborated in parallel, as these elements are interdependent. For example, in order to know which context data is relevant for the programme area characterisation, it is necessary to know already which thematic fields are targeted by the programme.

Characterisation of the programme area, context maps

The *characterisation of the programme* area incorporates the basic information necessary for an understanding of programme impact. This includes e.g. socio-demographic context data such as population and population density, age structure (status quo and development) as well as economic data such as shares of the economic sectors, income distribution, main fields of employment. As the territorial distribution of impacts is crucial in a TIA, this characterisation has to aim at identifying regional differences on the lowest feasible level, which will aid in subsequent working steps. Accordingly, spatial characteristics such as economic or population nodes should be identified. In order to avoid producing excess amounts of data of little use for the task at hand, it has to be carefully considered what should

Figure 2.2: Context map example



be included in such a characterisation and what not. TIA service providers should pay special attention to major or region defining characteristics, e.g. unusually high share of people above 65, outstanding shares of single economic sectors/employment fields or major disparities between regions. The goal is not to get an in-detail analysis of every aspect of a programme area, but an overview on the defining properties and their regional distributions. Indications can be taken (partly) from the programme documents itself, as those already include a section on regional characteristics. In the course of the characterisation, important *context data* for regionalizing programme effects has to be identified and can be translated into maps. Possible maps include regional typologies (urban/intermediate/rural, mountainous, coastal ...), income data, employment data, migration data etc. The choice has to be made along the question if the indicator is necessary and useful when identifying and regionalizing relevant programme effects. An example for such a context map depicting the regional disparities in GDP/capita ranging from € 25,000 to € 48,000 in the AT-IT CBC area is shown above. Those maps will be used for giving workshop participants in step 2 und step 4 an indication of the regional background, painting the scene for territorial differentiation against various characteristics.

Characterisation of the programme framework

The *characterisation of the programme framework* is the most important basis for reconstructing the intervention logic. As the programme framework changes over several programming periods (such as supporting the same beneficiaries or in general taking the same measures) effects cannot be assessed over multiple periods. Sources to be considered are the cooperation programme (OP) document, all Annual Implementation Reports (in full, not only as a citizens summary), the programme manual, the KEEP database[12] by Interact, as well as any additional documents the programme authorities can provide and are deemed helpful here. As a first step, the logical structure of the programme has to be examined. What goals are set by the programme? Which Priority Axes (PAs) are defined? Which Thematic Objectives (TOs) and corresponding Investment Priorities (IPs) are selected? What are the Specific Objectives (SOs) for each IP? How much funding is allocated towards each IP? Additionally, for each SO, details such as the justification for selecting it, the results expected by the programme and the actions and beneficiaries supported have to be depicted, as those are of high importance for reconstructing the intervention logic. The programme characterisation report template provides a clear structure for summarizing that information, however in future programming periods it has to be adapted to the structural changes in programming frameworks (such as the change from Thematic Objectives to Policy Objectives).

All relevant information can be found in the OP. Data on actual spending, outputs and results achieved (as measured by the corresponding programme indicators) are available through the AIR or have to be provided by the programme authorities through the electronic monitoring system. Based on that data, additional maps depicting the regional financial allocations by

[12] https://www.keep.eu/keep/

intervention field and thus indicating the regional and thematic distribution of programme spending as a background information for the workshops in step 2 and 4 have to be produced. It is advised to produce them at the finest territorial granulation for which the underlying data is available, which in most programmes should be NUTS 3.

Furthermore, the *continuity of the programme framework* has to be questioned. This point can be tackled consulting the MA or other regional authorities. It refers to identification of any major breaks and changes in the programme area during the programme period, which might interfere with the roll out of the programme as planned. If such changes are identified, those will have to be considered when identifying probable programme effects. For example: the improvement of travelling conditions for cross-border workers is a declared objective, however during the programming period, diverting from a beforehand freely crossable "Schengen-Border", one of the countries involved re-instates border control measures, the positive effect of the programme will be small to undetectable against the overlying negative effect of border-controls.

Reconstruction of the intervention logic

Building on all intermediate steps so far, the *intervention logic* of the programme has to be reconstructed. This follows a four step logical chain: *needs – measures – effects – indicators* and should be structured along the Specific Objectives. One logical chain as depicted in Figure 2.3 corresponds to each SO. The result is a systemic picture of the programme based on expert knowledge, literature review and the programme/programme area characteristics developed so far. An excel template for creating such logic chains is provided in the scientific annex, chapter 7.

The *needs* identified for the programme area are presented in respective programme documents. According to the programme logic, the identification of needs justifies selection of SOs.

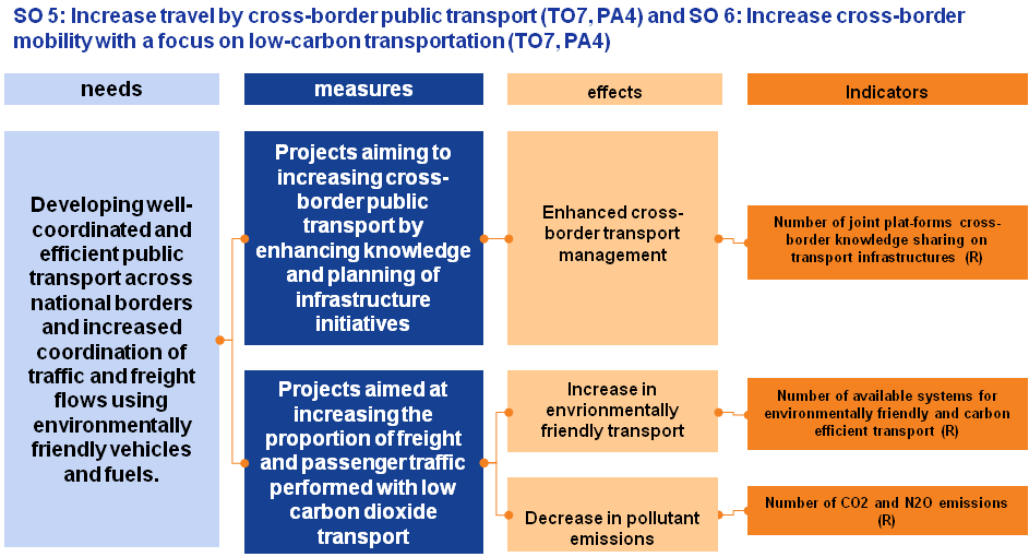
For each SO, the supported *measures* addressing these needs have to be extracted. Again, these can be identified based on the programme documents and AIRs, where supported actions and beneficiaries are described. Additionally, the programme monitoring system could be consulted for additional information (such as the types beneficiaries) as information recorded there might supplement information in the AIR and OP. Those will have to be summarized into generalized "measure groups" by the TIA service provider, which describe the activities under a specific SO in an abstract way. Depending on the structure and the scope of the TIA it is advised to aggregate actions to a maximum of 3-4 measures group per SO, as otherwise the corresponding effects and indicators will be too numerous to handle in the further process.

For each of those "measure groups" the expected *effect(s)* on the programme area have to be identified and formulated. In order to establish clear, well-justified link for each effect, both the measures themselves as well as the expenditure foreseen and other context data should be taken into consideration. The focus of these effects should take into account the cross-border

aspects in particular if that is relevant to the programme– e.g. when formulating an effect on industry innovation, “increased cooperation of companies across borders” is a more fitting effect than “increased in-house innovation potential of companies”. It should however be kept in mind, that not all programmes focus on the cross-border effects in all instances. The goal is not to identify every imaginable effect, but to concentrate on the main ones in line with programme expectations, also keeping in mind measurability and effort necessary for the further TIA process. As the number of indicators used to measure these effects should (for reasons of practicability) not exceed 15-20, this also limits the number of relevant effects to be identified. However, as the preliminary intervention logics are subject to expert discussion and verification in the first workshop (step 2), it is preferable to include more possible effects at this stage and narrow down the numbers later in the process.

An example of how such an intervention logic for a specific SO with the respective indicators could look like is presented in Figure 2.3. When formulating possible effects and corresponding indicators, attention has to be paid to differentiation between outputs and actual impacts.

Figure 2.3: Intervention logic example



Source: Consortium based on the INTERREG programme SE-NO

Identification of indicators

As the preliminary determination of effects is finalized, *indicators* to be proposed which accurately depict the programme impact for the identified effects should be researched. Indicators fall in three types of groups:

- Programme indicators (Result indicators depicting impacts, additionally output indicators possibly to be used for regionalization efforts as a proxy)
- Common CBC indicators (Provided by the handbook, common across various CBC areas and therefore ensuring comparability)
- Additional indicators (derived neither from the programme nor the handbook, but necessary to accurately depict programme impact)

As a first step, the relevance of programme result indicators (R) for the identified effects has to be taken into account. If a logical link can be established, programme result indicators are advisable to select as they will have underlying data provided by the programme itself available. However, not always do programme indicators accurately depict the identified effects – in such cases, they should not be included in the indicator selection.

As a second step, the list of common CBC indicators (C) provided by the handbook should be consulted. These indicators are arranged in three groups corresponding to the three general principles of CBC programmes as applied by the Institute for Transnational and Euregional cross-border cooperation and Mobility (ITEM) in their annual cross-border impact assessment of national and EU legislation [13], namely "European integration", "Regional competitiveness & sustainable economic development" and "Cross-Border cohesion". The purpose of this grouping is to steer indicator selection away from a purely economic assessment towards the overarching goals of CBC programmes. Therefore, at least one indicator out of each of the three groups should be included. However, if no clear logical link to programme effects can be established however, such an indicator should not be used.

As a third step, all effects which are not covered by indicators at this stage have to be identified. For each of those effects, an additional indicator (A) has to be formulated, that accurately depicts the effect. Furthermore, additional indicators can be proposed for any other effect as well, as an effect can be measured by more than one indicator.

Assessment of data availability and data gaps

Following the preliminary determination of indicators, the *data availability* has to be assessed by the TIA service provider in consultation with the programme authorities in order to get an impression of the practical usability and possible limitations. As it is explained in section 2.2.2, indicators in a CBC TIA can be assessed either qualitatively or quantitatively (or in a combination of quantitative background data and qualitative assessment of the net impact).The purpose of this task is to obtain an overview of available sources for quantitative assessments. For most of programme indicators, the respective programme authorities are able to provide comprehensive data (type, measurement unit, baseline year and value, annual values), usually available in AIR. In principle, the programme authorities have to be able to provide data on all programme indicators. However depending on the timing of the TIA exercise, some indicators, for example those stemming from surveys, might not be available. Both CBC-common as well as additional indicators can be populated based on numerous sources, ranging from EU-level statistical data (EUROSTAT, JRC, but also indexes such as the Regional Innovation Scoreboard or the Regional Social Progress Index) to national and regional statistical data (nation-

[13] ITEM 2018: Cross Border Impact Assessment 2018. https://www.maastrichtuniversity.nl/sites/default/files/extensivereports/item-cross-border-impact-assessment-2018_extensive-report.pdf

al/regional statistical offices, national/regional authorities, monitoring data of nature protection areas...) as well as non-official sources such as scientific studies, surveys etc.

Writing a summary analysis report

Concluding step 1 of the TIA, all results have to be summarized in a short report, a template for which is provided in the scientific annex, chapter 11. This report has to be sent out to the workshop participants in advance, enabling them to get a first impression of the findings so far and leading to a more informed discussion during the workshop. In case of multiple workshops to be conducted in Step 2, it has to be clearly marked which sections of the report are relevant to the individual workshops (i.e. if several workshops with varying thematic focus are to be conducted, the corresponding thematic sections and intervention logic elements have to be pointed out).

Results of step 1
Characterisation of programme and programme area
Preliminary reconstruction of the intervention logic
Preliminary selection of indicators
Overview of data availability

2.2.2 Step 2 – Identification of programme effects

As a next step, the preliminary findings and indicator selection has to be verified and/or adjusted with expert involvement in the setting of a one-day workshop. Depending on the scope of the TIA, this step can either be conducted as a single workshop or can be split into several workshops. The decision regarding the duration of the workshop depends on the following:

- Geographic size of the programme
- Thematic broadness of the programme
- Required depth of TIA findings
- Estimation of participant numbers

As the purpose of this step is to identify the validity of the logical chains for each geographic and thematic area of the programme, it is necessary to invite appropriate participants. Ideally, participants should be experts in each thematic area (i.e. usually each SO) and each geographic area of the programme. Regarding the latter, it is not necessary to distinguish between two structurally similar regions, if they are only divided by administrative borders; however the specificities of each functional region should be captured..

While the composition of the participants will vary depending on the programme and the number of workshops conducted, some general guidelines can be given on selecting experts for the workshops.

Participants of the workshop should belong to the following groups:

- Programme stakeholders (MA and JS)
- Regional experts outside the programme:
- representatives of regional authorities active in similar fields as the programme targets,
- representatives of NGOs,

- experts from scientific community;
- representatives of statistical offices.

Programme stakeholders are essential to the process given that they have the best knowledge of the programme. There is a range of different types of regional experts without direct link to the programme, whose participation would be very beneficial as well. These are experts who have knowledge of the regional context in specific fields relevant to the programme through their work in regional administration, NGOs other types of organisations or academic institutions. Their perception of the effects of programme interventions, given their knowledge of the programme area, can greatly complement the inputs of programme stakeholders with additional and impartial observations about what programme's effects in the regions. Of special value here are participants from umbrella organisations (such as political bodies, ministries, interest groups/associations) who can cover thematic aspects over multiple regions. Furthermore, invitation of one or two representatives from statistical office would ensure that discussions regarding indicators will take into account data availability, thereby greatly facilitating the discussions on data sources.

In addition, it is important to strive at an equal distribution of participants from both sides of the border. Ideally, parties from both sides of the border should be present for each type of participant described above.

Given that finding a common time and place for a workshop which can welcome all necessary participants is usually a challenge, and yet participation of some experts is crucial, alternative participation solutions should be considered. Technical solution including video conference, for example via Skype, can be arranged. Participants who cannot arrive in person can be invited to join for the whole workshop, or only specific parts when their input is most valuable. This should be arranged in advance and connections should be tested prior to the workshop.

Each workshop should include between 10 and 15 participants in order to ensure that joint discussions will enable an equal opportunity to participate to everyone while still basing any assessment on a sufficient number of expert opinions-:

As for the composition of the workshop participants, the following is advised:

- From the relevant programme authorities at least one representative per country should attend. If possible not more then 1/3 of the participants should fall into this group.
- 2/3 of the participants should be regional and/or thematic experts
- The composition of those 2/3 will vary depending on the programme. I.e. if the programme area is structurally heterogeneous (e.g. low income peripheral mountainous regions and high income urban regions in one area), a higher number of regional experts is necessary to cover the whole programme area
- If the programme incorporates multiple, very different thematic fields of actions, a higher number of thematic experts is required to accurately cover all fields

The participants list should be defined in close cooperation with the programme authorities. Invitees should receive relevant documents such as the agenda as well as material, in advance in order to prepare. The relevant material for participants should include information on

the programme which is important in case of participants who are outside of the programme. Except for the workshop agenda, this is:

- Cooperation Programme;
- Annual Implementation Reports (if not available online, should be requested from MA or JS);
- Available programme evaluations and assessments (to be discussed with programme authorities):
- Programme Characterization Report prepared as a previous step of the TIA.

Preparation of the workshop

Experts should take enough time for preparation of the workshop. This includes preparing material necessary for conducting the workshop as well as researching and processing data and information which need to be prepared as inputs to the workshop. The following should be provided as workshop materials: the intervention logic, elements printed on posters of a feasible size (at least DIN A2 is advised), pens and markers to write on the posters for all participants, all relevant maps produced printed on paper as well (DIN A3 usually should be sufficient), a printout of all common CBC indicators (scientific annex, chapter 6) and some printouts of the initial report. For presenting the intervention logic posters, either one desk per poster, or alternatively one pinboard per poster is required.

Additional information which is not included in the programme characterisation report, such as context data and maps and a clear structured overview of all programme indicators (both result and output indicators) should be prepared. This additional data, which should be ideally visualized as maps of graphs for better accessibility, should consist of most informative socio-economic indicators. These indicators, in case they were not included in the Programme Characterization Report, should be researched and prepared in advance.

The venue as well as catering should booked and taken care of in advance. It should be large enough to accommodate all participants and moderators.

Experts should also reflect on the structure of the workshop in advance. Each programme is different and the workshop should be adjusted to address the critical issues that require the input of participants in the workshop. At the same time, in compliance with the CBC TIA methodology, experts should ensure that the three elements are covered: analysis of the intervention logic, identification and verification of indicators as well as discussion of data sources and gaps. Table 2.1 presents a sample agenda for a workshop which outlines the most important elements.

Table 2.1: Sample agenda of a workshop

09:15	Introduction and welcoming round
09:30	Introduction to TIA and preliminary results
10:30	Coffee break
10:45	Part 1: Intervention logic revisited
12.30	Lunch Break
13.30	Part 2: Identification and verification of indicators
15.00	Coffee break
15.15	Part 3: Data sources and gaps
16.15	Summary of the workshop findings and next steps
16.45	End of the Workshop

Conducting the Workshop

In the *Introduction to TIA and preliminary results*, it is important that a short presentation of the TIA, its goals, methods and limitations is given. This is due to the fact that the term and method might not be common knowledge among the participants. Introductory clarifications, especially pointing out the difference between TIA and an evaluation, are necessary. In order to bring participants' attention to the purpose of their activities, the overall context and steps of the CBC TIA methodology, possibly including brief background information about the ESPON CBC TIA project, should be presented. Additionally, an overview of the initial findings of step 1 have to be presented in order to introduce the input to the workshop.

In *Part 1: Intervention logic revisited,* participants are asked to provide their input on the effects of the programme following the logical chains developed and suggest any changes or additions. In order to complete this task, it is important to provide them with relevant background data. This includes the information already collected in the Programme Characterisation Report (Step 1), but also additional graphs and maps regarding context indicators depicting regional characteristics relevant to programme activities. Information on the socio-economic context relevant to the programme activities provides an important background information against which workshop participants can reassess different elements of the intervention logic. Knowledge of the situation of the programme area aids the judgement on the appropriateness of needs identified as well as possible effects of programme. Visualization of this context data is preferable in order to enable a quick impression of the socio-economic context of the programme area. The proposed setting for this task is to present the intervention logic on posters (at this point, the indicators proposed should be covered in order to focus on effects first) and discuss their appropriateness in small groups. Any proposed changes should be written directly on the posters. The indicators proposed should be included in this exercise. Participants should be encouraged to change between posters and also to change groups in order to enrich the discussions for each intervention logic. Input information such as data and information from the Programme Characterization Reports, as well as context data visualized should be placed in an accessible location or projected on the screen.

Moderators should be aware that an important discussion point for each effect is what territorial effects are believed to be identifiable and measurable. While for some effects impacts can

be attributed to single regions, other effects probably will not show differentiated impacts across the whole programme area, or might even go beyond the project area itself. As this is a crucial point in the further process of the TIA, it has to be noted if an effect will be measurable either:

- In single clearly distinct regions (e.g. NUTS 3, NUTS 2, districts/municipalities)
- In fuzzy regions depending on their properties (e.g. mountainous regions/lowlands, urban/rural regions, industrial/non industrial regions ...)
- Covering multiple regions or even the whole programme area
- Spilling out beyond the programme area

After each participant has had the opportunity to discuss each intervention logic, each poster will be revisited by the whole group, with moderators reading out additions and alterations. Participants will decide on whether to accept or decline them, ideally in a consensual decision. If no consensual decision can be reached, a voting should take place. Time should be reserved for some discussion and weighing of arguments for and against the proposed changes. All decisions should be clearly reflected on the posters. Additionally, for each effect it should be noted if it is measurable in the short (less than 5 years), medium (between 5 and 10 years) or long term (more than 10 years).

Result
Graphical representation of the systemic picture of the intervention logic of the programme

For *Part 2: Identification and verification of indicators*, the same posters are used, now with the "indicators" column visible. The goal is to cover each effect identified in the logical chains with at least one indicator. Participants should be encouraged to think broad, the expected data availability *should not*, at this point, limit the proposal of an indicator. It has to be made clear, that at this point still only proposals are made – if the application of an indicator seems unrealistic, or if a better indicator is identified later on, the indicators can still be changed later in the TIA process. At this stage, the exercise serves collection of ideas, rather than final selection of indicators. Qualitative tailor-made indicators can also be formulated as long as participants make sure in discussions that data collection for such indicators is possible.

Following the same method as for part 1, participants should discuss and note any changes or additions of indicators (also making use of the "common CBC indicators" as provided by the project handbook) they propose. It should also be encouraged to note down any second-best indicators or proxies that might be used for regionalisation of first-best indicators, however all such indicators should be clearly marked. After group discussions, each poster again is revisited by the whole group, deciding on accepting or declining changes and additions (consensual or via voting).

Result
A list of indicators with clear links to expected programme effects established, plus second-best and proxy indicators

In the final *Part 3: Data sources and gaps*, participants will be asked for their input on how to measure the indicators proposed. For each indicator, the results of the initial data screening for the programme characterisation report (Step 1) have to be presented, giving an overview of what is already known as a potential data source. The input of representatives from regional statistical offices is most valuable at this step as they can provide information on whether data for selected indicators is available, easily accessible and appropriate, also in regards to geographic resolution. The moderators should make sure that representatives of statistical offices share their knowledge in this regard as it considerable facilitation to the exercise.

The proposed setting for this exercise is a moderated discussion with the whole group, as free exchange of ideas will stimulate brainstorming on sources. Ideally, in the process a potential data source for each indicator (providing data at a territorial granulation as low as necessary) is identified. Especially “exotic” data sources, such as specific scientific studies from different programmes (including ESPON projects) focusing on a particular region or topic relevant to the indicators, regional surveys etc. should be discussed here. These may not be identified in desk research, but participants may be aware of them through their day-to-day work.

Result
A list of sources proposed to be a able to provide data or context for the selected indicators

During the final part, *Closing of the Workshop*, participants should be informed about next steps of the CBC TIA. Experts should also note the general timeframe of the second workshop as well as note that participants for the second workshop are expected to involve a more diversified set of actors.

In a follow-up of the workshop, results should be entered into in the Impact Assessment Matrix (IAM) by the experts. This can be done after the workshop, as it is not necessary to directly involve workshop participants in the step of filling in the IAMs. Fields of the IAM that can be filled at this stage are indicator names, temporal distributions and any accompanying notes (e.g. if an indicator is likely to be assessed qualitatively). It is important to note any statements or justifications given by the participants, as in any such method with expert involvement a subjective element is introduced. Thus only by recording justifications and explanations, the process can be verifiable.

Results of step 2
Validated systemic picture of programme effects in the form of the reconstructed intervention logic
List of proposed indicators for each programme effect
List of potential data sources attached to each indicator (wherever possible)

2.2.3 Step 3 – Indicator Assessment

In Step 3 of the TIA process, the goal is to determine how indicators selected in the workshop will be used for impact assessment.

Three different ways of including an indicator in the impact assessment are possible:

- *Quantitative assessment*: the net impact of the programme on the indicator in question can be calculated, no expert judgement has to be involved.
- *Semi-quantitative assessment*: While data is available on the gross-change of indictor values in the programme area, either the net impact of the programme cannot be calculated directly or the regional granulation of data is not given. For establishing a net impact, expert judgement supported with quantitative data is necessary.
- *Qualitative assessment*: Neither the net-impact nor the gross change can be determined by calculations, therefore the impact of the programme has to be assessed qualitatively entirely.

For each indicator identified in step 2, it has to be determined which way of assessing the programme impacts can be applied in the TIA process. The TIA service provider, based on inputs from the workshop, should pinpoint the exact data sources, taking into account the regional scope of impacts as identified in Step 2. Based on the final research on data available for specific indicators, a decision can be made on how to treat the indicator for the further process. It has to be noted, that the best fitting assessment method depends both on the indicator itself as well as on the data available for it. Attempting quantitative net-impact calculations with low validity as the quality of the underlying data is not high enough will be fruitless. Also, some indicators in case of specific topics (such as governance, quality of cooperation), are better suited to qualitative or semi-quantitative assessments in the first place. The following section for each method outlines prerequisites or properties of indicators.

At this point, experts still have lists of all possible indicators made during the workshop. The indicator assessment should be conducted for all indicators, however along this exercise experts should shortlist the indicators which can be used for the impact assessment. It is important to keep in mind that the indicator shortlisting should be based on expert assessment regarding its suitability rather than data availability.

Assessment methods

Quantitative Assessment

For a quantitative assessment, the requirements on the quality of the base data are as follow:

- The data has to fit the indicator it is going to populate as close as possible
- No significant differences in data collection or calculation methods are observed between countries (i.e. the data has to be comparable)
- Required regional resolution (according to the regional scope of impacts) without data gaps, or with the possibility to apply estimation methods
- Required temporal availability without data gaps. As a minimum, this is data for the baseline point (usually at the beginning of the programming period) and for a point in time close to the conduction of the TIA. This also depends on the temporal orientation of the indicator as determined in step 2.

It is likely that few indicators fit all criteria, however several mitigation strategies can be applied, detailed instructions for which are provided in the handbook. The data availability for calculating net-impacts has to be assessed, in order to decide if the quantitative approach is feasible or not. In case that the data availability is deemed insufficient, a semi-quantitative assessment as described below should be applied. Methods for calculating the net-impact quantitatively are presented in step 4 in section 2.2.4.

The sources for quantitative data for programme indicators should be foreseen in the Cooperation Programme while sources for other indicators should be available in central statistical sources such as national/regional statistical offices or Eurostat. Furthermore, primary production of indicator data as described at the end of this working step can be considered.

Result
Provision and preparation of necessary data for all indicators assessed quantitatively

Semi-Quantitative Assessment

The criteria for Semi-Quantitative Indicators are less strict than for quantitative indicators, as the purpose of such an assessment method is to overcome shortages which may only be possible with less than perfect methodology. An assessment is considered semi-quantitative if concrete quantitative data on a certain indicator is available, however it cannot be used for quantitative calculation. This is the case if an indicator:

- lacks the required regional granulation;
- has significant temporal gaps;
- does not enable determining the net impact of the programme.

These issues often cannot be overcome by estimation methods in the quality desired or required. In such a case, the quantitative data available is used only as an input to qualitative impact assessment which is made based on expert judgement opinions in a workshop setting(see step 4 in section 2.2.4).

In order to enable a semi-quantitative assessment in an expert workshop, available and relevant data to each indicator in an easily accessible format should be prepared. The data necessary to obtain differs depending on the indicator and data gaps. Examples include funding-indicators, output-indicators or proxy-indicators which enable determination of net-impact or regionalization.

The data should subsequently be processed so that it can be easily accessible to workshop participants. Provision of graphs and figures as well as maps is highly recommended. Collection and processing of this data for purposes of semi-quantitative assessment should be carried out prior to the workshop.

Result
Indicator data gathered (gross development) gathered for all indicators assessed semi-quantitatively
Supporting data gathered enabling net-impact calculation or regionalization

Qualitative Assessment

A purely qualitative assessment differs from a semi-quantitative assessment in case when no data on the given indicator is available and no aspect of the indicator in question can be backed by quantitative data. In such case, a given indicator has to be assessed with expert judgement as described in step 4 in section 2.2.4. However, in this case it is possible to use data to back expert judgement, even if this data does not directly concern the indicator. Data which can be used is context data concerning the context relevant to a given indicator. The background- or context data necessary naturally differs from indicator to indicator. For example: regional unemployment statistics provide the context for assessing programme impact where employment in a certain sector is supported; regional tourism statistics (p. ex. day tourists and overnight stays) provide the context for assessing programme impact where certain cultural sites are supported. Deciding on the context data to collect and offer to the experts taking part in the workshop in step 4 requires a balancing between providing enough variability in the data to support judgement on without overloading participants with too much information. Also in this case it is recommended to provide an accessible presentation of the context data, such via graphs, figures and maps.

Data for context indicators should be readily available in centralized data sources such as regional/national statistical offices as well as Eurostat.

The following section on indicator data production is an optional part of the TIA and provides an opportunity to produce background data on all indicators to be assessed qualitatively, which can be used as an input for workshop 2 in step 4. In addition, step 4 should be undertaken in case experts decide to shortlist qualitative tailor-made indicators which were identified in the workshop.

Result
Supporting data gathered enabling impact assessment for all indicators assessed qualitatively

Optional: Indicator data production

If deeper knowledge need regarding certain indicators which cannot be covered by readily available quantitative data surfaces, an additional exercise for production of data qualitatively can be conducted. Two options for that are as follows:

- Production of qualitative indicators with a survey/questionnaire
- Organizing a workshop “production of qualitative data and trend analysis”

The methods for this optional step of indicator data production are presented in the scientific annex, chapter 6.

Results of step 3
Collected and processed necessary data for each indicator which is set for a quantitative assessment
Collection of indicator- and context data for every indicator to be assessed semi-quantitative
Collection of context data for every indicator to be assessed qualitatively
(optional) produced qualitative data

2.2.4 Step 4 – Impact assessment

Step 4 corresponds to the impact assessment. The impact assessment is conducted for each indicator based on the assessment provided in step 3. In the following, the three methods of impact assessment (quantitative, semi-quantitative and qualitative) are described in more detail.

Quantitative net impact assessment

In order to calculate the net-impact based on quantitative data, two principal methods are suggested within a TIA for CBC programmes:

- The "small scale counterfactual" approach, i.e. calculating the net-impact of the programme by comparing the actual development of a regions values for a given indicator with a hypothetical scenario in which no actions have been taken by the programme in the region. There is a multitude of options available for this approach, each having different needs in terms of data for establishing scenarios. At the very least, it is necessary to establish a group of beneficiaries and a group of non-beneficiaries who are active in the same fields, enabling a comparison between the two groups. Thus, data on the indicator(s) in question and the contribution of the groups to that has to be obtainable. Unlike the proper counterfactual approach, the establishment of test and control groups are in this case not established through statistical matching methods (e.g. propensity scores, discontinuity- or pipeline approaches) but on a case-by-case selection matching funded with non-funded entities (e.g. companies, associations or other, potential and actual, project applicants) which show the same observable traits (i.e. qualities as expressed by the selection criteria of the measures which are to be assessed). This "small-scale" approach will be justified by the fact that both test and control groups will be too small in reality to establish statistically sound matching methods. Thus, it seems justified to compare in a "difference-in-difference" assessment the changes over time of both the treated with the non-treated cases, which will provide a net effect of the assessed measure within the CBC programme[14].
- The "funding framework" approach, i.e. assessing which other programmes and funding sources (including private funding) are available to the beneficiaries for the targeted activities. This requires a thorough overview of potential public and private funding sources as well as access to relatively detailed data in order to calculate the share of the CBC programme on the total funding available for a certain activity. The share the CBC programme funding has on the total funding available in that case can be multiplied with the gross-impact in order to arrive at the net-impact of the programme.

[14] for a practical application see the evaluation of the Bavarian-Czech CBC programme for the 2014-2020 Programming Period (forthcoming)

Qualitative/Semi-quantitative net-impact assessment

Qualitative or semi-quantitative net impact assessment can consist of one or several workshops with a thematic and/or regional split among them, just as for the workshop 1 in step 2. Participants can (partly) be the same as for workshop 1, however some differing guidelines can be given:

- Participants should be regional and/or thematic experts as described in case of workshop 1. In this workshop, however, it is more important to achieve a higher proportion of persons who are not from JS/MA than in the previous one, in order to obtain a differentiated view of programme impacts.
- When programme stakeholders participate in the expert panel, it has to be considered that there could be a conflict regarding the objectivity of their judgement which can be linked to self-assessment. On the other hand, programme stakeholders usually know the mechanisms of the implementation of the program very well. So, a careful consideration of disadvantages and advantages is needed. This problem can be mitigated by, as mentioned above, a higher proportion of non-JS/MA participants as well as attendance of participants outside of the programme.
- The selection of participants has to be based on the framework of the programme, taking into special consideration the indicators to be assessed. The thematic fields and regional distribution of those indicators will determine if a broader spectrum of thematic experts (e.g. members of the scientific community) or regional experts (e.g. regional authorities, NGOs, chamber of commerce and other representative bodies etc.) is necessary, to capture the programme impact. Participants can include beneficiaries as they should have knowledge about the impact of their projects.
- Experts outside of the programme, who do not receive programme funding, should be invited in larger numbers, as this should also ensure unbiased expert judgement. Thematic experts from various regional organizations, who can assess the impact of the programme from the perspective of their expertise, are important as well.
- Ideally, 12-15 participants are envisaged.

Workshop preparation

In order to enable the expert panel to make an informed decision, all suitable pieces of information on the indicators should be prepared and made available to them. These include:

- verified intervention logics as an outcome of the first workshop;
- context data presented previously (especially output- and expenditure data) in form of graphs and maps;
- already established net impacts for indicators;
- any additional information that can be given based on step 3..

A useful tool for presenting the information in a structured manner is the IAM (filled to the extent possible). The IAM should be filled in with information on indicators assessed quantitatively, as well as also with some information on indicators to be assessed qualitatively in the workshop (such as baseline data). This information has to be readily available to the participants, as it will be necessary for establishing impacts for the separate regions. Maps are a particularly important input and should be printed out before the workshop.

For conducting the impact assessments, it is necessary that experts decide on the adequate method to be used for each indicator already in the preparation phase of the workshop(s).

The length of the workshop(s) depends on the tasks to be completed. I.e. if solely a qualitative impact assessment is foreseen, with few indicators to cover, half a day can be sufficient. If multiple indicators or multiple assessment methods have to be applied, the length can stretch to a day. A sample agenda is provided below.

Table 2.2: Sample agenda of a 1-day workshop

09:15	Introduction and welcoming round
09:30	Overview of the workshop goals, key information presentation
10:30	Part 1a: Qualitative Impact Assessment
11:15	Coffee break
11:30	Part 1b: Qualitative Impact Assessment
13.00	Lunch Break
14.00	Part 2: Semi-quantitative Impact Assessment
15.30	Coffee break
15.45	Summary of the workshop findings
16.15	End of the Workshop

Conducting the Workshop

The first two parts, *introduction and overview*, should give a quick outline of the goals and scope of the workshop. It is important to remind participants that that judgements should only be made on *what* is the impact, and not whether that impact is good or bad regarding the programme goals.

This part should also present information on the indicators to be assessed. The presented information should set the background for the participants to judge programme impacts, thus it is advised to have any data, maps and graphs which might be relevant included in a presentation as well as printed out on paper to hand it to the participants. Important information to be presented is regionalized expenditure data. However, moderators should limit the presentation to key information only, in order not to overload the participants. Additional information can be prepared and presented on request.

Parts *1a, 1b and 2 stand for the qualitative and semi-quantitative impact assessment*.

The overall goal of this step is to collect expert judgement on the magnitude of net-impacts as well as their territorial distribution in the programme region with help of different qualitative and semi-quantitative methods. The results of this exercise are then translated by the TIA service provider into the final impact assessment as described in step 5. In the course of the workshop, three main products are created:

- Judgement on impact magnitude (qualitative assessment)
- Judgement on net-impact or territorial distribution of quantitative indicators (semi-quantitative assessment)
- (if relevant) maps on regional distribution of impacts differing from “standard” classification of regions (such as NUTS3)

Two methods have been applied in the case studies: Focus Group, a flexible moderated discussions/round tables method and MAPP[15] which is a method used in various EU-programme impact assessments and provides very structured approach. Both methods can be used as qualitative or semi-quantitative methods, depending on the data which can be supplemented.

The preferable setting of the impact assessment itself depends on the impacts to be assessed and the composition of the panel. There are various methods available which have been developed for impact assessment or evaluation based on expert judgement. In principle, any such method, that allows to determine the magnitude of effects of a programme on a certain region and indicator is suitable for a CBC TIA workshop.

It is important to emphasize that conducting assessment according to each method should be supported by appropriate data, as described above in Step 3 (see section 2.2.3). Qualitative assessment should involve context data, while semi-quantitative assessment should refer to relevant available indicator data. During the qualitative expert judgement, moderators should refer to relevant data whenever possible in order to remind participants to include it in their judgement. In addition, moderators should also provide a specific guidance on how quantitative data can aid judgement so that participants know in what way the available data can support their decision-making. This is essential in order to ensure that participants are not confused by the quantitative data presented.

Focus Group

There are two approaches to the composition of the focus group, depending on the thematic area of the indicators as well as the expertise of participants. If indicators are situated in the same or similar thematic fields and participants are mostly of experts for this field, a full panel moderated discussion in the form of a focus group on each indicator is the advised method. If the thematic fields of the indicators are more widespread it is recommended to divide the panel into groups based on assigning different indicators to the fields of expertise of participants. Groups can be recomposed if additional discussions are necessary. In the end, groups should present their results to the whole panel, in order to agree on the magnitude. In case of both approaches, each indicator should be presented separately by the moderators, along with relevant data and maps. Moderators should guide participants in the use of the data by suggesting how each specific set of information is relevant to the judgement on the impact assessment. expert then is asked on his or her opinion on how to fill the remaining fields of the IAM for this indicator..

[15] For a description of the method see: https://ec.europa.eu/agriculture/sites/agriculture/files/evaluation/rural-development-reports/2014/investment-support-rdp/fulltext_en.pdf

MAPP

MAPP (Method for Impact Assessment of Programmes and Projects) is a structured semi-quantitative impact assessment which incorporates use of quantitative data. The main reasons why MAPP is considered relevant for the TIA include:

- The method is particularly suited for analysing more complex long-term objectives that can usually not be assessed with the help of one or more quantitative indicators.
- It has an open context-orientated approach that allows identifying not only planned, but also unplanned impacts.
- With MAPP, a specific programme is assessed in relation to other ongoing programmes and/or other external factors. Thus net impacts can be estimated against gross development trends.
- It helps to bridge the "attribution gap", i.e. the gap between outcomes that can directly be attributed to a specific programme/project and higher level outcomes that are also influenced by other measures/factors.
- Its systematic approach and the use of a point system produce results of greater external validity than purely qualitative data, e.g. derived from interviews or focus group discussions.

The MAPP method comprises 3 main elements: life curve, trend analysis, and influence matrix, The life curve sets the context for the assessment, the trend analysis shows the *overall* trends of different indicators (i.e. irrespective of any specific programme), while the influence matrix shows the *net* effects by depicting how the trends were influenced directly by the programme. All of these tools use a point system (from 1 to 4) and are based on stakeholders' perception/experience. More specifically:

Life curve: It shows the overall development trends (based on indicators selected by the group, e.g. employment) in the cooperation area along a certain timeframe, beginning before the programme started and ending at present. Participants are asked to assess the development of each indicator each year according to a five point scale. These assessments should be based on data on such indicators if available.

Trend analysis: With this matrix, detailed development trends on the TIA indicators are assessed over the same time period. These assessments again should be based on data if available. Participants are asked to score each indicator from 0 to 2 for every year and for every region, giving a general trend from the first to the last year as a gross magnitude. The regions for that purpose have to be defined by the participants, i.e. if NUTS3, any other administrative regional differentiation, or any functional regions the participants define themselves.

Influence matrix: The influence matrix represents the net-impact determination, putting the CBC programme up against other factors influencing the development of an indicator. These can be other funding programmes (EU. National or private) as well as non-funding related developments. This method can be used either for qualitative assessments (where the influence value is taken into account when making the magnitude judgement from the trend anal-

ysis) or for semi-quantitative assessments (where the influence value is multiplied with the gross development).

Table 2.3: Sample influence matrix

Influence matrix	CBC	ERDF	EAFRD	National	Others
Size of investments by companies in R+D+I	5%	40%	0%	25%	20%
Joint products related to historic, cultural and natural heritage developed	10%	35%	35%	0%	20%

Source: Consortium

For all judgements, explanations an justifications have to be recorded. In the IAM, all results have to be added and the process applied has to be explained.

Arriving at expert judgement on impact magnitudes

Each method should ultimately lead to providing a judgement on impact assessment for each indicator. This will be the judgement on the magnitude of the impact (0-4; where 0 stands to no impact and 4 for very high impact) and its direction against the baseline for each region (qualitative assessment) or a judgement on the net-impact of the programme (semi-quantitative assessment). Participants should be reminded that the judgement they are making is on the net impact of the programme, as separated from impact of other interventions. In addition, moderators should explain the difference between judgement which only *reflects* or forecasts the trends of relevant available quantitative data as well as a qualitative judgement which in informed by relevant available quantitative data but accounts for the *significance* of impact of the programme, from the perspective of the expertise of participants. In the case of this qualitative exercise it is more appropriate to assume the second strategy which is genuinely qualitative. The reason for emphasizing this is also to avoid a situation where experts select different magnitudes based on their diverging concepts of qualitative judgement. Some experts may assess the magnitude of the impact of the programme as low based on its measurability in quantitative terms, but nonetheless add that it is significant in terms of its qualitative contribution. In contrast, selecting the second strategy would lead to experts in their judgement directly reflecting the qualitative significance of the impact, despite its low quantitative measurability, and, as a result, selecting higher magnitude.

Any disagreement between the experts, either within the full groups or within divided groups, should open discussions ideally leading to a consensus at the end. If no consensus can be reached, the decision on the impact magnitude has to be made by voting.

When assessing impacts qualitatively, during the expert judgement experts should be asked to regionally differentiate their judgement, in order to account for the territorial distribution of impacts. The basis for this judgement can be expenditure- or output data on the regional level, but also socio-economic, geographic, or other properties of a region leading to different susceptibility towards a given effect. When assessing impacts semi-quantitatively the territorial distribution should be depicted by the underlying quantitative data already.

Judgements have to be well justified, including a reference to relevant quantitative data supporting the expert decision-making. Well-elaborated justifications should be recorded in the IAM under the guidance of the moderators..

Results of step 4
Established net impact value for every indicator
Filled IAM as manifestation of qualitative and quantitative assessments
Recorded workshop discussions as input for reporting

2.2.5 Step 5 – Reporting

While Working Steps 1-4 are mainly concerned with assessing and producing data on the impact of the programme and its background, bringing together all that information in a synoptic document in a comprehensive format is the goal of working step 5. The purpose of such a document is fourfold:

- providing an understandable and easy to read summary that can be used e.g. in the communication with politicians or the general public
- documenting the process, the applied methods out of the “toolbox”, making the TIA verifiable
- describing the impacts of the programme on a regional level
- identifying areas of improvement for future programming periods

In order to structure the reporting, a template has been developed which predefines the sections to include in such a document as well as provides guiding questions for formulating the information to include. The template is provided in the scientific annex, chapter 11.

Keeping in mind the different target audiences, it is especially important to build the corresponding sections accordingly. The information needs of the general public differ from those of the programme authorities – while the further will benefit mostly from relatable descriptions of what the programme has actually achieved, the latter will benefit more from input for upcoming programme periods or relevant information for a programme evaluation. Thus the sections are clearly distinguished in the template with guidance on what to include, in order to streamline the reporting process. The sections included in the report are:

- Introduction
- Executive Summary
- Initial programme assessment findings
- Territorial Impact Assessment process
- Territorial Impact Assessment results
- Methodological commentary on the programme

An important aspect of any territorial impact assessment are maps, as they make distribution of impacts tangible and understandable to the target audience. They accompany the written assessments and (oftentimes) show patterns and core information at a glance. As further specified in the handbook, the use of maps is advised both in the summary as well as the detailed territorial impact assessment section.

Table 2.4: Proposed structure of ex post CBC TIA report

Introduction

As the final report is supposed to be a standalone document, a short introduction has to be provided on what is the purpose of the report, what programme is tackled by the TIA, what steps have been undertaken etc.

Executive Summary

The executive summary is supposed to be usable on its own, independent of the complete report. It serves mainly for communication purposes, e.g. to politicians or the general public and should be focusing on the results rather than the process of the TIA.

Initial programme assessment findings

In order to provide a solid background for the further TIA process the following are described: context and programme area description, programme framework characterisation, other funding instruments in the programme area.

Territorial Impact Assessment process

Describing the TIA process is especially relevant, as the methodology includes various subjective elements (wherever expert opinion is brought in) which need to be thoroughly documented, as well as several different options for setting up the impact assessment. In order to make the process verifiable, the working steps have to be thoroughly documented and justified. The elements include selected TOs and SOs for the assessment, presentation of finalized programme intervention logic including selected indicators, description of net impact determination methods as well as results recorded in Impact Assessment Matrices (IAMs) (see section 2.2.6).

Territorial Impact Assessment results

As the core part of the report it presents a synoptic view, describing and interpreting the results of the previous working steps. The section is split into summary of main findings as well as impact on the regions described per each SO, differentiating the net impact between different territories.

Methodological commentary on the programme

This section should include comments and conclusions to the methodological set-up of the programme that came up during deeper analysis of the programme in the impact assessment. These are, e.g. comments on existing indicators and their limitations; they serve as additional input for future programming and indicator selection. These kinds of observations gained during impact assessment can be compiled with expert observations about the programme set-up made previously during the initial stages of the process (analysis of the intervention logic, selection of indicators for the TIA) and summarized in this section. Methodological comments can be structured per SO/TO.

Source: Consortium, 2019.

In addition to the scientific report, a communication paper for politicians and the general public could be prepared. This should consist of an executive summary, highlighting the main results supported by maps. If any “best practice” examples surface in the course of the TIA which could be used to make the description of impacts more “lively”, this could also be a means of conveying results.

Results of step 5

Final report on the Territorial Impact Assessment

Maps produced as evidence in the report and basis for the communication

2.2.6 The Impact Assessment Matrix (IAM)

The IAM is the structured method of collecting and recording data, calculations and justifications for each indicator. It is not to be considered the final result of an impact assessment, but rather a structured input for analysis and interpretation of the impact assessment recorded in working step 5 (Reporting). It is provided as an excel template in order to streamline the process. As shown in Table 2.5, for each indicator an assessment per region is noted. Region in

this case can again be anything from a NUTS3 region to an ad-hoc functional classification by the expert workshops.

Table 2.5: Impact assessment matrix

Indicator	Assessment method	Nature of Impact	Region 1	Region 2	Region 3	Region ..
	Quantitative	Value T0				
		ValueT1				
		Gross impact				
		Net impact calculation method				
		Net impact				
	Qualitative	Magnitude (0-4)				
		Direction against baseline				
		Temporal distribution (short/medium/long term)				
		Justification, notes				

Source: Consortium 2018

The assessment method (column 2) is split in quantitative and qualitative and also includes two lines for the temporal distribution and notes and justifications (which are relevant regardless of the assessment method used). The determination of the assessment method follows the process outlined in the working steps 1-3

- preliminary selection of indicators
- research of potential data sources and subsequently datasets to populate them
- determination of data quality
- decision on assessment method

The IAM is to be used as a “living document” throughout the process, filling the fields after the corresponding working steps have been conducted, which is indicated in the description above.

2.3 Reflection on the final CBC TIA methodology

The methodology developed in this project is applicable to ETC programmes and was tested on five CBC programmes. Several considerations regarding the CBC TIA methodology are presented below. These considerations address not only the requirement of transferability of the methodology, which has been considered from the outset of the project, but also other elements of the methodology.

Intervention logic and indicators

The goal of an ex post TIA is to capture the territorially differentiated impacts of the implementation of an intervention, in this case a CBC programme. The most significant challenge was confirmed by the case studies to be the provision of appropriate tools, i.e. indicators, for measurement of this impact, given that such tailored indicators were rarely present in monitoring systems. There are a number of improvements possible, both in the selection of indicators

as well as in the monitoring of their development over time. Suggestions for changes to fit the needs of a high-quality TIA in the future are recorded in section 5.

An important element of the methodology of the ex post CBC TIA is the construction of intervention logics of the programmes for the purpose of establishing a cause-effect chain and identifying indicators that can be best used for capturing the impact. Currently, this step involves not only work of experts but also inputs from programme stakeholders who have a good understanding of the needs and programme interventions. The experience in case studies showed that experts were sufficiently capable of constructing the intervention logic while involvement of stakeholders was an important element of validating their work. In general, this approach as well as new CBC indicators provided by the project have been positively welcomed by programme stakeholders.

It is important to note that even if in the future programmes will provide high quality ex ante intervention logics during the programming phase to match the needs with foreseen measures and effects and appropriate indicators, reconstructing the intervention logic within the settings proposed in an ex post TIA will still be necessary. Otherwise, unexpected or unintended effects, which were not apparent during the programming phase, cannot be identified. Additionally, this element may still serve as an aid to independent investigation of the quality and appropriateness of indicators used by the programmes and to identification of additional indicators which were not included in the programme framework.

Regionalization of impacts

The regional distribution of impacts a programme or policy had, the regionalization of data and information is a crucial element in any TIA. The case studies unveiled that simply trying to pinpoint all impacts down to the lowest foreseen geographical resolution (i.e. NUTS3 in that case) is either not possible for all indicators or not useful in the case of some CBC programmes. Several attempts have been made with the use of calculations involving proxy indicators and with qualitative expert judgement to get programme impacts down to NUTS3 level. However, the process revealed that the approach to that should be changed.

Refraining from impact regionalization is not always an outcome of lack of data, but has to be a conscious decision by the TIA service provider and the workshop experts, should they decide that such step is not sensible. This could be the case for impacts, where the deciding factor on the susceptibility of an area lies not in administrative but e.g. in geographic properties. Such effects would concern only e.g. mountainous regions, thus influencing only such areas regardless of the NUTS3 region they are in. Another case could be an indicator on patient satisfaction in the cross-border health system, which concerns the whole structure of the border area rather than individual regions. In addition, various impacts related to cross border cooperation are hard to attribute to single administrative regions. The relevance of effects crossing borders not only between two countries but also between two regions within the same country was stressed by workshop participants, which led to a revision of the pro-

cess opening the methodology up to account for diffuse impacts within and also outside of the programme area

The methodology thus has been adapted at two points. Firstly, for each indicator in the initial phase of the TIA it is determined on which regional scale impacts will manifest themselves. Impacts can either be regionalized (either by means of quantitative or by qualitative methods) to a territorial scale below the programme area, or they can be determined to show impacts only on the programme area as a whole. They can be also determined to show impacts in a broader geographical sense, not even limited to the programme area. Secondly, for any impacts that are possible to regionalize, the definition of "Region" has been adapted, no longer referring only to a predetermined region (e.g. NUTS3). The option has been added to define regions within the context of the second expert workshop, e.g. by creating functional regions based on the experts judgement, such as metropolitan regions, coastal regions, agrarian regions etc.

The challenge of data availability

A major obstacle that surfaced during the case studies was data availability. Within the case studies data availability was an obstacle for quantitative elements of the methodology. Improvements in the practice of indicator selection and data collection should help obtain more quantitative data needed for net impact assessment in the future. The process of selection of indicators should not oversee the fact that meaningful results of an ex post TIA require good quality data as a backing for the assessments made. On the other hand, data availability should not be the central point at the expense of appropriateness of indicators. If appropriate (and realistic in terms of measurement) indicators are identified at the outset and a realistic plan for data collection is developed, the TIA will provide more powerful results.

Finally, ex post CBC TIA faces the challenge of territorialisation of programme impacts, whenever this is sensible (see above "Regionalization of impacts").

Net impact assessment methods

The case study handbook offered a mixed selection of quantitative, semi-quantitative and qualitative methods of net impact assessment such as "small scale counterfactual", "funding framework" and the qualitative approach. As was anticipated by the project team, data availability was insufficient to provide a fully quantitative net impact assessment (such as quantitative counterfactual methods). However, case studies showed that data problems and time constraints were significant enough that only a qualitative approach as well as semi-quantitative "funding framework" approach could have been used. The semi-quantitative "funding framework" approach was deemed quite useful as it based on available financial data in regards to other funds and as such integrates a quantitative element. The method was further elaborated and developed on the basis of the MAPP method. A fully quantitative funding-framework approach calculation could not be performed as none of the indicators featured in the case studies was deemed to be solely reliant on external funding.

The case study-based “small scale counterfactual” method was not used by any case study given the resource constraints. However, it can be a useful method for net impact assessment provided that more resources are planned in similar future projects. Given the number of indicators within a case study and the necessary beneficiary and control group sizes, it could be taken into account already in the drafting of the terms of reference if the application of this method is foreseen.

Use of qualitative methods

Qualitative methods are an alternative to quantitative methods, especially in case of lack of quantitative data. Nevertheless, even regardless of the availability of quantitative data, the case studies identified an added value of qualitative assessment. A high quality TIA can only be achieved through integration of inputs of stakeholders who are able to “paint the scene” of the programme, provide valuable background information on the implementation and the measures taken, all of which will not show up just by analyzing statistical data. CBC programme impact may not always be fully translated into statistical data and mathematical calculation. For this reason, combination of quantitative and qualitative through provision of available quantitative data for qualitative assessments was a very successful method of impact assessment in case studies. The workshop sessions also showed, that the initially proposed 0-2 (no impact – minor impact – major impact) scale for qualitative assessments was deemed too narrow by the participants, thus subsequently has been expanded to a 0-4 scale in the final methodology. The case studies showed the need to provide finer differentiations of impacts.

In order to address this need for a more structured qualitative methodology, the handbook has been developed accordingly. A “Toolbox” of different moderation methods and workshop setups fitting various programme circumstances has been added. This will help in future CBC TIAs to easier guide workshop participants within the setting.

If experts recognize an additional need for qualitative data, additional steps for collecting such data can be undertaken. As an example, it is possible to conduct a survey and/or organize an additional workshop where more qualitative data is produced. A guidance for such a task has been added to the handbook as well.

Adjusting the structure of the workshops

A mix of different actors in the workshops held by the case studies proved very valuable, with the combination of programme stakeholders, regional and thematic experts. An important aspect is the involvement of umbrella organisations, which can cover a wider array of territorial or thematic aspects. It became apparent however, that the TIA process needs to adapt to the special circumstances of border regions, requiring involvement of experts from different geographical locations. While for smaller, more homogenous regions, covered by a thematically focused programme the assessment of impacts within a single workshop can be possible, the geographically larger programmes covering multiple thematic aspects have the need

for more than just one expert round to determine the programme impacts on regional level. Thus, the second workshop as foreseen in the methodology is not to be understood as one single workshop, but can be split thematically or regionally into multiple workshops depending on the needs of the programme and resources available.

Timing of an ex post TIA

An important constraint identified within the case studies is –as it often is the case with ex-post assessments – that the placement within the programming cycle can be problematic. Within the case studies conducted, the latest data available on the programme spending, projects conducted etc. was related to 2017 (as the 2018 data would only be provided around February 2019). However given the time period it took to conduct call for projects, selection procedures and actual contracting of funding, very few projects have been finished by 2017. In a lot of cases, most of the funding was not even paid out by the end of 2017, as there are several rounds of project calls conducted. As the programming for the next period by 2019 has already begun, a CBC TIA which should provide input for that programming period will never be conducted in a "true" ex-post setting. This leads to limitations on the quantitative data available and considerably limits the possibility of quantitative impact assessments.

Transferability to other CBC and transnational cooperation programmes

The ex post CBC TIA methodology was developed considering the requirement of transferability to other CBC programmes. This possibility was substantially tested due to the fact that the methodology was applied to five programmes that have a wide geographical and thematic coverage.

The transferability of the methodology is possible due to the methodological element of programme-tailored indicator selection. This methodological element is part of the step focusing on production of a high quality intervention logic that helps to account for impacts with appropriate indicators. The methodology provides enough flexibility for programme specificities through basing impact assessment on programme-specific intervention logic.

In addition, the project has provided a list of common CBC indicators which have been developed especially for accounting for impact of CBC programme impacts. These suggestions should facilitate the process of indicator selection for all CBC programmes.

If the basic assumption that the impact of territorial cooperation programmes can only be measured with tailored indicators is respected, the ex post TIA methodology can be transferred not only to other CBC programmes but also to transnational programmes. The significant differences in impact of intervention are relevant not only in case of territorial cooperation programmes as compared to other interventions but also in case of different types of territorial cooperation programmes (i.e. INTERREG A and INTERREG B programmes). It is important to recognize that while INTERREG A and INTERREG B programmes base on similar principles of territorial cooperation, both types vary in terms of type and scope of impact. In the ex post TIA methodology these differences are accounted for by the use of appropriate indica-

tors. Therefore, if indicators specific for the type of programme in question are used, the methodology can also be used for assessing the impact of different territorial cooperation programmes.

Nevertheless, it should be noted that INTERREG B programmes might find it more challenging to collect necessary data given the fact that they act on larger territories. As a consequence, there may be more differences between collected data in different regions and the data collection process may be more consuming. For this reason, it is even more important that INTERREG B programmes consider selection of appropriate and measurable indicators during the programming phase.

3 Results of CBC TIA case studies

The five case studies described below have been conducted on INTERREG programmes in the ongoing 2014-2020 programming period. While the TIA method in the current project was developed for an ex-post application, the current progress of the case study programmes and their need for input for the coming programming period led to the application in an interim setting instead of a true ex-post setting. This has as expected led to some issues in relation to the programmes progress (e.g. in some cases implementation of projects has only started 2 years ago, while project calls are still ongoing) as well as the data availability (e.g. European indices such as the Regional Competitiveness Index working with data from the start of the programming period only). The choice to limit the assessment to the 2014-20 period was made on the grounds of consistency of intervention logics within the pilot study. While some programmes were set up similar to the previous programming period, changes in the regulatory framework as well as the in the programme priorities could distort the results if assessments were made across programming periods. The intervention logic as the foundation of programme action is only ever consistent within the same programme framework, thus the project team decided deliberately to limit the timeframe to the current period to increase the reliability of the results.

INTERREG V-A Germany – The Netherlands

The qualitative expert assessment in regards to the impact of the INTERREG Germany-Netherlands has been diverse but overall positive with respect to the impact on specific developments in the programme area. However, it is difficult to assess the programme's impact on the basis of quantitative result indicator data

One type of findings relates to effects on the socio-economic dimension. In this respect, the impact of the programme on the sensitization of companies with respect to product and process innovation was assessed as high (with respect to CO_2 technologies the estimate is lower). The impact on shared cross-border research and patent applications as well the impact of energy/CO_2 related infrastructure projects is regarded as existent but not very high.

With respect to the cross-border cohesion the programme had a significant impact on the quality of cross-border coordination of municipalities, there was a broad understanding that the programme plays a very important role. There has been also an important impact detected with respect to the coordination and quality of cross-border employment services. The support of cross-Border information points is seen as a crucial cause for a positive development. The impact on the quality of the cooperation of educational organisations and cooperation of hospitals and ambulances has been assessed a weaker but still relevant. The impact on the quality of the cooperation of the tax authorities was assessed as rather weak. This is seen as dominated by national steering and with little influence of cross-border projects. The

assessment is that the programme has a crucial impact on the cross-border governance system by providing important networks and structures. The programme also has an impact on the functioning of the Euregions. This is in line with the impact of earlier programmes.

With respect to aspects of European Integration there were difficulties in assessing the impact of the programme on existing bureaucratic cross-border obstacles of citizens and companies. It was expressed by the experts within the workshops, that these issues are mostly driven by national agendas and the influence of the CBC programme is hard to distinguish here. Concerning obstacles with respect to taxes and social security, the impact is regarded as very low, or not possible to be assessed. The impact on obstacles in cross-border professional training was assessed as considerable. The score for the impact on cross-border mobility of citizens and companies (accessibility rail, road, air) is also rather low. There are indications that the development and the impact of the programme is very diverse in the sub-regions, however there is only anecdotal evidence. With respect to the impact on the mind-set of citizens and companies, a differentiated picture emerged. Concerning cross border institutions, the influence on the citizens was assessed as considerably higher than on companies. For regions across the border and the EU in general, the influence of the programme was assessed as equally moderate, and for European Projects it was assessed as equally low. The score for the impact on different aspects of cross-border education is higher for the situation in NL than in DE.

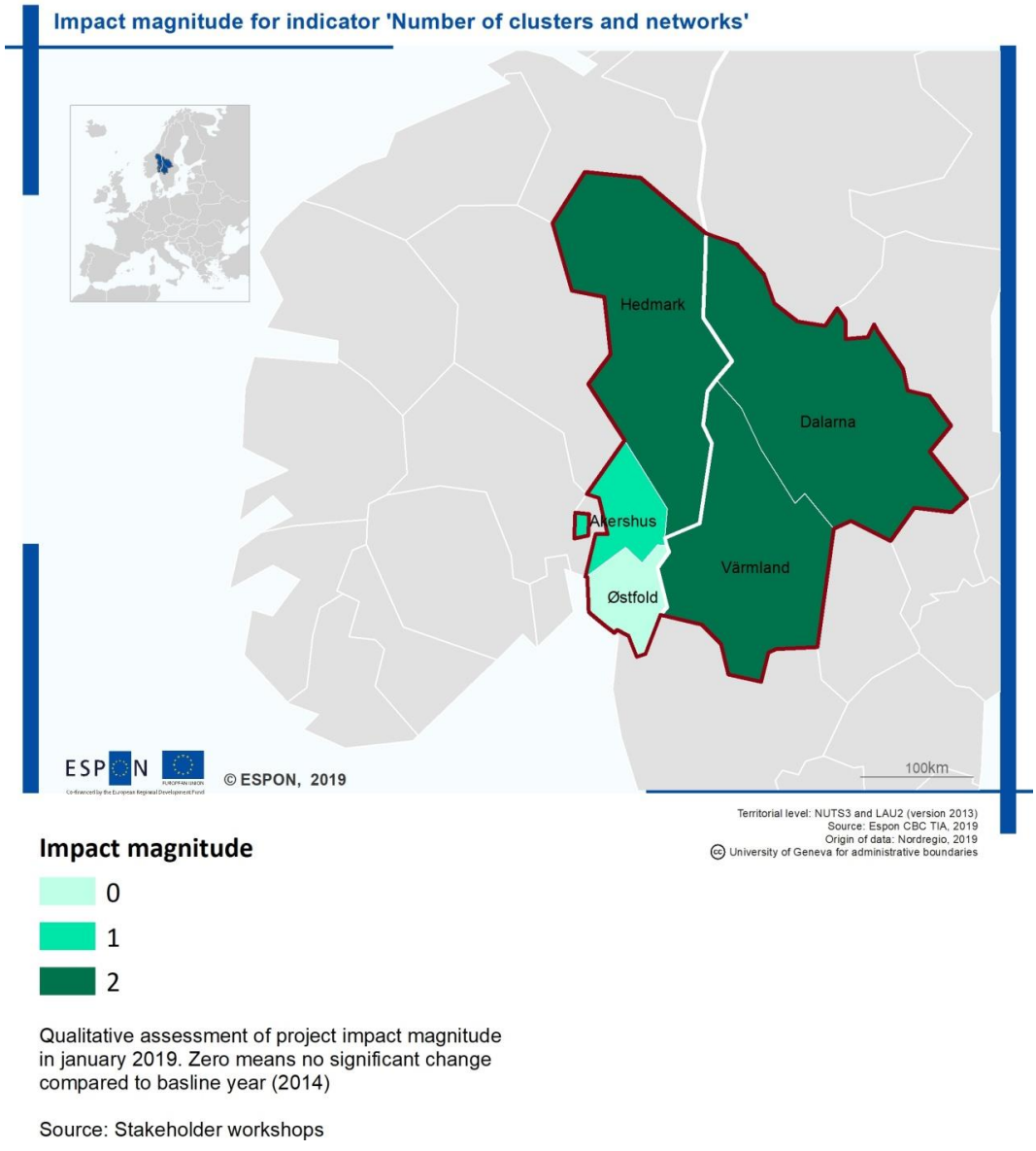
One main objective of the programme is the increase of product and process innovation in companies. According to the qualitative assessment of experts the programme has had a positive impact on different aspects of innovation within the cross-border area. While the available data from the Regional Innovation Scoreboard (indicating a reduction in companies who are product and process innovators) and the Regional Competitiveness Index (indicating a lower score for CB regions in 2016 than in 2013), the experts concluded, that this is due to the time-lag in collecting the indicators which are used to calculate both indices. The most recent data used in both cases is from 2013/14 and thus before the start of the program implementation.

INTERREG V-A Sweden – Norway

The TIA results indicate that the Sweden-Norway programme in the Inner Scandinavia region (the sub-part of the programme for which the TIA was conducted) has had a significant impact on building and enhancing cross-border collaborations within the Inner Scandinavia region, but regional and thematic distinctions are evident. There is a greater impact in urban areas than in rural ones, with the largest regional towns, including Karlstad (Värmland), Hamar (Hedmark) and Borlänge (Dalarna) benefitting most from the programme. This can partially be explained by the regional spread of programme spending, as Värmland, Hedmark

and Dalarna receive higher levels of funding than the Akershus and Ostfold regions. The main reason that the programme has a bigger impact in urban areas is that these cities, particularly Hamar and Karlstad, have a critical mass of key stakeholders, including industries, businesses, and higher education institutions. The regional variations are broadly reflected across the different specific objectives of the programme, with the exception of the specific objectives for natural and cultural heritage, which is largely focused on rural areas around the immediate cross-border areas.

Map 3.1: Impact Magnitude for indicator "Number of clusters and networks"



Qualitative assessment of project impact magnitude in january 2019. Zero means no significant change compared to basline year (2014)

Source: Stakeholder workshops

At the specific objective level, the programme has the largest impact in relation to fostering cross-border innovation. The programme has helped in the development of an innovation ecosystem involving cross-border stakeholders, with particularly strong collaboration between actors in the Värmland and Hedmark regions in areas of shared interests and strength, such as forestry, bio foods, manufacturing, and renewable energy solutions. The programme has

also had a significant impact in the thematic objective area of labour mobility by promoting cross-border labour schemes and student exchanges that are driven by a close connection between the universities in Hedmark, Karlstad and Dalarna. In relation to SMEs and entrepreneurship, the impact of the programme is largely confined to urban hubs, such as Hamar and Karlstad, which have dense business agglomerations within the programme area, although some examples of pioneering localities for rural entrepreneurship have also received great benefit from the programme. Overall, the impact of the programme funding is more significant for SMEs in their expansion phase than as seed funding for start-ups, as the former are well-placed to maximise the opportunities presented by the programme in relation to cross-border networking.

The impact of the programme has been smaller in the specific objectives areas of transport, as well as in culture and heritage. Different national priorities and administrative differences in these thematic areas are an obstacle to cross-border collaboration and significant developments can be attributed mainly to national level policies and cluster organisations. In the thematic area of innovation, the programme has helped contribute to building long-term collaborations between stakeholders, but in most other specific objective areas the impacts are short-term and do not extend beyond the project period. Overall, the TIA results indicate that the Inner Scandinavia region is a genuinely functional area that has the critical mass of stakeholders required to stimulate regional growth and development. The next programme period should focus on finding ways of utilising the cross-border innovation ecosystem that the programme has helped develop to stimulate new business development through training, knowledge sharing and sharing test bed facilities. There should also be a more explicit focus on how to connect rural areas to urban hubs and on promoting the use of rural capital and entrepreneurship opportunities. If the rural dimension is to be genuinely developed in relation to opportunities presented by cultural heritage and environmental tourism, the programme must find ways of enhancing collaboration between municipalities in Norway and Sweden in the development of environmentally friendly transport initiatives.

INTERREG V-A Romania – Bulgaria

At the specific objective level, the programme has balanced impacts across the eligible territory. The largest share of the funding goes for improvement of the transport links (PA 2, SO 2.1. sustainable use of natural and cultural heritage and SO 2.2. sustainable ecosystem management).. However, this is not directly linked to the magnitude of expected impacts on the respective regions since a large portion of the investments under PA 1 and PA 2 is allocated to a small number of infrastructure projects.

Based on the distribution of contracted funding and on the analysis and the outcomes of the stakeholder workshops, the TIA of the RO-BG programme indicates that the different NUTS

3 regions in the cross-border area will benefit to a different extent from the undertaken interventions within the 7 specific objectives of the programme. There are two exceptions – SO 1.2. and SO 2.2., whose positive effects will cover the whole eligible area. All RO counties and BG districts will achieve increased passenger and freight transport traffic in the cross-border section of the Danube river based on improved transport safety of the waterway transport routes and improved protection and conservation status of natural habitats and NATURA 2000 sites due to newly introduced sustainable management tools

For the remaining 5 SOs, the following Romanian counties will be most positively affected by the programme: Constanţa, Dolj and Giurgiu. A common feature can be identified between Constanţa and Dolj counties – they are the most economically developed NUTS 3 regions on the RO side of the border. Giurgiu is also a good performer. It has a direct link via bridge with Ruse district (BG) and borders Ilfov county, which is surrounding the economic center of Romania – the capital city of Bucharest. The 3 counties have balanced project budget allocations within all 5 PAs of the programme (close to 70% of all available funding for RO partners, excluding ones outside the eligible area, e.g. Bucharest and Ilfov) and a large number of projects by individual beneficiaries located in those territorial units.

Should all contracted projects under the programme be completed successfully, the respective territories will benefit from improved TEN-T connectivity, upgraded use of resources related to the natural and cultural heritage, increased risk management potential, sustainable employment and labour mobility services, and enhanced capacity of the public institutions in a cross-border setting.

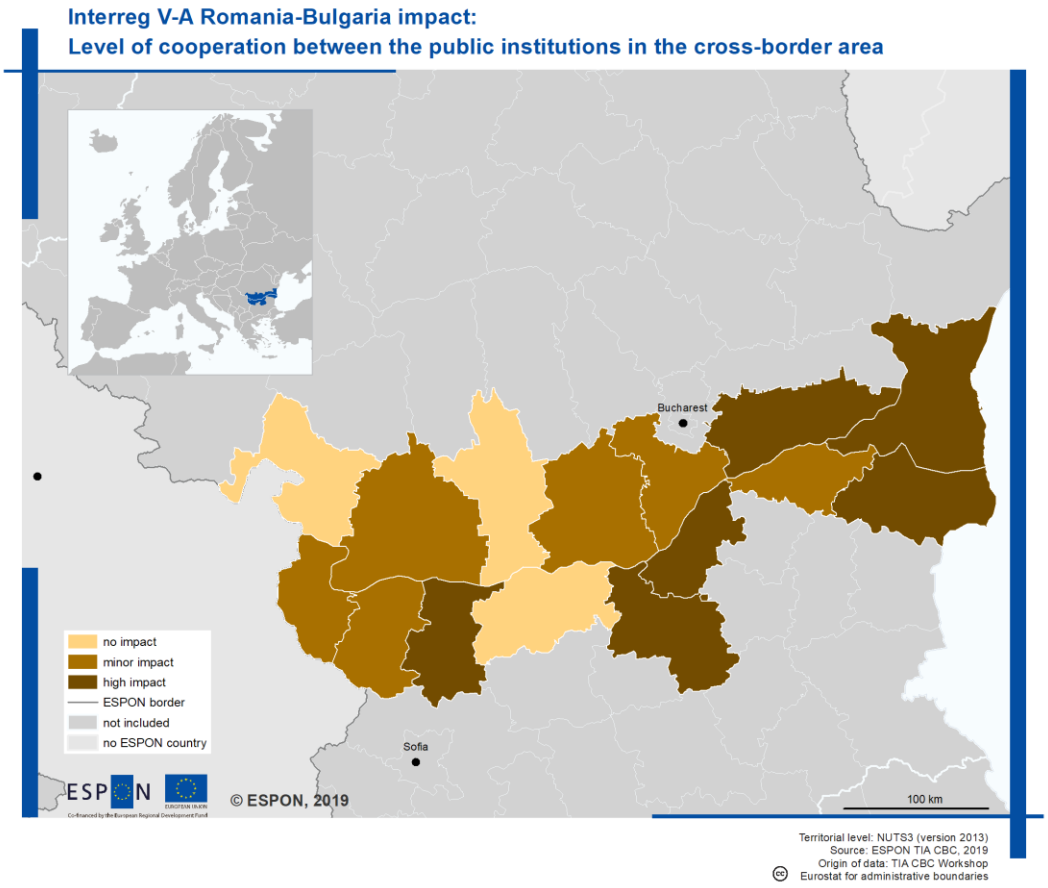
The Bulgarian districts which will receive the most significant positive impacts from the interventions under the 5 SOs of the programme (except SO 1.2. and SO 2.2.), are Ruse, Pleven and Dobrich. Ruse is the most economically developed region among the 8 BG districts eligible under the programme and has a direct transport connection by bridge with RO (Giurgiu county). Pleven and Dobrich are also among the top performers in terms of GDP.

The 3 Bulgarian districts will benefit from over two thirds of the financial support dedicated to project beneficiaries among the BG NUTS 3 regions (excluding the funding that is allocated to beneficiaries outside the programme area, e.g. Sofia capital and Sofia district). There is one specifics, however, as Pleven district will not be taking advantage from the actions under PA 5 related to increasing the cooperation capacity and the efficiency of public institutions in the CBC context. Therefore, the major scope of positive impacts for the 3 regions will comprise better connectivity to the TEN-T transport networks, sustainable use of natural and cultural heritage and resources, increased risk management options and enhanced employment and labour mobility potential.

In Romania, lesser effects will be observed in the counties of Mehedinţi, Olt, Teleorman and Călăraşi, while in Bulgaria – in the districts of Vidin, Montana, Vratsa, Veliko Tarnovo and Silistra. The main reasons for this can be attributed to the smaller administrative or financial

capacity of the project beneficiaries for the implementation of the projects, having in mind the requirement for 2% own participation. Other reasons have also been pointed out by interviewed local stakeholders. The county of Mehedinţi (RO) and the districts of Vidin, Montana and Vratsa (BG) have access to additional funding opportunities for similar interventions through the RO/BG-Serbia CBC programme, while Veliko Tarnovo district (BG) has a narrow border with the Danube river (Romania, respectively) and has prioritised the funding of its projects from the national operational programmes and other sources.

Map 3.2: Net impact for indicator "Level of cooperation between the public institutions in the cross-border area"



INTERREG V-A United Kingdom – Ireland (Ireland – Northern Ireland, Ireland – Scotland)

The programme is in its implementation phase which means the impact of the funding is still to be realised. Generally between the baseline date of 2014 to current date of analysis 2018 there have been many positive developments. The assessments were based on experts discussions during the workshops with consideration of the context information of the programmes. The participants involved were stakeholders as well as relevant thematic experts.

For the health of the economy, the numbers of SMEs have increased for all types of busi-

ness activity in Republic of Ireland and the West and South of Northern Ireland. However, the North of Northern Ireland has been the most effected by decreases in the numbers and types of SME activity. The biggest decreases are in ITC, finance and insurance, and profession, scientific and technical categories. Despite this negative trend in some areas, the overall impact of the programme on innovation and SMEs can be deemed as positive.

For the health and social care objective, rates of medical prescribing have increased in both jurisdictions, but higher in Republic of Ireland. Based on the investigated indicators as well as expert discussions, it can be concluded that the impact of the programme on health and social care innovation can be characterized as positive.

Less positive are the developments in relation to water quality. The health of the river water quality has decreased in the North Western region and remained the same in the Neagh Bann region. However, this might also be connected to recent changes in the regulatory background for the assessment of water quality, which have to be taken into account.

Finally, in terms of territorial differentiation of impacts, the case study has identified that rural areas seem to be more strongly affected by programme interventions.

It must be noted that due to ongoing Brexit negotiation, some foreseen impacts of the programme may not take place as they can be reverted by the results of Brexit negotiations.

INTERREG V-A Spain – Portugal (POCTEP)

The TIA results indicate that POCTEP in the Galicia-Northern Portugal region (which was assessed in the course of the TIA) has a significant impact on the development and improvement of cross-border structures and governance system. It main value added stems from the creation, maintenance and further development of cross-border structures while instilling a cooperation culture across institutions in the cooperation territory. There are no territorial differences in this respect, since these effects apply to the whole GNP cooperation area.

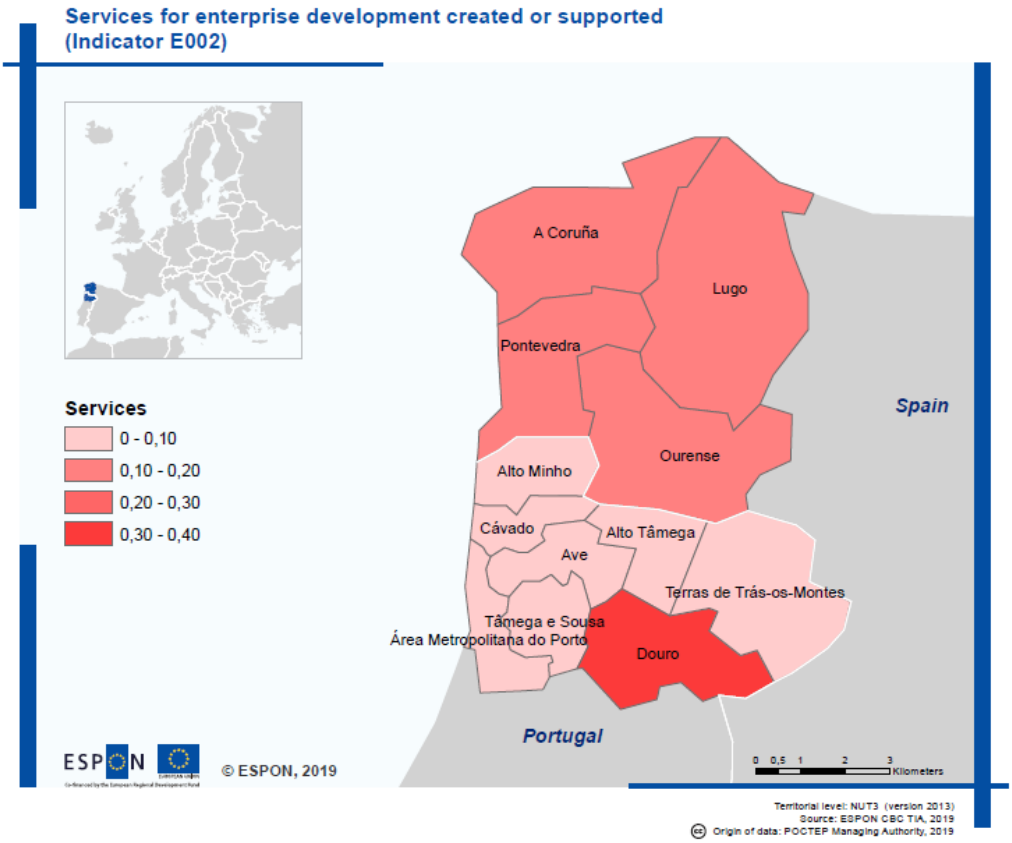
In terms of Specific Objectives, “Strengthening cross-border cooperation strategies between the different agents operating in the territory” is the one with the lower financial allocation but with the highest net impact. This is because this SO encompasses the value added of POCTEP in terms of strengthening and developing cross-border institutional structures and governance.

Amongst the other SOs, “Protecting and enhancing cultural and natural heritage as an economic base of the cross-border region” has a small but important net impact, especially in terms of developing joint products and joint approaches for the protection, promotion and management of natural and cultural heritage. Likewise, the most significant impact of the SO “Increasing the levels of efficiency in the use of natural resources to contribute to the development of the green economy in the cooperation area” is creating the conditions for better

management of natural resources through coordination mechanisms and tools and the development of common solutions to common problems like water and waste management.

The other SOs ("Improve the necessary and favourable conditions for the appearance of new business initiatives" and "Improve the participation of the business sector in innovation processes and R+D+I activities closer to the market") present a small net impact at the moment since the POCTEP funds in these fields are much lower than those of other programmes that are more targeted to entrepreneurship and innovation. For example, the "number of services for enterprise development created or supported" was only 1 and analysed also at NUTS3 level, assuming that a service can be created to cover several regions. However, due to the very small value, the five NUTS3 regions covered by it, present a very small impact.

Map 3.3: Services for enterprise development created or supported (Indicator E002)



However, it needs to be stressed again that POCTEP plays an important role in terms of creating the conditions for business development and innovation by bringing enterprises, research centres and other regional stakeholders together to learn from each other experiences and therefore produce common new knowledge and cooperate to improve competitiveness.

It has not been possible to reach meaningful conclusions in terms of net impacts at smaller territorial levels than the GNP area as a whole, due to: a) the interim stage of programme implementation and therefore limited data and information available, b) the lack of sufficient

time for organising stakeholder workshops with adequate representativeness (territorial units of analysis, sectors), c) the limited participation of stakeholders with an overview of programme implementation (MA, Secretariat) due again to the tight timeframe.

3.1 Summary analysis of the results

3.1.1 Comparative analysis of indicators and thematic areas

The comparative analysis of the case study results has revealed various similarities and differences among the programmes in terms of thematic and indicator selection, some of which are inherent to the regulatory structure of CBC programmes, others are the results of the practical application. Table 3.1depicts how the three general principles of CBC programmes as identified by the projects are taken up by the five case study programmes.

Table 3.1: General principles of CBC in the case studies

Programme	European Integration	Regional Competitiveness	Cross-border Cohesion
DE – NL	x	x	x
SE – NO		x	
RO – BG			
ES – PT		x	x
UK – IE	x	x	x

Source: consortium

Indicators out of the "regional competitiveness & sustainable economic development" group have been selected in 4 case studies, Cross-border Cohesion was selected in 3 and European Integration in 2. The RO – BG case study is the only one not applying any of the common indicators, however that decision has been made based on the lack of data backing, not on the lack of suitable indicators for the programme effects in general.

In total, 69 Indicators have been selected within the case studies, which can be group to 14 thematic fields:

- Innovation
- Economy
- R&D
- Education
- Tourism
- Environment
- Institutional capacity
- Infrastructure
- Living conditions
- Employment
- Culture
- Transport
- Digitalisation
- Health

The selection of those indicator groups among the case studies is depicted in Table 3.2. Given the constraints of a CBC TIA in the setting of this project, it has to be taken into account, that the thematic distribution of indicators does not cover the possible total thematic impacts of the programme. Some indicators within the case studies, while in principle relevant to capture programme impacts, have been rejected due to the lack of data even backing a qualitative assessment.

Table 3.2: Thematic fields covered by the case study programmes

Programme	Innovation	Economy	R&D	Education	Tourism	Environment	Institutional capacity	Infrastructure	Living conditions	Employment	Culture	Transport	Digitalisation	Health
DE – NL	x	x	x				x	x	x	x				
SE – NO	x	x		X		x				x	x	x		
RO – BG					x	x	x	x	x	x				
ES – PT	x	x	x	X	x	X	x							
UK – IE	x	x		x									x	x

Source: consortium

As is apparent from the table, the fields of Innovation, Economy, Education and Environment are those with measurable effects in the majority of programmes. Some thematic fields such as Digitalisation, Health or Infrastructure are only measurable for one of the programmes. What is demonstrated by the table as well is the wide spread of activities that are undertaken in each programme. None has less than 5 different thematic areas for which effects are created, thus confirming the initial assessment, that CBC programmes cover a wide array of thematic issues with comparably low budget, increasing the difficulty of net-impact assessments.

Consequently, all case studies have encountered similar issues in assessing the net impacts respectively obtaining quantitative data for the relevant indicators. This is mirrored in the indicator assessment methods, where only a few out of the 69 total have been assessed quantitatively. Some of that is related to the timing of the project as is elaborated in section 2.3, however even given a later stage of the TIA and better data from the programmes monitoring system available, a lot of impacts created by CBC programmes elude quantitative measurements as they tackle issues which almost never are covered by quantitative data collections.

Table 3.3. Impact assessment methods applied by the case studies

CBC programme	Quantitative methods	Semi-Quantitative methods	Qualitative methods
DE – NL	Investigated for several socio-economic indicators but deemed not possible due to lack of data	Investigated for several indicators but deemed less robust than qualitative assessments	Full-panel moderated discussion + group discussions in workshop setting
SE – NO	Investigated but impossible	Investigated but impossible due	Moderated discussion

CBC programme	Quantitative methods	Semi-Quantitative methods	Qualitative methods
	due to lack of data or data not yet covering the necessary time period	to lack of data or data not yet covering the necessary time period	along guiding questions provided beforehand
RO – BG	Funding Framework Approach	Investigated but relevant indicators lack data thus qualitative assessments were deemed preferable	Moderated discussion
ES – PT	Funding Framework approach	MAPP Method	Moderated discussion along guiding questions
UK – IE	Investigated for several indicators but deemed not possible due to lack of data	Investigated for several indicators but deemed not possible due to lack of data	Moderated discussion + Interviews

Source: Consortium, 2019

Among the programmes, different stages of the implementation progress have been observed, thus leading to a different basis for the results.

3.1.2 Comparative analysis of impacts

Based on the results of case studies, it is also possible to understand whether there are similarities between the examined CBC programmes in terms of impact in different thematic areas and on different territories. As mentioned above, while CBC programmes in general have a very wide thematic focus, there are some thematic areas that appear more frequently. It is therefore interesting to investigate if the strength of impacts in SOs of the investigated CBC programmes are likely to be similar in the same or different thematic areas. Such analysis could provide evidence for understanding whether there are specific thematic areas where CBC interventions of the investigated programmes have a higher chance of providing stronger impact.

Table 3.4. Presentation of general TIA results of all case studies.

CBC programme	Thematic areas of higher impact	Thematic areas of lower impact	Territorial differentiation of the impact
DE – NL	Sensitization of companies with respect to product and process innovation (also in the case of CO_2), cross-border cohesion; obstacles in cross-border professional training; cross-border coordination of municipalities, employment services, cross border governance systems.	Obstacles with respect to taxes and social security, quality of cooperation of tax authorities, cross-border mobility, mind-set and awareness of citizens with respect to INTERREG and cross-border institutions,	Not possible to differentiate territorially Exception: influence of the programme with respect to language skills was assessed higher at the Dutch side of the programme area.
SE – NO	Innovation, labour mobility	Transport, culture and heritage	Higher in urban areas and areas with urban centres
RO – BG	TEN-T cross-border transport connections, protection and conservation of natural and cultural heritage, and risk management	Thematically differentiated in different territorial areas, Cross-border employment and mobility, and capacity of administrations providing public services	Differentiated regional impact, higher in more economically developed regions

CBC programme	Thematic areas of higher impact	Thematic areas of lower impact	Territorial differentiation of the impact
ES – PT	Cross-border structures and governance, joint actions and joint management of natural and cultural heritage, natural resources and green economy,	R+D+I, business and innovation (note: despite the fact that the net impact is low, the impact of the programme is considered meaningful by stakeholders in terms of bringing actors together and creating the conditions for cross-border innovation or enterprise development.	Territorial impact differentiated (however, due to technical difficulties and limited programme implementation at the time of the assessment, unable to differentiate for the Galicia – Norte de Portugal region).
UK – IE	CB SME Innovation, Health and Social Care innovation	Water quality (possibly – see section 3)	More distinct in rural areas, but difficult to predict pending Brexit negotiations.

Source: Consortium, 2019

As the table above shows, there are very few similarities in the level of impact on different thematic areas and territories among the case studies. Some CBC programmes experience higher impacts in areas in which other programmes register a rather lower or average impact. For example, RO-BG and ES-PT programmes noted higher impact in area of cultural and natural heritage while the SE-NO programme observed a rather weaker impact. Similarly, SE-NO and RO-BG programmes noted high impact in regards to cross-border labour mobility. Similarities can be found in CBC programmes' positive impact on cross-border cohesion and governance which has been the case for DE-NL and ES-PT. Interestingly, however, DE-NL programme has noted a weak impact on mind-set and awareness of citizens in relation to INTERREG and cross-border institutions. In case of DE-NL and RO-BG programmes weaker impact was also registered in relation to some aspect of administrative capacities and administrative cooperation such as cooperation of tax authorities, obstacles in respect to taxes and social security (DE-NL) and capacity of administrations providing public services (RO-BG).

Interesting, however, are the findings of programme impact on cross-border innovation. The SE-NO as well as UK-IE programmes noted higher impact in the area of innovation. While ES-PT noted that the net impact in the thematic field of business innovation was low, it was pointed out that it is regarded as important by stakeholders. Similarly, available quantitative data in the DE-NL programme indicate that the impact of the programme on innovation could be low, however this goes against the view of stakeholders who consider it positive One possible explanation for this dichotomy is the lag in data collection, where the quantitative data in question was available at the latest point before the programme start, while the stakeholders assessment is concerned with the development after programme star). It has to be noted that experts in the SE-NO case study in their judgement seemed to have included consideration of the impact with regards to its nature and specificity (i.e. relating to actual cross-border related effects only, considering but going beyond the limited indications of quantitative data), which is different in nature than other funding intervention, while experts in the ES-PT and DE-NL workshop seemed to have focused more on the contribution of the programme to these thematic area along the indications of the available data, but without yet accounting for the specificity and importance (i.e. the value of cooperation across borders in itself, even without

measurable quantitative results) of the examined impact. In other words, the judgement of experts in ES-PT and DE-NL workshops has been based on the available quantitative data only. As a result, the POCTEP and Germany – the Netherlands programmes` results were that impact has a low magnitude, based on quantitative information, with the qualification that it is still significant. On the other hand, the outcome of the judgement by Sweden –Norway programme was that the impact has a high magnitude because it is significant, despite being quantitatively low. . In effect, the impact assessment in all four cases is very similar; The comparison of the case study results presents a very differentiated picture in terms of impact in different thematic areas which can only confirm the diverse nature and impact of these programmes.

No similarities can be identified in terms of impact on different territories within the CBC programmes. Some case studies could not produce a territorial differentiation either for the whole programme area or some part of it or noted a differentiated territorial impact (DE-NL, ES-PT), either due to lacking data or due to the fact that such differentiation was not sensible given the impact of the programme. Others identified slightly higher impact in more economically developed areas (RO-BG), noted higher impact in urban areas (SE-NO) or in rural areas (UK-IE).

4 Case study data

The tables in annex 2 of the main report give an overview of the indicators used, their sources as well as their assessment method in the corresponding case study. The IAM which includes all data, judgements and calculation methods is available in the scientific annex per case study. As is evident from the tables, most of the indicators have been assessed qualitatively. A lengthy explanation on the reasons for the prevalence of qualitative assessments over quantitative assessments as well as a proposal on how to increase the usage of quantitative indicators in future TIAs is given in sections 2.3 and 5.

The collected case study data is also available in the scientific annex, chapters 1 to 5.

5 Recommendations for indicators and data collection

Cooperation with programme stakeholders in every case study has resulted in a number of recommendations regarding implementation of programmes, some of which have been touched upon in previous sections. It came as no surprise that the data availability was very poor due to several reasons already mentioned in section 2.3. Specific recommendations for data collection and better data availability have to do not only with the process of data collection alone but are related also to selection of indicators, where considerations about data availability should be a built-in element of the process. Given the identified issues with indicators, it seems appropriate to combine the recommendations.

Selection of appropriate indicators

Specific recommendations

- Compose a programme intervention logic ex ante to help select indicators that are most likely to depict CBC programme effects;
- Make use of the existing indicator lists and, if appropriate, modify them with expert help to fit the programme context;
- Make sure that for each indicator systematic data collection is realistic.

The examples in case studies have shown that some available indicators were not specific enough for the CBC context. For example, in terms of assessing impact on innovation ecosystems, it was suggested that instead of an indicator measuring new clusters and networks an indicator on the number of stakeholders involved in clusters and networks could be used. In another example, an alternative measure for patent and trademark registrations could be the number of new product types and ideas on a more general level. Indicators in the field of transport were considered rather unfitting for a cross-border setting and it was suggested that emphasis should be on producing a more detailed analysis of transport patterns across borders focusing on different transport nodes, including the number of new cross-border transport links created in relation to bus and train routes. In a similar manner, current indicators measuring labour mobility across borders are rather unsuitable due to the fact that CBC programme interventions were largely based on short term interactions.

Mitigation of such indicator problems involves provision of clear links between programme needs, measures and indicators via the intervention logic. While all stakeholders are aware of the concept of intervention logic, it is highly advisable to employ it in a meticulous manner during programming phase. Building an intervention logic at an early stage helps identifying the specific needs of the programme area at the very start of the programme and, consequently, allows targeting measures and finding the most appropriate indicators for monitoring and assessments. During the exercise it should be considered which indicators are appropriate for the specificity of the programme area as well as for the cross-border dimension.

The developed “common CBC indicators” within the project were deemed helpful in the case studies (for a full list see scientific annex, chapter 6), as they steer the indicator selection into different fields of superordinate CBC goals as per the relevant EU regulations. However not

all of those indicators are relevant to all programmes. As such they can be regarded as a suggestion and it is not necessary for CBC programmes to collect data on each of these indicators. Using the common CBC indicators as inspiration for development of more tailored, specific indicators, or modifying them may be a good option, provided that such tailored indicators are validated by experts (for example from statistical offices).

An important element of indicator selection should be consideration of the feasibility of data availability. In order to avoid data collection problems, stakeholders are advised to make sure that data is available, complete and usable with provision of concrete data sources. As such, data availability should be a criterion of indicator selection. However a balanced approach should ensure that data availability should not outweigh the importance of selection of the thematically tailored indicators.

A robust intervention logic developed ex ante will help steer the effective implementation of the programme by targeting the measures as well as providing monitoring data for assessments, analyses (e.g. gap analysis) and programme evaluations. Nevertheless, the intervention logic of each programme has to be "reconstructed" during a TIA in order to identify any shortcomings of the initial intervention logics of the programming phase.

Coordination with statistical offices and other actors

Specific recommendations

- Establish a cooperation with statistical offices in order to have a better overview of data availability as well as in regards to:
- Solutions for overcoming existing monitoring and data problems such as lack of appropriate geographical resolution as well as cross-border discrepancies in data;
- Considering data sources and geographical resolution during selection of indicators;
- Seek cooperation of other actors and institutions that are responsible for data collection.

Quantitative data availability was the central issue in each case study. The problems related to the timing of the project during the implementation of the programme partly contribute to the problem. However, programmes also suffer from lack of data even for programme indicators irrespective of the implementation stage. In some cases, even though programmes have indicated national statistical offices as data sources, the data indicated was not usable as it was either outdated or had only partial relevance and lacked the geographical resolution. In some situations, even if relevant indicated data would be available, it would not prove useful for purposes of CBC programmes. For example, measuring cross-border commuting between regions in CBC programme area would require information both on the origin and destination regions of each cross-border commuter, and this level of detail is usually not provided by current data-gathering efforts. In some cases, this information is already collected on the national level (i.e. the origin and destination on a ZIP-code level is collected for each commuter within a single country, but for cross-border commuters only the destination or origin on country level is collected).

The above indicator and data issues point towards a need for a better understanding of usability of the available data. It is thus highly recommended that programme stakeholders establish a cooperation with statistical offices in order to improve the possibilities of collecting data for monitoring of the programme. As data experts, representatives of statistical offices can help programme stakeholders find solutions to lack of data or unsuitability of available data, including the problem of different measurement methodology and practices across borders in relation to some indicators. Moreover, they can be consulted early during programming phase in order to help select feasible indicators, with regards to geographical resolution and data sources of respective data. Case studies have shown that in some cases even if quantitative data was available there often were discrepancies between the way information was collected on each side of the border.

There are various forms of cooperation with experts. Programme authorities are encouraged to organize workshops inviting representatives of national statistical offices from both sides of the border in order to help solve specific problems or plan indicator selection during the programming phase. If this option is not available, programme authorities can establish written ad-hoc communication or conduct feedback rounds on the availability of pre-selected indicators. With such an approach managing authorities can better understand the available data, their appropriateness for the context of CBC programmes as well as explore possibilities of new indicators and closing potential data gaps. Representatives of national statistical offices, on the other hand, will have a better overview of data-related challenges for CBC programmes and may play a role in overcoming them.

Finally, these coordination efforts can go beyond statistical offices, as a multitude of organisations is usually active in the various territories collecting and compiling data. Particularly institutions such as the chamber of commerce, tourism associations or academic networks working in the same thematic fields are likely to follow similar activities in all countries involved in a CBC programme. Lack of coordination between such organisations in different countries related to methodology of data collection might lead to incomparable results. It is therefore advised to include those organisations or institutions in joint meetings in order to coordinate their efforts and to produce comparable data for future TIAs.

Improvements in the programme monitoring system

Specific recommendations

- Consider modifications in monitoring system in order to better account for geographical location of project outputs;
- Complement monitoring systems with the data from statistical offices as well as data collected by beneficiaries for more flexible and rapid provision of necessary data.

A considerable limitation in regionalizing the impacts is rooted in the programme monitoring systems, or rather in the practical application. In most case studies, programme authorities stated that information on outputs (which can act as a proxy indicator in regionalizing impacts) of individual projects is only collected on project level depending on the location of the lead

project partner. In case of projects where the actual undertakings are taking place in a location not coinciding with the lead partner, or where multiple partners have activities in different locations, the outputs are then attributed to the “wrong” geographic location. Programmes are thus advised to collect data on project activities on a territorially detailed level in order to be able to get information on the actual geographic distribution wherever possible and useful (e.g. for projects providing trainings the location of the training might not correlate with the location of impacts, this has to be regarded in the attribution to a region). As the eMS already offers the option to enter at least the location of any partner involved in the project, encouraging the use of those fields can be a step towards better regionalization without directly altering the eMS.

The speed with which data can be processed in order to produce high-quality ex-post assessments is also a crucial element of the working of the programme monitoring systems. A limitation that has already been touched upon in section 2.3 is the time-lag between collection of data and official publication by statistical offices. This leads to problems when trying to capture actual impacts, as up-to-date data is needed, and data dating back 1,5 years can already be outdated for the purpose of the TIA. As a result, it is suggested to complement data in monitoring systems with data from project beneficiaries. A more complete data will enable programme authorities to provide robust and up-to-date data for assessments and evaluations.

6 Proposal on use and communication of TIA results

The report on the use of TIA results includes ideas on the integration of a TIA into the programme life cycle as well as proposal in terms of communication. It is a stand-alone document which comprises a general guidance, but is further enriched by tools (model ToR, guidance for communication) that help CBC programmes to concretely integrate a TIA in its working routines.

The report goes far beyond the use of a TIA as an ex-post instrument. In fact, the report reflects on the entire life cycle of a CBC programme and relevant programme functions that can be supported by a TIA. More details are presented in section 12 of the scientific annex.

Table 6.1: Overview: Integration of TIA and use of TIA results in different stages of the CBC programme's life cycle

Programme phase	Use of TIA results	Integration of ex-post TIA into the process
Programme development for next period	Better understanding of socioeconomic baseline Evidence based and targeted strategy development	Early stage of programme development, either as part of Ex-Post Evaluation or as part of the socioeconomic analysis
Project implementation: monitoring and steering of impact	Revisiting the programme strategy and refining financial allocations or development of targeted calls	TIA as part of monitoring: TIA covering the entire programme strategy or targeted TIA focusing on a specific aspect
Project implementation: dissemination	Improved evidence for targeted communication to policy makers, sectoral stakeholders or potential or approved applicants	ex-post TIA results as part of the documents
Programme evaluation	Use of and evidence based evaluation	TIA as part of the programme evaluation, contributing with inputs so defined evaluation questions
Programme communication with policy makers	Communicating results of the programme performance to policy makers; Evidence based consultation phases for the preparation of upcoming programmes	ex-post TIA results as part of the documents

Source: Consortium, 219.

The proposal identifies four scenarios in which a TIA and its results can play a major role in refining the programme's performance and improving the communication with target groups.

- Scenario 1: ex-post TIA contributing to improved understanding of the socioeconomic framework condition of the programme area.
- Scenario 2: Using ex-post TIA results for improved monitoring and steering of the programme implementation
- Scenario 3: ex-post TIA as a basic ingredient for a citizen-oriented communication
- Scenario 4: ex-post TIA results as a contribution to successful communication with policy makers

The CBC programmes are the main target group of the guidance. In the scientific annexes, concrete tools are offered to assist a guided implementation:

- Guidance on using the results of a TIA
- Overview on communication routines of the CBC programmes
- Model ToR for tendering different forms of a TIA (four scenarios)Communication guidance with concrete assistance on how to communicate the TIA and its results to the target audiences.

Annex 1 – Indicator data production through qualitative methods (optional in step 3)

Production of qualitative indicators with a survey/questionnaire

To get a more comprehensive picture of certain trends related to the qualitative indicators presented in the methodology, the final expert judgement (produced in workshops) should be supplemented by results from a survey. The survey should be launched a couple of weeks before the scheduled expert workshops with an online questionnaire. It will be in the first place the programme secretariat who can deliver a list of potential experts/stakeholders who could be asked to fill in the questionnaire. The target group of this survey goes beyond the realm of INTERREG experts. It would be the added-value of the survey that a broader group of persons with knowledge on cross-border activities can give their view on certain developments. Meaning for instance, that citizens, representatives of companies, scientists, politicians or civil servants should assess the general trends of cross-border cooperation beyond INTERREG related activities. This could also guaranty a wider picture and could be a valuable input for the following expert session.

The list of questions of the survey should follow the list of qualitative indicators described as common indicators and should be adapted with respect to the quality of the individual programme.

Table A.1: Example Format Questionnaire

Question	Rating 0-4	Explanations/Experiences
How do you assess the quality of cross-border cooperation of public sector bodies in 2018 compared to 2014?		
How do you assess the quality of cross-border cooperation of companies in 2018 compared to 2014?		
How to you assess the cross-border governance structure in 2018 compared to2014?		
How do you assess the obstacles in the field of taxes that concern cross-border workers and companies?		
How do you assess the obstacles in the field of social security that concern cross-border workers and companies?		
….	….	….

Organizing a workshop "production of qualitative data and trend analysis"

Within such an additional workshop, a trend analysis setting the frame for qualitative net impact assessment in step 4 can be developed. It acts as an additional input to the programme background against which the net impacts on a regional level can be determined.

Participants can (partly) be the same as for workshop 1, however some differing guidelines can be given:

- Participants should be regional and/or thematic experts as described for workshop 1
- When Programme stakeholders participate to the expert panel, it has to be considered that on one hand there could be a conflict with the objectivity of the process and constitute a self-assessment. However, in this second expert workshop the focus will be on the

production of qualitative data and not on the impact of the INTERREG programme Usually, programme stakeholders know a lot about the general development of the programming area.

- The selection of participants has to be based on the framework of the programme, taking into special consideration the indicators to be assessed. The thematic fields and regional distribution of those indicators will determine, if a broader spectrum of thematic experts (e.g. members of the scientific community) or regional experts (e.g. regional authorities, NGOs etc.) is necessary, to capture the programme impact.
- Ideally, 12-15 participants are envisaged

Workshop preparation

In order to enable the expert panel to make an informed decision, all suitable pieces of information on quantitative and qualitative indicators should be made available to them. These include the verified intervention logics as an outcome of the first workshop and context data presented there (especially output- and expenditure data and maps) as well as any additional information that can be given based on step 3 and already established net impacts for quantitative indicators. A useful tool for presenting the information in a structured manner is the IAM (filled to the extent possible). The most important input for the workshop is a presentation of the results of the survey and the qualitative data produced.

In order to describe the different trends (2014 vis-a-vie 2018) maps, tables or posters can be used with respect to the qualitative indicators. Interesting perceptions/experiences produced by the survey should be also presented.

Conducting the second workshop

The guiding questions for the workshop are the questions of the questionnaire. The debate can be done in subgroups (dependent on the size of the group) and being steered by the following structure:

- Discussion on the result of the survey per indicator: does the assessment of the survey correspond to the own perception? Is there a regional aspect related to the own assessment or a particular institutions or cooperation experience?
- Discussion on the experiences described from the survey participants: Do they correspond to the own experiences?
- Filling in own assessments with respect to the qualitative indicators and discussing own experiences with illustrative examples. The different subgroups should agree on a common assessment of the development based on an exchange of views and experiences
- The workshop organizers develop a “trend analysis” per sector, or theme (based on the debate in the workshop). This “trend analysis” shall be finally discussed and commented by the participants.
- After the workshop, the researchers prepare the documentation, presenting the qualitative data (survey and workshop) and producing a “trend analysis”.[16]

[16] As an inspiration for the extended methodology, some elements of the “participative Method for Impact Assessment of Programmes and Projects (MAPP)” was used applied in the field of development policy. The methodology was developed by Susanne Neubert, scientific staff of the German Development Institute in Bonn. Especially the use of the term “trend analysis” and the respective presentation

To complete the tasks in the workshop, half a day could be enough.

Table A.2: Sample agenda of a workshop 2

9:15 Introduction and welcoming round
9:30 Recap of the workshop goals, key information presentation
10:30 Qualitative Indicators: the development according to the survey and broader debate of the own perception
11:15 Coffee break
11:30 Qualitative indicators: producing data related to the qualitative indicators by the workshop participants
12.45 Summary of the workshop findings
13.00 End of the Workshop

The final trend analysis can be presented in the form of the following exemplary table, which has been structured along the common indicators of the CBC TIA project:

Table A.3: Trend analysis

Improvement of…	2014-2018	Explanatory note
Situation of cross-border workers/ Companies		
Employment services for cross-border		differing regional perceptions, differing perception per sector, if documented in survey or workshop
– Workers	2	
– Employers	1	
Obstacles due to taxes		
– Workers	2	
– Employers		
Obstacles due to social security		
– Workers	1	
– Employers		
General understanding		
Languages		
Quality of cross-border cooperation		
Cooperation of public sector bodies	1	
Cross-border governance	4	
…	….	….

The results of these data production exercises can act as an input for the following workshop in step 4.

was inspired by the methodology. See: Susanne Neubert, Description and Examples of MAPP, Method for Impact Assessment of Programmes and Projects, Lusaka, 2010.

Annex 2 – Indicators used in case studies

Name: Name of the indicator used

Source: Data source used to populate the indicator. Where the source is indicated as "Workshop", this refers to an indicator where no directly related quantitative data was available and assessments could only be based on supporting data.

Baseline year: first year of the indicator data available against which the assessment was made.

Reference year: last year of the indicator data available with which the assessment was made.

Assessment method: stated as qualitative or quantitative – details are provided in the Scientific Annex for each case study.

DE-NL case study

Name	Source	Baseline Year	Reference Year	Assessment method
Population change	Eurostat	2014	2017	Quantitative
Population Density	Eurostat	2013	2016	Quantitative
GDP	Eurostat	2014	2016	Quantitative
Unemployment	Eurostat	2015	2017	Quantitative
Employment Higher Education	Eurostat	2013	2017	Quantitative
Employment Scientist/Engineers	Eurostat	2013	2017	Quantitative
Tourism, Overnight stays	Eurostat	2013	2017	Quantitative
Score Regional Competitiveness Index	RCI	2013	2016	Quantitative
Qualitative Indicators				
Sensitization of SME with regard to product and process innovation (in general and in the field of CO_2 reduction)	Workshop II	2014	2018	Qualitative
2. Share of common initiatives for cross-border research and to access funding	Workshop II	2014	2018	Qualitative
3. Quality of cross-border research	Workshop II	2014	2018	Qualitative
4. INTERREG projects which lead to patent applications and to the application of new technologies	Workshop II	2014	2018	Qualitative
Cross-border energy/CO_2 infrastructure projects	Workshop II	2014	2018	Qualitative
In comparison to previous years: **The quality of cross-border cooperation of:** 6. municipalities 7. employment services 8. educational institutions (9. cultural organisations) 1. hospitals/ambulances 11. tax authorities (12. police forces) (13. disaster management) 14. public transport organisations	Workshop II	2014	2018	Qualitative
15. Functioning of the governance system in the broader sense: functioning of cross-border organisations/	Workshop II	2014	2018	Qualitative

Name	Source	Baseline Year	Reference Year	Assessment method
networks/ instruments				
16. Functioning of Euregios compared to previous years	Workshop II	2014	2018	Qualitative
Bureaucracy/complexity of cross-border activities of citizens/employees/companies compared to previous years and with regard to 17. taxes 18. social security 19. professional training	Workshop II	2014	2018	Qualitative
2. housing Mobility compared to previous years 21. potential accessibility of the cross-border territory by road/rail/air 22. cross-border infrastructure projects in the sector of traffic 23. cross-border public transport connections	Workshop II	2014	2018	Qualitative
Mind-set of citizens/companies with regard to 24. cross-border institutions 25. the regions across the border 26. the EU 27. European projects (INTERREG)	Workshop 2	2014	2018	Qualitative
Access to employment services in the neighbouring country	Workshop 2	2014	2018	Qualitative
28. individual consulting (today/previous years) 29. Access to digital systems for cross-border worker, employers and citizens		2014	2018	Qualitative

Source: Consortium, 2019.

SE-NO case study

Name	Source	Baseline Year	Reference Year	Assessment method
Number of clusters and networks	Adapted by case-study team from programme document	2014	2018	Qualitative
Number of new patents/trademarks	Adapted common CBC Indicator	2014	2018	Qualitative
Number of companies cooperating across the border	Common CBC Indicators, programme document	2014	2018	Qualitative
Number of companies engaged in export efforts	Programme document	2014	2018	Qualitative
New enterprises (number of new enterprises with 1-4 employees) (R)	Programme Document	2014	2018	Qualitative
Number of joint nature, culture and heritage governance initiatives	Programme Document	2014	2018	Qualitative
Increased area of protected natural and cultural landscape	Programme Document	2014	2018	Qualitative
Number of joint platforms cross-border knowledge sharing on transport infrastructures	Programme Document	2014	2018	Qualitative
Number of available systems for environmentally friendly and carbon efficient	Programme document	2014	2018	Qualitative

Name	Source	Baseline Year	Reference Year	Assessment method
transport				
Number of CO_2 and N_2O emissions	Programme document	2014	2018	Qualitative
Number of participants in cross-border labour mobility schemes	Programme document	2014	2018	Qualitative
Number of cross border students	Adapted by case-study team from programme document and CBC indicators	2014	2018	Qualitative

Source: Consortium, 2019.

RO-BG case study

Name	Source	Baseline Year (T)	Reference Year (T1)	Assessment method
1. (R) Cross-border population served by modernized infrastructure leading to TEN-T, number	Project reports, Road Infrastructure Agencies	2014	2018	Qualitative
2. (R) Share of the RO-BG CBC Danube length where safety of navigation has been improved, %	Project reports, Romanian Naval Authority, Executive Agency for Exploration and Maintenance of the Danube river	2014	2018	Quantitative
3. (R) Tourist overnights in the cross-border region, number	Project reports, National Statistical Institutes	2014	2017	Quantitative
4. (R) NATURA 2 sites from the cross-border area with management tools, number	Project reports, Ministries of Environment	2014	2018	Quantitative
5. (A) Population benefiting from actions of risk management, number	Project reports	2014	2018	Qualitative
6. (R) Population with access to joint employment initiatives, number	Project reports, Ministries of Labour	2014	2018	Qualitative
7. (R/A) Level of cooperation between the public institutions in the cross-border area	Programme reports	2014	2018	Qualitative

Source: Consortium, 2019.

ES-PT case study

Name	Source	Baseline Year	Reference Year	Assessment method
No of companies that cooperate with research centres (C)	COOPERA Workshop	2014	**2017**	Quantitative
Joint projects developed between enterprises and institutions (A)	Workshop	2014	2018	Qualitative
No of beneficiary companies that introduce new products for the company (R)	COOPERA Workshop	2014	**2017**	Qualitative
Increased number of enterprises that have invested in R+D+I (A)	Workshop	2014	2018	Qualitative
Size of investments in R+D+I (A)	Workshop	2014	2018	Qualitative
No of services for enterprise development created or supported (R)	COOPERA Workshop	2014	**2017**	Quantitative
SME/companies with cross-border business (C)	Workshop	2014	2018	Qualitative
Enterprises created/improved in the cooperation space, of which by young/unemployed/social economy (A)	Workshop	2014	2018	Qualitative

Name	Source	Baseline Year	Reference Year	Assessment method
Companies that offer professional internships (A)	Workshop	2014	2018	Qualitative
Increased number of planned visits to sites belonging to cultural and natural heritage and to subsidized attractions (R)	COOPERA Workshop	2014	**2017**	Quantitative
Joint products related to historic, cultural and natural heritage developed (A)	Workshop	2014	2018	Qualitative
Joint tourism offers developed(A)	Workshop	2014	2018	Qualitative
Improved management of natural resources (R)	Workshop	2014	2018	Qualitative
Number of tools for cross-border management of natural resources (R)	COOPERA	2014	**2017**	Quantitative
Improvement of institutional structures for cooperation in operation (R)	Workshop	2014	2018	Qualitative
Development of the cross-border governance system (C)	Workshop	2014	2018	Qualitative

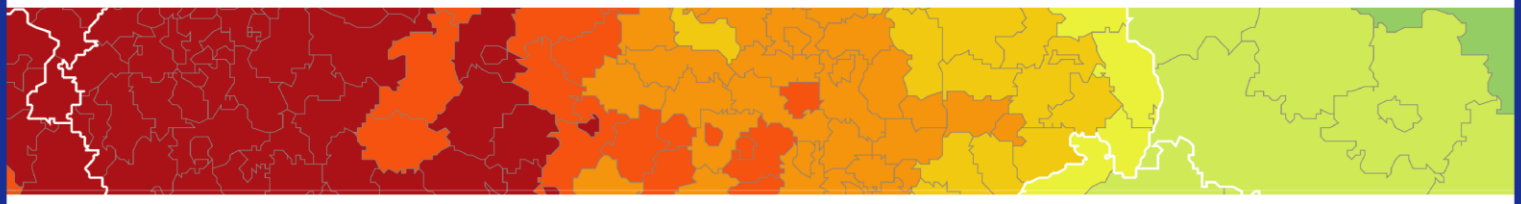
Source: Consortium, 2019.

UK-IE case study

Name	Source	Baseline Year	Reference Year	Assessment Method
No. of SMEs collaborating with research institutes	Programme document	2014	2018	qualitative
No. of SMEs declaring cross border exports in goods and services	Expert Workshop/ Programme Document	2014	2018	qualitative
Productivity/Growth in the region	Expert Workshop	2014	2018	qualitative
Creation of digital systems for CB workers/citizens and employers	Expert Workshop/ Programme Document	2014	2018	qualitative
Measurement of diversification in the regional economy	Expert Workshop/ Programme Document	2014	2016 2018	quantitative
No. of people undertaking innovation development workshops/training	Expert Workshop/ Programme Document	2014	2018	qualitative
No. of patent applications	Expert Workshop/Programme Document	2014	2018	qualitative
Measure of ecological status against WFD elements	Programme Document	2015	2018	quantitative
Research results at sites by monitoring agencies and universities	Programme Document	2014	2018	qualitative
Hectares of agricultural land in Incentive Scheme	Programme Document	2014	2018	qualitative
Shared water related activities in irrigated agriculture use of willow for bio remediation (willow supply chain)	Expert Workshop	2014	2018	qualitative
Qualitative feedback from "citizen scientists" volunteers	Expert Workshop	2014	2018	qualitative
No. organisations cooperating across borders post project completion	Expert Workshop/ Programme Document	2014	2018	qualitative
Decrease in chronic disease due to early intervention	Expert Workshop	2014	2018	qualitative
Decrease in prescribed medicines	Expert Workshop	2014	2016 2017	quantitative
Increase in social prescribing	Expert Workshop	2014	2018	qualitative
Increase in the no. robotic surgical tech-	Expert Workshop	2014	2018	qualitative

Name	Source	Baseline Year	Reference Year	Assessment Method
niques				
Increase in e-Health services	Expert Workshop	2014	2018	qualitative
No. children cared for near to home/family	Expert Workshop	2014	2018	qualitative
Increase in educational attainment	Expert Workshop	2014	2018	qualitative
Distance/accessibility to treatment centre	Expert Workshop	2014	2018	qualitative
Increase no of treatments made in patients home	Expert Workshop	2014	2018	qualitative

Source: Consortium, 2019.



ESPON 2020 – More information

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

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.