



BLACK SEA HORIZON



Bi-regional STI Dialogue

BSH Policy brief #1

Obstacles, drivers and opportunities to enhance EU-Black Sea STI cooperation

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LIST OF ABBREVIATIONS

AM – Armenia
AC – Associated Countries
AZ – Azerbaijan
BG – Bulgaria
BSEC – Organization of the Black Sea Economic Cooperation
BSH – Black Sea Horizon
EaP – Eastern Partnership
EC – European Commission
EU – European Union
FP – Framework Programme
GE – Georgia
GR – Greece
ICT – Information and Communication Technology
IPR – Intellectual Property Rights
MD – Moldova
MS – Member States
R&D – Research and Development
R&I – Research and Innovation
RU – Russia
STI – Science, Technology and Innovation
TR – Turkey
UA – Ukraine

EXECUTIVE SUMMARY

The aim of this policy brief prepared within Black Sea Horizon project (BSH) is to support the structured, efficient and effective Science-Technology-Innovation (STI) dialogue focusing on obstacles, drivers and opportunities to enhance EU-Black Sea STI cooperation. Due to several reasons the target region - incl. Armenia (AM), Azerbaijan (AZ), Bulgaria (BG), Georgia (GE), Greece (GR), Moldova (MD), Russia (RU), Turkey (TR), Ukraine (UA) – possesses a distinct place in the world, i.e. its strategic location, rich energy resources, economic potential etc. These countries have achieved considerable progress in the STI fields which have been identified as a priority field from the beginning of EU cooperation with the target region. Several key documents, e.g. “*Black Sea Synergy- A new regional cooperation initiative COM*”, “*EaP Roadmap for International Cooperation in R&I*”, “*EU Strategy for the Danube Region*” etc., build the strategic base for improving EU-BS STI cooperation. The current analysis of policy documents conducted through the BSH project reveals that the research fields: **transport; climate change and environment; secure, clean and efficient energy**; as well as **ICT** can be considered as priorities for the region. There have been several communication platforms and funding platforms in the BS Region, e.g. EU funded projects that proved fruitful grounds for interaction among the countries within these thematic areas.

Despite plenty of current initiatives within this strategic context the policy brief shows that there is still a need for improvement in the following fields:

- a more intensive S&T policy dialogue
- creation of an additional policy framework for enforcing S&T and industry
- better exchange among the countries concerning experience in research management and capacity building
- ensuring funding for targeted S&T projects and innovative initiatives
- extending integrated programs on the regions by avoiding duplications.

1. Introduction

The aim of this policy brief is to support the structured, efficient and effective STI dialogue, focusing on obstacles, drivers and opportunities to enhance EU-Black Sea (BS) STI cooperation. The target group of this paper involves all interested relevant stakeholders in the field of international STI cooperation who could optimise the framework for cooperation between researchers from the EU and the non-EU BS countries. The paper also provides recommendations for policy makers, funding agencies, the European Commission as well as research organisations in the BS region and the EU MS/ AC.

The policy brief has been prepared within the H2020 EU project BLACK SEA HORIZON (BSH), which started in February 2015 for duration of 3 years.

2. STI Cooperation among the Black Sea countries and the EU - experiences and challenges

Two key policy documents define the EU's strategy towards the wider Black Sea area, namely, the '*Black Sea Synergy- A new regional cooperation initiative COM*' and the '*Eastern Partnership*' by the European Commission. Generally, they set several thematic priorities, e.g. democracy, respect for human rights and good governance, managing movement and improving security, "frozen" conflicts, energy, transport, environment, maritime policy, fisheries, trade, research and education networks, science and technology (S&T), employment and social affairs as well as regional development.

Moreover, in May 2015 an online survey addressing key stakeholders in all EU MS and non-EU BS Countries and interviews with selected experts have been conducted within the EU Project BSH. The aim of this initiative was to examine the current development in the EU-BS STI collaboration, to compare the outcome with existing strategies and to explore the needs of scientific experts. In this context, the survey has shown that sharing knowledge and experience (knowledge transfer) and working together (networking) have been seen as a main driver for future activities. Moreover,

the cooperation within the BS countries could promote qualitatively new relations that will reduce the probability of conflict, help in the creation of regional entities, focused on sustainable development of the target region. The physics, ICT and biology as well as innovation belong to the main STI collaboration areas. Obviously the scientific areas cover the main topics settled by the European Commission within H2020.

Within the most relevant studies and documents, partly mentioned above, the following needs, obstacles and challenges for the STI cooperation between the EU and the Black Sea Countries as well as within the region have been identified:

- The BS countries have a wealth of human capital and know-how that remains untapped. This is largely due to the lack of a coordination mechanism.
- All targeted countries have faced a dramatic decrease of their R&D intensity since the early 90s. That led to the shutting down or reorientation of many research branches as well as a significant decrease in the number of researchers.
- There is also a need to strengthen, stimulate and exploit remarkable long lasting expertise and creative potential as assets for national and regional development.
- Financing through public/private partnerships and/or external sources of funding is still low and should be further promoted.
- Despite the modest growth in innovation performance in some BS countries in recent years, the research system is still characterized by general decline because of lack of inconsistent national research policies and inefficient use of funding for R&D activities.
- The optimum exploitation of the research results and in particular their transformation into innovative products and processes is partly very low. Complexity and continuously increasing costs for both high and mid-level research infrastructures lead to under development of innovative type of infrastructures. Furthermore, Innovation capacity is influenced by legal barriers such as IPR and industry.

- The gap between high-level political commitments and their actual implementation at the lower administrative and community levels, requiring increased stakeholder participation, should be bridged.
- All countries have launched ambitious national strategies to modernise and boost their research and innovation systems. In recent years, this resulted in the emergence of many technology parks and incubators, but their number in some countries is still very low.
- At EU level, there have been several communication platforms in the BS region that proved fruitful grounds for interaction among the countries, albeit with certain shortcomings and obstacles. Notable examples have been EC funded INCO (EECA and EaP) and ERA.NET (BS ERA.NET, SEE ERA.NET PLUS, ERA.NET RUS & PLUS) projects and the Black Sea Economic Cooperation (BSEC) Working Group (WG) on Cooperation in Science and Technology.
- Furthermore, the European Neighbourhood and Partnership Instrument (ENPI) has provided significant opportunities for the Organisation of the Black Sea Economic Cooperation (BSEC).
- Within the EU-Black Sea cooperation in education, science and innovation, the majority of funding instruments have been developed within the bilateral relations between different countries.

Anyway, the STI cooperation with the BS region has a huge potential: 85 % of the respondents within the BSH survey have worked with BS countries and they will support a deepening of the STI cooperation. Sharing knowledge and experience and working together have been seen as a main driver for future activities.

Moreover, the cooperation within the BS countries could promote qualitatively new relations that will reduce the probability of conflict and will help in the creation of regional entities, focused on the sustainable development of the target region (science diplomacy).

3. Future STI initiatives - recommendations

Based on survey and interviews conducted within the BSH project as well as on the analysis of relevant literature, the following recommendations on future STI collaboration can be stated:

- Within the BS region the progress of reorganising the research systems and structures should be assessed with the aim to consolidate the achievements and to address any weaknesses.
- The EU countries should intensify the S&T policy dialogue with the aim to support the creation of a policy framework for enforcing S&T and industry (e.g. via policy stakeholders conferences).
- The targeted countries should build suitable (or intensively use available) platforms for sharing best practice and experience in research management, capacity building.
- Within the STI collaboration between EU MS/AC and BS countries joint funding activities for targeted S&T projects and innovative initiatives should be ensured.
- Integrated EU programs should be extended to the BS region by avoiding duplications.
- The EU community should support the efficient reproduction of scientific potential in the target region (e.g. “brain drain” prevention) as well as the modernisation of scientific infrastructure. This activity shall include measures on increasing the number of young and talented specialist involved in research, education and technological development as well as upgrading of research infrastructure.
- The local authorities in some BS countries should establish a reliable S&T management system and ensure adequate conditions for sustainable development.
- The absence of an understanding of the essence and the meaning of an innovation system among politicians in some countries could be supported by

targeted consulting activities (e.g. like TAIEX missions in the past). The possibility to develop a system of venture investment (off-budget financing of projects with high risk) in the scientific and technical sphere could be also taken into consideration.

- Reliable protection against unauthorised use, issues regarding intellectual and industrial property in economic circulation should be defined by the local authorities. The development of a methodological manual on innovations for receiving comparative results at international level could support these activities.
- EU doctoral and post-doctoral programmes in support of research should remain open for BS participants.
- EU enterprises should support trainings on the development of entrepreneurial skills and the use of new technologies of staff of enterprises in BS countries.
- In general, the international coordination of programmes, addressing science and innovation, should be fostered in a better way, e.g. opening-up of national programmes to foreign organisations and through trans-national coordination.
- Existing sources of funding possibilities should be used more intensively for enhancing EU-Black Sea cooperation. Co-funding schemes for joint programs (like ERA.Net with the Black Sea region planned in BSH) should be jointly created.
- Within the framework of Horizon2020, the STI collaboration with the BS countries should be supported by the EU Commission intensively by offering targeted calls for joint actions.
- Further initiatives, which ensure a sustainable project management, coordination of synergies between multilateral horizontal projects, identification of strategic partnerships in selected fields of S&T, sharing of best practices between EU MS-BS countries in research and innovation management and establishment of regional evaluation platforms, should be developed.

Jointly EU and BS partners should specify long-term milestones for innovation/commercialization of results as well as objectives to finance basic and applied research.

4. Conclusions

The analysis (the background paper developed within BSH project) shows i.a. the huge research and development potential (e.g. restructuring of the research and innovation sectors, new strategies for STI development) in the BS countries. In addition, many bilateral S&T cooperation programs exist between the countries of the region and EU MS, as well as among the countries themselves. The main aim is:

- to support the EU's external relations with the target region by significantly contributing to ongoing bi-regional and regional STI policy dialogues, and by increasing the knowledge base about the EU's external environment (e.g. BSEC, ICBSS);
- to stimulate bi-regional STI cooperation and to strengthen the EU's economic competitiveness (e.g. BS ERA.Net);
- to contribute to the establishment of supportive framework conditions by facilitating the pooling of resources and by identifying challenging thematic areas for mutual STI cooperation.

Moreover all the BS countries have already devoted particular efforts to the development of innovation-related structures such as science and technology parks and incubators as well as to support different initiatives/activities in the field of innovation. Indeed several factors have decisively influenced the innovation development in the different countries.

Despite the positive trend in the current development of the EU-BS STI cooperation there is still a need:

- to strengthen, stimulate and exploit remarkable long lasting expertise;
- to improve coordination mechanism;

- to further consolidate the achievements and to address existing weaknesses, especially in the field innovation;
- to establish new and to promote available funding opportunities;
- to support additionally the transformation of research results into innovative products;
- to jointly use existing infrastructures regarding cost reduction;
- to better coordinate national strategies, established to modernize and boost the research and innovation systems in the BS countries.

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Policy Brief #1:

*“Obstacles, drivers and opportunities to enhance EU-Black Sea STI cooperation” – BSH **Policy Paper #1** (D1.1)*

*“Obstacles, drivers and opportunities to enhance EU-Black Sea STI cooperation – BSH **Background Paper #1**” (D1.1)*

Policy Brief #2:

*“Thematic patterns of cross-border S&T cooperation based on co-publication and co-patent analysis” – BSH **Policy Paper #2** (D1.2)*

*“Thematic patterns of cross-border S&T cooperation based on co-publication and co-patent analysis” – BSH **Background Paper #2**” (D1.2)*

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