Interreg Baltic Sea Region

Monitoring of the state of institutional capacity in the region

UPDATE 2020

FINAL REPORT

05 November 2020

This report was prepared for the
Interreg Baltic Sea Region
Managing Authority / Joint Secretariat
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LIST OF ABBREVIATIONS

BSR	Baltic Sea Region
ERDF	European Regional Development Fund
ESCO	Energy service companies
ESF	European Social Fund
ETC	European Territorial Cooperation
EU	European Union
EUSBSR	European Union Strategy for the Baltic Sea Region
HACs	Horizontal Action Coordinators (in EUSBSR)
IB.SH	Investitionsbank Schleswig-Holstein
IBSR	Interreg Baltic Sea Region Programme
MA/JS	Managing Authority/ Joint Secretariat
MC	Monitoring Committee
PACs	Policy Area Coordinators (in EUSBSR)
PPP	Public private partnerships
R&D	Research and Development
R&I	Research and Innovation
S3	Smart Specialisation Strategies
SO	Specific Objective
TEN-T	Trans-European Transport Network

Executive summary

The aim of this report is to provide a milestone update of the Programme's result indicator contribution at the end of the programming period 2014-2020. The Interreg Baltic Sea Region Programme (IBSR) established that the most significant impact of the Programme in the region is its contribution to institutional capacity building. For monitoring the institutional capacity in the region, five dimensions of institutional capacity have been defined in the original study that established baseline values for all Specific Objectives (SO) of the Programme in 2015. Each of the five dimensions has been operationalised further with a different set of characteristics.

The methodology used for this update for the 2020 situation with regard to institutional capacities in the Baltic Sea Region follows the initial methodology defined by the baseline study in 2015[1] and the assessment done in 2018. Methodological coherence is needed to achieve comparability and a certain level of scientific robustness. Data gathering for the study took place between May and July 2020. The two methods used to collect relevant data from experts have been: i) an online survey of experts in different thematic policy fields, corresponding to the Specific Objectives of the Interreg Programme. A total of 174 invitations were sent out. The final number of complete and usable responses was 76 (response rate of 44%); ii) twelve in-depth interviews with experts were held in order to gain background knowledge on the situation of capacities in the different SOs and to validate the measurement based on the survey data.

As a general rule, experts responding to the survey were asked not to take into account in their judgement the possible consequences of the COVID-19 pandemic, as its impact on the institutional capacities is still unclear. In turn, the interviewed experts were asked if they had been influenced by the COVID-19 discussion in their assessment and if they thought that sanitary measures, lockdown or economic downturn would have any effects on the institutional capacities in the Baltic Sea Region. The answers showed that experts indeed did not take into account the effects of the pandemic in their assessment. Therefore, we can dismiss the possibility that the COVID-19 crisis has influenced the decrease in some values of institutional capacities.

In general, the development of the institutional capacities shows a more differentiated picture compared to the previous assessment of 2018. Overall, in four SOs, a progression of the capacities can be observed, while in one a stagnation. For seven SOs, a reduction or a slight negative tendency is seen which is contrasting the trend of 2018. As for the negative developments, the decrease is rather limited in most cases. Nevertheless, some SOs have moved further away from the target values for 2023.

The most significant progress in comparison to 2018 can be observed for SO 1.1 (Research and innovation infrastructure), followed by an increase for SO 2.3 (Energy efficiency), SO 3.1 (Interoperability

[1] Ramboll Management (2015): "Final Report: Analysis of projects in 2007-2013 and setting baselines and targets for the indicators 2014-2020".

of transport modes) and SO 3.2 (Accessibility of remote areas and areas affected by demographic change).

The situation for SO 3.4 (Environmentally friendly shipping) has remained stable, but the target value for 2023 remains far from reach. The most significant decreases can be observed for SO 1.2 (Smart specialisation) and SO 1.3 (Non-technical innovations). The reach of the target values for 2023 for these two SOs is deemed as most likely not possible. Only minor decreases were reported by the experts for SO 2.1 (Clear waters), SO 2.2 (Renewable energy), SO 2.4 (Resource-efficient blue growth), SO 3.3 (Maritime safety) and SO 3.5 (Environmentally friendly urban mobility).

The comparison of standard deviations shows that the overall spread of survey responses has increased in contrast to 2018. This evidences that the consistency between answers has decreased slightly since 2018. Nevertheless, the interviews and the analysis have confirmed that answers are still reliable and allow for some robust conclusions.

According to the analysis, the more negative trend for quite some SOs might have two main explanations: first, the changing political landscape in some countries, leading to a lack of continued support to capacity development, and, second, that BSR is reaching a 'glass ceiling' in the field of institutional capacities. It seems that the development of capacities has reached a certain maximum and is now hampered by structural and systemic factors, such as the difficulty to establish knowledge transfer between the public and the private sectors, the challenge to develop intersectoral approaches, the difficulty to attract private funding for larger initiatives or the difficulty to spread the positive benefits equally across the territory. Many experts highlight that generally the situation is at least satisfactory, sometimes even good, but further positive development cannot be observed due to inequalities between countries and different types of territories, e.g. positive developments are concentrated only in some countries or only in larger cities and capitals. The conclusion is that further increase in capacities is not easy to be achieved with a continuation of existing support mechanisms, i.e. more funding or more projects, but that it would require systemic and structural changes in existing policies, i.e. involvement of other departments, integrated strategies, capitalisation and wider distribution of knowledge over the territory, mainstreaming of successful pilot actions etc.

As for the method, it can be observed that this measurement tool has a large potential to be used not only for monitoring institutional capacities as result indicators of the IBSR but also for producing input for the analysis of institutional capacities in the Baltic Sea Region from a wider perspective. The tool already offers valuable insights into the evolution of capacities and needs for further development in different thematic fields in the BSR which can be of interest also to other relevant stakeholders, namely the EUSBSR presidency or PACs/HACs.

The chosen method is subject to shortcomings, of which two must be highlighted. First, reliability and validity of the results depend on the number of responses. The more responses can be analysed, the higher is the validity of the results. Low number of responses for individual fields have the effect that results are more likely to be biased by personal opinion. Second, external factors, such as the overall economic or political development, may influence experts' assessment on the development of the institutional capacity in the BSR. In view of this, the methodological process tried to foresee certain measures to reduce these shortcomings as much as possible.

With regard to any future use of the tool, the following recommendations have been defined:

- Establish a sufficiently large database of thematic experts (if possible, 20-30 experts per field).
- Try to define well the various thematic fields in which institutional capacities should be measured.
- Maintain post-survey interviews, so that the answers can be validated more thoroughly and external influences on the expert assessments can be made explicit.

Regarding the next programming period 2020+, the approach and this study offer a meaningful input on how to define, understand and measure/monitor relevant result indicators for ETC programmes. Having established a baseline in 2014/2015 and with regular updates, the measurement tool can be even more instrumental in the years after 2021, allowing for a long-term analysis.

1 Introduction

Institutional capacity building in the region is seen as the most significant impact of the IBSR. Following the European Commission's appeal for a stronger result orientation in the field of Cohesion Policy for the programming period 2014-2020, the Programme introduced a set of qualitative indicators to monitor the institutional capacity building in the region. In 2015, the complex task of defining and setting up the indicators as well as carrying out the first respective assessment of the status-quo was entrusted to Ramboll, which elaborated methodology, co-ordinated it with the MA/JS and performed the task accordingly[2]. The methodology is briefly described in section 1.2. The first update measurement of the institutional capacity was conducted in 2018[3]. The report at hand follows the same methodology as the assessment of 2018 and provides an overview of the situation of institutional capacity in 2020.

1.1 Objective

The aim of this report is to provide a milestone update of the Programme's result indicator contribution to the institutional capacity building at the end of the programming period.

It will assist verifying the Programme's present performance with regards to its goal of increased institutional capacity in the BSR. It also contributes to provide knowledge to the Programme concerning gaps and potential areas for more intense programme dedication in the upcoming programming period 2021-2027. The capacity measurement at this point will allow to assess the existing trends towards possible achievement of the result indicators. It might also indicate at certain risks for potential failures which perhaps could be still mitigated at the Programme's closure phase.

The present monitoring exercise is also useful to validate the methodological approach used in 2015 and the first assessment in 2018 in order to establish and monitor the overall institutional capacity in the BSR as an important indicator for Interreg results.

1.2 Background

To follow with the European Commission's direction towards a stronger result orientation in the field of Cohesion Policy for the programming period 2014-2020, a Cooperation Programme shall define result indicators to monitor the achievement of each specific objective of the Programme. The indicators would show the intended change in the region within a specific area or SO (e.g. Research and innovation infrastructure) and thereby would suggest the main expected effects of the intervention. As opposed to the output indicators, which only capture the actual operation supported with the funding, the result indicators relate to a wider target group in the programme region covering all potential beneficiaries of the interventions under one specific objective. Including all the potential beneficiaries as the reference for result indicators would not only capture effects that can be directly linked to the programme intervention but also those effects that are dependent on other factors outside the programme's

[2] Ramboll Management (2015): "Final Report: Analysis of projects in 2007-2013 and setting baselines and targets for the indicators 2014-2020".

[3] Spatial Foresight (2018): "Final Report Task 1.1: Monitoring the state of institutional capacity in the region. 17 August 2018."

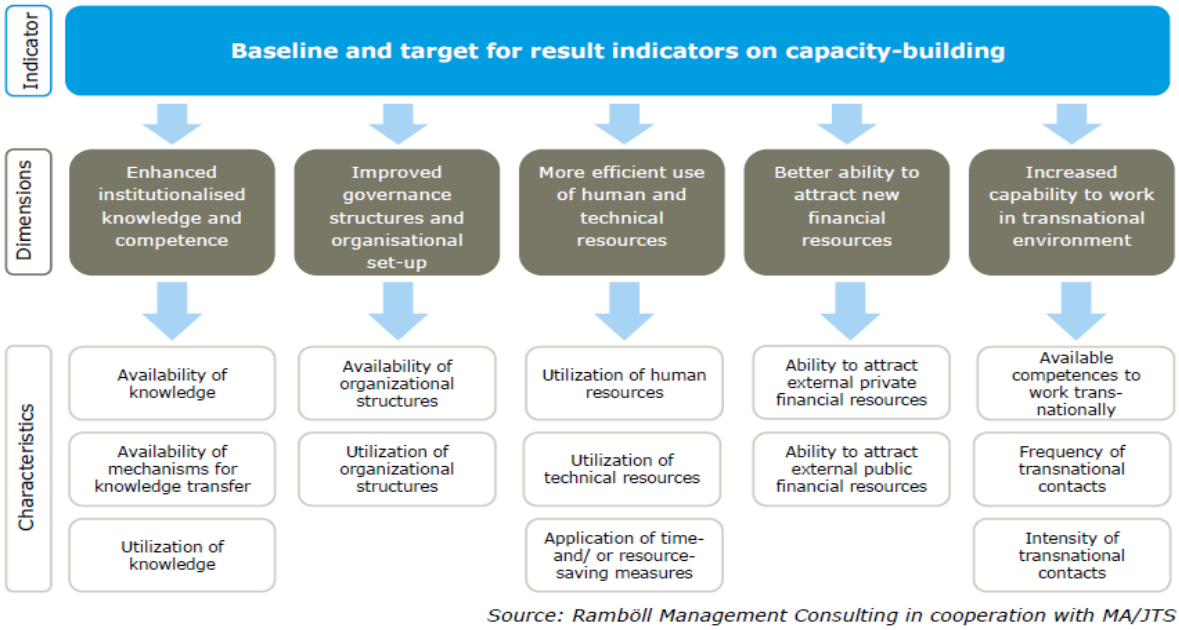
influence. Examples of such indicators could either be quantitative measures or more qualitative indicators, such as increased capacity within public administration or enhanced transnational cooperation.

In line with these requirements, the Interreg Baltic Sea Region Programme 2014-2020 established that the most significant impact of the Programme in the region is its **contribution to institutional capacity building**. For the monitoring of institutional capacity in the region, five dimensions of institutional capacity have been defined in the original study in 2015, which were tested in the first interim assessment of 2018:

i. Enhanced institutionalised knowledge and competence;
ii. Improved governance structures and organisational set-up;
iii. More efficient use of human and technical resources (databases, technical solutions, small infrastructure etc.);
iv. Better ability to attract new financial resources; and
v. Increased capability to work in transnational environment.

Each of the five dimensions has been operationalised further with a different set of characteristics. The aim of these characteristics is to specify what is understood by each of the five dimensions in the context of Interreg Baltic Sea Region.

Figure 1: Dimensions and characteristics of capacity-related result indicators



Source: Ramböll Management Consulting in cooperation with MA/JTS

In order to use the elaborated indicators as an effective instrument to monitor changes in the programme region, it was decided that the situation of the institutional capacity needs to be captured at the beginning, mid-term and at the end of the funding period.

In 2014/2015, a qualitative baseline and target values for result indicators were set according to a five-point scale developed within an external evaluation in order to ensure comparability of the results over the course of the funding period. The scale ranges from 'no capacity' (1) to 'full capacity (5).

A wide range of thematic experts of the Baltic Sea region were involved in defining baselines and targets. The experts represented the SOs and participating countries of the Programme. They were identified by the MC and were familiar with the target group(s) in their country and their SO without being directly involved in funded projects. The baseline and target values for the indicators were based on online surveys, complemented by interviews to reflect on the results of the survey and to fill in the remaining gaps.

In line with the European Commission's requirements the Cooperation Programme foresees to carry out respective measurements in the mid-term of the Programme, i.e. in 2018, upon finalizing the Programme in 2020 and in three years' time after its closure in 2023.

This report covers the 2020 update monitoring of the different thematic areas of the Programme.

1.3 Methodology used for the 2020 update

The methodology used for this update of the 2020 situation with regard to institutional capacities in the Baltic Sea Region follows the initial methodology as defined by the Baseline Study in 2015[4] and the first assessment conducted in 2018[5].

The methodological coherence is necessary to achieve comparability and a certain level of scientific robustness. This is even more important as the research requires a strict application of similar methodological guidelines to convert the expert opinions about the qualitative situation of institutional capacities into a more objective and semi-quantitative set of values.

Data gathering for the study took place between May and July 2020. The two methods used to gather relevant data from experts have been:

- An **online survey** of experts in different thematic policy fields, corresponding to the Specific Objectives of the Interreg Programme. A total of 174 invitations (2018: 126) were sent to experts to take part in the survey and the final number of complete and usable responses is 76 completed surveys (2018: 58 surveys) which represents a response rate of 44 % (2018: 46%).
- **In-depth Interviews** with twelve experts in order to gain background knowledge on the situation of capacities in the different SOs and to validate the measurement based on the survey data.

Both methods are presented more in detail below.

[4] Ramboll Management (2015): "Final Report: Analysis of projects in 2007-2013 and setting baselines and targets for the indicators 2014-2020".
[5] Spatial Foresight (2018): "Final Report Task 1.1: Monitoring the state of institutional capacity in the region. 17 August 2018."

Following the general purpose of assigning a set of "marks" to the present estimated status of the various aspects of the institutional capacity within the region and respective SO, a survey was sent out to a number of thematic experts in all of the IBSR participant states. They were asked to assess the progress of all public authorities towards a set of target capacity levels. Ratings from the experts were then collected and aggregated by theme.

The applied method is based on a repeatable and comparable procedure allowing for analysis of the situations at different points in time. As a result of the common work by MA/JS and the external consultant in 2015 and 2018, presently the Programme has a set of result indicators at its disposal. The underlaying assessment for 2020 allows to analyse the progress made since 2018 and in relation to these result indicators.

1.3.1 Survey

The experts have been proposed by the Member States and other Third Countries that take part in the Interreg Baltic Sea Region programme. In some SOs and countries with a low number of proposed experts, the consultants identified and added experts to the list on an ad-hoc basis.

Table 1: Survey responses by country and specific objective

Specific Objective	Total									
	DE	DK	EE	FI	LT	LV	NO	PL	SE	
1.1 Research and innovation infrastructure	1	1	1	0	0	1	0	0	0	**4**
1.2 Smart specialisation	1	0	1	0	0	1	1	1	0	**5**
1.3 Non-technological innovation	1	0	0	0	1	0	0	2	2	**5**
2.1 Clear waters	1	0	3	3	0	0	0	2	2	**11**
2.2 Renewable energy	1	0	1	0	1	2	0	1	0	**6**
2.3 Energy efficiency	0	0	1	0	0	1	0	1	1	**4**
2.4 Resource-efficient blue growth	1	0	1	1	1	0	0	2	0	**6**
3.1 Interoperability of transport modes	1	0	0	0	0	1	0	1	2	**5**
3.2 Accessibility of remote areas and areas affected by demographic change	1	1	1	0	0	1	1	1	1	**7**
3.3 Maritime safety	1	1	1	1	2	1	1	1	0	**9**
3.4 Environmentally friendly shipping	1	1	1	0	1	3	1	1	0	**9**
3.5 Environmentally friendly urban mobility	1	0	0	0	1	1	1	1	0	**5**
Total	**11**	**4**	**11**	**5**	**7**	**13**	**6**	**13**	**6**	**76**

Source: Spatial Foresight survey of thematic experts (May-August 2020)

The first survey was sent out to experts in 2015. They were asked to set the baseline values of the different aspects of institutional capacities, as well as target values for the year 2023, in a scale of 1 to 5 where 5 is an ideal level of capacity. The same methodology was used in the 2018 update and the present report in order to update the initial values and assess the progress.

A separate survey was designed for each SO and sent to the relevant experts. It also included the SO background information and baseline values from the 2015 study as well as the 2018 interim assessment for a reference. The survey was launched to all recipients on the 11th of May 2020. Responses were awaited until the 24th of June 2020. Due to low response rate for SOs 1.3 (Non-technical innovation) and 2.1 (Clear waters), the survey was re-opened for these two SOs during the second half of August (17th August – 02nd September).

A total of 174 invitations were sent to 148 experts. Experts designated for several SOs were invited to a maximum of two SOs so as to not overburden them and in order to increase the consistency of the answers provided between SOs. The final number of complete and usable responses is 76 surveys from 66 respondents (response rate of 44% counting on surveys and 45% counting on experts). The coverage is overall good, with an average coverage of 6.3 responses per SO (2018: 4.8), and 8.4 responses per Member State (2018: 5.8). The goal to reach a minimum of 4 expert responses per country and per SO has been achieved in all cases.

1.3.2 Interviews

Altogether twelve interviews have been conducted with thematic experts covering one or more SOs in order to obtain first-hand explanations behind the assessments of various dimension and characteristics of the institutional capacity within the BSR. The interviewed persons represent various public and non-governmental institutions of pan-European, national and regional level organisations active in the area of a respective specific objective. The list of persons interviewed is an annex to this report. The interviews were structured along the survey questions asking the interviewees to justify and explain the general numeric assessment and the development since 2018. Comments based on interviews are included in this report under each SO. They provide explanations and arguments for the development and proposals for potential measures.

1.4 Limitations and challenges

Even though it has been possible to apply the original methodology and to arrive at a set of comparable results, the methodology faces several challenges to get to meaningful results. It is only fair to identify these limitations and put the results of the measurement into context.

The first limitation is the low number of experts that answers the survey. The survey is more representative the more thematic experts participate. In general, the robustness and reliability of results tends to be higher with more responses per SO. The reliability suffers from a very low number of responses per SO (e.g. 1-3). With few responses, the margin of error increases and the role of external factors that might influence the final result becomes more important. It was planned from the beginning to overcome this obstacle by gathering a high number of experts in the database and to ensure a high number of responses per SO.

The second limitation refers to the influence of numerous external factors on the assessment of institutional capacities by thematic experts. These can include overall macro-economic factors, e.g. there might be a tendency to make a more positive assessment in a positive macro-economic-situation in a given country, or even personal factors, e.g. older experts might tend to assess the evolution differently compared to younger colleagues or the personal job situation might have an influence.

Especially in the context of the COVID-19 crisis, external factors and a general feeling of uncertainty might have caused the experts to project current factors into the future. In order to eliminate this effect, the experts were asked in the survey to assess the current situation (May 2020) and not their expectations for the future. During interviews we asked if experts had been influenced, nevertheless, by the COVID-19 discussion in their assessment and if they thought that sanitary measures, lockdown or economic downturn would have any effects on institutional capacities in the Baltic Sea Region. The answers showed that experts indeed did not take into account the effects of the pandemic in their assessment. Therefore, the possibility that the COVID-19 crisis has influenced the decrease in values of institutional capacities can be dismissed. To confirm this, the interviewees were asked about expected (long-term) effects of the COVID-19 crisis and usually there was neither a clear positive nor straight negative opinion. Some experts were rather positive ("*no effects on institutional capacities*"), others were more negative ("*if the markets will develop negatively, the governments will have less money to dedicate to further institutional capacities*"). Even the same single expert could have contradictory opinions ("*on the one hand, this has a positive effect, strengthening the communication and digital capacities, on the other hand, it might have negative effects*"). Overall, it can be confirmed that the experts, as a general rule, were not negatively influenced by the COVID-19 crises and its effects, even if some statements presented in the qualitative analysis might reflect a certain ambiguity and uncertainty about any medium- or long-term effects in the future.

External factors cannot be completely identified and, by no means, calculated and excluded from the expert assessment within the given methodology. The impossibility to identify and take into account all external factors, e.g. political priorities, COVID crisis, etc., limits the possibility to establish an analysis of causal inference between the Interreg Programme and the situation of institutional capacities in the Baltic Sea Region.

1.5 Recommendations to optimise the methodology and the analysis

In the framework of the present report, the recommendations for the methodology from the 2018 report were taken into account, as far as possible.

First of all, the analysis shows that the approach to assess institutional capacities in a given context with the help of thematic experts and the aggregation of their estimation of capacities in their field has proved to be useful and produces meaningful results. However, the methodology still presents some limitations and challenges (see the previous section 1.4) that still can be (partially) solved through methodological adjustments.

The interim update of 2018 provided certain recommendations for the 2020 update which were all taken into consideration or have been realised in the framework of the analysis:

- The database of experts was increased in the expectation to gather a higher number of responses in contrast to the interim update of 2018. By this, the number of useable answers has been increased from 58 in 2018 to 76 in 2020. For future updates, it would nevertheless still be necessary to increase the number of experts in the database to achieve higher reliability of individual results. This would require an additional effort in order to a) identify and add experts to the existing database and to b) update/refresh the database shortly before the next survey. It can be considered that the MA/JS would benefit in other areas from this database as it can also be used to communicate general programme information and results. Several reminders were sent by the Joint Secretariat as well as the service provider to remind the invited experts as well as the Monitoring Committee members in reminding the experts, in replying to the online survey.

- For the survey, the SOs were grouped into several thematic areas, for which separate online surveys were created. The experts received an introduction into every thematic area ensuring the respondents are aware of the content. Also, in order to avoid confusion and overlaps, it was provided that one expert was invited at most to reply for two SOs. In future assessments, this should be further optimised where possible through assigning one expert to only one SO (if possible), depending on the affiliation of experts to SOs collected in the database.

- The accompanying mail as well as the survey were held as neutral as possible, only referring to the Interreg Baltic Sea Region Programme where necessary. The accompanying text as well as the text in the survey were considerably simplified to make sure the experts have the context information of the respective SO but are not put off with too much information. Future monitoring should maintain simplified surveys and context information where possible.

- The recommendation for increasing the number of post-survey interviews has been discussed but not retained as a higher number of survey responses was achieved in contrast to the 2018 interim update. The higher number of responses increased the overall reliability of the results and thus, interviews were not required to complement missing survey responses on the numerical assessment of the survey. The interviews were used to validate the quantitative and qualitative assessments of the experts and to collect further qualitative data. Future upgrade of the methodology may still consider increasing the number of interviews to strengthen the analysis of cause-effect-relationships and to examine further the role of external factors. However, enlarging the role of interviews in the analysis might also lead to a bias on strong individual opinions. Thus, there is always a trade-off to be considered between increased reliability and coherence of the overall analysis and more bias through interviews.

Thus, most recommendations from the 2018 interim update were taken into consideration for the 2020 update.

It can be noted that this assessment tool has a large potential to be used not only for monitoring of institutional capacities as result indicators of the IBSR but also for producing input for the analysis of institutional capacities in the Baltic Sea Region from a wider perspective. The tool already offers valuable insights into the evolution of capacities and needs for further development in different thematic fields in

the BSR which can be of interest also to other relevant stakeholders, namely the EUSBSR presidency or PACs/HACs.

With regard to any further use of the tool, some limitations of the methodology might be overcome through the following improvements:

- Establish a sufficiently large database of thematic experts (if possible, 20-30 experts per field).
- Try to define well the various thematic fields in which institutional capacities should be measured.
- Maintain post-survey interviews, so that the answers can be validated more thoroughly.

With regard to the next programming period 2020+, the approach and this study offer a meaningful input on how to define, understand and measure/monitor relevant result indicators for ETC programmes. Having established a baseline in 2014/2015 and with regular updates, the measurement tool can be even more instrumental in the years after 2021, allowing for a long-term analysis.

2 Results of survey and interviews with thematic experts

The overall picture of the development since 2014 indicates a stalling of the institutional capacities in the BSR. The overall positive development, measured in 2018, could not be continued. In 2020, half of the SOs shows a decreasing institutional capacity (six SOs), five SOs show increasing values while one remained stable. This is a significant difference to the interim assessment (2018) where all but one SO showed increasing values.

Despite the overall decreasing tendency, the observed decreases for the SOs in 2020 are not of major relevance; the variance of the positive and negative trends observed in 2020 lies at 0.4 compared to the 2018 values (+0.2 / -0.2) with the exception of one SO (1.3 Non-technical innovation) where the decrease is at 0.4. The interviews confirmed that the decrease of values is not caused by the effects of the COVID-19 crisis in 2020, but that the trends are caused by other factors. The present report puts emphasis on structuring and reformulating the qualitative feedback of the experts in order to provide a deeper understanding on the reasons behind the observed changes.

Table 2: Overall update of institutional capacity baselines by SO

Capacities per Specific Objective	Baseline Value (2014)	Milestone (2018)	Milestone (2020)	Target Value (2023)	Comments
1.1 Research and innovation infrastructure	2.7	3.0	3.2	3.6	Slight increase, positive trend towards target value
1.2 Smart specialisation	2.9	3.4	3.2	3.8	Minor decrease, still higher than the baseline
1.3 Non-technological innovation	2.9	3.2	2.8	3.7	Significant decrease, lower than the baseline
2.1 Clear waters	2.7	2.9	3.0	3.6	Slight increase, positive trend
2.2 Renewable energy	2.4	2.8	2.7	3.5	Minor decrease, still higher than the baseline
2.3 Energy efficiency	2.6	3.0	3.1	3.5	Minor increase, positive trend towards target value
2.4 Resource-efficient blue growth	2.8	2.9	2.8	3.6	Minor decrease, value at baseline level
3.1 Interoperability of transport modes	2.3	2.5	2.6	2.9	Minor increase, positive trend towards target value

Capacities per Specific Objective	Baseline Value (2014)	Milestone (2018)	Milestone (2020)	Target Value (2023)	Comments
3.2 Accessibility of remote areas and areas affected by demographic change	2.8	2.8	2.9	3.8	Minor increase, slightly higher than baseline value
3.3 Maritime safety	2.5	2.8	2.7	3.4	Minor decrease, still higher than the baseline
3.4 Environmentally friendly shipping	2.9	3.2	3.2	3.8	Constant, positive trend towards target value, stable since 2018
3.5 Environmentally friendly urban mobility	2.7	3.3	3.2	3.5	Minor decrease, still higher than the baseline

Source: Spatial Foresight survey to thematic experts (May-August 2020)

The most significant progress in comparison to 2018 can be observed for SO 1.1 (Research and innovation infrastructure) with an increase of 0.2, followed by an increase of 0.1 for SO 2.1 (Clear waters), SO 2.3 (Energy efficiency), SO 3.1 (Interoperability of transport modes) and SO 3.2 (Accessibility of remote areas and areas affected by demographic change). All SOs but the latter remain within reach of the target value by 2023.

The situation for SO 3.4 (Environmentally friendly shipping) has remained stable. Without progression, the target value for SO 3.4 remains far from reach.

The most significant drop can be observed for SO 1.3 (Non-technical innovation) with a decrease of 0.4, falling below the baseline value from 2014, and SO 1.2 (Smart specialisation) with a decrease of reported average value by 0.2. The reach of the 2023 target values for these two SOs is deemed as no longer feasible. Minor decreases by 0.1 were reported by the experts for SO 2.2 (Renewable energy), SO 2.4 (Resource-efficient blue growth), SO 3.3 (Maritime safety) and SO 3.5 (Environmentally friendly urban mobility). Of those four SOs, it remains only for the latter realistic to reach the 2023 target value.

The comparison of standard deviations shows that the overall spread of survey responses has increased in contrast to 2018. With a mean standard deviation of 0.9 and 1.4 reported for 2018, the mean for 2020 lies at 1.1 whilst the maximum remained stable at 1.4 for any given question. This shows that the consistency between answers has decreased since 2018, reflecting slightly increasing inequality between countries and territories. This observation is confirmed by qualitative statements in the survey and the in-depth expert interviews.

The detail of survey results is presented in an annex to this report. The following chapters present the detailed analysis per SO.

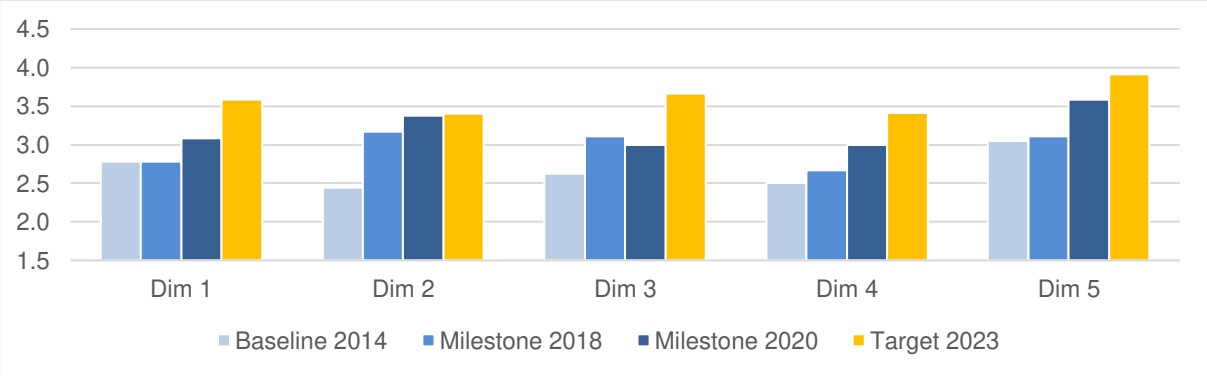
2.1 Specific objective 1.1: Research and innovation infrastructure

Overview capacities	Baseline Value (2014)	Milestone (2018)	Milestone (2020)	Target Value (2023)	Comments
1.1 Research and innovation infrastructure	2.7	3.0	3.2	3.6	Slight increase, positive trend towards target value

Source: Spatial Foresight survey to thematic experts (May-August 2020)

Surveys for SO 1.1 "Research and innovation infrastructure" have been answered by four respondents from four different countries. One interview was conducted with an expert for the respective SO. The overall estimated score of administrative capacity sees a modest increase with respect to the milestone in 2018, however the pace of the progress is considered as most likely insufficient in order to meet the target value of 3.6 in 2023 (see Figure 2). All dimensions except dimension 3 "More efficient use of human and technical resources" have further improved, while dimension 2 "Improved governance structures and organizational set-up" has seen an increase and is already at the level of the target value. Dimension 5 "Increased capacity to work in transnational environment" continues to develop at a good pace and is likely to reach target value in 2023.

Figure 2: Development of values for every dimension of SO 1.1 Research and innovation infrastructure



Source: Spatial Foresight survey to thematic experts (May-August 2020)

Table 3: Baseline and updated values summary for SO 1.1 Research and innovation infrastructure[6]

		Estimated value (average)	% increase / progress toward target
Overall	Baseline 2014	2.7	
	Milestone 2018	3.0	
	Milestone 2020	3.2	Change +6.7%
	Target 2023	3.6	Progress 56%
Dimension 1: Enhanced institutionalised knowledge and competence	Baseline 2014	2.8	
	Milestone 2018	2.8	
	Milestone 2020	3.1	Change + 10.7%
	Target 2023	3.6	Progress 38%
Dimension 2: Improved governance structures and organizational set-up	Baseline 2014	2.4	
	Milestone 2018	3.2	
	Milestone 2020	3.4	Change +6.2%
	Target 2023	3.4	Progress 100%
Dimension 3: More efficient use of human and technical resources	Baseline 2014	2.6	
	Milestone 2018	3.1	
	Milestone 2020	3.0	Change -3.2%
	Target 2023	3.7	Progress 36%
Dimension 4: Better ability to attract new financial resources	Baseline 2014	2.5	
	Milestone 2018	2.7	
	Milestone 2020	3.0	Change +11.1%
	Target 2023	3.4	Progress 56%
Dimension 5: Increased capability to work in transnational environment	Baseline 2014	3.1	
	Milestone 2018	3.1	
	Milestone 2020	3.6	Change +16.1%
	Target 2023	3.9	Progress 67%

Source: Spatial Foresight survey to thematic experts (May-August 2020)

[6] **"Change"** describes the change of the numerical assessment measured in 2020 compared to the numerical assessment of 2018 ($Change = \frac{(Milestone\ 2020 - Milestone\ 2018)}{Milestone\ 2018}\ x\ 100$).

"Progress" describes the status of advancement in achieving the 2023 target value, based on the baseline defined in 2014 and the milestone measured in 2020 ($Progress = \frac{(Milestone\ 2020 - Baseline\ 2014)}{(Target\ 2023 - Baseline\ 2014)}\ x\ 100$).

Detailed comments from survey and interviews

Dimension 1: Enhanced institutionalised knowledge and competence

According to the survey and interviewees, availability of knowledge and competence is at a satisfactory level all over the BSR. The value of this dimension has increased by 10.7% since 2018. The availability of knowledge is considered to be slightly in a better shape (assessments between satisfactory and good) than the availability of mechanisms for knowledge transfer and the utilisation of knowledge (both have received assessments between basic and good).

Experts deem that especially the mechanisms for knowledge transfer are in many countries still at a basic level. About the availability of knowledge an expert proposes to do more "*on cluster collaboration on a broader and more ambitious scale*" in order to further increase the capacities in the knowledge field.

Dimension 2: Improved governance structures and organisational set-up

As for the organisational set-up, research and innovation structures are in place and functioning. Experts consider that the main stakeholders are known and there are regular contacts with and between them. For this dimension, the increase since 2018 has been 6.2%. Thus, the target value for 2023 has been already achieved (3.4). The experts assess the availability of organisational structures as good, while their utilisation is rather satisfactory and can be still improved. This is also thanks to the smart specialisation strategies which have helped to have a similar organisational set-up for research and innovation in all territories in the EU, including the BSR. The experts had no further comments or explanations for the developments in this area.

Dimension 3: More efficient use of human and technical resources

Experts consider that there are sufficient and well-trained human resources all around the BSR. The assessment by experts is that the situation is satisfactory with regard to all three criteria. However, the assessment has slightly decreased since the last measurement in 2018. The value shows an important improvement compared to 2014, but still needs to increase to reach the target set for 2023.

Human and technical resources for research and innovation are in place, according to experts. One expert mentions that especially in the field of efficiency and time- and resource-saving measures "*more can be achieved, for example by making more use of video conferences*".

Dimension 4: Better ability to attract new financial resources

The ability to attract public financial resources is seen as overall well-developed, there are still many challenges with attracting funds from the private sector. Some parts of the region are more advanced in this; however, in general the ability to attract new financial resources from the private sector is seen as rather limited, when compared to the attraction of public funds. However, on average the assessment of this dimension has increased by 11.1% since 2018. There is clear tendency towards achieving the target set for 2023.

An expert mentioned that "*the levels of funding of research and innovation, and implementation and priorities in research policies are very different in the Baltic Sea Region countries*." The interview confirmed that the overall assessment of this dimension in the BSR possibly cannot be more positive than it is now, as long as important inequalities between the countries exist that limit the overall BSR development.

Dimension 5: Increased capability to work in transnational environment

There are good skills and competences for working in a translational environment all over the BSR. The institutions usually are very willing to join international projects and regularly use such opportunities. The intensity of co-operation though can be deemed as satisfactory but can be still improved. Overall, this dimension is the best developed in the field of research and innovation. Since 2018, the value has increased by 16.1%.

Nevertheless, experts highlight that there is still a need for "*closer cooperation within each of the states and between BSR countries*". "*There has to be intersectoral cooperation in place as well*". Another expert highlighted that "*on political level a strong common commitment is needed. Institutions in BSR need a clear strategic basis, provided by the Member States in BSR*."

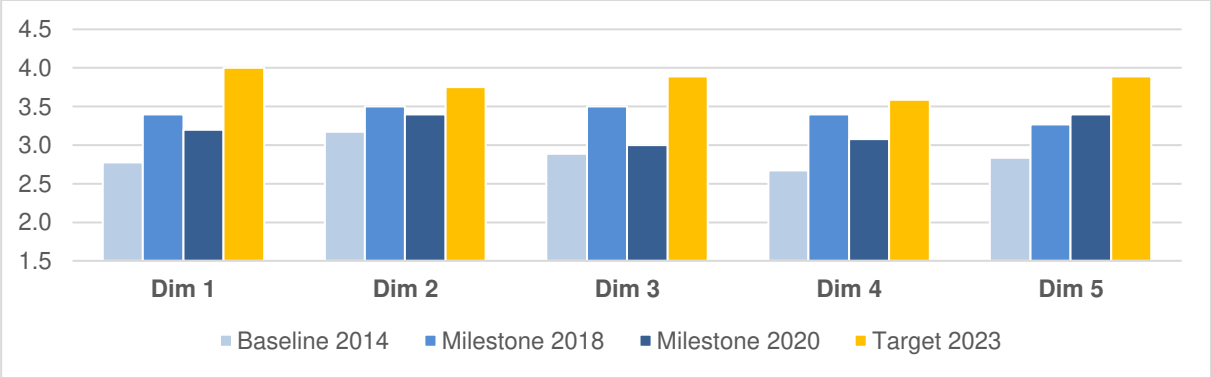
2.2 Specific objective 1.2: Smart specialisation

Overview capacities	Baseline Value (2014)	Milestone (2018)	Milestone (2020)	Target Value (2023)	Comments
1.2 Smart specialisation	2.9	3.4	3.2	3.8	Minor decrease since 2018, still higher than the baseline

Source: Spatial Foresight survey to thematic experts (May-August 2020)

Surveys for SO 1.2 "Smart specialisation" have been answered by five respondents in five countries. Two interviews were conducted with experts for the respective SO. Overall, there has been a little decrease in capacities for smart specialisation, and the final target for 2023 seems to be no longer attainable. Nearly all individual dimensions show a decrease with dimension 3 ("More efficient use of human and technical resources") reporting the most significant drop (3.4 in 2018 to 3.0 in 2020). On the contrary, dimension 5 ("Increased capability to work in a transnational environment") shows a modest progression but remains far away from the level of the 2023 target value.

Figure 3: Development of values for every dimension of SO 1.2 Smart specialisation



Source: Spatial Foresight survey to thematic experts (May-August 2020)

Table 4: Baseline and updated values summary for SO 1.2 Smart specialisation

		Estimated value (average)	% increase / progress toward target
Overall	Baseline 2014	2.9	
	Milestone 2018	3.4	
	Milestone 2020	3.2	Change -5.9%
	Target 2023	3.8	Progress 33%
Dimension 1: Enhanced institutionalised knowledge and competence	Baseline 2014	2.8	
	Milestone 2018	3.5	
	Milestone 2020	3.2	Change -5.9%
	Target 2023	4.0	Progress 33%
Dimension 2: Improved governance structures and organizational set-up	Baseline 2014	3.2	
	Milestone 2018	3.5	
	Milestone 2020	3.4	Change -2.9%
	Target 2023	3.8	Progress 33%
Dimension 3: More efficient use of human and technical resources	Baseline 2014	2.9	
	Milestone 2018	3.4	
	Milestone 2020	3.0	Change -14.3%
	Target 2023	3.9	Progress 10%
Dimension 4: Better ability to attract new financial resources	Baseline 2014	2.7	
	Milestone 2018	3.4	
	Milestone 2020	3.1	Change -8.8%
	Target 2023	3.6	Progress 44%

		Estimated value (average)	% increase / progress toward target
Dimension 5: Increased capability to work in a transnational environment	Baseline 2014	2.8	
	Milestone 2018	3.3	
	Milestone 2020	3.4	Change +3%
	Target 2023	3.9	Progress 55%

Source: Spatial Foresight survey to thematic experts (May-August 2020)

Detailed comments from survey and interviews

Dimension 1: Enhanced institutionalised knowledge and competence

According to the survey and interviewees, availability of knowledge and competence is overall at a satisfactory level in the BSR region. "*The BSR has a wide knowledge base to be approached*". However, the value of this dimension has decreased by almost 6% since 2018. The availability of knowledge and mechanisms for its transfer is considered to be rather good (assessments between satisfactory and good).

As a limiting factor, experts mention that practitioners are not easy to reach and to be integrated into knowledge network. Another expert highlights the uneven availability of knowledge across BSR and the uneven utilisation of the knowledge. In general, the utilisation of knowledge is considered to be at a satisfactory level with room for improvement. The experts acknowledge the availability of knowledge in BSR and praise the variety of mechanisms for knowledge transfer. At the same time, some experts mention the "*uneven distribution and uneven absorptive capacities between regions*". Some experts find that "*relations between R&D units and businesses are very poor*".

Mechanisms for knowledge transfer are seen as the least developed capacity in this dimension. Knowledge transfer seems to be hampered by unbridged gaps between research and businesses, especially in some regions and countries. One expert also thinks that "*the knowledge still needs to be further spread within the organisations before it can be more effectively put to use*". Another expert sees still "*insufficient mechanisms for knowledge transfer*" and a need for more and wider activities to stimulate the transfer of knowledge.

Dimension 2: Improved governance structures and organisational set-up

As for the organisational set-up, structures are in place and functioning. The assessment of the situation is almost unchanged compared to 2018 and slightly better than in 2014. The experts assess the availability of organisational structures for smart specialisation and their utilisation as satisfactory. This is also thanks to the Smart Specialisation Strategies (S3) which have helped to have a similar organisational set-up for innovation strategies in all territories in the EU, including BSR. However, one expert highlights the different interests by different stakeholder groups: "*There is a lack of networks and platforms for knowledge exchange between different stakeholders*".

The interviewee confirms that there are barriers to further positive development of capacities, in particular, the uneven political commitment at regional and national level in the different BSR regions and countries to improve and build up more structures and mechanisms related to innovation. There might be new stimulus for improvement with the new/updated S3 strategies to be presented in 2020 and the upcoming years, as they are deeply linked to the EU Cohesion Policy funding periods.

Dimension 3: More efficient use of human and technical resources

The level and efficiency of human and technical resources in BSR is assessed as satisfactory. The assessment has considerably decreased since the last measurement in 2018 and has returned almost to the level of 2014. Especially, the human and technical resources have not increased as expected.

The experts think that S3 strategies were an important step forward from 2015 and the years after, but then recently, little has been done on really implementing the strategies or increasing resources or capacities in line with the proposed entrepreneurial discovery processes. Another negative aspect is the uneven distribution of resources across the territory. Smart specialisation resources are highly concentrated in capital and larger cities, with almost no effect on peripheral territories. This seems to be even the case in a small country like Estonia, but possibly much higher in other countries. Therefore, these might be the reasons for a slight decrease in capacities. Other aspects that according to the experts have influenced the assessment are: "*specialists are not always available*"; "*databases presenting practical examples would be appreciated*"; "*very basic time- and/or resource-saving measures are applied*"; "*better use of digital tools would be appreciated*".

Dimension 4: Better ability to attract new financial resources

The ability to attract public financial resources is seen as overall intermediately satisfactory, but the situation of availability of public funds is assessed as much better than the rather basic situation of attracting funds from the private sector. The situation is still considerably better than in 2014 but has worsened since the 2018 assessment.

The experts again think that the S3 strategies were an important step forward, though recently not much has been done to actually implement them by increasing resources or capacities in line with the proposed entrepreneurial discovery processes. Not much additional financial resources have been mobilized.

Again, the uneven distribution of resources across the territory is a weakness that still persists, as mentioned before. Uneven capacities to raise private funds have been mentioned as a constrain. The experts assess the availability and ability to access public funds for smart specialisation as positive, but with a need to further build on public-private partnerships. Almost all experts highlight the need to work further on the mobilisation of private funding and public-private partnerships. The EU funds should not be the only funding source of the S3 strategies as they can be reduced significantly in the future or cease to exist at some point.

Dimension 5: Increased capability to work in transnational environment

There are good skills and competences for working in a translational environment all over BSR. The experts' assessment of the situation is slightly more positive than in 2018 and much better than in 2014. The progress towards the target value is clear. The experts praise the good skills and competences as well as the high interest for transnational cooperation on smart specialisation, especially at the regional level. Frequency of international cooperation on S3 is growing constantly. With regard to the quality and intensity of cooperation, there is the wish for more transnational exchange and collaboration not only between the institutions but also practitioners.

Experts see that there is still a need to develop this field and create and distribute good practices. One expert highlights that cooperation is so far "*more formal between organisations than true transnational collaboration*". Especially on the topic of smart specialisation there is a "*keen interest in improving how to pursue the use and implementation of S3*".

2.3 Specific objective 1.3: Non-technological innovation

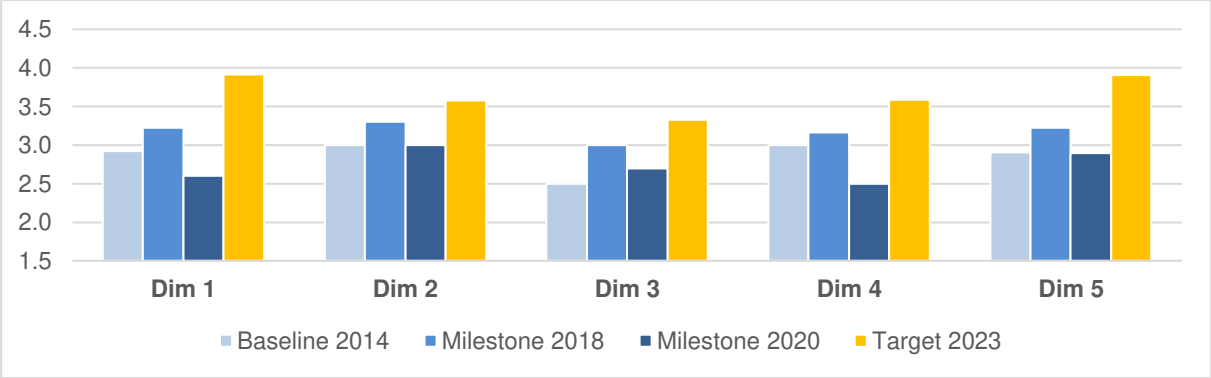
Overview capacities	Baseline Value (2014)	Milestone (2018)	Milestone (2020)	Target Value (2023)	Comments
1.3 Non-technological innovation	2.9	3.2	2.8	3.7	Significant decrease, negative trend, lower than the baseline

Source: Spatial Foresight survey to thematic experts (May-August 2020)

Surveys for SO 1.3 "Non-technological innovation" were answered by five experts in five countries. One interview was conducted with an expert for the respective SO.

The overall score shows a decrease below the baseline value of 2014, which would render reaching the target value by 2023 difficult. The development of institutional capacities between dimensions shows a uniform picture: whilst dimensions 1 ("Enhanced institutionalised knowledge and competence") and 4 ("Better ability to attract new financial resources") show the most significant decreases, all other dimensions report a decrease by 0.3. With these developments, it becomes difficult to reach the target values for all dimensions of this SO until 2023. In fact, only for Dimension 3 a progress can be noted compared to the situation in 2014. For Dimensions 1 and 4, there is even a retrogression behind the situation established as baseline in 2014.

Figure 4: Development of values for every dimension of SO 1.3 Non-technological innovation



Source: Spatial Foresight survey to thematic experts (May-August 2020)

Table 5: Baseline and updated values summary for SO 1.3 Non-technological innovation

		Estimated value (average)	% increase / progress toward target
Overall	Baseline 2014	2.9	
	Milestone 2018	3.2	
	Milestone 2020	2.8	Change -12%
	Target 2023	3.7	Progress -8%
Dimension 1: Enhanced institutionalised knowledge and competence	Baseline 2014	2.9	
	Milestone 2018	3.2	
	Milestone 2020	2.6	Change -19.3%
	Target 2023	3.9	Progress -32%
Dimension 2: Improved governance structures and organizational set-up	Baseline 2014	3.0	
	Milestone 2018	3.3	
	Milestone 2020	3.0	Change -9.1%
	Target 2023	3.6	Progress 0%
Dimension 3: More efficient use of human and technical resources	Baseline 2014	2.5	
	Milestone 2018	3.0	
	Milestone 2020	2.7	Change -10%
	Target 2023	3.3	Progress 24%
Dimension 4: Better ability to attract new financial resources	Baseline 2014	3.0	
	Milestone 2018	3.2	
	Milestone 2020	2.5	Change -21.9%
	Target 2023	3.6	Progress -83%

		Estimated value (average)	% increase / progress toward target
Dimension 5: Increased capability to work in transnational environment	Baseline 2014	2.9	
	Milestone 2018	3.2	
	Milestone 2020	2.9	Change -10%
	Target 2023	3.9	Progress 0%

Source: Spatial Foresight survey to thematic experts (May-August 2020)

Detailed comments from survey and interviews

Dimension 1: Enhanced institutionalised knowledge and competence

According to the survey and interviewees, availability of knowledge and competence is at a rather basic level. The assessment shows lower scores than in 2018 and even as in 2014. It appears as if the experts are more critical now than before not so much on the availability and transfer of knowledge but, in particular, on the utilisation of knowledge.

One expert mentions that the availability of knowledge is not a problem, however, "*a lot of material has been generated, but it is hard to locate the source to find it*". Another expert mentions that the use of knowledge is not easy as "*often target groups are not reached, the knowledge needs to be adapted to regional conditions and the final target group needs to be coached to fully exploit and implement the knowledge*". Another expert highlights that there is willingness to adapt but the knowledge on how to implement change management in practice hinders improvements in this dimension.

Dimension 2: Improved governance structures and organisational set-up

As for the organisational set-up, the availability and use of structures for non-technological innovation is assessed as satisfactory by the experts. The assessment shows slightly worse figures than in 2018 at the level of the baseline value from the 2014 assessment. The experts assess the availability of organisational structures as rather good, while their utilisation is seen as only basic to satisfactory and could be still improved. Experts mention that "*organisations are quite responsive and open to meet and discuss*". However, the use of the existing structures and organisations seems to be still a weak point that can be improved.

Dimension 3: More efficient use of human and technical resources

The human and technical resources for non-technological innovation are seen as satisfactory in BSR. The assessment by the experts is lower as in 2018 but still better than the situation in 2014. Use of human resources has received a slightly better assessment than the effective use of technical resources. Nevertheless, as one of the respondents mentions, the experts in the different fields of this SO are only poorly interconnected. The availability of efficient working methods is at a somewhat satisfactory level. In the interview, the expert did observe a stagnation or even a very small improvement since 2018 in this dimension. The expert sees a need for a greater emphasis on more efficient working

methods like remote working. Today, "*the acceptance of new ways of working and ways to ensure the workflow is poor*".

Apparently with regard to existing (IBSR) projects, one expert states: "*Often the employees in the institutions need more training on the spot to adapt the newly developed measures by projects and implement it in their regions; it is not sufficient to develop guidelines, websites, documents and share them among all partner institutions".*

Dimension 4: Better ability to attract new financial resources

The ability to attract public financial resources is seen as non-satisfactory by the experts, while availability of funds from the private sector is assessed as basic. On average the assessment of this dimension has decreased by more than 21% compared to 2018 and is much lower than the 2014 assessment. In the interview, the expert did see a stagnation rather than a decrease since 2018. As a reason for the stagnation, the expert highlighted an unbalanced level of ability to raise additional funds (in particular, private funds) and a specifically low ability to raise funds (public and private) in the Eastern Baltic countries.

Other comments in the survey referred to the specific challenges for many organisations active in this field, i.e. smaller organisations, social service providers, NGO, social enterprises, welfare organisations, not-for profit organisations that sometimes have problems to raise sufficient internal resources to match public funding or to start activities without advance payments taking into account long periods of time between expenditure and re-payment.

Dimension 5: Increased capability to work in transnational environment

The capability to work in a transnational environment is assessed by the experts as decreasing. The value for this dimension has fallen back to the 2014 baseline level. In contrast to this negative development, one expert highlights successful activities to improve the capacity to work in transnational environment: "*in particular in the new member states, the networking increased, the knowledge of English as a common language is much stronger recently*." Nevertheless, as one expert mentions, capacities of many players are not sufficient to undertake the role of a lead partner in a co-funded project.

2.4 Specific objective 2.1: Clear waters

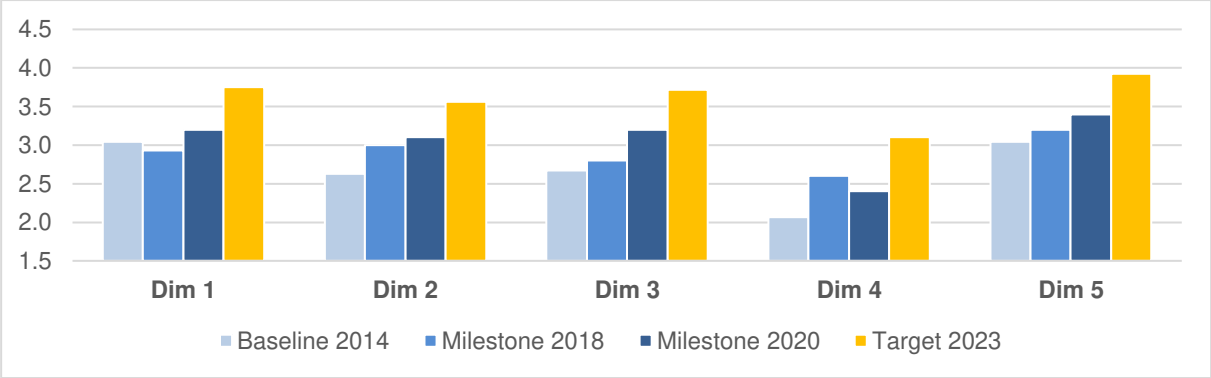
Overview capacities	Baseline Value (2014)	Milestone (2018)	Milestone (2020)	Target Value (2023)	Comments
2.1 Clear waters	2.7	2.9	3.0	3.6	Slight increase, positive trend

Source: Spatial Foresight survey to thematic experts (May-August 2020)

Results for SO 2.1 "Clear waters" are based on responses from eleven experts in five countries. The overall score for clear waters shows an increase in institutional capacity, moving the target value closer to reach in 2023. Only dimension 4 ("Better ability to attract new financial resources") shows a negative

development. Nevertheless, compared to 2018, the progress in this SO is so slow that it seems unlikely to reach the target value for all remaining dimensions until 2023.

Figure 5: Development of values for every dimension of SO 2.1 Clear waters



Source: Spatial Foresight survey to thematic experts (May-August 2020)

Table 6: Baseline and updated values summary for SO 2.1 Clear waters

		Estimated value (average)	% increase / progress toward target
Overall	Baseline 2014	2.7	
	Milestone 2018	2.9	
	Milestone 2020	3.0	Change 3.4%
	Target 2023	3.6	Progress 34%
Dimension 1: Enhanced institutionalised knowledge and competence	Baseline 2014	3.0	
	Milestone 2018	2.9	
	Milestone 2020	3.2	Change 9.1%
	Target 2023	3.8	Progress 22%
Dimension 2: Improved governance structures and organizational set-up	Baseline 2014	2.6	
	Milestone 2018	3.0	
	Milestone 2020	3.1	Change 3.3%
	Target 2023	3.6	Progress 51%
Dimension 3: More efficient use of human and technical resources	Baseline 2014	2.7	
	Milestone 2018	2.8	
	Milestone 2020	3.2	Change 14.3%
	Target 2023	3.7	Progress 51%
Dimension 4: Better ability to attract new financial resources	Baseline 2014	2.1	
	Milestone 2018	2.6	

		Estimated value (average)	% increase / progress toward target
	Milestone 2020	2.4	Change -7.7%
	Target 2023	3.1	Progress 32%
Dimension 5: Increased capability to work in transnational environment	Baseline 2014	3.0	
	Milestone 2018	3.2	
	Milestone 2020	3.4	Change 6.3 %
	Target 2023	3.9	Progress 40%

Source: Spatial Foresight survey to thematic experts (May-August 2020)

Detailed comments from survey and interviews

Dimension 1: Enhanced institutionalised knowledge and competence

As regards the development of enhanced knowledge and competence in BSR in the field of clear waters, according to the comments by two experts in the survey the slightly worsening development of the institutional capacity can be explained partially by the very complex and inter-disciplinary nature of the issue. Despite the body of knowledge progressing in this field because of long-term monitoring, e.g. through HELCOM (HOLAS), the experts assessed that it remains unclear how solutions and ideas could be adopted and influence the relevant organisations. This might be partially explained by an observed lack of awareness from relevant organisations, be it city administrations and decision-makers, economic operators or scientists. Fragmentation of knowledge hampers its effective application, as explained by an expert: "*Knowledge is applied to limited extent for policy implementation due to a silos structure of policy making*". Transferring solutions to national and regional contexts requires practical collaboration across institutional, national and language borders, as mentioned by one expert. Other experts observed a differentiation in knowledge, with much knowledge available for phosphorous and nitrogen pollution, less knowledge observed on hazardous substances, micropollutants, germs, viruses and antibiotics. "*Concerning eutrophication, the knowledge is much better than for chemicals*".

Unequal distribution of effective mechanisms for knowledge transfer in BSR is the reason for a lower valuation, as one expert declares: "*My assessment "5" (very good capacity) describes the situation in Finland. Mechanism for knowledge transfer and cooperation at the level of BSR exists e.g. via EUBSR and HELCOM platforms but with lower level of effectiveness. Thus, my overall assessment for BSR is "4" (good capacity)*".

Dimension 2: Improved governance structures and organisational set-up

As regards the improvement of governance structures and organisational set-up in support of the field of clear waters, the experts see overall a satisfactory or even a good situation in BSR. However, they note a lack of cooperation routine in the region. The existing platforms appear to be frequently used for collaboration and exchanges and the organisations are evaluated as responsive and open for discussions; however, they may fail to reach out to a broader target group beyond the experts that

already cooperate on the topic of clear water. The uptake of such platforms thus appears to be limited. Some experts even refer to an ineffective organisational integration within one country, between the experts that work at national level and the ones at transnational level.

The situation of networks and platforms is seen as good, but not good enough. As one expert states: "*Baltic sea wide structures such as networks and platforms have evolved for e.g. pharmaceuticals and taking for chemical group of PFAS. The situation is getting better but could be better*."

Thus, numerous platforms exist, but are not always effectively used for regular exchanges, which would be required. Also, language barrier is mentioned by one expert as hindering factor for a broader cooperation.

Dimension 3: More efficient use of human and technical resources

The development of more efficient use of human and technical resources was evaluated as significantly improving by the experts in comparison to 2018. Overall, experts see many efforts conducted in BSR that contribute to an improvement of the situation, e.g. greater use of various communication means, platforms and webinars. One expert mentions that the informal peer-to-peer exchanges between stakeholders could be enhanced, which would result in a long-term commitment of stakeholders towards a better use of human and technical resources in BSR. One expert highlighted that the incentivising factor to improve the use of human and technical resources in BSR is the external EU funding. With limited intrinsic motivation for change, it would be more difficult to convince stakeholders towards implementing changes.

Dimension 4: Better ability to attract new financial resources

As regards the ability to attract new financial resources, the situation has been evaluated as slightly worse in contrast to 2018. In this dimension, the qualitative answers of experts hint at a good level of availability of public funding, but a rather basic situation with regards to private funding.

According to experts, grants are available and frequently used by stakeholders to fund research and work in this field, whilst such grants could be more targeted to the actual needs of the field. In general, public funds appear to be available, especially in countries such as Germany, Sweden and Finland. One expert comments that availability of public funding is good, but the constraints to attract and spend funding can be a lack of political support, limited local financial resources and a lack of clear regulation for innovative activities. Another constraining element identified by three experts is the limited availability and interest of private funding sources. A low degree of available funding for measures to improve water quality in the Baltic sea was also mentioned by three experts. As such, one of the biggest challenges appears to be motivating private investments to contribute to improving the situation in this field.

Dimension 5: Increased capability to work in transnational environment

As regards the development of the capability to work in transnational environment, the situation was deemed as improved by all experts. Thanks to Interreg and other EU funding instruments, the situation improves, not least to the platform structure of projects, that enables exchanges between involved

stakeholders. Also, the transnational structures like HELCOM are evaluated as supporting the transnational cooperation of stakeholders.

Limitations for further improvements have been named. One expert mentions that "*especially public authorities and those units not responsible for international/ EU cooperation do only have very limited transnational contacts*". Similar to this, another expert raises that the "*main challenge is the lack of understanding/ knowledge of the institutional landscape in and cultural characteristics of other countries*." Moreover, again language has been named as another obstacle for more transnational collaboration. Room for improvement was identified by two experts on allowing more staff exchanges and the sharing of technical and other resources in the field of clear waters and also to better market activities and possibilities towards not yet involved stakeholders in the field. Another element, that might improve the situation under this dimension is spreading knowledge on institutional settings, landscapes as well as cultural characteristics among experts involved in transnational cooperation. This could be enhanced by increasing staff mobility, according to two experts.

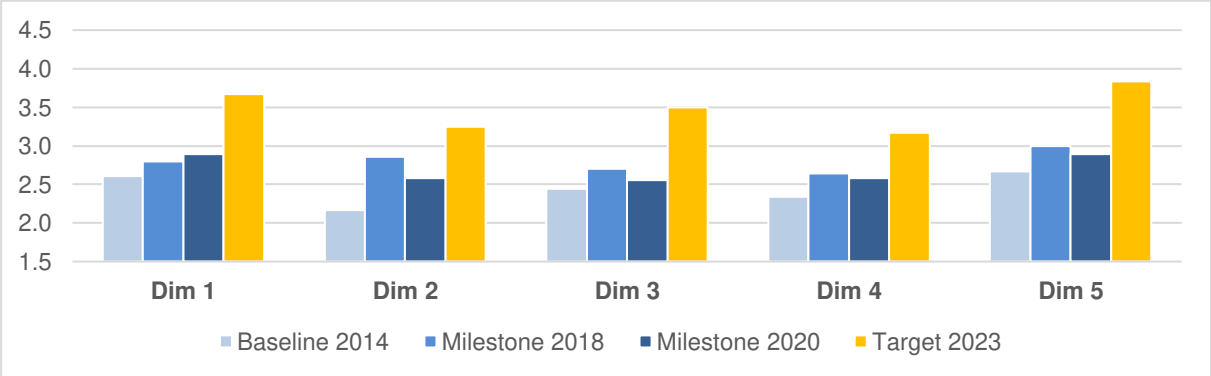
2.5 Specific objective 2.2: Renewable energy

Overview capacities	Baseline Value (2014)	Milestone (2018)	Milestone (2020)	Target Value (2023)	Comments
2.2 Renewable energy	2.4	2.8	2.7	3.5	Minor decrease, still higher than the baseline

Source: Spatial Foresight survey to thematic experts (May-August 2020)

Responses to the survey for SO 2.2 "Renewable energy" came from six thematic experts in five different countries. One interview was conducted with an expert for the respective SO. The indicator has seen a slight decrease and thus remains beyond the reach of the ambitious target value of 3.5. All dimensions with the exception of dimension 1 ("Enhanced institutionalised knowledge and competence") feature slightly lower scores than in 2018. Based on the assessment of the progress, reaching the ambitious target values by 2023 remains difficult for all five dimensions.

Figure 6: Development of values for every dimension of SO 2.2 Renewable energy



Source: Spatial Foresight survey to thematic experts (May-August 2020)

Table 7: Baseline and updated values summary for SO 2.2 Renewable energy

		Estimated value (average)	% increase / progress toward target
Overall	Baseline 2014	2.4	
	Milestone 2018	2.8	
	Milestone 2020	2.7	Change -3.6%
	Target 2023	3.5	Progress 27%
Dimension 1: Enhanced institutionalised knowledge and competence	Baseline 2014	2.6	
	Milestone 2018	2.9	
	Milestone 2020	2.9	Change +3.6%
	Target 2023	3.7	Progress 27%
Dimension 2: Improved governance structures and organizational set-up	Baseline 2014	2.2	
	Milestone 2018	2.9	
	Milestone 2020	2.6	Change -10.3%
	Target 2023	3.3	Progress 36%
Dimension 3: More efficient use of human and technical resources	Baseline 2014	2.4	
	Milestone 2018	2.7	
	Milestone 2020	2.6	Change -3.7%
	Target 2023	3.5	Progress 18%
Dimension 4: Better ability to attract new financial resources	Baseline 2014	2.3	
	Milestone 2018	2.6	
	Milestone 2020	2.6	Change 0%
	Target 2023	3.2	Progress 33%
Dimension 5: Increased capability to work in transnational environment	Baseline 2014	2.7	
	Milestone 2018	3.0	
	Milestone 2020	2.9	Change -3.3%
	Target 2023	3.8	Progress 18%

Source: Spatial Foresight survey to thematic experts (May-August 2020)

Detailed comments from survey and interviews

Dimension 1: Enhanced institutionalised knowledge and competence

The institutionalised knowledge and competence are evaluated by the experts as improving due to the development of renewable energies as a consequence of the increasing societal and political awareness about renewable energies and thus increased efforts for further development. Overall, this yields new

and relevant information material and new competencies among experts. Additionally, there appears to be an increasing number of online resources dedicated to the presentation of good practises and support organisations targeted at the uptake of energy efficiency measures and thus improving the institutionalised knowledge and competence among public authorities in BSR.

As confirmed by the interview, this supports the emergence of various instruments such as working groups, information channels and information repositories that have a potential to bridge the cultural and language barriers in BSR. Also, despite further need for research in the field of energy efficiency, as identified by two experts, e.g. on cost-effective and marketable storage technologies, public authorities take evidence-based decisions and benchmark their measures, leading to the recognition of standardised solutions across BSR. Knowledge on certain technical solutions (sector coupling) and availability of data still needs to be improved.

Several experts identified limiting factors concerning the knowledge and competences available. One element mentioned by several experts refers to the inclusiveness of projects and of the learning from projects; transfer of knowledge is sometimes limited to project stakeholders and does not reach interested stakeholders beyond the project structure. Additionally, sometimes project partners are deemed as unsuited to adopt and implement project results after the termination of projects. This leads to the observation that efforts to enhance energy efficiency are limited to individual organisations and thus fail to reach designated target groups. This might be an explanation for the situation, stated by one expert, that a general understanding of ways to move ahead in terms of energy efficiency is present in BSR, but there is a lack of understanding about the most up-to-date solutions and how to implement them.

An element, identified by one expert that limits further absorption of knowledge and competence into BSR administrations is the way how administrations are run; salaries of civil servants are seen as too low to attract or keep highly-skilled and much-needed experts in administrations, elections changing the orientation towards energy efficiency measures, and reluctancy towards organisational changes.

Dimension 2: Improved governance structures and organisational set-up

The development of governance structures and organisational set-up under the field of energy efficiency benefits of a diversity of institutions dedicated for exchanges in the region. These institutions exist at both, project and BSR level, whilst the latter is seen as less frequently used by one expert due to the challenges of energy efficiency being identified at local level. Despite being used regularly, according to two experts, the field of energy efficiency sometimes also suffers from a lack of expertise at project level. This might be explained by the observation of one expert that well-functioning organisational structures in the field of energy efficiency are still young and have not yet sufficiently institutionalised or are not permanent. By increasing the awareness of interested and relevant stakeholders towards creating and adapting governance structures and organisations in support of energy efficiency, the situation may be improved, according to one expert.

In many BSR regions, the institutional settings have been adapted during recent years to cope with the increasing focus on renewable energy measures, e.g. by combining the expertise of energy-related sectors into single administrative structures, according to one expert (for example energy and nature

conservation into single governance structures). This supports a more effective implementation of energy-related measures as potential conflicts can be solved in-house. In conclusion, governance structures have been adapted during the past years and have become more effective in supporting the development of renewable energies. Thus, the worsening trend of the institutional capacity should be seen more differentiated by individual countries.

Dimension 3: More efficient use of human and technical resources

The use of human and technical resources in the field of energy efficiency has slightly decreased since 2018. The general trend can be explained by several experts mentioning that human resources are either limited or not used effectively, while technical resources have improved and are being used more frequently. The effective use of technical resources is sometimes limited "*mostly due to limited availability or low quality of data in English*". The capacities appear to have developed unequally across BSR. Whilst in some countries, the use of resources has progressed, in others it has decreased, featuring an increasing divergence and thus increasing heterogeneity.

This leads to a low improvement in the use of human resources, mainly due to persisting administrative structures, hampering the adoption of new approaches. Also, as one expert mentioned, institutional memory and capacity is an issue, meaning that functioning approaches are hardly remembered by institutions at the expense of innovation also due to capacity constraints. As a general fact, in many fields related to science, technology, engineering, and mathematics (STEM), human resources are limited and not ubiquitously available.

Another reason for limited update of innovative solutions, be it related to technical or human resources, is that information on new solutions is sometimes not easily accessible, according to one expert. Implementation of new solutions usually can rely on less experience and knowledge and also information material is much less structured and thus more difficult to grasp for decision-makers. One explanation for this might be the limited intersections of public institutions with implemented projects.

Dimension 4: Better ability to attract new financial resources

The ability to attract new financial resources is evaluated by the experts as rather low, but still satisfactory, while slightly worse than in 2018. Surprisingly, both availability of private and public funding has been assessed as almost equally low. The public financing is well-known by experts active in the field of energy efficiency in BSR whilst also a growing number of private sector funding is being mobilised in this field, e.g. public private partnerships (PPP) and energy service companies (ESCO) becoming more and more recognised by the BSR city administrations .

Two experts identified the lack of critical mass of projects in the renewable energy field as the main reason for a reducing interest of private investments and thus lower availability and knowledge on these funding sources. The projects driven by scientific excellence and less economic interests, appear to lower the interest from private financial sources, as stated by one expert.

Two experts observed that the field of renewable energy is driven mostly by SMEs whilst EU-funding appears to be geared more towards large economic operators. A challenge for SMEs is the necessary

co-funding; private companies sometimes use loans to mobilise their own contribution, which is however not seen as such by the funding provider. This might result in risks and occasionally also in the loss of public funding that scares off SMEs from applying for public funding in this field. It reflects in lower abilities to attract funding not merely due to the lack of competence but due to the lack of supportive funding opportunities for SMEs, mentioned one expert.

Experts also note that stakeholders in BSR need to work more with private funding sources. This would ensure project continuation or the financial capitalisation of the developed solution. For this however, broad expertise is still missing, which needs to be built from successful initiatives.

Dimension 5: Increased capability to work in transnational environment

Capacities to work in transnational environments have slightly decreased since 2018 but are still better assessed than in 2014. The main vector for this development appears to be a political shift away from transnational or BSR-related issues towards national topics, i.e. the ongoing re-nationalisation across BSR in this field. This might be caused by a progress in policymaking, i.e. that renewable energies have passed the stage of pilot actions and have been mainstreamed into national policies.

Most actors in the field of renewable energies focus on national renewable energy related projects, whilst there is good will to cooperate with other players in BSR, according to two experts. The exchanges face several restrictions, e.g. poor level of spoken English, the emerging national political foci and administrative procedures that rarely allow for non-standard procedures like staff exchange, transnational collaboration, etc. For those instances where transnational cooperation takes place, the experts evaluate the cooperation as fruitful and beneficial. Especially for public actors, one expert identified cooperation barriers that limit the further development of capability to work in transnational environments. The topic of renewable energy is being identified as related to local development involving many public actors of the local level. Especially these actors require support structures that would enable them to pursue non-standard solutions or allow for sharing experience with similar-level actors from elsewhere in BSR.

2.6 Specific objective 2.3: Energy efficiency

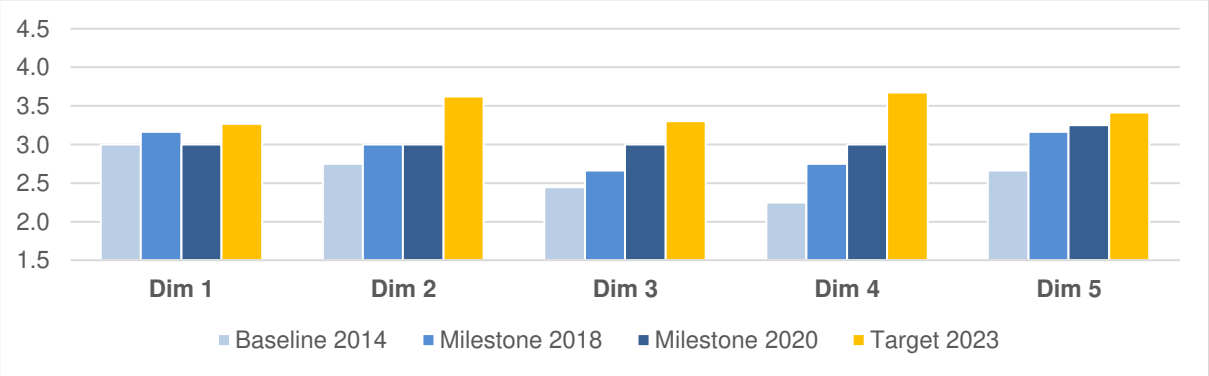
Overview capacities	Baseline Value (2014)	Milestone (2018)	Milestone (2020)	Target Value (2023)	Comments
2.3 Energy efficiency	2.6	3.0	3.1	3.5	Minor increase, positive trend towards target value

Source: Spatial Foresight survey to thematic experts (May-August 2020)

For SO 2.3 “Energy efficiency”, four thematic experts from four countries have provided responses. One interview was conducted with an expert for the respective SO. In 2020, the situation has slightly improved compared to 2018. Despite showing generally a slower pace of development, the target of 3.5 remains within reach by 2023. Despite nearly having reached the target value in 2018, dimension 1 (“Enhanced institutionalised knowledge and competence”) was assessed with a slight decrease. All other dimensions either remained stable (dimension 2 “Improved governance structures and organizational set-up”) or have increased (dimensions 3 “More efficient use of human and technical

resources", 4 "Better ability to attract new financial resources" and 5 "Increased capability to work in transnational environment"). Bearing the observed development in mind, reaching the target value until 2023 appears realistic for dimensions 1, 3 and 5 and difficult for dimensions 2 and 4.

Figure 7: Development of values for every dimension of SO 2.3 Energy efficiency



Source: Spatial Foresight survey to thematic experts (May-August 2020)

Table 8: Baseline and updated values summary for SO 2.3 Energy efficiency

		Estimated value (average)	% increase / progress toward target
Overall	Baseline 2014	2.6	
	Milestone 2018	3.0	
	Milestone 2020	3.1	Change +3.3%
	Target 2023	3.5	Progress 56%
Dimension 1: Enhanced institutionalised knowledge and competence	Baseline 2014	3.0	
	Milestone 2018	3.2	
	Milestone 2020	3.0	Change -6.3%
	Target 2023	3.3	Progress 0%
Dimension 2: Improved governance structures and organizational set-up	Baseline 2014	2.8	
	Milestone 2018	3.0	
	Milestone 2020	3.0	Change 0%
	Target 2023	3.6	Progress 25%
Dimension 3: More efficient use of human and technical resources	Baseline 2014	2.4	
	Milestone 2018	2.7	
	Milestone 2020	2.0	Change +11.1%
	Target 2023	3.3	Progress 67%
	Baseline 2014	2.3	

		Estimated value (average)	% increase / progress toward target
Dimension 4: Better ability to attract new financial resources	Milestone 2018	2.8	
	Milestone 2020	3.0	Change +7.1%
	Target 2023	3.7	Progress 50%
Dimension 5: Increased capability to work in transnational environment	Baseline 2014	2.7	
	Milestone 2018	3.2	
	Milestone 2020	3.3	Change +3.1%
	Target 2023	3.4	Progress 86%

Source: Spatial Foresight survey to thematic experts (May-August 2020)

Detailed comments from survey and interviews

Dimension 1: Enhanced institutionalised knowledge and competence

Within the context of the available institutionalised knowledge and competence, the objectives and measures were developed through a broad process involving experts from scientific, housing, transportation, industry fields and local governments and municipalities and other related sectors representatives as well as following rules of public involvement. Routines for communication with relevant interest groups are in place and are being used. Overall, there are well-trained specialists working in this field and many relevant research activities are conducted in this field. According to one expert, there is also a good knowledge platform available online and in paper.

However, the main reasons why the institutionalised knowledge and competence was assessed as slightly worsening can be found in staff mobility and in political changes at local administrative levels. Also, there have been some bottlenecks and potentials identified on how to improve the situation in BSR. There appears to be a lack of resources for necessary activities, especially for more communication and knowledge transfer between project implementers and targeted audience (municipalities, governments, other stakeholders etc.). This applies also to the capitalisation of project results. As one expert mentions, results are often displayed in lengthy documentation, failing to reach the target audience. Therefore, more effort could be put into the communication of research results, e.g. informing the target audience about relevant policy conclusions and recommendations in a more concentrated and focussed manner.

Dimension 2: Improved governance structures and organisational set-up

Work in the field of energy efficiency is organised through the support of sectoral institutions and organisations. There appears to be a sufficient amount of structures available that ensure support in this field to target groups including scientific support from research organisation. However, these structures are used less frequently than their capacities would allow. This might be linked to the limited capacities of public authorities to absorb project results into their daily and regulatory work, according to two experts. Also, the capitalisation of results could be improved, especially regarding the use of project

results to adapt and tune governance structures and organisational set-up to enable a better support in this field.

As regards the governance structures and the organisational set-up in the BSR, the situation has remained stable. Nevertheless, main bottlenecks identified are a general reluctancy of public administrations to absorb and implement changes to established structures. Additionally, one expert evaluated persons working in administrations are as less prone to take risks when implementing changes. These hamper institutional learning in this field.

Dimension 3: More efficient use of human and technical resources

Overall, the situation is evaluated as improving as competences develop. More and more resources have been dedicated to the topic of energy efficiency during the past both technical as well as human resources. Thanks to the available data there is also a growing awareness, support infrastructures and a consensus of measures and project results in the region under this SO.

The increasing availability of human resources in this field is valued as less positive than the improving technical resources. Experts still see unattended needs: "*More energy efficiency consultancy is needed, for example to help actions in local governments*". The situation is better with regard to technical resources: "*There are existing data bases, technical solutions, infrastructures, supporting measures existing for energy efficiency activities.*" But one expert even sees a "*resource-overload*" and requests more structured manners to cope with knowledge and supporting technical resources.

Despite the overall improved assessment, the more effective use of human and technical resources is directly linked to the ability of inducing institutional changes in BSR, according to one expert. Many administrations are less prone to adapt changes and thus limit the uptake of organisational changes that could eventually improve the situation on the use of human and technical and resources.

Dimension 4: Better ability to attract new financial resources

The available public funding for projects to enhance energy efficiency is well known and absorbed in the region. However, attracting private financial sources to match with public investments is seen as a sensitive issue. Nevertheless, mobilising private investments has proven to work well in the field of energy efficiency.

Also, private resources are necessary to enhance the roll-out of energy efficiency measures in BSR as the available public resources are limited. However, there are different challenges that might limit the availability of private financial resources in certain areas, e.g. in areas with low population density and thus lower investment returns. According to one expert, the expected investment return is an important factor to consider when evaluating the availability of private funding in the field of energy efficiency.

There is interest in further developing such investments, e.g. through PPP or ESCO and should be capitalised further, according to one expert. To use the full potential of available resources for individual projects, the capacities of BSR experts to attract multiple funding sources for single projects should be increased, concludes another expert.

Dimension 5: Increased capability to work in transnational environment

The situation of transnational cooperation capacities has improved since 2018. A broad interest towards international exchange and cooperation is visible in BSR, despite the still persisting language barriers. Experts mention that they are regularly invited to participate in international/transnational surveys, workshops, webinars, etc. and receive other information showcasing the diversity of measures in this specific field.

Some organisations are frequently participating in transnational projects on energy efficiency while involving other partners in their sector. The communication skills and contacts gained during the project implementation can be used to further deepen the existing partnerships and exchange programmes, to organise international events or other collaboration programmes on transnational level.

Nevertheless, as two expert state, beyond the cooperation in the framework of Interreg projects, collaboration remains scarce despite big potential. This might be linked to limited willingness to exchange and/or pool resources and to the issue of energy efficiency being identified as 'local' issue; public authorities, practitioners and researchers have some knowledge to work with transnational institutions.

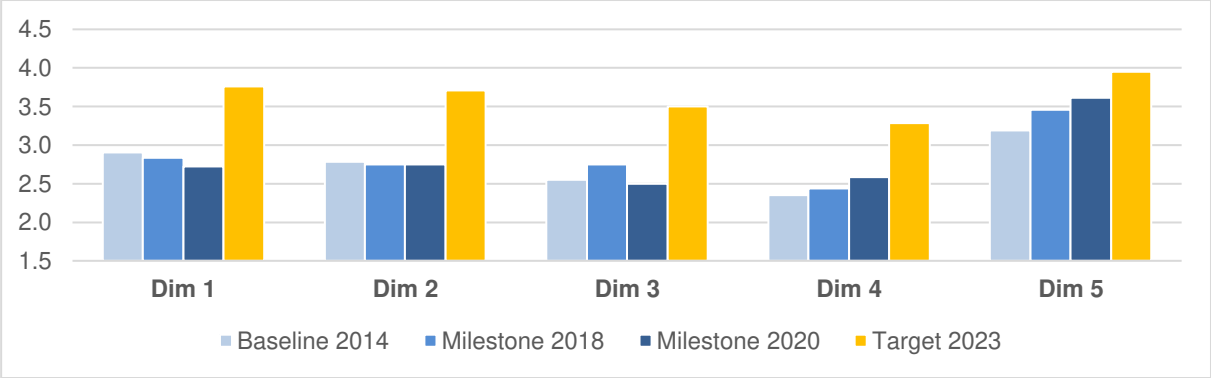
2.7 Specific objective 2.4: Resource-efficient blue growth

Overview capacities	Baseline Value (2014)	Milestone (2018)	Milestone (2020)	Target Value (2023)	Comments
2.4 Resource-efficient blue growth	2.8	2.9	2.8	3.6	Minor decrease, value at baseline level

Source: Spatial Foresight survey to thematic experts (May-August 2020)

The survey for SO 2.4 "Resource-efficient blue growth" collected six responses from five countries. Two interviews were conducted with experts for the respective SO. The progress in comparison with the 2014 baselines is very little overall and since 2018 it has decreased in some dimensions. No improvement was identified in dimension 2 ("Improved governance structures and organizational set-up") while a decrease was reported in dimensions 1 ("Enhanced institutionalised knowledge and competence") and 3 ("More efficient use of human and technical resources"). Dimensions 4 ("Better ability to attract new financial resources ") and 5 ("Increased capability to work in transnational environment ") continue to develop with the same pace as observed in 2018, whilst dimension 5 has the best chances to reach the target value in 2023. Target values for dimensions 1, 2 and 3 remain beyond reach.

Figure 8: Development of values for every dimension of SO 2.4 Resource-efficient blue growth



Source: Spatial Foresight survey to thematic experts (May-August 2020)

Table 9: Baseline and updated values summary for SO 2.4 Resource-efficient blue growth

		Estimated value (average)	% increase / progress toward target
Overall	Baseline 2014	2.8	
	Milestone 2018	2.9	
	Milestone 2020	2.8	Change -3.4%
	Target 2023	3.6	Progress 0%
Dimension 1: Enhanced institutionalised knowledge and competence	Baseline 2014	2.9	
	Milestone 2018	2.8	
	Milestone 2020	2.7	Change -3.6%
	Target 2023	3.8	Progress -22%
Dimension 2: Improved governance structures and organizational set-up	Baseline 2014	2.8	
	Milestone 2018	2.8	
	Milestone 2020	2.8	Change 0%
	Target 2023	3.7	Progress 0%
Dimension 3: More efficient use of human and technical resources	Baseline 2014	2.6	
	Milestone 2018	2.8	
	Milestone 2020	2.5	Change -10.7%
	Target 2023	3.5	Progress -11%
Dimension 4: Better ability to attract new financial resources	Baseline 2014	2.4	
	Milestone 2018	2.4	
	Milestone 2020	2.6	Change +8.3%
	Target 2023	3.3	Progress 22%

		Estimated value (average)	% increase / progress toward target
Dimension 5: Increased capability to work in transnational environment	Baseline 2014	3.2	
	Milestone 2018	3.5	
	Milestone 2020	3.6	Change +2.9%
	Target 2023	4.0	Progress 50%

Source: Spatial Foresight survey to thematic experts (May-August 2020)

Detailed comments from survey and interviews

Dimension 1: Enhanced institutionalised knowledge and competence

The assessment of the institutional capacity under dimension 1 shows a differentiated picture between experts' quantitative and qualitative assessments. The assessment indicates at a slight decrease of institutional capacities under this dimension, compared to 2018. However, the qualitative answers show a more differentiated picture.

Blue growth represents a new policy fields in which institutionalised knowledge and competence still need to be enhanced. It appears that in the sub-fields of fisheries there is good knowledge available, in the sub-fields of mussel and macroalgae merely basic knowledge is available. However, the field suffers from a lack of statistical data despite increasing availability of indicators and efforts conducted to improve the situation in this field. Scientific studies are available, institutional knowledge is increasing and knowledge is spread through workshops, public seminars and also shared projects whilst it appears that not all improvements can be reflected by the applied measurements. This could be explained by fact that for actions under the field resource-efficient blue growth, behavioural changes of inhabitants are necessary, requiring a different approach towards policymaking than institutions apply so far.

Several experts mention that there is a knowledge divide that hampers cooperation in this field; enterprises were involved in Interreg projects and do continue to use the knowledge while there is insufficient cooperation between companies and researchers (R&D). Instruments for knowledge transfer are under development, however, strongly depend on personal initiatives, institutional capacities and are often hampered by internal procedures of administrative and policy bodies.

Reasons for the decreasing tendency in contrast to 2018 might be the lack of capitalisation of knowledge. On the one hand, it was mentioned that local knowledge in the field of resource-efficient blue growth is not sufficiently respected, despite high relevancy for this policy field. Especially when learning about the reactions from the environment on innovative uses (key word: impact assessment), local knowledge is deemed beneficial by one expert. Another expert mentions the lack of informal knowledge exchange platforms to reach local players and stakeholders as an impediment to improvement.

Overall, the decreasing tendency could be explained by the yet missing indicators and initiatives that reflect improving capacities of institutions in this dimension and also by the shortage of effective

mechanisms for continuous knowledge transfer. Voluntary knowledge transfer via the existing networks yields lower transferability as such mechanisms adhere to persons that are already transnationally active in this field.

Dimension 2: Improved governance structures and organisational set-up

As regards the governance structures and organisational set-up, experts mentioned the absence of norms and common understandings of measures across BSR countries and thus incentives to structure governance and organisations accordingly.

The stable development could also be explained by the increasing amounts of administration due for transnational cooperation and through the absence of effective mechanisms for knowledge transfer into governance structures towards adapting the organisational set-ups from lessons learned during projects. This concludes in only basic transnational exchange structures after the termination of Interreg projects, with the exception of the field of maritime spatial planning. Institutions are also less eager for change than other players, according to one expert, explaining the stalling of capacities in this dimension.

Regarding the implementation of projects, the improvement of governance structures and organisational set-up is hampered by a lack of stakeholder participation, according to two experts. Participation and collaboration are seen as inseparable part of almost any action carried out by public authorities. Some sector representatives tend to skip these collaboration phases, leading to the emergence of a top-down approach, overruling existing local public and private organisational structures.

Additionally, one expert mentioned that the governance and organisational set-up in favour of resource-efficient blue-growth did not progress as some organisations in the field are created to pursue 'business-as-usual' economy development objectives. This leads to less innovative approaches also because public authorities lack the experience to support innovative approaches, that would support non-standard, innovative approaches.

Dimension 3: More efficient use of human and technical resources

Many Interreg projects contributed to a more efficient use of human and technical resources in BSR, while these efforts are limited to Interreg projects according to several experts. Such instruments and products that would enable a more efficient use of human and technical resources are forgotten or used by very few people after the termination of the Interreg projects. Domestic instruments and products do not feature the same potential leverage as they are often developed considering the national language and other specificities, hampering their adoption in other BSR countries. The small market size of BSR might also play a role when evaluating success of developed solutions.

Within the Interreg community across BSR, however, the use of human and technical resources progressed since 2018, not least because of the observed investments into the technical resources and the many ongoing cooperation activities. Necessary human resources, identified as key for resource-efficient blue-growth, are easily available and embedded in transnational networks according to some experts. However, time-limits to transnational cooperation e.g. in Interreg projects or postings and

delegations limited in time hamper the long-term learning of institutions and limit their transnational functionality.

Also, in some countries a decreasing commitment for the further integration of the BSR countries could be observed, according to one expert. This can be explained by shifting political foci, that cause human resources and policy attention to be shifted away from BSR elements. As regarding technical resources, a better use can be observed but the progress might not have been apparent as there are no big and visible innovations implemented.

Dimension 4: Better ability to attract new financial resources

The ability to attract new financial resources has been evaluated as increasing by the experts. This can be explained by a variety of funding programmes available, especially public funding from Member States and the EU in the field of resource-efficient blue-growth. The improving availability of funding and the related knowledge to acquire has also improved due to the shifting focus of EU funding instruments on matters of blue growth in the remaining current funding period and in the upcoming funding period.

Nevertheless, two experts observe a harsh competition over public funding sources, leading to lower success rates of funding applications. Also, requirements are deemed as too strict by another expert, requesting a higher degree of flexibility, and with the closing of the programming period ahead, the resources of available funds continue to diminish. At the same time, the knowledge and creativity on how to acquire new financial resources increases.

The availability of private financial resources in this field appears to be limited with a few exceptions; enterprises are willing to allocate staff to new and innovative fields but not financial resources. This limits cooperation initiatives as private involvement is hampered by the lack of willingness to commit financial resources. One reason for this might be the unsecure turnout when committing resources into researching innovative technologies.

Dimension 5: Increased capability to work in transnational environment

The capability to work in a transnational environment has improved in spite of many persisting cultural differences in the field of resource-efficient blue growth. Reason for this is the good mobility and communication skills between stakeholders, gained through international and transnational networks (Interreg, Bonus, Horizon, VASAB, etc.), according to multiple experts. Also, the common challenges and opportunities in this specific objective related to the Baltic sea, represent a great driver for cooperation and the development of capacities. Such competences build up slowly and need to be learned by newcomers. Thus, it is important that the established contacts, networks and expertise is used also after the termination of transnational cooperation projects. These efforts are thanks to cooperation projects and cannot be explained by the institutional settings within the BSR countries according to one expert.

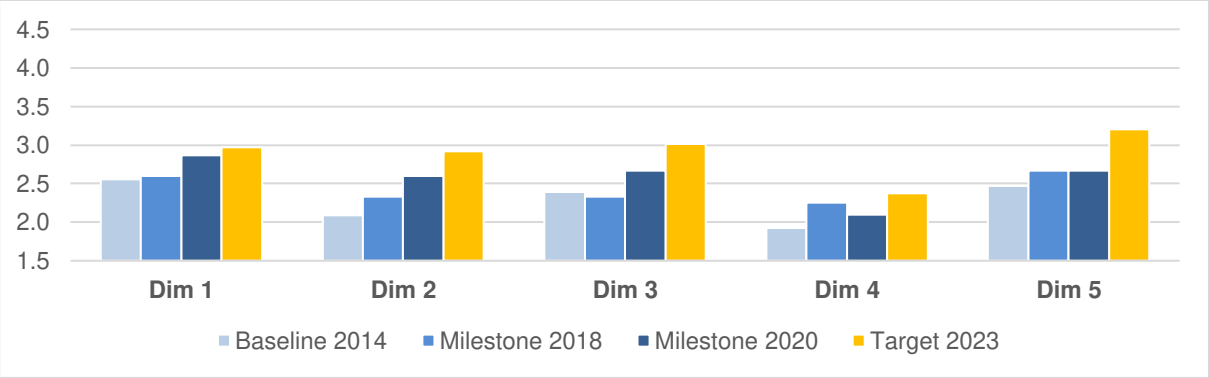
2.8 Specific objective 3.1: Interoperability of transport modes

Overview capacities	Baseline Value (2014)	Milestone (2018)	Milestone (2020)	Target Value (2023)	Comments
3.1 Interoperability of transport modes	2.3	2.5	2.6	2.9	Minor increase, positive trend towards target value

Source: Spatial Foresight survey to thematic experts (May-August 2020)

Responses about SO 3.1 "Interoperability of transport modes" were collected from five respondents in four countries. One interview was conducted with an expert for the respective SO. The overall progress is positive; however, the pace of development has slowed in comparison to the pace of change observed in 2018. With the exception of dimension 4 ("Better ability to attract new financial resources"), all dimensions have slightly progressed or remained stable (dimension 5 "Increased capability to work in transnational environment"). Except the latter dimension, all appear to be within reach of the target value by 2023 without requiring significant progressions.

Figure 9: Development of values for every dimension of SO 3.1 Interoperability of transport modes



Source: Spatial Foresight survey to thematic experts (May-August 2020)

Table 10: Baseline and updated values summary for SO 3.1 Interoperability of transport modes

		Estimated value (average)	% increase / progress toward target
Overall	Baseline 2014	2.3	
	Milestone 2018	2.5	
	Milestone 2020	2.6	Change +8.3%
	Target 2023	2.9	Progress 50%
	Baseline 2014	2.6	
	Milestone 2018	2.6	

		Estimated value (average)	% increase / progress toward target
Dimension 1: Enhanced institutionalised knowledge and competence	Milestone 2020	2.9	Change +11.5%
	Target 2023	3.0	Progress 75%
Dimension 2: Improved governance structures and organizational set-up	Baseline 2014	2.1	
	Milestone 2018	2.3	
	Milestone 2020	2.6	Change +13%
	Target 2023	2.9	Progress 63%
Dimension 3: More efficient use of human and technical resources	Baseline 2014	2.4	
	Milestone 2018	2.3	
	Milestone 2020	2.7	Change +17.4%
	Target 2023	3.0	Progress 50%
Dimension 4: Better ability to attract new financial resources	Baseline 2014	1.9	
	Milestone 2018	2.3	
	Milestone 2020	2.1	Change -8.7%
	Target 2023	2.4	Progress 40%
Dimension 5: Increased capability to work in transnational environment	Baseline 2014	2.5	
	Milestone 2018	2.7	
	Milestone 2020	2.7	Change 0%
	Target 2023	3.2	Progress 29%

Source: Spatial Foresight survey to thematic experts (May-August 2020)

Detailed comments from survey and interviews

Dimension 1: Enhanced institutionalised knowledge and competence

The surveyed and interviewed experts mention that the progress made during the past years through transnational cooperation efforts has yielded significant knowledge and competence in BSR. Because of the now several generations of Interreg projects, knowledge and competence about and on increasing inter-operability and mobility is wide-spread and well-known by experts in the region. The research and implemented projects are deemed of good quality and assessed as helpful by the experts.

Whilst one of the respondents indicated that the mechanisms for knowledge transfer are rather weak, another expert could not confirm this assessment. However, it was brought up that sometimes it can be observed that despite the efforts of the past years, silo-thinking prevails. An explanation for this is that sometimes, it required a lot of additional effort to break up established routines and thus to be more sensitive to inter-disciplinary ways of thinking in BSR.

Dimension 2: Improved governance structures and organisational set-up

The experts mention that there is a sufficient number of structures in charge of transnational governance and cooperation, it is thus not surprising that this dimension has been evaluated as increasing. The opinion of the consulted experts differs on the necessity for higher number of transnational institutions; on the one hand, some state that an overlapping of responsibilities, thematic areas addressed, etc. increases friction between structures and thus would decrease efficiency in transnational cooperation. As a consequence, the existing transnational structures should be used more effectively instead of creating new ones in this field. On the other hand, some experts say that introduction of new structures is necessary to test new transnational approaches and thus their raison d'être.

Dimension 3: More efficient use of human and technical resources

The consulted experts mention that the use of human resources has further improved in comparison to 2018 in both formal and informal structures. Nevertheless, the use of human and technical resources was deemed as being sufficient rather than efficient, especially considering the use of human resources concerning the interoperability of transport modes. Hence, there is still room for improvement, concerning both technical and human resources, that go hand-in-hand according to one expert. This can especially be observed when collaborating in transnational projects; sufficient resources are available, nevertheless the prevailing legal obstacles between and within countries to inter-disciplinary cooperation hamper the better use of both human and technical resources in this field.

Dimension 4: Better ability to attract new financial resources

The ability to attract private financial resources was deemed as difficult to assess by the experts since there is very little private funding that can be acquired for infrastructure projects. Also, public-private partnerships are still rather underdeveloped. Overall, the knowledge on experts as regarding the different funding sources in BSR on transport and infrastructure projects under the responsibility of state/governmental funding and municipal/regional funding is well-developed.

Dimension 5: Increased capability to work in transnational environment

The stability of this dimension in comparison to the observed status in 2018 was commented in the interview as 'rewarding' but also as challenging by some experts. There is still leeway for development in BSR, especially because of the reduced relevancy of transport and infrastructure as topic in transnational cooperation in BSR, according to one expert. Generally, infrastructure and transport projects are very much entangled in national policymaking. Transnational cooperation, rendering such projects sometimes more complex, might lead to applicants often only trying to fulfil the minimum criteria instead of making full use of the potential, brought by transnational cooperation.

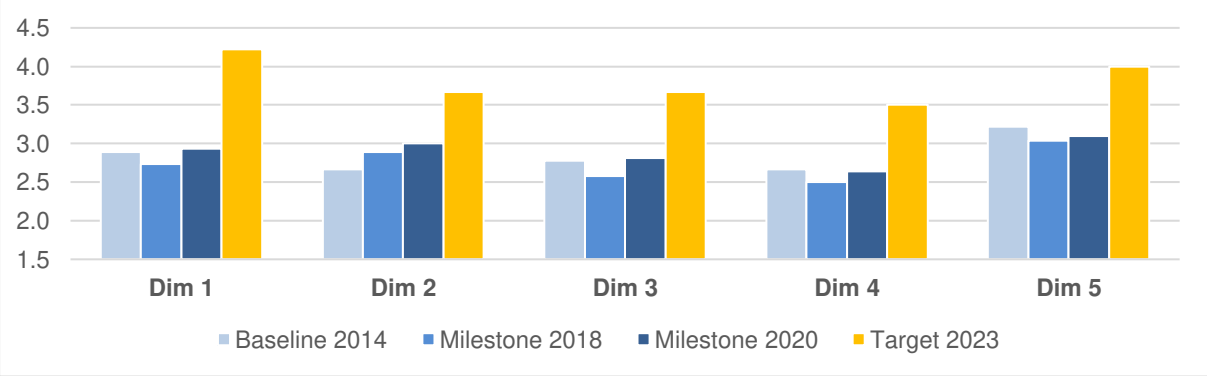
2.9 Specific objective 3.2: Accessibility of remote areas and areas affected by demographic change

Overview capacities	Baseline Value (2014)	Milestone (2018)	Milestone (2020)	Target Value (2023)	Comments
3.2 Accessibility of remote areas and areas affected by demographic change	2.8	2.8	2.9	3.8	Minor increase, slightly higher than baseline value

Source: Spatial Foresight survey to thematic experts (May-August 2020)

Results for SO 3.2 "Accessibility of remote areas and areas affected by demographic change" are based on seven responses from experts in seven countries. One interview was conducted with an expert for the respective SO. In contrast to 2018, the institutional capacities in the BSR have progressed, according to the experts. All dimensions feature a slight increase of the institutional capacities, with some still showing scores below the initial 2014 baseline values (dimensions 4 "Better ability to attract new financial resources" and 5 "Increased capability to work in transnational environment"). Bearing these developments in mind, all dimensions are far from reaching the ambitious target values set in 2014.

Figure 10: Development of values for every dimension of SO 3.2 Accessibility of remote areas and areas affected by demographic change



Source: Spatial Foresight survey to thematic experts (May-August 2020)

Table 11: Baseline and updated values summary for SO 3.2 Accessibility of remote areas and areas affected by demographic change

		Estimated value (average)	% increase / progress toward target
Overall	Baseline 2014	2.8	
	Milestone 2018	2.8	

		Estimated value (average)	% increase / progress toward target
	Milestone 2020	2.9	Change +3.6%
	Target 2023	3.8	Progress 10%
Dimension 1: Enhanced institutionalised knowledge and competence	Baseline 2014	2.9	
	Milestone 2018	2.7	
	Milestone 2020	2.9	Change +7.4%
	Target 2023	4.2	Progress 0%
Dimension 2: Improved governance structures and organizational set-up	Baseline 2014	2.7	
	Milestone 2018	2.9	
	Milestone 2020	3.0	Change +3.4%
	Target 2023	3.7	Progress 30%
Dimension 3: More efficient use of human and technical resources	Baseline 2014	2.8	
	Milestone 2018	2.6	
	Milestone 2020	2.8	Change +7.7%
	Target 2023	3.7	Progress 0%
Dimension 4: Better ability to attract new financial resources	Baseline 2014	2.7	
	Milestone 2018	2.5	
	Milestone 2020	2.6	Change +4.0%
	Target 2023	3.5	Progress -13%
Dimension 5: Increased capability to work in transnational environment	Baseline 2014	3.2	
	Milestone 2018	3.0	
	Milestone 2020	3.1	Change +3.3%
	Target 2023	4.0	Progress -13%

Source: Spatial Foresight survey to thematic experts (May-August 2020)

Detailed comments from survey and interviews

Dimension 1: Enhanced institutionalised knowledge and competence

The experts mention that, in general, measures to increase accessibility of remote areas and areas affected by demographic change are under political pressure to enhance accessibility through transport investments. There is thus a strong political rationale to improve and use the institutionalised knowledge and competences.

It is deemed that new solutions/ways to work are time-consuming and often there are arguments for not having them as a priority at this moment. A recent analysis on the available knowledge in this field has

concluded that some countries in BSR undertake a good quality research and feature a good absorption capacity for additional knowledge. Nevertheless, it was observed that such knowledge was sometimes used more frequently by experts involved in EU cooperation rather than by experts working on national projects in this field in the BSR countries.

Consulted experts also observed that within this field in BSR the knowledge transfer functions well between scientific bodies whilst there is only basic knowledge transfer in public administrations. Nevertheless, a well-suited structure for knowledge exchange and a good climate for exchange under this dimension features in BSR.

The effectiveness of mechanisms for knowledge exchange and the available institutionalised knowledge depend on the local, regional and national conditions in the BSR, as observed by one expert. Especially when it comes to local knowledge, local institutions tend to have more knowledge at hand on local specificities that are not always transferred into national decision-making.

Dimension 2: Improved governance structures and organisational set-up

In the field of accessibility of remote areas and areas affected by demographic change, organisational structures are available. The experts observe that governance structures and organisations are used when available. However, they lack relevant resources, national interests are dominating the discourse and hence despite macro-regional and transnational structures are available, e.g. VASAB, they are only occasionally used, according to one expert.

Dimension 3: More efficient use of human and technical resources

Overall, the assessment is more positive than in 2018. However, experts' assessments cover a wide range of values, reaching from a good use of existing resources to an insufficient use. This is the case for both, the human and the technical resources.

Generally, BSR features progress in the use of human and technical resources to collaborate in the field of accessibility of remote areas and areas affected by demographic change, according to one expert. This is due to the web-based platforms and digital infrastructures available in nearly all territories. With regard to the technical resources in this field, there is still room for improvement, e.g. concerning the (oftentimes costly) last mile connections in remote areas.

Dimension 4: Better ability to attract new financial resources

The experts mention that in this field, there is a good ability to attract public funding in BSR. Low availability of private funding can be observed because of low collateral values.

New initiatives are currently elaborated in order to provide additional guarantees and loans in this area. New funding arrangements, for example with public-private-partnerships, are emerging but still challenging. In general, EU funding is considered as easy to attract, according to one expert.

Dimension 5: Increased capability to work in transnational environment

The experts observe that in the Eastern BSR countries, the competences to work transnationally increase year by year because of the collaboration experiences the experts gain through Interreg programmes.

At transnational level, there are frequent contacts between experts from different countries and as one expert observes the transnational collaboration is developing through the joint creation and application of knowledge.

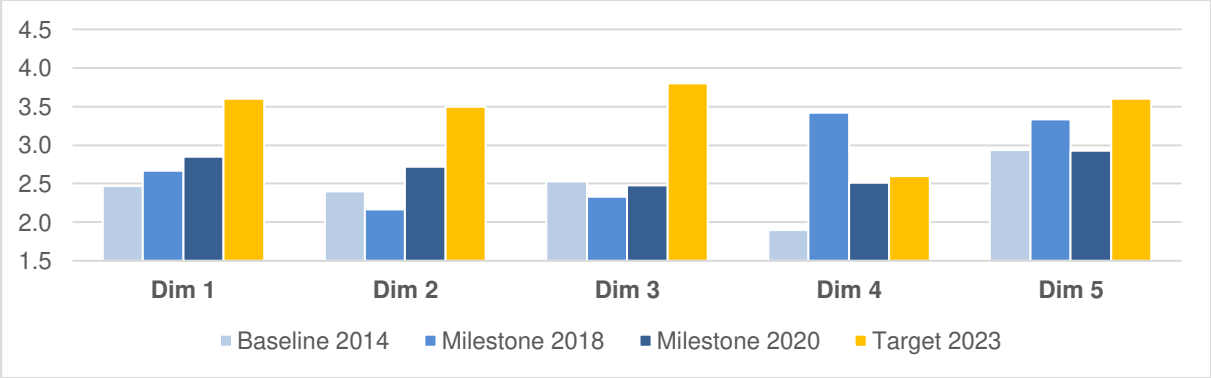
2.10 Specific objective 3.3: Maritime safety

Overview capacities	Baseline Value (2014)	Milestone (2018)	Milestone (2020)	Target Value (2023)	Comments
3.3 Maritime safety	2.5	2.8	2.7	3.4	Minor decrease, still higher than the baseline

Source: Spatial Foresight survey to thematic experts (May-August 2020)

Answers for SO 3.3 “Maritime safety” were collected from nine sectoral experts in eight different countries. One interview was conducted with an expert for the respective SO. Overall, there has been a slight decrease in the indicator, which is explained by the very negative development observed for dimensions 4 (“Better ability to attract new financial resources”) and 5 (“Increased capability to work in transnational environment”). A slow progression can be observed for dimensions 1 (“Enhanced institutionalised knowledge and competence”), 2 (“Improved governance structures and organizational set-up”) and 3 (“More efficient use of human and technical resources”). The target values however remain beyond reach in all dimensions, except dimension 4.

Figure 11: Development of values for every dimension of SO 3.3 Maritime safety



Source: Spatial Foresight survey to thematic experts (May-August 2020)

Table 12: Baseline and updated values summary for SO 3.3 Maritime safety

		Estimated value (average)	% increase / progress toward target
Overall	Baseline 2014	2.5	

		Estimated value (average)	% increase / progress toward target
	Milestone 2018	2.8	
	Milestone 2020	2.7	Change -3.6%
	Target 2023	3.4	Progress 30%
Dimension 1: Enhanced institutionalised knowledge and competence	Baseline 2014	2.5	
	Milestone 2018	2.7	
	Milestone 2020	2.9	Change +7.4%
	Target 2023	3.6	Progress 36%
Dimension 2: Improved governance structures and organizational set-up	Baseline 2014	2.4	
	Milestone 2018	2.2	
	Milestone 2020	2.7	Change +22.7%
	Target 2023	3.5	Progress 27%
Dimension 3: More efficient use of human and technical resources	Baseline 2014	2.5	
	Milestone 2018	2.3	
	Milestone 2020	2.5	Change +8.7%
	Target 2023	3.8	Progress 0%
Dimension 4: Better ability to attract new financial resources	Baseline 2014	1.9	
	Milestone 2018	3.4	
	Milestone 2020	2.5	Change -26.5%
	Target 2023	2.6	Progress 86%
Dimension 5: Increased capability to work in transnational environment	Baseline 2014	2.9	
	Milestone 2018	3.3	
	Milestone 2020	2.9	Change -12.1%
	Target 2023	3.6	Progress 0%

Source: Spatial Foresight survey to thematic experts (May-August 2020)

Detailed comments from survey and interviews

Dimension 1: Enhanced institutionalised knowledge and competence

The experts mention that a transnational knowledge network has been successfully established in BSR in the field of maritime safety. Several mechanisms function for the purpose of enhancing the institutionalised knowledge and competence and these mechanisms are deemed as well-functioning by the consulted experts.

Further improvement might be possible with connecting maritime administrations in search of evidence-based knowledge and innovation capacities to research/development and innovation service providers. It can be observed that the topic of maritime safety is well-embedded in research and development activities whilst the results could benefit of a better integration into administrations and enterprises of BSR; especially the logic of administrations sometimes hinder the quick adaptation of new services whilst academia is sometimes less driven by practical needs rather than research interests.

The traditional knowledge in the field of maritime safety appears to be sufficient. Studies and research are maintained to address blind spots in order to close existing gaps in the field. However, some of the results are not publicly available (open source) despite of being outcomes of the EU programmes. Also, information on wreck status is not yet fully available throughout BSR as well as mapping and remediation methods for dumped munitions. The knowledge about areas with wrecks and munitions is updated for the economic interests of the industry whilst not all areas are mapped and thus there are no remediation activities everywhere where needed.

Nevertheless, one of the experts pointed out that the formerly leading countries in the field of maritime safety in BSR have retracted to kind of doing their own business (for example: e-Navigation underway (Denmark), Sea Traffic Management (Validation) follow up projects apparently confined to Swede).

Dimension 2: Improved governance structures and organisational set-up

The availability of organisational structures is valued as satisfactory by the experts. The transnational organisation HELCOM has been mentioned among the main governance structures though respondents question its present activeness and focus. The experts mention that there are HELCOM working groups and informal knowledge exchange networks, but they question the practical usefulness of the work of such networks. For example, informal fora (such as e-navigation conferences) appear to be not adequately or regularly organised. It is presumed that important regional stakeholders have lost interest in furthering the work in this field. The experts mention that there is no visible transfer of findings to international regulatory domain and no tangible results of on-going collaboration. As concerning the policy area ‘SAFE’ under the EUSBSR, one expert mention that it would be necessary to include new structures, e.g. for maritime risk management.

Dimension 3: More efficient use of human and technical resources

The use of human and technical resources for the benefit of maritime safety is valuated as a developing field which allows to absorb new ideas and developments that improve time and resource management. Nevertheless, human resources appear as being very limited these days in the field of maritime safety. Despite existing personal networks between experts in the BSR, recognition is lacking for the potentials that these networks yield. This results in situations where good human resources at hand are not consulted for taking decisions.

As regarding technical resources, there are databases covering most of the information in the related fields/topics, for example national single window, ports register, ships register etc. and these resources are widely used. Sometimes the researchers are not able to access data, whereas administrations do

not have knowledge and skills to use the available data in an effective way. Some other mechanisms are already available but used rarely.

Digitalisation is one of the yet untapped potentials in the field of maritime safety, according to one expert. When digital instruments and means are further applied, one needs to be aware of safety measures increasing complexity and use of resources, according to one expert.

Dimension 4: Better ability to attract new financial resources

The experts note that projects in the field of maritime safety are often financed from private or semi-public sources, i.e. from port fees paid by shipping companies. Still, availability of public funding is slightly better assessed than of private funding. But, unlike in other SOs, experts deem the private funding as real alternative to public funding. "*Good cooperation with the private sector, quite a lot of private interest to public authorities, researchers, practitioners*." However, private interests might be limited to specific areas, such as existing offshore projects, as expressed by one expert.

There is a public interest to enable safe exploitation of the sea. And public funding is available. However, experts warn that activities between public authorities and public stakeholders take long time, for example state procurements, so that implementation of projects needs a lot of time, despite of available funding.

Dimension 5: Increased capability to work in transnational environment

The experts observe that the existing structures for maritime safety work quite well when there is a shared interest on certain topic. Typically, such interests emerge from large-scale accidents or new game changing innovations. Nevertheless, it appears that the field of maritime safety lacks an overall vision; as some experts observe, several countries and public administrations around BSR reduce involvement in transnational cooperation and rather focus on domestic matters. This results in fewer key events that are pivotal for the transnational exchange and cooperation, such as the "e-navigation underway" conferences, which ceased to continue.

In contrast, the institutional experts working in the field of maritime safety are well prepared and at ease with the implementation of transnational projects, according to the experts. One expert mentions that it could be necessary to join forces with similar activities for maritime safety with the North Sea Programme.

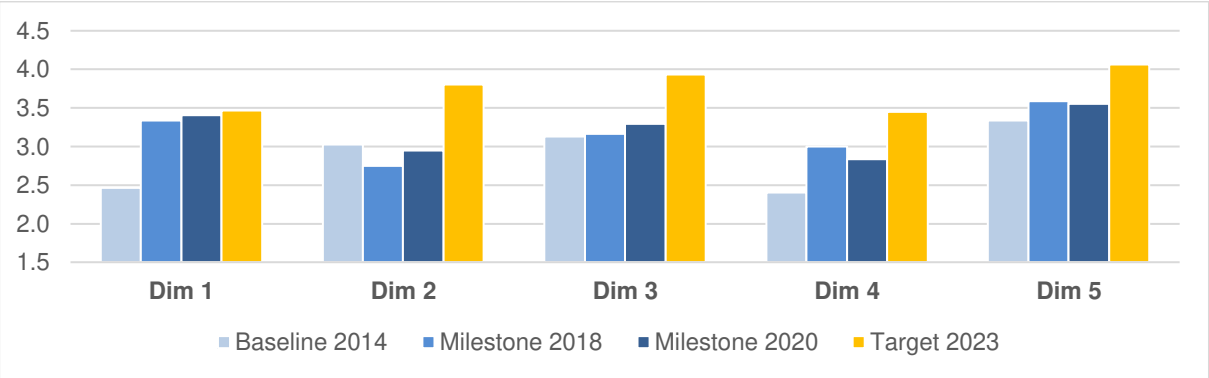
2.11 Specific objective 3.4: Environmentally friendly shipping

Overview capacities	Baseline Value (2014)	Milestone (2018)	Milestone (2020)	Target Value (2023)	Comments
3.4 Environmentally friendly shipping	2.9	3.2	3.2	3.8	Constant, positive trend towards target value, stable since 2018

Source: Spatial Foresight survey to thematic experts (May-August 2020)

Surveys for SO 3.4 “Environmentally friendly shipping” have been completed by nine respondents in seven different countries. One interview was conducted with an expert for the respective SO. Overall, the development has been evaluated as steady by the experts, showing a stable dimension 5, minor increases for dimensions 1, 2 and 3 and a minor decrease for dimension 4. The target value has nearly been reached for dimension 1 (“Enhanced institutionalised knowledge and competence”) and remains within reach for dimension 5 (“Increased capability to work in transnational environment”).

Figure 12: Development of values for every dimension of SO 3.4 Environmentally friendly shipping



Source: Spatial Foresight survey to thematic experts (May-August 2020)

Table 13: Baseline and updated values summary for SO 3.4 Environmentally friendly shipping

		Estimated value (average)	% increase / progress toward target
Overall	Baseline 2014	2.9	
	Milestone 2018	3.2	
	Milestone 2020	3.2	Change +0.0%
	Target 2023	3.8	Progress 33%
Dimension 1: Enhanced institutionalised knowledge and competence	Baseline 2014	2.5	
	Milestone 2018	3.3	
	Milestone 2020	3.4	Change +3.0%
	Target 2023	3.5	Progress 90%
Dimension 2: Improved governance structures and organizational set-up	Baseline 2014	3.0	
	Milestone 2018	2.8	
	Milestone 2020	2.9	Change +3.6%
	Target 2023	3.8	Progress -13%
Dimension 3: More efficient use of human and technical resources	Baseline 2014	3.1	
	Milestone 2018	3.2	
	Milestone 2020	3.3	Change +3.2%

		Estimated value (average)	% increase / progress toward target
	Target 2023	3.9	Progress 25%
Dimension 4: Better ability to attract new financial resources	Baseline 2014	2.4	
	Milestone 2018	3.0	
	Milestone 2020	2.8	Change -6.7%
	Target 2023	3.5	Progress 36%
Dimension 5: Increased capability to work in transnational environment	Baseline 2014	3.3	
	Milestone 2018	3.6	
	Milestone 2020	3.6	Change -0.0%
	Target 2023	4.1	Progress 38%

Source: Spatial Foresight survey to thematic experts (May-August 2020)

Detailed comments from survey and interviews

Dimension 1: Enhanced institutionalised knowledge and competence

The consulted experts mention that, overall, there is sufficient knowledge available in the field of environmentally friendly shipping. The field benefits from a big cluster of experts and research organisations in BSR. As a result, research and development and innovation potential is available in all countries in both dimensions, i.e. the public and the private sector. The institutes RISE and CLOSER from Sweden were mentioned as well-functioning examples for merging different competences, by one expert.

However, one expert observes that the knowledge is sometimes not sufficiently distributed and transferred to all parties. Relevant knowledge is sometimes also 'lost' due to the wealth of everyday information available in this field. This results in situations where not every necessary solution is applied and utilised, requiring improved knowledge transfer mechanisms for the future.

One expert also mentions small 'cluster initiatives' in the field of environmentally friendly shipping. Such initiatives research very specific elements of this field but are in some way exclusive as no consistent exchange with other initiatives is either programmed or envisaged.

Dimension 2: Improved governance structures and organisational set-up

The experts observe that after the financial crisis from 2008, the governance structures have been reorganised in almost all the BSR countries BSR, resulting in a reshuffling of public resources and competences. This has affected the activity and performance of bodies working in the field of environmentally friendly shipping in some countries. It has also had an impact to the previous dimension where the knowledge transfer channels have been disassembled or transfer activities were reduced. A

lot of competences and functions have moved to NGOs which usually are comparatively weak structures but have gained some strength with growing experience.

Presently it appears there is still a lot to be improved in this field, especially within the older structures since they change very slowly and do not adapt to new challenges and trends at a sufficient speed. Experts mention that German structures for example are those in BSR that still lag behind, concerning digitalisation potentials. Another example is Sweden which is not able to respond to the market needs by developing structures to promote inland navigation activities.

The technical innovations also require adaptation, which is sometimes slow: new fuel deployment (such as hydrogen, LNG, e.g.) require adequate structures which are not always being set-up. Also, complicated procedures and unclear responsibility within structures often prevails. Due to these challenges, the governance structures and institutional set-up do not evolve as expected.

Dimension 3: More efficient use of human and technical resources

The experts observe an unequal development of capacities in the region. In some of the BSR countries, available human resources are limited and over-utilised while in other countries there is an excess of resources. With limited human resources, the volume of information that needs to be processed on a daily basis in this field, is much more difficult to handle. This again can impact the knowledge and information transfer mentioned under dimension 1 where the knowledge does not reach the right addressees and/or users.

In this field, processes, tools and methods that enable time saving have been developed and are implemented in work routine. This is even more valid in the business sector which is profit orientated. Public authorities too often lag behind due to insufficient capacities of structures to absorb changes. Research and academic sector are also very well in line as being driven by the need of the best possible use of their available budget, stated by one expert.

At the same time the respondents indicate that good networks exist and there is always a way to identify needed expertise by searching, e.g. on LinkedIn for other professional networks. Digitalisation has made the process to identify and research expertise much easier. Instruments such as cooperation programmes have paved the way to a very good exchange and search possibility.

As for technical resources they are deemed as not sufficiently developed, especially, for the inland navigation, but overall, they are used quite efficiently.

Dimension 4: Better ability to attract new financial resources

Experts mention that most of the activities are funded from public sources. In some BSR countries, private funding in this field is difficult to attract due to the legal constraints. This results in the situation that public funding is generally more readily available than private, and that many private actors rely on the availability of public funding. Most funding is provided through the national level with very limited mechanisms to attract private resources at the regional level.

According to one expert, the reason the field is less attractive for private funding lies in low profit margins of the shipping sector. Other fields utilising maritime resources, such as offshore wind energy production, blue agriculture, e.g. offer better prospects and attract more private finance.

Dimension 5: Increased capability to work in transnational environment

Most institutions work in transnational environment on an everyday basis. Thus, their staff is well experienced with a lot of contacts already established and almost no barriers for communication, according to the experts. There are, however, regional disparities that sometime prevent a broader co-operation, e.g. in some parts of BSR, one has to take into account the impact of ice in the Baltic Sea, which is not relevant in other areas of the sea or in other seas.

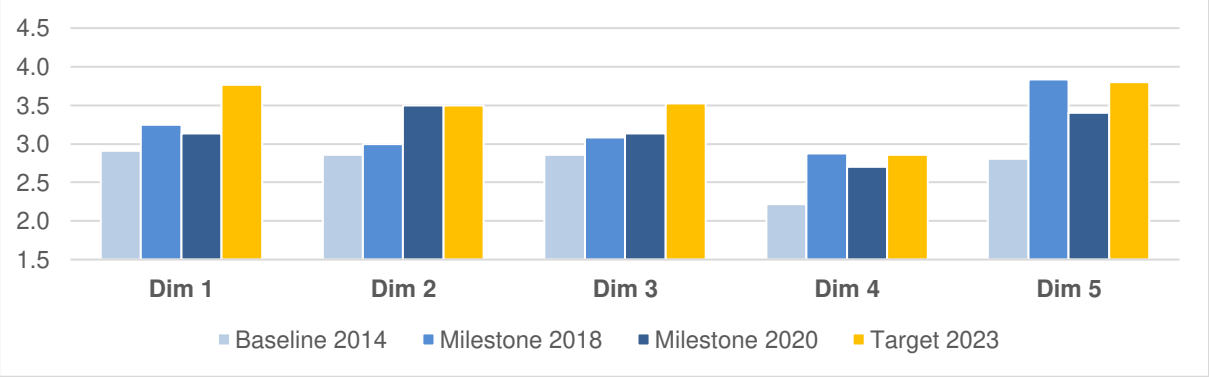
2.12 Specific objective 3.5: Environmentally friendly urban mobility

Overview capacities	Baseline Value (2014)	Milestone (2018)	Milestone (2020)	Target Value (2023)	Comments
3.5 Environmentally friendly urban mobility	2.7	3.3	3.2	3.5	Minor decrease, still higher than the baseline

Source: Spatial Foresight survey to thematic experts (May-August 2020)

The survey for SO 3.5 “Environmentally friendly urban transport” has been completed by five respondents in five countries. One interview was conducted with an expert for the respective SO. The overall value shows a slight overall decrease. Regarding the different areas, dimension 2 (“Improved governance structures and organizational set-up”) has increased and reached the target value, dimension 3 (“More efficient use of human and technical resources”) has improved slightly compared to 2018, whereas dimensions, 4 (“Better ability to attract new financial resources”) and 5 (“Increased capability to work in transnational environment”) have decreased compared to 2018, but still reaching the target value seems possible. Dimension 1 (“Enhanced institutionalised knowledge and competence”) has decreased and remains far from the target value.

Figure 13: Development of values for every dimension of SO 3.5 Environmentally friendly urban mobility



Source: Spatial Foresight survey to thematic experts (May-August 2020)

Table 14: Baseline and updated values summary for SO 3.5 Environmentally friendly urban mobility

		Estimated value (average)	% increase / progress toward target
Overall	Baseline 2014	2.7	
	Milestone 2018	3.2	
	Milestone 2020	3.2	Change -3.0%
	Target 2023	3.5	Progress 63%
Dimension 1: Enhanced institutionalised knowledge and competence	Baseline 2014	2.9	
	Milestone 2018	3.3	
	Milestone 2020	3.8	Change -6.1%
	Target 2023	3.8	Progress 22%
Dimension 2: Improved governance structures and organizational set-up	Baseline 2014	2.9	
	Milestone 2018	3.0	
	Milestone 2020	3.5	Change +16.7%
	Target 2023	3.5	Progress 100%
Dimension 3: More efficient use of human and technical resources	Baseline 2014	2.9	
	Milestone 2018	3.1	
	Milestone 2020	3.1	Change 0%
	Target 2023	3.5	Progress 33%
Dimension 4: Better ability to attract new financial resources	Baseline 2014	2.2	
	Milestone 2018	2.9	
	Milestone 2020	2.7	Change -6.9%
	Target 2023	2.9	Progress 71%
Dimension 5: Increased capability to work in transnational environment	Baseline 2014	2.8	
	Milestone 2018	3.8	
	Milestone 2020	2.4	Change -10.5%
	Target 2023	3.8	Progress 60%

Source: Spatial Foresight survey to thematic experts (May-August 2020)

Detailed comments from survey and interviews

Dimension 1: Enhanced institutionalised knowledge and competence

In this field, the experts mention that institutionalised knowledge is available but not always fully utilised as different local, regional and national conditions for direct and simple transferability apply. Good practises are transferred between institutions from various knowledge exchange events, but too often

not introduced due to various limitations. This could be explained by yet insufficient social demand and readiness of environmentally friendly urban mobility. Often the knowledge transfer and some pilot actions take place within projects but are not extended beyond individual projects. The limited utilisation could be attributed to insufficient resources available within the governance bodies. There is, however, a great diversity of how knowledge transfer happens between the different countries and cities, according to the experts.

Dimension 2: Improved governance structures and organisational set-up

The experts mention that there are various structures dedicated to environmentally friendly urban mobility because of the social and political pressure. This results in a good combination of old-fashioned structures as well as new ones that are seen as more efficient and attractive, according to the experts, increasing the available knowledge. Changes in this field are usually induced by younger generations which feature higher speeds in taking up various technological solutions of modern mobility, e.g. electric scooters. One expert mentions that there is a greater civic engagement in searching solutions to environmentally friendly urban mobility.

It also can be observed that business communities are becoming more involved in modern urban mobility solutions, e.g. rent of electric scooters. They become more socially engaged and there is much more co-operation seen with local communities, non-profit organisations, universities, etc. to promote common interests of modern mobility. Business companies are also getting involved in R&D initiatives and projects. Municipalities are more prone towards cooperation with civil society, increasing knowledge available in structures.

Dimension 3: More efficient use of human and technical resources

Experts observe that in this field, sufficient human resources are available, yet not always efficiently utilised. Sometimes, highly skilled experts are involved in carrying out inefficient tasks. Sometimes, it can be observed that there is a lack of trust in qualified experts. In some countries, the precious advice from younger professionals and the academic community is disregarded by heads of institutions or business directors. With more and more communication taking place online and institutions developing efficient internal document management systems, a time- and/or resource-saving can be observed, according to one expert. The share of public services going online is increasing resulting in a more efficient use of human and technical resources. Both, public and private sectors have access to advanced technical resources in the field of environmentally friendly urban mobility. A lot of open data, statistics and databases are available. They are constantly being improved and made accessible to support knowledge-driven decision-making. Technical equipment is however not yet always efficiently used, according to one expert; especially the public sector appears to have a tendency to purchase highly complicated equipment that it has difficulties to operate afterwards.

Dimension 4: Better ability to attract new financial resources

With public resources being scarce a more efficient involvement of private stakeholders should be sought, according to one expert. The experts can rely on different experiences made with PPP throughout BSR. One expert mentioned that the private sector yet is more involved about their business

than social impact. As a consequence, institutions and governments could work on better tailored incentives to enhance more positive social impacts.

Dimension 5: Increased capability to work in transnational environment

In the field of environmentally friendly urban mobility, there is a lot of cross-border cooperation in the region, but less on the BSR level. Some network organisations (e.g. UBC) provide good support in this field, also contributing to an increase of the level of competence among experts both thematically and transnationally. One expert points out that a lot of communication and cooperation is shifting to the virtual space. This has been even more reinforced with the COVID-19 lockdown.

3 Conclusion

The analysis is based on 76 completed surveys covering in each case a detailed assessment of capacities and qualitative comments. They have been gathered from experts from nine different countries working in different contexts (public authorities, private sector, research, intermediary organisations). Even if an equal number of experts per country was selected and addressed, not all countries are represented equally in the responses, for example, there were 4 answers from Denmark but 13 from Poland and Latvia, mentioning the countries with least and most responses. However, the analysis shows that this has not led to a relevant bias in the survey results or in the answers, as most answers reflect not a 'national view' but rather a truly personal opinion. Since assessments and qualitative explanations are based on personal opinion, the overall arguments mentioned in the qualitative analysis of the study may, therefore, differ and sometimes even contradict, depending on the experts and their perspective. Despite these variations, which account for the wealth of qualitative information received, the aggregated results of the expert opinion on the development of the institutional capacity are valid and robust as well as coherent in relation to the answers of the previous measurements (2014 and 2018) conducted.

As a general rule, experts responding to the survey were asked not to take into account in their judgement the possible consequences of the COVID-19 pandemic, as the impact on the institutional capacities is still unclear. During the analysis and post-survey interviews, it was confirmed that the experts, as a general rule, were not negatively influenced by the COVID-19 crises and its effects, even if some statements presented in the qualitative analysis might reflect a certain ambiguity and uncertainty about any future developments.

From the gathered information and the detailed analysis of the development of the institutional capacities, one can conclude that the institutional capacity is overall on a good level in the BSR, despite the negative trend identified between 2018 and 2020 for some SOs.

The most significant positive progress in comparison to 2018 can be observed for SO 1.1 (Research and innovation infrastructure), followed by SO 2.3 (Energy efficiency), SO 3.1 (Interoperability of transport modes) and SO 3.2 (Accessibility of remote areas and areas affected by demographic change). The situation for SO 3.4 (Environmentally friendly shipping) has remained stable. The most significant decreases can be observed for SO 1.3 (Non-technical innovations) and SO 1.2 (Smart specialisation). The reach of the target values for 2023 for these two SOs is deemed as most likely not possible. Minor decreases have been calculated for SO 2.1 (Clear waters), SO 2.2 (Renewable energy), SO 2.4 (Resource-efficient blue growth), SO 3.3 (Maritime safety) and SO 3.5 (Environmentally friendly urban mobility).

With regard to the type of capacities that have developed positively across all SOs, it has to be highlighted that the most significant progress is observed for capacities in Dimension 5 "Increased capability to work in transnational environment". This shows that the experts agree that BSR, despite perceived limitations in other capacities, has continued to develop the ability and capacity for cooperation. The interviews confirm this assessment and hint at further interest from stakeholders all across the BSR for future cooperation and underline the importance of the IBSR programme in further enhancing the capacities.

The overall positive development of institutional capacities for almost all SOs in 2018 has, thus, come to a halt. Now, it seems that several institutional capacities are stable or have not been further developed. According to analysis, the more negative trend for quite some SOs might have two main explanations: first, the changing political landscape in some countries, leading to a lack of continued support to capacity development, and, second, that BSR is reaching a 'glass ceiling' in the field of institutional capacities. It seems that the development of capacities has reached a certain maximum and is now hampered by structural and systemic factors, such as the difficulty to establish knowledge transfer between the public and the private sector, the challenge to develop intersectoral approaches, the difficulty to attract private funding for larger initiatives or the difficulty to spread the positive benefits equally across the territory. Many experts highlight that generally the situation is at least satisfactory, sometimes even good, but further positive development cannot be observed due to inequalities between countries and different types of territories, e.g. positive developments are concentrated only in some countries or only in larger cities and capitals. The conclusion is that further increase in capacities is not easy to be achieved with a continuation of existing support mechanisms, i.e. more funding or more projects, but that it would require systemic and structural changes in existing policies, i.e. the involvement of other departments, integrated strategies, capitalisation and wider distribution of knowledge into the territory, mainstreaming of successful pilot actions etc.

ANNEX:

Detailed survey results per SO and per dimension and characteristic of institutional capacities (Update 2020)

Dimension / Specific Objective	4.1		4.2		4.3		5.1		5.2		6.1		6.2		6.3		7.1		7.2		8.1		8.2		8.3		**Overall**	
	Availability of knowledge		Availability of mechanisms for knowledge transfer		Utilisation of knowledge		Availability of organisational structures		Utilisation of organisational structures		Utilisation of human resources		Utilisation of technical resources		Application of time- and/or resource-saving measures		Ability to attract external private financial resources		Ability to attract external public financial resources		Available competences to work transnationally		Frequency of transnational contacts		Intensity of transnational collaboration			
	Avg	Dev	Avg	Dev	Avg	Dev	Avg	Dev	Avg	Dev	Avg	Dev	Avg	Dev	Avg	Dev	Avg	Dev	Avg	Dev	Avg	Dev	Avg	Dev	Avg	Dev	Avg	Dev
1.1	3.3	0.5	3.0	0.8	3.0	0.8	3.8	0.5	3.0	0.8	3.0	0.0	3.0	0.8	3.0	0.8	2.5	1.0	3.5	0.6	4.0	0.8	3.8	1.0	3.0	0.8	3.2	0.8
1.2	3.4	0.5	3.4	0.9	2.8	0.4	3.4	0.5	3.4	0.5	3.2	0.4	3.0	0.0	2.8	0.8	2.4	0.7	3.8	0.6	3.6	0.5	3.6	0.5	3.0	0.7	3.2	0.6
1.3	3.0	0.0	2.6	0.5	2.2	0.4	3.4	0.5	2.6	0.5	3.2	0.4	2.4	0.5	2.6	0.5	2.0	0.0	3.0	0.0	3.0	1.0	3.0	1.0	2.8	0.8	2.8	0.7
2.1	3.5	0.7	3.0	0.8	3.0	0.9	3.4	0.7	2.8	0.6	3.4	0.7	3.1	0.7	3.0	0.5	1.9	0.5	2.8	0.8	3.6	0.5	3.5	0.8	3.2	0.8	3.0	0.8
2.2	3.0	1.1	3.0	0.9	2.7	1.2	2.8	0.8	2.3	0.5	2.5	0.5	2.8	0.8	2.3	0.5	2.3	0.5	2.8	0.8	3.2	0.8	2.8	0.4	2.7	0.5	2.7	0.7
2.3	3.5	1.0	3.0	1.4	2.5	1.3	3.5	1.0	2.5	1.3	2.5	0.6	3.3	1.0	3.3	1.0	2.8	0.5	3.3	0.5	3.5	0.6	3.5	1.0	2.8	1.0	3.1	0.9
2.4	3.0	0.6	2.5	1.0	2.7	1.0	3.0	0.9	2.5	0.5	2.7	0.5	2.7	0.8	2.2	1.0	2.2	0.4	3.0	0.6	3.8	0.4	3.7	0.5	3.3	0.8	2.8	0.8
3.1	3.2	0.4	2.6	0.5	2.8	0.8	2.6	0.5	2.6	0.5	2.8	0.4	3.0	1.2	2.2	0.4	1.6	0.5	2.6	0.5	2.8	0.4	2.8	0.4	2.4	0.5	2.6	0.7
3.2	3.3	0.5	2.7	0.5	2.9	1.1	3.3	0.8	2.7	1.0	3.0	0.8	2.6	1.0	2.9	1.1	2.1	0.7	3.1	0.7	3.4	0.8	3.0	0.8	2.9	0.7	2.9	0.8
3.3	3.0	0.5	2.7	0.9	2.9	1.1	3.1	0.8	2.3	0.7	2.6	0.9	2.8	1.1	2.1	0.6	2.3	0.7	2.8	0.7	3.1	0.8	3.0	0.7	2.7	0.5	2.7	0.8
3.4	3.7	1.0	3.2	0.7	3.3	0.9	3.1	0.6	2.8	0.7	3.4	0.5	3.3	0.9	3.1	0.6	2.3	0.9	3.3	0.7	3.9	0.6	3.4	0.7	3.3	0.7	3.2	0.8
3.5	3.6	0.5	2.8	0.4	3.0	0.0	3.4	0.5	3.6	0.5	3.4	0.5	3.2	0.4	2.8	0.8	2.6	0.5	2.8	0.8	3.8	0.8	3.0	0.7	3.4	0.9	3.2	0.7
Total	3.3	0.7	2.9	0.8	2.8	0.9	3.2	0.7	2.8	0.7	3.0	0.7	2.9	0.8	2.7	0.8	2.2	0.6	3.1	0.7	3.5	0.7	3.3	0.8	2.9	0.7	3.0	0.8