Baltic Science Network

Connecting Through Science

Researcher mobility tools for the Baltic Sea Region

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Project in brief

Baltic Science Network (BSN) serves as a forum for higher education, science and research cooperation in the Baltic Sea Region (BSR).

BSN is a policy network gathering relevant transnational, national and regional policy actors from the BSR countries. The Network is a springboard for targeted multilateral activities in the frame of research and innovation excellence, mobility of scientists and expanded participation. These joint activities are modelled with an overall aim to ensure that the BSR remains a hub of cutting-edge scientific solutions with the capacity to exploit the region´s full innovation and scientific potential. The activities are modelled as examples of best practice which form basis of the policy recommendations drafted by the Network.

The platform is tailored to provide advice on how to enhance a macro-regional dimension in higher education, science and research cooperation. Recommendations jointly formulated by the Network members address the European, national and regional policy-making levels.

BSN is a flagship of the EU Strategy for the Baltic Sea Region under the Policy Area Education, Research and Employability, as well as one of two cornerstones of the Science, Research and Innovation Agenda of the Council of the Baltic Sea States.

Disclaimer: This Working Paper is based on input from stakeholders and BSN partners and does not necessarily reflect the views of all participating Member States and organisations.

Table of Contents

Executive Summary

This study, made by Gaia Consulting Ltd. for the Baltic Science Network, maps and describes existing tools for researcher mobility in the Baltic Sea Region (BSR). It analyses how the existing tools work in overcoming challenges and barriers in researcher mobility, and it puts forward suggestions for new structured tools in support of researcher mobility in the region. The study was made in September-December 2017 as part of the BSN WP 4. Methods included desk study, an online survey, and interviews with researcher mobility stakeholders in the region, as well as a workshop with the BSN Steering Committee.

Researcher mobility tools were in this study defined *as set practices, agreements or funding instruments that facilitate researcher mobility with focus on or including the BSR*. They should be available for researchers, meaning doctoral student level and beyond. The primary focus of the tools would not need to be mobility, but mobility should be included as a prerequisite or a requirement for using the tool.

The mapping identifies 86 tools for supporting researcher mobility in the BSR. Tools are provided by more than 30 organisations, covering Denmark, Estonia, Finland, Germany (with focus on BSR), Latvia, Lithuania, Norway, Poland, Russia (only Baltic Sea adjacent areas) and Sweden. They include joint European funding opportunities, programmes with specific focus on BSR cooperation, national and bilateral mobility tools, national research funding that enables mobility in the region, Nordic and Arctic mobility programme that can provide best practice for the BSR, as well as a few examples of regional and university-driven local tools. In addition to funding, tools that provide training opportunities, information, advice and support are regarded to be of considerable importance and a prerequisite for well-functioning mobility.

The mapping shows that there exist a great deal of tools that can be used towards supporting researcher mobility within the BSR. However, only few tools are designed with a direct focus on the BSR and most of these are rather small-scale, with the exception of BONUS EEIG.

The mapping clearly indicates that well-functioning mobility needs close consideration of various dimensions of cooperation, from political priority setting and

a regional mind set to sufficient and various funding incentives, national and local support on administrative issues as well as investments in creating favourable working and living conditions. The mapping shows that there exist best practice in overcoming identified key challenges for researcher mobility. However, none of the mapped tools answers efficiently to all mobility challenges of the BSR. The use of the tools is often restricted to specific sites, countries or programmes. Best practice tools cannot easily be replicated, as they are the result of years of negotiations and built trust. Also, information on the tools is not easily and equally available to all researchers.

The study recommends three possible models for building structured tools for research mobility, depending on the aim of research cooperation.

In Model A, the aim is to connect the researchers of the region, by increasing the level of long and short term mobility among both researchers and students at all career stages, within all fields of research and across all countries. In this model, mobility tools should be attractive and available for as many researchers and students as possible. Key measures would be to enhance the availability of information, provide targeted support to universities and researchers on administrative issues, as well as securing the availability of various funding tools for short and long term mobility and training.

In Model B, the aim is to increase the prosperity of the region by pooling and sharing excellent research and innovation, including cooperation around excellent research infrastructures, and both geographic and sectoral mobility. In this model, mobility tools should be attractive and available for the best candidates. Key measures would be to sign agreements on joint use of research infrastructure and innovation platforms, building attractive regional BSR brands, supporting the development of well-functioning selection systems, excellent administrative and HR services, as well as good connections with industry partners.

In Model C, the aim is to respond to common challenges of the region by cooperating on jointly defined themes of specific importance and policy relevance to the BSR. In this model, mobility tools need to be attractive for the most relevant researchers and societal stakeholders. Key measures would be to reach political support and agreements on cooperation platforms, as well as sufficient volumes of targeted

funding that can make an impact in the selected areas, support for pooling and sharing resources and for developing good contacts to societal stakeholders to ensure policy relevance of the research.

1. Introduction

The Baltic Sea Region (BSR) includes some of the most successful and innovative economies in the world, as well as regions that are fast catching up with the European average. The competitiveness of the region is closely related to a high education level. To maintain and boost the region's competitiveness, there is a need to increase cooperation between educational institutions on all levels, as well as to promote entrepreneurship and innovation.

Improved researcher mobility tools and schemes can significantly advance these aims. Research mobility is widely acknowledged as one of the major factors facilitating excellence in science and competitiveness in innovation and technological development. Countries and regions are actively involved in designing and implementing academic mobility policies through academic exchange programmes.

The Baltic Science Network (BSN) aims at developing and implementing transnational strategies, incentives and programmes to support higher education, research and innovation and to develop excellence in research, development and innovation (RDI). The theme of the Work Package 4 is Mobility in research and higher education, and the task of its action 4.2. is targeted specifically to identify and develop *structured tools for researcher mobility in the BSR.*

This study was conducted to support this work by:

1. Mapping and describing existing tools for researcher mobility in the BSR;
2. Analysing how the existing tools work in overcoming challenges and barriers in researcher mobility;
3. Making suggestions for new structured tools in support of researcher mobility in the region.

2. Framework of the Study

2.1 Criteria of researcher mobility tools

In this study, researcher mobility tools were defined *as set practices, agreements or funding instruments that facilitate researcher mobility with focus on or including the BSR*. They should be available for researchers, meaning doctoral student level and beyond. The primary focus of the tools would not need to be mobility, but mobility should be included as a prerequisite or a requirement for using the tool.

Existing tools for researcher mobility were investigated with a focus on publicly provided national and meta-regional tools that are focused on or cover the BSR. Tools provided by local or privately funded organisations were left with less attention. The study focused on tools currently in use, although some examples of concluded programmes and instruments as well as planned new initiatives were used as a point of reference.

2.2 Analysis framework

As a basis for the analysis framework, the results of the study were reflected on one hand against relevant parts of the EU Strategy for the Baltic Sea Region (EUSBSR)[1], and on the other hand against the key challenges that were identified in the study "Challenges to researchers' mobility in the Baltic Sea Region"[2]. Where relevant, also the "Working Paper on Challenges and Barriers to Research Cooperation in the Baltic Sea Region"[3] was consulted.

There are three main objectives in the EUSBSR: Save the Sea, Connect the Region, and Increase Prosperity, which all have a set of sub-objectives[4]. These objectives are shown in Figure 1. In the context of this study on researcher mobility tools in the BSR, the relevant objectives that are considered are: "Connect the Region" and its sub-

[1] https://www.balticsea-region-strategy.eu/
[2] Challenges to researchers' mobility in the Baltic Sea Region, Gintaras Valinčius, Tadas Juknevičius. Research and Higher Education Monitoring and Analysis Centre, 2017.
[3] Working Paper on Challenges and Barriers to Research Cooperation in the Baltic Sea Region, Josephine Them Parnas, Danish Agency for Science and Higher Education, March 2017.
[4] COMMISSION STAFF WORKING DOCUMENT European Union Strategy for the Baltic Sea Region ACTION PLAN {COM(2009) 248}, 2017, https://www.balticsea-region-strategy.eu/action-plan.

objective “Connecting People in the region”, and “Increase Prosperity” and its sub-objective “Improved global competitiveness of the Baltic Sea region“.

EUSBSR calls for improving the cooperation within the region, by better connecting the people in the region. This can be done either by establishing new networks and platforms of cooperation, or by strengthening the existing ones. At the same time, to increase the prosperity of the region, the EUSBSR includes actions to promote entrepreneurship and innovation. Improved researcher mobility tools and schemes can significantly advance both of these aims, but different mobility tools and services might be needed depending on whether the target is to advance researcher mobility at large or whether the main aim is to increase prosperity by including also specific actions for research driven innovation and entrepreneurship.

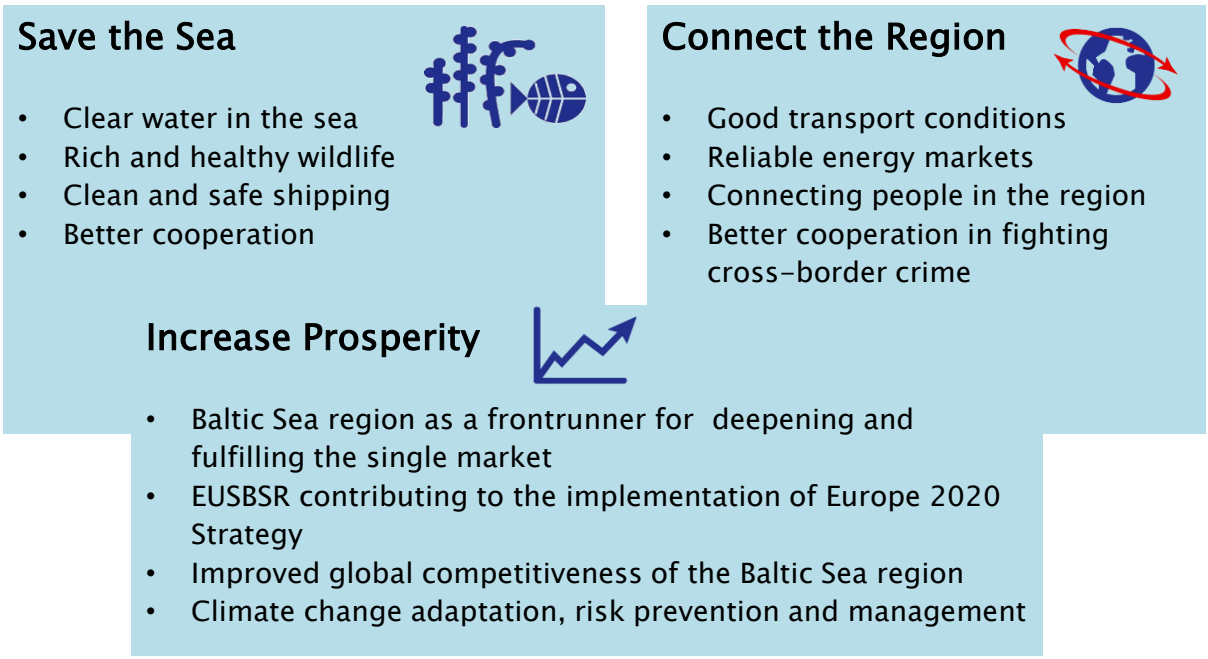


Figure 1. Main objectives and sub-objectives of EUSBSR. Source: The Baltic Sea Region Strategy for Beginners 2016. Swedish Agency for Economic and Regional Growth (Tillväxtverket). [5]

The survey “Challenges to researchers’ mobility in the Baltic Sea Region” conducted by Research and Higher Education Monitoring and Analysis Centre (MOSTA) sheds light on the general attitudes of researchers and policy makers, administrators as well as social partners on research mobility as one of the important elements of modern RDI systems. Despite the general agreement on benefits generated by academic mobility, the views on the specifics of how to implement mobility programmes may differ quite significantly. This is partly due to different historical perspectives,

[5] https://www.balticsea-region-strategy.eu/news-room/documents-materials?task=document.viewdoc&id=26

academic traditions, cultural differences and political environments. The survey unveiled some key challenges related to the practices used for facilitating researcher mobility in different BSR countries (Table 1). Further, the survey identified ten greatest challenges for research mobility in the BSR, which are:

1. BSR in general is not seen as a priority region for research mobility by the researchers, as well as by the research policy implementing bodies; including asymmetry perception in of the region in country groups I and II[6].
2. Absence of the national level measures for attracting talents to the country through the research mobility schemes.
3. Low level of initiatives at research institution level to attract researchers from other countries.
4. Absence of the national support programs for outgoing visits.
5. Difficulties of accessing funds/grants for mobility/research in the country of destination.
6. Difficulties of relocation: immigration process and high relocation costs.
7. Integration into different cultural environment, language barriers, history and political system.
8. Technological differences in research instrumentation and infrastructure amongst institutions in BSR countries creates asymmetric mobility patterns in the region.
9. Unfavourable employment regulation at home institutions, and intense teaching load, administrative, other duties, preventing long term research visits.
10. Research mobility associated risk of the brain drain.

These challenges highlight the diversity of issues that actually hinder researcher mobility in the BSR. If aiming at increased exchange of researchers in the area, instrument and funding related issues are just one point of view, at least equally important is to pay attention to administrative and cultural or family related issues as well as taking into consideration the regional dimension challenges.

[6] The survey used the following grouping of the Baltic Sea countries: **Group I:** Estonia, Latvia, Lithuania, Poland, Russia (St. Petersburg), and **Group II:** Finland, Germany, Iceland, Norway, Denmark and Sweden.

Table 1. Overview of challenges to researchers' mobility in the BSR. Source: Challenges to researchers' mobility in the Baltic Sea Region, Gintaras Valinčius, Tadas Juknevičius. Research and Higher Education Monitoring and Analysis Centre, 2017.

Administrative issues	Instruments and funding	Regional dimension	Cultural or family related issues
Difficulties of relocation: immigration process and high relocation costs.	Absence of national level measures for attracting talents.	BSR in general is not seen as a priority region for mobility.	Temporary separation of families, relocation of the family members.
Low level of initiatives at the research institution level to attract researchers from other countries.	Absence of the national support programs for outgoing visits.	Asymmetric perception of the BSR as a most important research mobility in different country groups[6] in the region.	Integration into different cultural environment, language barriers.
Unfavourable employment regulation at home institutions (absence of sabbatical leave schemes, difficulties related to the employment breaks, difficulties related to the vertical advancement of researcher, etc.), and intense teaching load, administrative, other duties.	Difficulties of accessing funds/grants for mobility/research in the country of destination.	Technological differences in research instrumentation and infrastructure amongst institutions in BSR countries creates asymmetric mobility patterns in the region.	
		Research mobility related risks of the brain drain.	

The BSN Working Paper on Challenges and Barriers to Research Cooperation in the Baltic Sea Region[3] is based on a series of workshops/surveys conducted in 2016 and 2017 and it outlines relevant challenges, barriers, and possible solutions to improved research cooperation in the BSR. It identifies three additional challenges to those listed in Table 1 that highlight the need for a clear purpose for research mobility within the Baltic Sea Region and the need for scaled up tools available across the whole region:

1. The purpose of research cooperation is to achieve excellent results or solve concrete problems – not cooperation or capacity building for its own sake.
2. BSR cooperation often depends on a few key individuals with long experience, personal networks and personal commitment, which makes BSR cooperation as such more vulnerable than e.g. EU cooperation.
3. Existing structures/programmes such as NordForsk and BONUS cover only part of the BSR or only selected research topics.

The present study on research mobility tools in the BSR uses the strategies and previously conducted studies as a point of departure and tries to find answers to the question of *why, even if the existing tools are trying to bring solutions to at least some of these challenges, the system does not seem to function properly*.

The EUSBSR calls for increased cooperation in the region at the level of connecting people but also by connecting various organizations, whether academic or commercial, and also asks for further joint promotion of entrepreneurship and innovation. Thus in the analysis another key question, for which answers are sought for, is *how well the existing researcher mobility tools actually promote or consider the aspects of entrepreneurship and innovation and should they consider those aspects*.

Overall, the analysis framework aims at providing insight to the BSN on *how the tools should be improved or what other measures should be taken in order to have well-functioning structured research mobility tools in the BSR, which also further the EUSBSR strategic goals for the region's development*.

2.3 Methods and implementation of the Study

The overview of current researcher mobility tools was compiled through desk study, a survey and complementing interviews, as well as a workshop with the BSN Steering Committee. The mapping was made in the period September-November 2017.

The target groups of the mapping were national, Nordic, BSR and European stakeholders, as well as coordinators of larger international/European infrastructures based within the BSR. The original survey was answered by 25 organisations and phone interviews were conducted with several of these organisations. In addition, the mapping was based on extensive study of public material of the tool providers (incl. web sites, annual reports, statistics and other publications). The preliminary results

of the mapping were commented and complemented by representatives of the BSN Steering Committee. The main results of the mapping are presented in the section 3.1. A complete overview of the mapping is included in the Annex 1 to the report and a list of respondents are enclosed in the Annex 2. It should be noted that the mapping provides a representative sample of different types of tools, and does not aspire to contain all tools available in the region.

In the second phase of the study, selected research mobility tools were analysed against how they work in overcoming the challenges that have been identified by researchers and research organizations, i.e. the most important stakeholders when it comes to research mobility in the BSR. The analysis was made using the BSN framework of 12 central challenges. Solutions provided by existing tools were analysed on the four levels used in the previous BSN work: a) regional issues (policies and priorities), b) instruments and funding, c) administrative issues of home and host organisations and d) cultural and personal issues related e.g. family. This analysis is presented in chapter 3.3. of the report.

In the final phase of the study, suggestions for new structured tools in support of research mobility were developed. Aims for research mobility were formulated using the EUSBSR framework and the general aims of the BSN as a starting point. Best practice features and lessons learned from mapped existing tools were structured under the EUSBSR aims. They were discussed with the BSN Steering Committee at a facilitated mini-workshop at the BSN meeting 15 November, 2017, in Tallinn, based on the workshop, suggestions for three different sets of structured research mobility tools (A, B and C) were finalised by the consultants. The results are presented in chapter 4 of this report, which is meant to provide tools for the following phase of the BSN work, where possibilities for developing new instruments for research cooperation within the BSR will be looked into.

3 Mapping of researcher mobility tools for the Baltic Sea Region

This section provides a summarised overview of the findings of the mapping. A more detailed table of the mapped tools is provided in the Annex 1.

3.1 General outcomes of the mapping

The mapping covers 86 tools for supporting researcher mobility in the BSR. Identified tools were provided by more than 30 organisations, covering Denmark, Estonia, Finland, Germany (with focus on BSR), Latvia, Lithuania, Norway, Poland, Russia (only Baltic Sea adjacent areas) and Sweden.

Tools were provided by:

- EU-funded initiatives (16 tools)
- BSR, Nordic or Arctic "meta-regional"[7] organisations (14 tools)
- National organisations, including also bilateral tools (total of > 50 tools)
- Regional (1 example) and local (2 examples) organisations.

Almost one half of the identified tools (39 tools) have mobility as the primary aim of the tool. The rest of the tools have primary aims of research training and education (14), research (10), internationalisation of research systems or organisations (12), information services (6), networking of researchers and organisations (5), strengthening the innovation capacities (2) or capacities of societies (2). When interpreting these findings, it should be considered that several of the tools have multiple aims and many of the tools with mobility as direct aim have for example internationalisation and national capacity building as a longer-term aims.

When combining the different levels of tool providers and aims of the tools, some main types of tools emerge, which can be used as best practice, when discussing how to enhance the research cooperation of the region. These are summarised in table 2 with examples.

[7] "Meta-regional" is here used referring to larger geographical regions encompassing several countries (Nordic regions, Arctic region) as opposed to regions within a country.

Table 2. Mapping of research mobility tools.

Type of tool	Main features	Examples
National and bilateral schemes for research mobility and cooperation *32 tools identified*	• Tools with main focus on mobility, incl. outbound, inbound, and bilateral exchange • Specific mobility focus • Provide funding (in the example of DAAD considerable funding) • No specific BSR focus	• DAAD (several tools) • DAAD bilateral agreements with different countries • Humboldt Research Fellowships for postdoctoral/experienced researchers • Finnish-Russian Student and Teacher Exchange Programme FIRST+ • Research Council of Norway International Cooperation Agreements and International Funding • Post doc grants of the Estonian Research Council (Estonia) • Networking grants and post doc grants of Swedish Research Council
European funding opportunities *16 tools identified*	• Fund research within EU member and associate states • Often include mobility, but mobility is seldom the main focus • Annually provide considerable funding • No specific BSR focus	• Horizon2020 (H2020) in general • H2020 Marie Skłodowska-Curie Actions • European Research Council (ERC) funding • COST • ERASMUS+ • EEA and Norway grants
National or regional RDI programmes in support of internationalisation *10 tools identified*	• Focus on strengthening the national RDI system, incl. internationalisation • Can include mobility support for e.g. mutual learning • Include funding for the development of national environments and for increasing international cooperation • National, not BSR focus	• Dora Plus Scholarships (Estonia) • Mobilitas Pluss grants (Estonia) • Kristjan Jaak Scholarships for internationalisation of higher education in Estonia • Enhancing Researchers' International Competences (Lithuania)

		• Open Access to Science and Research (MITAP II, Lithuania) • German Research Foundation (Deutsche Forschungsgemeinschaft, DFG) Initiation of International Collaboration and International Scientific Events • Research Promotion of the Federal State of Hamburg (Landesforschungsförderung Hamburg): part for international cooperation • UWERTURA (Poland) • National Liaison Offices in Brussels
BSR programmes and tools *9 tools identified*	• Promote research cooperation within the BSR • Include mobility, but not the main focus • BONUS provides funding, others are more of coordinating focus • **Specific BSR focus**	• BONUS EEIG • Baltic Science Network • Baltic TRAM Industrial Research Centres • Baltic University Programme • CBSS Summer University • Studies of the Baltic Sea (Foundation for Baltic and East European Studies)
Meta-regional programmes that partly overlap with BSR *5 tools identified*	• Promote research cooperation within groups of countries that are part of/adjacent to BSR • Include mobility requirement • Provide funding • No specific BSR focus, but BSR countries can partner in Nordic programmes	• NordForsk Nordic Centres of Excellence (several programmes) • Nordic eInfrastructure Cooperation (NeIC) • Nordplus for higher Education • University of the Arctic (UArctic) networks • STRING network (Öresund region)
National research funding that enables BSR mobility *4 tools identified*	• Research support through free project funding and schemes supporting researchers' careers • Can include mobility requirement (e.g. Finland) or	• FRIPRO, Research Council of Norway • Academy Research Fellows and Post-doctoral Fellows of the Academy of Finland

	mobility incentives (e.g. Norway) • Annually provide considerable funding • No specific BSR focus	
University-level tools for internationalisation and mobility *2 specific tools identified as examples; most activities under any of the listed tools are realised on university level*	• University networks or tools of individual universities • Can provide funding for mobility within university partnerships or for preparing and implementing international (e.g. EC-funded) projects • Can organise joint courses and tuition	• Funding for mobility within university partnerships International Center of Kiel University • Fund for internationalisation of Kiel University
Joint tuition tools *>10 tools identified*	• Tools on European, BSR, Nordic or bilateral levels where joint training is the primary aim. • Include courses, research schools and joint degree agreements (bilateral or multilateral) • With or without mobility requirement • Can involve funding • With or without BSR focus	• MSCA- and Erasmus + activities • DAAD bilateral agreements (several) • Nordic eInfrastructure Collaboration course mobility and travel grants • Nordplus activities • Summer schools of Swedish Research Council and Ministry of Education and Research of Germany (BMBF) • Baltic International Summer School • Baltic University Programme activities
Information assets that helps find funding opportunities for research mobility *6 tools identified*	• Online information services, databases etc. that provide information on mobility-related issues such as grants, cooperation partners, migration etc. • Organisations and contact points providing information and advice on mobility-related issues • Specific mobility focus • No funding	• DAAD database • EURAXESS • H2020 National Contact Points • National Liaison Offices in Brussels • Hello Norden • Enter Finland • Aurora database (Finland)

	• Mostly no specific BSR focus	
Meeting places *Number of scientific conferences and other regular events in the region is high, but only a few BSR-focused examples were identified for this study*	• Conferences, seminars and other regular events • Include travelling (not research mobility as such) but can give the spark to further cooperation • Can be supported by travel grants, or covered by participants • With or without BSR focus	• Baltic Sea Science Congress (BSCC) • CBSS Summer University • Baltic International Summer School • CBSS Baltic Sea Science Days

As the overview shows, there exist a great deal of tools that can be used towards supporting researcher mobility within the BSR. However, only few tools (9) are designed with a direct focus on the BSR. These include tools provided by BONUS EEIG, by the Interreg funded projects BSN and Baltic TRAM, the Baltic University Programme, the Baltic Sea Region University Network, the Foundation for Baltic and East European Studies, and the tools offered by the Council of the Baltic Sea States. Of these, only BONUS provides considerable funding for research, and only the small-scale BUP Mobility Research Grant Programme for Young Researchers has mobility as the primary aim.

Most of the mapped tools include funding, and most funding is provided on national and EU levels. In addition to funding, tools that provide information, advice and support are regarded to be of considerable importance and a prerequisite for well-functioning mobility.

3.2 Analysis of how researcher mobility tools overcome barriers for mobility

This section provides the main findings of the analysis on how mapped tools overcome challenges for mobility. The analysis uses the challenge and solution framework from the BSN report *Challenges to researchers' mobility in the Baltic Sea Region*[8]. Specific examples on how existing tools provide potential solutions are given

[8] Gintaras Valinčius, Tadas Juknevičius. Research and Higher Education Monitoring and Analysis Centre, 2017.

for each challenge and solution under the headlines: Regional dimension, Instruments and Funding, Administrative Issues and Cultural and Family-related Issues.

3.2.1 Regional dimension challenges & solutions

Challenges 1&2: The BSR is not seen as a priority region for researcher mobility, and the perception of the region's importance is asymmetric.

Possible Solutions	Best Practice Examples
Political support & dissemination	• The BSN itself provides science and research ministries of the BSR states with an overall coordination framework to develop and implement science policy in a macro-regional dimension and to ensure a better representation of BSR interests on the EU level. • BONUS had an exceptionally high support of the European Parliament and the European Council when it was launched, which underlines the status of BONUS as the first model case for the development of science-based management of the European macro-regional seas.
Bilateral Support Schemes	• DAAD has bilateral agreements with several countries on researcher exchange and joint tuition. • Bilateral mobility schemes also exist e.g., between Finland and Russia, and between Norway and Poland and Norway and Estonia.
Participation in research infrastructure development and use	• National funding agencies in BSR countries participate with membership fees in major international research infrastructures. • As for regional cooperation, the BONUS EEIG encourages joint use of research infrastructures (especially research vessels as well as marine and coastal field research stations) by providing an inventory of the facilities available and by coordinating communication between infrastructure owners. By providing research facilities in kind for the use of BONUS the participating states will also increase total funding volume of the programme for the benefit of the Baltic Sea. • On a Nordic scale, NordForsk works for cooperation around research infrastructures, and has recently established and research infrastructure committee with high-level representatives of national funding agencies in the Nordic countries

Challenge3: Technological differences in research instrumentation and infrastructure

Possible Solutions	Best Practice Examples
Targeted investment in the development of the new centres of excellence using national and European funds	• Open R&D Lithuania network is a newly launched platform of cooperation between open access R&D centres/ laboratories of 14 Lithuanian universities, 13 public research institutes as well as 8 science and technology parks. All these institutions unite their intellectual potential, infrastructure and resources in order to provide scientifically based solutions to the problems raised by business and society.
Bilateral agreements, targeted support schemes	• The European Economic Area (EEA) and Norway Grants are the financial contributions of Norway, Iceland and Liechtenstein to strengthen bilateral relations with 16 EU and EEA Member States in Northern, Central and Southern Europe. The research councils in the partner countries administrate the grants. • Through the Lithuanian programme for *Enhancing Researchers International Competences II*, Lithuanian scientists have acquired practical knowledge in internships of scientific results commercialization, services / technology and product identification topics. Participating countries from the BSR include Finland, Germany, and Sweden.

Challenge 4: Risk of brain drain

Possible Solutions	Best Practice Examples
Improving socioeconomic environment and legislation incl. IPR	• The Lithuanian national R&D Programme „ Open Access to Science and Research" stimulates open access usage of science and research institutions resources; develops skills to identify the research needed services and to commercialize R&D outputs; and organizes and develops a common Lithuanian R&D marketing strategy using the Open R&D Lithuania brand. As part of the programme, Lithuanian researchers have participated in international internships and delegations.
Performance based funding, increasing transparency and trust in research funding	• The main tool of national research funding agencies for funding research in e.g. Denmark, Finland, Norway, and Sweden is competitive free project funding, awarded by excellence criteria, and with an expectation that part of the funds will be used for developing international collaborations.

Open employment policies, internal grant systems, open access to funding and infra, active recruitment and flexible employment models	• University networks (such as networks of mobility officers, national or regional EURAXESS networks, or the BUP) serve as good fora for exchange of competence and experience. • Best practice examples for research organisations on recruitment and open access polices is provided by large-scale infrastructure environments with prestigious fellowship schemes.

3.2.2 Challenges and Solutions related to instruments and funding

Challenge 5: Absence of national level measures for attracting talents to the country

Possible Solutions	Best Practice Examples
Programmes for attracting talents	• The aim of Dora Plus Programme scholarships are to improve Estonia's visibility and attractiveness as a destination for studying and research. • The Swedish Research Council's Visiting Professors' scheme attracts foreign experts that strengthen Swedish research environments.
Programmes for attracting especially young talents	• Alexander von Humboldt Foundation's Sofja Kovalevskaja Award is targeted at successful top-flight junior researchers to come to institutions in Germany. • Estonia's Mobilitas Pluss grants bring researchers – especially young researchers – to work in Estonia.
Participation in H2020 activities	• Poland's UWERTURA programme offers fellowships in international research teams conducting ERC grants. • The Lithuanian Research Development and Innovation Liaison Office in Brussels (LINO) aims to strengthen European research cooperation facilitating the successful integration of Lithuanian researchers into international research projects and to monitor, analyse and report on developments in EU research and innovation policy.

Challenge 6: Absence of national support programmes for outgoing visits

Possible Solutions	Best Practice Examples
Bilateral agreements	• The large German foundations have bilateral agreements with several non-EU states, as well as with Poland
Mobility support added in funding schemes	• Norway's free research funding grants (FRIPRO) fund Norwegian research projects. Projects can receive additional funding for outgoing mobility.
Ensuring equal opportunities for men and women	• The EURAXESS network offers informative assistance to researchers international and intersectoral mobility

Challenge 7: Difficulties of accessing funds/grants in the country of destination

Possible Solutions	Best Practice Examples
Simplification of the support schemes for the foreign researchers, ensuring equal opportunities	• National funding agencies in several countries have opened their grant schemes to researchers from abroad and project funds can be used for international cooperation. • DAAD offers a database on DAAD scholarships as well as funding provided by selected other organisations, for researchers interested in coming to Germany.

3.2.3 Administrative challenges and solutions

Challenge 8: Difficulties of relocation

Possible Solutions	Best Practice Examples
Immigration procedures	• Hello Norden portal of the Nordic cooperation offers comprehensive information on how to move between Nordic countries. • The Finnish online MIGRI system for immigrants has been developed to be easy to use and tailored to take individual differences into consideration.
Partial or full compensation of the relocation costs	• Many of the fellowship schemes of larger foundations include relocation costs as well as costs for e.g. bringing family members and for language tuition: Best practice examples are provided by e.g. DAAD and the Humboldt Foundation, and among the national research funding agencies e.g. the Estonian Research Council.

Challenge 9: Low level of initiatives at research institution level to attract researchers from other countries

Possible Solutions	Best Practice Examples
International mobility activity indicators in funding agreements and performance assessment	• The Academy of Finland's funding for Academy Research Fellows includes since 2016 a 'mobility requirement' (national or international). Fellows are encouraged to engage in international research collaboration and mobility across international and sectoral borders, for example, by working part of the term abroad.
International mobility activity indicators in career advancing	• Mobility is a requirement in NordForsk Nordic Centres of Excellence, and funding is provided towards receiving guest students and researchers at universities in the Nordic region.

Challenge 10: Unfavourable employment regulation at home institutions

Possible Solutions	Best Practice Examples
International mobility activity indicators into the performance assessment	• The International Center of Kiel University offers grants for mobility within university partnerships as well as other internationalisation measures for its researchers and students.
Sabbatical leaves, encouraging participation in EU support schemes	• The International Funding of the Research Council of Norway enables researchers at Norwegian institutions to take part in European cooperation aiming at H2020 funds. • The Landesforschungsförderung Hamburg, Förderlinie Aufbau internationaler Kooperationen offers grants to universities in the region for e.g. workshops and researcher exchange, typically resulting in a joint application to EU calls. • Post doc schemes of Swedish Research Council offer post docs opportunities to work abroad, with possibility for repatriation • Poland's UWERTURE programme covers the costs of Polish scientists participating in European Research Council (ERC) projects.

3.2.4 Cultural and family-related challenges

Challenge 11: Temporary separation of families, relocation of the family members

Possible Solutions	Best Practice Examples
Counselling services	• Many of the fellowship schemes of larger foundations include relocation costs as well as costs for e.g. bringing family members and for language tuition, accompanied by extensive HR services. Best practice examples are provided by e.g. DAAD and the Humboldt Foundation. • Large-scale international infrastructure environments, such as the European Molecular Biology Laboratory EBML invest heavily in their HR services and the social integration of recruited researchers and fellows, before, during and after the stay.

Challenge 12: Integration into different cultural environment, language barriers

Possible Solutions	Best Practice Examples
Counselling services	• See the examples displayed under possible solutions for Challenge 11.

3.3 Conclusions of the mapping and analysis

The mapping shows that there exist a great deal of best practice that could be used for enhancing the conditions for researcher mobility. It is also notable that for each identified challenge, there exist best practice examples that can be adopted and further developed. Similar results are also found in the BSN report "Overview of the Best Practices of Researchers' Mobility Programmes" (MOSTA, August 2017), which raised the question on whether special schemes designed to facilitate researcher's mobility within the BSR are necessary.

"Overview of the Best Practices of Researchers' Mobility Programmes" (Aug 2017) points out that:

- a wide range of mobility schemes are available for the researchers in BSR
- mobility schemes address the needs of researchers at various stages of their careers
- schemes cover visits ranging from one month up to five years
- mobility programmes envisage no major restrictions concerning nationality of researchers
- mobility schemes in most cases cover both outgoing and incoming research visits
- moving between sectors during the research visits is allowed in some EU sponsored mobility schemes (but usually not in others)

Although there exist a lot of mobility tools, some key challenges remain. These include:

1. *A highly scattered scene where information is not easily and equally available to all researchers*
2. *The use of the tools is often restricted* to specific sites, countries or programmes.
3. *Only few of the tools have a specific incentive for BSR cooperation*, and none of the tools answer efficiently to all or most of the mobility challenges of the region.
4. *Best practice tools cannot easily be replicated*, as the most well- functioning tools are often the outcome of years of hard work and negotiations (such as BONUS EEIG or NordForsk programmes).
5. *Funding needs to be accompanied by sufficient social support services on both national and institutional level*. Despite the fact that some of the most central mobility challenges earlier identified (e.g. language barriers in settling administrative matters at the hosting institution, city and state or family relocation

considerations, as well as social security matters)[9] cannot be solved by funding grants, the mapping lack best practice examples from individual universities. Considerably more focus needs to be put on sharing best practice on favourable working and living conditions at home and host institutions, where lessons can be learned from e.g. the EURAXESS network and its work on a "mobility toolbox" for partner universities.

The mapping clearly indicates that well-functioning mobility requires thorough consideration of all four dimensions, from the reginal policy dimension (priority setting, regional mindset) to sufficient and various funding incentives, national and local support on administrative issues as well as heavy investments in creating favourable working and living conditions (HR services, social integration). These findings are summarised in Figure 2.

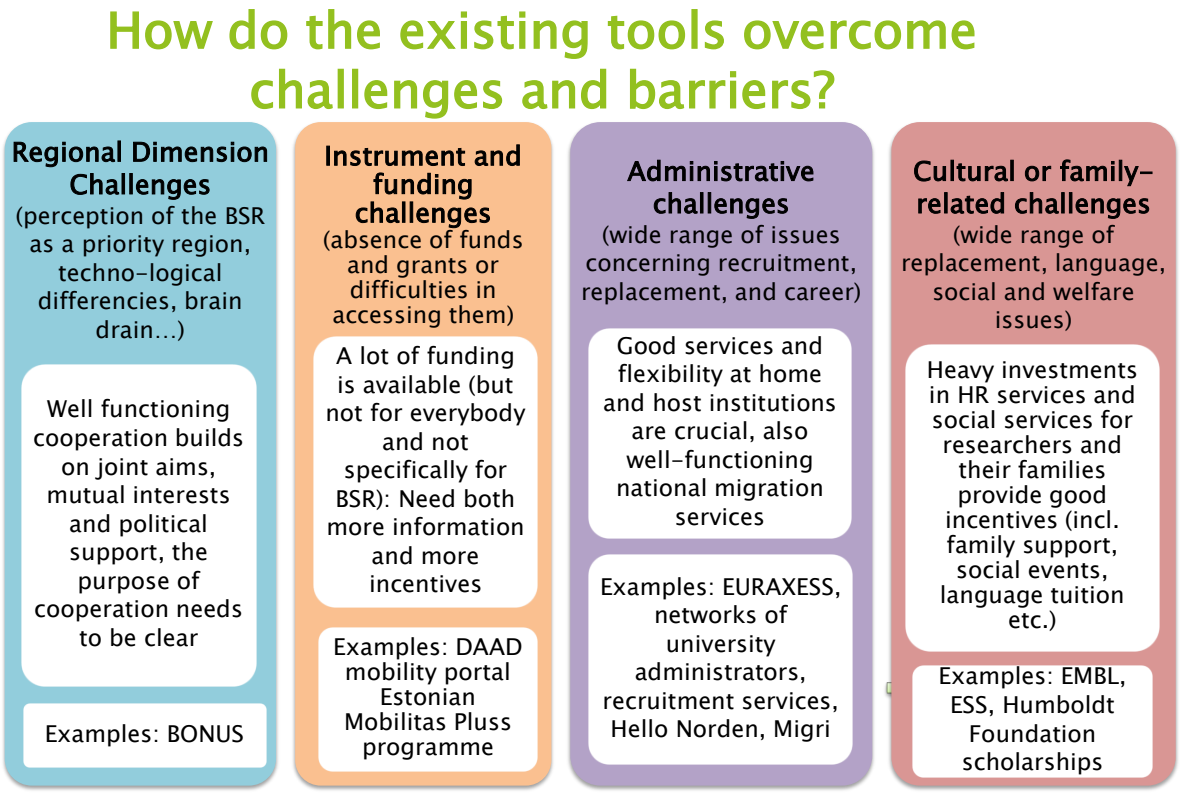


Figure 2. Overview of how existing tools overcome existing challenges and barriers for researcher mobility.

[9] According to respondents in this mapping as well as finding from "Overview of the Best Practices of Researchers' Mobility Programmes", MOSTA, Aug 2017.

4 Developing new and better tools for researcher mobility in the BSR

4.1 Main considerations when developing new mobility tools

When discussing the development of new and better tools for researcher mobility, the starting point needs to be the question on why mobility should be enhanced. The framework elaborations in the section 2 emphasized that different mobility tools and services might be needed depending on whether the target is to advance researcher mobility at large, to enhance the level of RDI environments of the region and joint innovation, or to target specific challenges of the Baltic Sea and the region.

Following these overall aims for research cooperation, the aims for research mobility can be:

- **Connecting the researchers of the region**, by increasing the level of long and short term mobility among both researchers and students at all career stages, within all fields of research and across all countries
- **Increasing the prosperity of the region** by pooling and sharing excellent research and innovation, including cooperation around excellent research infrastructures, and both geographic and sectoral mobility
- **Responding to common challenges of the region** by cooperating on jointly defined themes of specific importance and policy relevance to the BSR

Different mobility tools are useful dependent on the main aim of mobility.

If the aim is to connect researchers of the region, mobility tools need to address the question of ***how to make mobility attractive and available for as many as possible.*** Key measures to be ensured are e.g.:

- availability of information (e.g. online services and tools)
- support on administrative issues (active networks of university administrators, utilising the EURAXESS services)
- availability of various kinds of support for short and long term mobility and for education (joint courses, meeting places, using English as tuition language)

If the aim is to enhance the international level of selected RDI environments, mobility tools need to address the question of ***how to make cooperation attractive and available for the best candidates.*** Key measures to be ensured are e.g.:

- agreements on joint use of research infrastructure and innovation platforms
- building an attractive brand
- well-functioning selection system to get the right fellows
- excellent administrative and HR services to keep the right fellows (from IPR issues to family-related matters)
- good connections to industry partners

If the aim is to respond to joint challenges of the BSR, mobility tools need to address the question of ***how to make cooperation attractive for the most relevant researchers and societal stakeholders.*** Key measures to be ensured are e.g.:

- political support
- agreement on cooperation platform
- sufficient funding to make an impact in the selected areas
- pooling and sharing resources
- good contacts to societal stakeholders, ensuring policy relevance

In the following and final section of the report, we elaborate on these three models A, B and C for BSR cooperation and what kind of mobility tools they require. The described tools include notions of whether their perspective is of short-term or long-term nature. This provides some guidelines on what can be started already now and what work will need longer term consideration.

The models are meant to offer a schematic overview of possible development paths for the coming years. In reality, the models are interlinked and elements from the different models can be combined. Nevertheless, it is important to acknowledge that different approaches ought to be prioritised depending on the rationale for the mobility: to reach the goals in terms of impact and attractiveness of the region for research cooperation, choices on where to focus the efforts need to be made.

4.2 Presentation of suggested new tools

A. Connecting researchers of the region

The tools suitable for this aim are connected to making the BSR an available and attractive cooperation region for as many researchers as possible, within a broad range of research fields and topics. This would support the building of an interconnected region, which in the long run also can serve as the basis for increased prosperity (B) and joint solutions (C). In support of this aim, the following measures should be prioritised.

A1. Making information on cooperation possibilities available

Researchers want to go where the interesting cooperation possibilities are. Making information on research topics, teams and offerings of different universities in the region more easily available will spark the interest. This could be done by utilising a combination of online services and contact points and networks at the universities.

A2. Making information on mobility tools available

Collecting an overview of tools and contacts that can provide more information on e.g. funding opportunities or university practices. This could be done by making better use of existing networks such as national contact points and EURAXESS coordinators in the BSR countries. In the long run, provide a branded information platform on BSR research opportunities.

A3. Supporting university networks and meeting places such as joint courses

For students and junior researchers, the creation of networks may have far-reaching career impacts. A system that supports the provision of joint courses and summer schools – held in English – for this target group enables strong ties to be built within the BSR region that in the long run will result in more joint research.

A4. Including mobility requirement into all project funding

The BSN could do some lobbying for integrating mobility into all national-level research funding, taking example from e.g. the Academy of Finland, which already has institutional mobility as a requirement in its general research fellow funding. Together with targeted information actions, this could provide new incentives also for BSR mobility.

A5. Supporting the development of university services

Much of the researcher driven mobility under aim A is diversified and scattered and not easily compiled under a joint coordination structure (in comparison with the more challenge-driven approaches under model C). It might also be difficult to find political will for raising considerable new funding targeted at researcher mobility as such. The mobility under this target relies heavily on the readiness of universities to a) receive researchers and create attractive working conditions for them, as well as b) create stable structures for outbound mobility. The role of policy implementation and funding agencies could be to support the universities in creating mobility-friendly environments (rather than to raise competitive funds for the mobility of individual researchers). This may include going through processes and practices, agreements and recruiting services, developing common guidelines and best practice, or a toolbox for supporting inbound and outbound mobility and overcoming language barriers.

A6. Including mobility indicators in university funding

In a longer perspective, the BSN could work for including researcher mobility as an indicator of the international standing of a research environment (with possible funding implications for the funding of universities). Although this might not be very realistic in the short run, it would provide universities with strong incentives to invest in their mobility and recruitment services boosting their attractiveness for incoming researchers.

Figure 3 summarises the main tools required in Model A, dividing them into short-term and long-term solutions.

Level of solution	Short-term solution	Long-term solution
Policy	A1. Information on cooperation possibilities	A6. Mobility indicators in university funding
Funding	A2. Information on mobility tools	A4. Mobility requirement in national funding
Administration /Personal	A3. University networks organising e.g. joint courses	A5. Development of university services

Figure 3: Model A. Connecting researchers.

B. From research to joint innovation

The tools suitable for this aim are connected to making the BSR an available and internationally attractive cooperation region for the best researchers and RDI environments. This is done by utilising and further developing internationally strong RDI environments under a joint BSR brand. This would support the building of increased prosperity and stability of the region, and also (although not exclusively) serve towards finding joint solutions on common challenges (C) and in interconnecting the RDI environments of the region (A). In support of this aim, the following measures should be prioritised.

B1. Increasing the knowledge on the hotspots in the BSR region

As a fast-track action to prepare for future joint funding, information on RDI environments of international interest should be collected and jointly presented. These especially include environments that provide research infrastructures and innovation platforms of (potential) international importance. Countries have national infrastructure roadmaps and some countries have also mapped public RDI environments that are relevant for research-industry cooperation. BONUS has made an infrastructure inventory of relevant sites. This information should be made better available to all BSR research environments and would include e.g. the ownership of the platforms, services provided and terms of use. Some environments have competitive recruitment and mobility support of their own, others can be accessed e.g. through cooperation projects with local research groups. As regional proximity is a considerable benefit in infrastructure cooperation, this tool could increase the general interest in closer cooperation.

B2. Developing a strategy for branding RDI environments in the region

BSR countries could opt for branding selected RDI environments on a macro-regional level, thus increasing the attractiveness of the whole BSR. In Nordic cooperation, such "excellence" brands have been used for years to pool the resources of rather small countries and to strengthen the international brand. As it is not evident that a "BSR" stamp would serve this purpose, some work should be made on defining an appropriate strategy for developing a successful brand, and to prioritise the RDI environments to be included in this framework. As part of this work, the BSN could look at whether some funding could be nationally raised towards covering the costs for mobility to such environments, and between them. This could be included as part

of e.g. project funding and branded a "BSR mobility tool". It is, however, not evident that national funders would be able and willing to earmark funds toward such a purpose.

B3. Sharing best practices between platforms

Well-functioning RDI and infrastructure environments have well-functioning recruitment and HR processes that make them attractive work places also for research fellows from abroad. Systematic benchmarking and sharing of best practice helps developing environments with international potential to implement an equally functioning and attractive system.

B4. Supporting researcher mobility to prioritised RDI environments

In the short term, existing project funding in BSR countries can be channelled towards cooperation around certain RDI environments. This could be accomplished by a tool that for example awards small grants on top of existing project funding towards mobility connected to certain infrastructures. RDI environments can also agree on e.g. favourable terms of use for cooperation partners. On a longer term, it could be negotiated with national and BSR/European funding agencies, whether incentives for cooperation around certain BSR-branded RDI environments could be included in some research funding calls.

B5. Developing well-functioning mobility supporting systems around the RDI environments

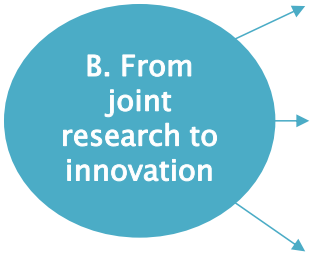
Best practice cases show that successful environments have a) a good reputation based on scientific excellence, b) high-standard facilities, c) well-functioning HR services, which make mobility easier. These include a wide spectrum of factors from terms of employment to support provided for family members, language tuition and organised social activities, making it easy to integrate into the environment and creating a sense of belonging. Mobility systems should include both purely academic inbound mobility, as well as academy-industry mobility connected to the RDI environment.

B6. Raising new funding for ecosystem development

If a more strategic branding of selected RDI environments in the region is accomplished, dialogue should be maintained with national, BSR and European funding agencies on the possibilities to mobilise funding for the development of these

environments. Well-functioning mobility support systems (B5) also require a funding base, which is today available only for a few of the best environments e.g., through national member fees. Ecosystem development requires long-term business plans for funding maintenance and development of facilities and equipment as well as for proper support for innovation measures and cooperation with industry. RDI environments need to have not only academic excellence but also high-level innovation and business development competence, in order to evolve into internationally attractive hot spots for research and development.

Figure 4 summarises the main tools required in Model B, dividing them into short-term and long-term solutions.



Level of solution	Short-term solution	Long-term solution
Policy	B1. Knowledge on the RDI hotspots in the BSR region	B2. Strategy for branding R&D environments in the region
Funding	B4. Incentives for researcher mobility to certain RDI environments	B6. Funding for ecosystem development
Administration /Personal	B3. Sharing best practices between platforms	B5. Well-functioning mobility support systems

Figure 4: Model B. From joint research to innovation.

C. Responding to common challenges

The tools suitable for this aim are connected to collaborating on topics of specific importance for or utilising the specific strengths of the BSR. The aim will be accomplished by making the BSR an available and attractive cooperation region for researchers, policy makers and other societal stakeholders as well as industry. This would support finding new solutions to common challenges and thus also increase the well-being and prosperity of the region (B), and also (within the certain pre-determined frameworks) to connect the researchers, research environments and societal stakeholders of the region (A). In support of this aim, the following measures should be prioritised.

C 1. Defining joint priorities

Many of the common societal challenges are of such character that enable fairly top-down approaches for defining themes and funds for cooperation. Success in defining good topics for cooperation depends on the ability in the process to include multiple stakeholders and commit them to the process. Also researchers (senior and junior) should be involved in bringing in new views on how to approach well-known challenges. Private industry and societal stakeholders have to be involved from the very start to ensure relevance of the topics and subsequent end results to wider audience than academics and research.

C2. Attaining national commitment around a platform for cooperation

As numerous national and European examples show, there needs to be a coordination office/secretariat in place that actively drives the cooperation. The BSN is a loose organisation that for the time being lacks this kind of function. If the main aim of cooperation is to collaborate on joint challenges of the BSR, one obvious path would be that BSN drives the continuation and strengthening of BONUS EEIG, which has proved operative and has strong backing. Depending on the topics chosen for cooperation, a parallel path could be that BSR countries join Nordic research programmes of their choice (a risk of this option being that the BSR brand does not become visible enough because of the strong Nordic brand). A third option is to choose an existing BSR organisation and mandate that to turn into an active programme secretariat.

C3. Initiating cooperation with existing programmes

As a fast-track activity, BSR funding agencies and universities can initiate cooperation with existing programmes and cooperation platforms that will foster increased researcher mobility in the whole region. For example, Nordic research programmes are open for participation on in kind cost – principles, on the conditions that the involved research groups are interested in the partnership. European-level initiatives lack the regional branding perspective, but can provide a broader framework also for BSR mobility, as the mapping of existing tools shows.

C4. Raising funds from multiple stakeholders and governments

In the long run, high-impact programmatic activities on topics of common priority for the region will require targeted funding also on national level. Although it will probably be somewhat easier to raise funds for research on common challenges of the region than for cooperation per se, this will usually require long-term driven efforts and success will depend very much on the topics chosen. European Joint Programming models could also be relevant, if the topics are deemed specifically important for all BSR states. On the other hand, countries that have invested heavily in BONUS might prefer to drive the continuation and growth of this already functioning cooperation rather than invest in new Baltic Sea topics and structures. EC funds are mostly granted on excellence ground without regional preferences (with the exception of the regional funds). Whichever the path, success will depend on having an extremely strong and long-term ambition and a proactive driving force behind the initiative.

C5. Creating advantageous conditions for mobility within research programmes

Whether the long-term goal is to strengthen existing programmes or to develop new ones for the BSR, participating universities, researchers and students will need support on inbound and outbound mobility issues. Universities may need support on e.g. establishing appropriate structures and routines, providing family-friendly incentives and helping to overcome immigration and language barriers. A "customer-oriented" approach in researcher mobility can provide a competitive benefit for universities in the region and raise the attractiveness and status of BSR mobility.

C6. Developing long-term university partnerships

To create impact, programmes towards common solutions will require the strengthening of partnerships between universities and other RDI environments in the BSR. Cooperation between specific infrastructures and RDI environments will need to be developed also in research programmes focused on specific topics, and measures might overlap with measures in the section B. In addition, there needs to be a joint goal of raising the international attractiveness of the region and to develop favourable conditions for mobility – institutional, geographical or sectoral – as a tool for strengthened cooperation. Cooperation incentives (e.g. funding) can be defined top-down, but success is possible only when good conditions are present for research groups and individual researchers. The universities and other RDI environments play a key role in creating favourable conditions for cooperation. If the ambition is to raise the scientific level and international attractiveness of the region, focus is needed on creating university partnerships that support long-term cooperation in education and research, by identifying and agreeing on the strong common research areas where competence and resources can be shared.

Figure 5 summarises the main tools required in Model C, dividing them into short-term and long-term solutions.

Level of solution	Short-term solution	Long-term solution
Policy	C1. Defining joint priorities of BSR research cooperation	C2. National commitment around platform for cooperation
Funding	C3. Negotiating cooperation on researcher mobility and networking with existing programmes	C4. Raising new funding for joint programmes, including researcher mobility
Administration /Personal	C5. Mobility support within research programmes	C6. Long-term university partnerships

Figure 5: Model C. Responding to common challenges.

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Annex 1 Overview of the mapping

The mapping includes the following 86 tools. A complete overview of the tools with more detailed information is available in a separate excel annex to the report.

Name of the tool	Organisation that provides the tool
Academy of Finland and DAAD mobility funding: Germany	Academy of Finland and DAAD (Deutsche Akademische Austauschdienst / German Academic Exchange Service)
Academy of Finland mobility funding for mobility between Finland and Russia	Academy of Finland
Academy Research Fellows	Academy of Finland
Aurora database	The Council of Finnish Foundations, the Ministry of Education and Culture, Universities Finland (UNIFI), Universities of applied sciences (Arene), State Research Institutes (TUNE)
Baltic International Summer School (B.I.S.S.)	HafenCity University Hamburg (HCU)
Baltic Sea Science Congress (BSCC)	rotating
Baltic University Programme (BUP)	Baltic University Programme (BUP), Secretariat at Uppsala Centre for Sustainable Development (Uppsala CSD) at Uppsala University
Baltic University Programme (BUP) Annual Award – PhD Thesis in 2017	Baltic University Programme (BUP)
Baltic University Programme (BUP) Mobility Research Grant Programme for Young Researchers	Baltic University Programme (BUP)
BONUS – The joint Baltic Sea research and development programme	The BONUS Secretariat (European Economic Interest Grouping EEIG), Bonus Steering Committee
CBSS Summer University	Council of the Baltic Sea States
COST	European Commission
DAAD bilateral exchange of academics	DAAD (Deutsche Akademische Austauschdienst / German Academic Exchange Service)
DAAD database	DAAD (Deutsche Akademische Austauschdienst / German Academic Exchange Service)
DAADppp mobility programme	Research Council of Norway
DLR-DAAD Research Fellowships	DAAD (Deutsche Akademische Austauschdienst / German Academic Exchange Service)
Dmitrij-Mendeleev-Programme	DAAD (Deutsche Akademische Austauschdienst / German Academic Exchange Service)
Dora Plus Scholarships	Archimedes Education Agency (implementation)
EEA and Norway Grants	European Economic Area (EEA) and Government of Norway

Enhancing Researchers' International Competences 2 (TYKU2)	Agency for Science, Innovation and Technology (MITA)
Enter Finland	Finnish Immigration Service (Migri)
Erasmus+ – Erasmus Mundus Joint Master Degrees (EMJMD)	European Commission
Erasmus+ – Jean Monnet Chairs	European Commission
Erasmus+ – Jean Monnet Modules	European Commission
EURAXESS Centres	Pan-European EURAXESS – Researchers in Motion Network
European Research Council (ERC) advanced grants	European Commission
European Research Council (ERC) consolidator grants	European Commission
European Research Council (ERC) starting grants	European Commission
Finnish-Russian Student and Teacher Exchange Programme FIRST+	Ministry of Education and Culture and Finnish National Agency for Education
Framework Grant Röntgen-Ångström Cluster	Swedish Research Council and Ministry of Education and Research of Germany (BMBF)
FRIPRO and FRIPRO Mobility Grant	Research Council of Norway
Fund for Internationalisation	International Center of Kiel University
Guest professors	Swedish Research Council
Hello Norden	Nordic Council/Nordic Council of Ministers
Humboldt Research Fellowship for Experienced Researchers	Alexander von Humboldt Foundation
Humboldt Research Fellowship for Postdoctoral Researchers	Alexander von Humboldt Foundation
Immanuel-Kant-Programme	DAAD (Deutsche Akademische Austauschdienst / German Academic Exchange Service)
Industrial Research Centres	Baltic TRAM (Transnational Research Access in the Macro region)
Initiation of International Collaboration	German Research Foundation (DFG)
International conferences	Federation of Finnish Learned Societies
International cooperation agreements	Research Council of Norway
International Post Doc Grants	Swedish Research Council
International Scientific Events	German Research Foundation (DFG)
Kristjan Jaak Scholarships	Archimedes Education Agency (implementation)
Landesforschungsförderung Hamburg, Förderlinie Aufbau internationaler Kooperationen	Free and Hanseatic City of Hamburg, Ministry of Science, Research and Equalities
Leibniz-DAAD Research Fellowships	DAAD (Deutsche Akademische Austauschdienst / German Academic Exchange Service)
Leopoldina Postdoc Scholarship	German National Academy of Sciences
Marie Skłodowska-Curie Actions (MSCA) COFUND	European Commission

Marie Skłodowska-Curie Actions (MSCA) Individual fellowships (IF)	European Commission
Marie Skłodowska-Curie Actions (MSCA) Research and Innovation Staff Exchange (RISE)	European Commission
Marie Skłodowska-Curie Actions (MSCA) Research networks (ITN)	European Commission
Mercator Fellows	German Research Foundation (DFG)
Michail-Lomonosov-Programme	DAAD (Deutsche Akademische Austauschdienst / German Academic Exchange Service)
Mobilitas Pluss postdoctoral researcher grant	Estonian Research Council
Mobilitas Pluss returning researcher grant	Estonian Research Council
Mobilitas Pluss training events and study visits for researchers	Estonian Research Council
Mobilitas Pluss Top researcher grant	Estonian Research Council
Mobility within university partnerships	International Center of Kiel University
MoUs to support cooperation, submission of proposals, and doctoral programmes	German Research Foundation (DFG)
National Contact Points	National Funding Agencies
National Contact Points / National R&D Liaison Offices	National Liaison Offices for EU RTD (at IGLO - informal association of Brussels-based non-profit R&D Liaison Offices)
Networking grants	Swedish Research Council
Nordic Centres of Excellence	NordForsk
Nordplus for Higher Education	Nordic Council of Ministers
North2North	The University of the Arctic (UArctic)
Pawel Melnikow-programme	DAAD (Deutsche Akademische Austauschdienst / German Academic Exchange Service)
Personal Overseas Research Grants (under projects funded by the Research Council of Norway)	Research Council of Norway
Personal Visiting Researcher Grants (under projects funded by the Research Council)	Research Council of Norway
Polish-Norwegian Research Programme	European Economic Area (EEA) and Government of Norway
Postdoctoral Fellows	Academy of Finland
Post-doctoral researcher	Estonian Research Council
Postdoctoral Researchers International Mobility Experience (P.R.I.M.E.)	DAAD (Deutsche Akademische Austauschdienst / German Academic Exchange Service)
Programmes for internationally recognised cutting-edge researchers	Alexander von Humboldt Foundation

Programmes for junior research group leaders – Sofja Kovalevskaja Award	Alexander von Humboldt Foundation
Project „ Open Access to Science and Research (MITAP II)	Agency for Science, Innovation and Technology (MITA)
Ratatosk Nordic mobility enhancement programme	The Nordic e-Infrastructure Collaboration (NeIC)
Research Grants – Cotutelle Doctoral Programmes	DAAD (Deutsche Akademische Austauschdienst / German Academic Exchange Service)
Research Grants – Doctoral Programmes in Germany	DAAD (Deutsche Akademische Austauschdienst / German Academic Exchange Service)
Research Grants – One-Year Grants	DAAD (Deutsche Akademische Austauschdienst / German Academic Exchange Service)
Research Grants – Short-Term Grants	DAAD (Deutsche Akademische Austauschdienst / German Academic Exchange Service)
Research Initiation	Riksbankens Jubileumsfond / The Swedish Foundation for Humanities and Social Sciences
Research Stays for University Academics and Scientists	DAAD (Deutsche Akademische Austauschdienst / German Academic Exchange Service)
Studies of the Baltic Sea projects	The Foundation for Baltic and East European Studies
Top-up financing for outgoing MSCA fellows	Research Council of Norway
UWERTURA	National Science Centre NCN / Ministry of Science and Higher Education of Poland
Visby Programme Scholarships for PhD studies and postdoctoral research	Swedish Institute

Annex 2 Overview of respondents to the study

We thank the following respondents for their participation in the study:

The BSN Steering Committee for active discussions at the workshop in Tallinn and subsequent phone and mail conversation.

Respondents to the survey

Tomas Andersson, Swedish Research Council

Marta Buchalska, National Science Centre Poland

Anna Enemark, Council of Baltic Sea States (CBSS)

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Sonata Juciute, Agency for Science, Innovation and Technology, Lithuania

Arnis Kokorevics, Latvian Council of Science, EURAXESS Latvia

Mari Leino, University of Turku

Oskar Otsus, Estonian Research Council

Ulrike Reincke, Fachhochschule Lübeck

Andreas Ritter, Kiel University

Katariina Röbbelen-Voigt, Ministry of Science, Research and Equalities, City of Hamburg

Mariann Saaliste, Ministry of Education and Research, Estonia

Meelis Sirendi, BONUS EEIG

Interviewees

Matija Grgurinovic, European Molecular Biology Laboratories, on best practices for researcher mobility connected to international large-scale research infrastructures

Johanna Hakala, Academy of Finland, on researcher mobility in national research funding schemes (case Finland)

Eivind Hovden, NordForsk, on Nordic research cooperation and cooperation between the Nordic region and the Baltic Sea regions (group interview)

Kirsi Korhonen, EURAXESS Researchers in Motion, on researcher mobility services on national and local levels

Marianne Minge, NordForsk, on Nordic research cooperation and cooperation between the Nordic region and the Baltic Sea regions (group interview)

Meelis Sirendi, BONUS EEIG, on BONUS and research cooperation in the Baltic Sea Region

Annex 3 Summary of the BSN workshop in Tallinn 17.11.2017

Baltic Science Network Steering Committee in Tallinn 15.11.2017. Notes from the Workshop (4.1.) with the BSN Steering Committee

Susanna Sepponen presented the mapping and analysis of tools for researcher mobility in the Baltic Sea Region (BSR) made by Gaia Consulting for WP 4.2. Mobility in Research & Higher Education: Structured Mobility Tools (University of Turku).

The mapping has identified around 70 different kinds of tools that support researcher mobility in the BSR, which Gaia assesses as to be a representative sample of existing mobility tools. Tools cover all BSR countries and are in function on either European, BSR, national and regional/local levels. Tools are provided by governments, funding agencies, foundations, and research organisations.

Most identified tools are funding instruments, but the study has also identified other kinds of tools, e.g. national development programmes and projects, courses and joint tuition agreements, conferences and other physical meeting places, national contact points and online information services. The tools provide good examples on how to overcome challenges and obstacles, but the use of the mapped tools is often restricted to specific sites, countries or programmes and they do not provide equal mobility opportunities for all researchers in the whole BSR. Established tools are not easily replicable, as they might be the result of long-term negotiations.

The creation of new, high-volume and high-impact funding tools can also be a challenge, as it would require considerable commitment from all BSR countries. It might therefore be more feasible to first look at how to create services that enable researchers to better use existing funding opportunities for BSR cooperation. The presentation is enclosed.

Following Gaia's presentation, Klaus von Lepel, Project Director of the Baltic Science Network (BSN), gave a commentary, referring to the German Academic Exchange Service (DAAD) statistics on mobility in the BSR, which show that:

- Mobility within BSR could be improved
- imbalanced mobility – Baltic and Polish brain drain

- Russia is disintegrating from BSR – co-publications are decreasing
- Intraregional cooperation has not been developing, current status: static or slight decrease (except Russia)
- PhD students are less mobile than other groups

After this, Susanna Sepponen and Marika Bröckl from Gaia Consulting introduced the group work session. Each meeting participant was asked to choose an aim for researcher mobility based on the EU Strategy for the Baltic Sea Region (EUSBSR) and Baltic Science Network (BSN) aims:

A. Connecting the people of the macroregion, by increasing the level of long- and short-term mobility among researchers and students within all fields and across all countries
B. Increasing the attractiveness and prosperity of the macroregion by pooling excellent research and innovation (e.g. cooperation around excellent research infrastructures)
C. Cooperating on issues of specific importance to the BSR (e.g. BONUS Baltic Organisations' Network for Funding Science EEIG)

Each group (A-B-C) then discussed what kind of researcher mobility is most needed and what are the key features that need to be in place for researcher mobility to work towards these aims.

In the concluding plenary session, each group summarised their discussions.

Theme A (10 members)

- Baseline is that there is a real scientific motivation behind the cooperation and a motivation to cooperate within the BSR.
- The aim is to support mobility and networking primarily of PhDs and post docs.
- It is important to get help with finding the right research partners.
- Some funding (grants) should be in place to facilitate the cooperation.
- Administration with grants as well as relocation needs to be smooth and bureaucracy light.

Theme B (5 members)

- Baseline is that this collaboration also includes issues of specific importance to the BSR (theme C) but cooperation is not limited to these.
- The aim is to support excellent research areas and attract researchers to these (instead of choosing other sites in the world, such as US or Southern Europe).
- Focus should be on access to facilities/research infrastructures (in line with earlier BSN discussions in Hamburg).
- Branding on a BSR level is key, otherwise researchers will choose to go to other places.
- Funding is needed for a) individual researchers' mobility, and b) host institutions that receive and provide services for the researchers.
- The selection system should be decided by the host organization, which will know how to recruit good candidates suitable for the research it focuses on.

Theme C (12 members divided into three sub-groups)

- Baseline is that good cooperation has to be based on a common vision on issues of shared importance and long-term partnership
- The aim is to identify joint challenges and cooperation needs on a common platform through a balanced of top-down and bottom-up approach
- A thematic focus can help ensuring political support, but researchers, incl. young researchers, must be involved in defining the topics
- Within education schools for young scientists could be the focus area (with English as the teaching language everywhere)
- Within research, focus should be on joint research projects, within which mobility is more feasible to finance, there should be long-term funding commitments, as joint research and publication is the key
- Pooling and sharing resources and cooperation with societal stakeholders is important

In conclusion, it was noted that aims A-B-C are interlinked but also that different tools can be needed to support the aims.

Considering the next steps, Gaia Consulting will finalise the mapping in December. The final report will include brief descriptions of three different suggested structured mobility tools that support aims A, B and C. BSN will in the next steps of the work further define the priorities and support tools for researcher mobility.