

BLACK SEA HORIZON



Bi-regional STI Dialogue

BSH Background Paper #1

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

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Abstract

The aim of this deliverable (D1.1) is to support the structured, efficient and effective STI dialogue focusing on obstacles, drivers and opportunities to enhance EU-Black Sea STI cooperation. The target group of this paper involves all interested relevant stakeholders in the field of international STI cooperation who could optimize the framework for cooperation between researchers from the EU and the non-EU BS countries.



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LIST OF ABBREVIATIONS

AM – Armenia
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 BSH is to support the structured, efficient and effective STI dialogue focusing on obstacles, drivers and opportunities to enhance EU-Black Sea STI cooperation. Due to several reasons the target region (incl. AM, AZ, BG, GE, GR, MD, RU, TR, 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 such as the “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 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, a survey, conducted within the framework of BSH, 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

1.1. Short description of the EU project Black Sea Horizon (aims)

The BLACK SEA HORIZON (BSH), EU project within H2020, which started in February 2015 for duration of 3 years, aims to support the EU's external relations with the Black Sea region by significantly contributing to ongoing bi-regional and regional Science, Technology and Innovation (STI) policy dialogues, and by increasing the knowledge base about the EU's external environment. It also tries to stimulate bi-regional STI cooperation and to strengthen the EU's economic competitiveness as well as 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.

1.2. Thematic focus of the policy brief/ target group

The aim of this policy brief prepared within BSH is to support the structured, efficient and effective STI dialogue, focusing on obstacles, drivers and opportunities to enhance EU-Black Sea 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.

1.3. Methodology

Methodologically this policy brief is based on analyses of relevant studies¹ and strategy papers including appraisals to identify common grounds as well as procedures for renewal and adoption (e.g. EU-Black Sea Synergy; BSEC Action Plans on Cooperation in S&T) as well as on an online survey² addressing key

¹ See Annex 1 for a complete list of documents

² The survey, conducted online between May and June 2015, addressed representatives of governmental bodies/funding agencies, researchers, SME partners, representatives of EU projects, incrEAST users and it gathered a total of 107 respondents

stakeholders in all EU Member States and non-EU Black Sea Countries and interviews³ with selected experts.

2. STI Cooperation among the Black Sea countries and the EU – experiences, challenges as well as opportunities for future cooperation

2.1. Potential of Black Sea countries: Policy Framework on EU-BS STI cooperation

Located at the juncture of Europe, Asia and the Middle East, the Black Sea Region (incl. AM, AZ, BG, GE, GR, MD, RU, TR, UA) possesses a distinct place in the world due to several reasons, i.e. its strategic location, rich energy resources, economic potential etc. Albeit in varying degrees, a huge research and development potential exists in the Black Sea countries. Despite the difficulties most of the countries in the region have faced over the last years, this potential has solid roots. Having developed a cooperation pattern in an institutionalised way through the Black Sea Economic Cooperation Organization (BSEC) for almost two decades, the countries in the extended Black Sea Region have achieved considerable progress in certain fields. Science and Technology is a field that has been identified as a priority field from the beginning. A dedicated Working Group on Science and Technology works on S&T matters of the Black Sea region. A crucial policy document that the BSEC Science and Technology Working Group have produced is the Action Plan on Cooperation in S&T (3rd Action Plan published in 2015). In this paper there is no particular focus on any thematic priority; instead, sectorial priorities like human resources, capacity building, research infrastructure and innovation have been clearly mentioned.

Furthermore, 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. The Black Sea Synergy, part of the European Neighbourhood Policy, is an initiative,

³ Interviews conducted from May to July 2015 with experts from Armenia, Georgia, Romania, Russia and Ukraine

launched in 2008 by the European Commission in order to complement the policies of the pre-accession strategy with TR, the EaP and the Strategic Partnership with RU. Thematic priorities are very widely defined, 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. However, there is a need for specific initiatives and tools, aiming at facilitating the implementation of concrete actions in the field of S&T.

Moreover, within the EaP Roadmap for International Cooperation in R&I (2014) there is no particular reference to the Black Sea Region as an EU “partner”, as it is considered for the Eastern Partnership Countries. However, the importance of this document is high, since almost all the countries from the Eastern Partnership are also included in the Black Sea region (exception: Belarus). According to EaP, the potential STI fields for international cooperation with the region are health, demographic change and well-being, climate action and environment, secure, clean and efficient energy, which cover the thematic focus of H2020.

Also, on 13 April 2011 the EU Member States endorsed the EU Strategy for the Danube Region (incl. BG, RO, UA and MD). Its aim is the better coordination and cooperation between the countries and regions in regard to several challenges:

- environmental threats (water pollution, floods, climate change);
- untapped shipping potential and lack of road and rail transport connections;
- insufficient energy connections;
- uneven socio-economic development;
- uncoordinated education, research and innovation systems;
- shortcomings in safety and security.

Furthermore, the S&T potential for international collaboration is based on the rich, long-lasting and common traditions in and with the target region. In terms of S&T cooperation of the countries of the region with the EU, the region includes current

and potential Associated countries (TR, MD, etc.), countries that signed a Cooperation Agreement in S&T with the EU (RU, UR), as well as International Cooperation Partner Countries – ICPC (AR, AZ, GE). 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.

2.2. Obstacles and challenges for cooperation

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

- There is the need to strengthen, stimulate and exploit remarkable long lasting expertise and creative potential as assets for national and regional development.
- The BSEC countries have a wealth of human capital and know-how that remains untapped. This is largely due to the lack of a coordination mechanism.
- The progress of reorganizing the research systems and structures should be assessed with the aim to consolidate the achievements and to address any weaknesses.
- 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.
- Financing through public/private partnerships and/or external sources of funding is still low and should be further promoted.
- The optimum exploitation of the research results and in particular their transformation into innovative products and processes should be further developed.

- 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.
- Complexity and continuously increasing costs for both high and mid-level research infrastructures lead to under development of innovative type of infrastructures.
- Innovation capacity is influenced by legal barriers such as IPR and industry.
- 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.

The survey, prepared by the BSH in May 2015, has confirmed these trends. A total of 85 % of the respondents have worked with BS countries and they have agreed that the cooperation with BS countries should be further developed. 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. Numerous scientific fields were listed in the questionnaire, but the fields physics, ICT and biology as well as innovation were the most prominent ones.

Within the interviews carried out by BSH, the experts have suggested:

- a more intensive S&T policy dialogue and creation of a policy framework for enforcing S&T and Industry, with a particular focus on the renewable energy and energy efficiency;
- sharing best practice and experience in research management, capacity building;
- ensuring funding for targeted S&T projects and innovative initiatives;
- extending integrated programs on the regions by avoid duplications;

2.3. Dialogue, information exchange and funding instruments - current stage and opportunities

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, e.g. the cooperation between SRNSF (Georgia) and CNR (Italy); UK-Turkey Science and Innovation Partnership (in-country partner: TUBITAK); MoU between NCBR Poland and TUBITAK; Lithuania – Ukraine Bilateral Programme in Science and Technology, the programme of the German Federal Ministry of Education and Research (BMBF/IB) Intensified Cooperation (IntenC): Promotion of German-Turkish Higher Education Research as well as bilateral STI programmes with UA, MD, AM and two programmes of the DFG (German Research Foundation): Initiation and Enhancement of Bilateral and Multilateral Programmes , and International Research Training Groups ; Programme for International Scientific Cooperation of CNRS in France .

Many EU Member States (MS), associated countries (AC) and other countries of BS region have bilateral cooperation and exchange activities with Russia in many scientific disciplines, often based on inter-governmental or inter-institutional cooperation agreements. Under the 'mega-grants' competitions, many European scientists are developing lasting research relationships with Russian scientific institutes and universities. To support RU participation in Horizon 2020 actions and in view of the fact that participants from Russia are no longer automatically funded by the EU, the Ministry of Education and Science of the Russian Federation publishes dedicated calls to offer funding support for Russian Horizon 2020 participants in accordance with its own call procedures (Russian Federal Programme "R&D in Priority Areas of Development of the Russian S&T Complex 2014-2020").

Furthermore, the Black Sea Trade and Development Bank (BSTDB, <http://www.bstdb.org/>) is multilateral development bank serving the eleven countries that are members of the Organization of the Black Sea Economic Cooperation (BSEC). It supports economic development and regional cooperation by providing trade and project financing, guarantees, and equity for development projects. BSTDB

supports both public and private enterprises in its member countries and does not attach political conditionality to its financing.

Objectives of the bank include promoting regional trade links, cross country projects, foreign direct investment, supporting activities that contribute to sustainable development.

At the EU level, the European Neighbourhood and Partnership Instrument (ENPI) has provided significant opportunities for the Organisation of the Black Sea Economic Cooperation (BSEC). The European Neighbourhood Instrument (ENI) has replaced the ENPI, so that it reflects real needs and considerations that have emerged over the years. The instrument becomes faster and more flexible, reducing the complexity and length of the programming process and it is increasingly policy-driven based on the key policy objectives agreed with the partners, mainly in the ENP bilateral action plans. The ENI also encourages closer links between the EU and partner countries to enable their citizens to participate in successful EU internal programmes, such as on student mobility, youth programmes or support to civil society.

Within the EU Framework Programme (6th and 7th FP) the European Commission assisted also several EU-projects e.g. SEE.ERA-NET/ PLUS (<http://www.see-era.net/>) and Black Sea ERA.Net (<http://www.bs-era.net/>) as well as ERA.Net RUS, ERA.Net RUS Plus (<http://www.eranet-rus.eu/>). Within these initiatives joint funding instrument was launched successfully.

Moreover, the European Commission supported financially the adoption process of the 'BSEC Action Plan on Cooperation in Science and Technology'. The funding is provided on a project by project basis from the currently available national and international financing schemes or a combination of them.

Furthermore, two consecutive IncoNet Projects, namely IncoNet Eastern Europe and Central Asia (EECA) and IncoNet Eastern Partnership (EaP), have been conducted in the region with the aim of creating a sustainable bi-regional policy dialogue, involving stakeholders of various levels and backgrounds (researchers from academia and private sector, policy-makers etc.). Another objective of these projects was to enable Eastern European researchers to participate in FP7 (Horizon2020) programmes and to raise the institutional capacities in order to facilitate the

implementation of the abovementioned goals. The ongoing IncoNet EaP also provides twinning grants for research consortia that includes participants from the EU (MS/AC) and the EaP countries.

According to the 3rd BSEC Action Plan “On Cooperation In Science And Technology” (2014-2018) existing sources of funding possibilities should be used more intensively for enhancing EU-Black Sea Cooperation. The aim is to:

- create co-funding schemes for joint programs (like ERA.Net with the Black Sea region planned in BSH);
- support joint calls through Horizon2020 project;
- promote modes of funding combining national, regional, EU and other international funds and exploring PPP models.

Moreover, 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. In general, the international coordination of programmes addressing science and innovation should be fostered on a better way, e.g. opening-up of national programmes to foreign organisations and through trans-national coordination.

The BSEC Working Group on Cooperation in Science and Technology (WG CS&T) is, however, a permanent intergovernmental body where BS Region country representatives meet regularly in order to advise the BSEC Meeting of the Ministers in charge of S&T in setting the general objectives and the key priorities. The group operates on four-year action plans and these plans are laid into concrete actions under “plans of action” which are valid for two years.

These platforms serve a significant ground for exchange of information both ways and are backed by websites such as <http://increast.eu/>, <http://www.inco-eap.net/>, and the recently launched <http://blacksea-horizon.eu/>.

Despite these milestones, achievements are assumed to have remained behind of the anticipated potential for various reasons. The primarily referred factor is the insufficient governance capacity mainly as a result of low economic capabilities, lack of human resources and slowness of reforms during the transition from former socialist regimes. Frozen conflicts, on the other hand, constitute yet another major obstacle against implementation of cooperation programmes among the countries of the region. Notable examples are Nagorno-Karabagh conflict, South Osetia, Abkhazia, Transnistria and Crimea.

The forthcoming call for proposals, the preparations of which are underway within the scope of the BSH project, appears to be the most salient future initiative to provide networking and funding opportunity for the researchers of the region. What seems to be missing is better coordination and compatibility among the S&T objectives and priorities of the BS countries.

2.4. Identifying scientific topics of mutual interests

A dual process for identifying the priority research fields and specific topics for the Black Sea region took place, at political and at operational level.

2.4.1. *Political level – defining the general research fields*

The current policy analysis, made through the Black Sea Horizon project on the basis of analysing and synthesising relevant studies and strategy papers, conducting an online survey among key stakeholders as well as interviews with selected experts, did not identify any specific references to the methodology used in the political process for defining the general research topics. It can thus be assumed that the decision-making process on the political level was based on consultations between key stakeholders and various policy fora in order to set the thematic priorities of common interest in the Black Sea region.

The Commission Communication 'Enhancing and focusing EU international cooperation in research and innovation: a strategic approach' called for a systematic and coherent identification of priorities for international cooperation with the EU's partner countries and regions, with a view to subsequently implementing these through activities with the necessary scale and scope, in particular in the context of Horizon 2020. The Communication also called on this priority setting process to be

reflected in multi-annual roadmaps for international cooperation with its key partner countries and regions. For each of the partner countries and regions, roadmaps provide a full overview of the framework governing the cooperation and the current state of play with regard to the cooperation, including information on the way this has been addressed in the first Horizon 2020 work programmes. Most importantly, they provide an overview of what are considered to be the priorities for future cooperation (using a medium-term perspective) with the partner in question, reflecting the current state of agreement in the policy dialogue.

2.4.2. Operational level – defining specific scientific topics

Under the IncoNet EECA, BSA-ERA.NET and IncoNet EaP projects, an operational process took place in order to identify specific scientific topics of mutual EU-EaP interest that could be considered in future calls for proposals.

In this context, during the BS-ERA.NET project, an operational process, linked to the main result of the project -the Pilot Joint Call (PJC)- has been implemented in order to define the priority research fields and to narrow them down to specific scientific topics. During the International Conference “Towards a joint approach to a sustainable S&T programme in and with the Black Sea Region” (8-9 December 2009, Bucharest), it was suggested that for the definition of the priority fields of the Joint Call two methods should be used: the quantitative and the institutional one. The quantitative method was based on two separate questionnaires addressed to project partners and, respectively, to governmental and non-governmental programme owners, who were asked to prioritise and specify scientific fields they considered pertinent for the Call. On the other hand, the institutional method included the use of existing Research and STI Councils and the implementation of foresight exercises. The final decision has been taken by the consortium, responsible for the launching of the Call, which also took into consideration other past activities in the region. The selected fields have been narrowed down by the Steering Board of the project to specific topics previously mentioned in this analysis.

The IncoNet EaP Project identified two main sub-fields for research:

- Fighting and adapting to climate change;
- Protecting the environment, sustainably managing natural resources, water, biodiversity and ecosystems.

The methodology used was based on the input of two main sources: a bibliometric analysis which showed that the majority of the co-publications between 2012 and 2014 dealt with the two sub-fields mentioned above; and the Conclusions of the 2012 IncoNet EECA Workshop on “Opportunities for joint EU-EECA policy approaches addressing global challenges at the example of climate change, health, energy”.

The project proceeded to further narrowing down the two main sub-fields into specific scientific topics. Thus, following the decision of the 2nd meeting of the Eastern Partnership Panel on Research & Innovation (R&I), the IncoNet EaP Project organised a Thematic Workshop on Climate Change (6-7 November 2014, Athens), during which a group of researchers from all the six EaP countries and from seven EU member-states identified the five previously mentioned priority topics (see ‘Specific scientific topics’).

Finally, from the current BSH Project’s exercise (analysis of the policy documents reviewed, survey with key stakeholders, interviews with experts and analysis of the main projects), the conclusion is that the priority research topics for the Black Sea region are: Climate Change and Environment, respectively Energy. At the same time, based on a publication analysis as well as on the findings of the Black Sea Research Programme (BSRP), the BSH partners have identified further joint scientific fields like health, maths, Geo/Astrophysic, social sciences incl. security, food security, bioeconomy.

2.4.3. Priority research fields in the BS region

General research fields: The current analysis of policy documents, conducted through the Black Sea Horizon project, reveals that the following research fields are often mentioned in the reviewed documents and therefore can be considered as priorities for the region:

- Transport (including the efficiency, safety and security of transport operations, aviation and maritime safety);

- Climate Change and Environment;
- Secure, clean and efficient energy (including the upgrading of existing and the construction of new energy infrastructure);
- ICT.

The IncoNet EECA project aimed to facilitate a coordination of S&T policies building on common interest and at mutual benefit in order to strengthen the cooperation between EU and EECA, and focused its activities on the following jointly identified priority research fields for the STI cooperation:

- Human Genomics;
- Sustainable Surface Transport;
- Impact of trans-regional transport corridors on environment;
- Information and Communication Technologies;
- Energy;
- Socio-economic Sciences and Humanities.

The 'Pilot Joint Call' (PJC) for proposals of interested programme owners / programme managers represented the most important result of the BSA-ERA.NET project. The thematic focus in the case of the PJC was set on two main research fields:

- Climate and Environment;
- Energy.

The IncoNet EaP project, in its aim to support the advancement of the bi-regional STI policy dialogue between the EU Member States/Associated Countries and the Eastern Partnership Countries, identified three priority research fields for the STI cooperation:

- Climate Change;
- Energy;

- Health.

Specific scientific topics: Neither the policy documents analysed, nor the respondents in the survey or the interviewees in the Black Sea Horizon project have identified specific scientific topics as priorities for the region. By contrast, in addition to the identification of priority scientific fields, in the case of the IncoNet EaP and the BSA-ERA.NET projects, the need to narrow down these fields to specific research topics, led to defining the following sets of concrete research topics:

- **BSA-ERA.NET** (through the Pilot Joint Call):
 - Exploitation and transport of mineral resources: impact on environment;
 - Water pollution prevention options for coastal zones and tourist areas;
 - Hydrogen production from H₂S rich Black Sea Water;
 - CO₂ capture and storage technologies for zero emission power generation in the Black Sea region.
- **IncoNet** (through the Thematic Workshop on Climate Change):
 - The impact of climate change on soil resources and desertification; influence of glaciers;
 - Green production with emphasis on low carbon and smart production;
 - Influence of climate change on urban air quality and strategy for mitigation of pollution effects on human health and ecosystems;
 - Water management for trans-boundary cooperation: water monitoring, databases, modelling, water market development, and risk assessment;
 - The impact of climate change on ecosystems services.

2.5. Innovation in the BS region

The optimum exploitation of the research results and in particular their transformation into innovative products and processes remains a key priority in all the BSEC Member States due to its direct positive impact on employment, economic growth and prosperity. In addressing this priority, all the BSEC Member States already

devoted particular efforts to the development of innovation-related structures such as science and technology parks and incubators. In addition to that the international experience shows that several other factors are decisively influencing the innovation capacity. These factors ('Innovation framework conditions') include legal barriers, such as IPR and industry – academia relations, innovation financing, such as venture capitals and business angels. Because of the heterogeneity in the Black Sea region, the development in the field of applied research has to be observed country by country:

2.5.1. Armenia

By government resolution as of September 2006, the Ministry of Trade and Economic Development was recognised as authorized body responsible for development and implementation of innovation policy, in co-operation and coordination with other concerned ministries and organisations. The fragmented character of policy-making in S&T and innovation, and the poor interlink and cooperation between these organisations was emphasized as well.

At present, the National Academy of Sciences (NAS RA) with its around 35 affiliated research institutes and centres exists without major systemic and functional changes and is the main R&D performer in the country. The Academy promotes and carries out fundamental and applied research in different scientific fields, as well as coordinates basic research carried out throughout the country. The new statute of the National Academy of Sciences of Armenia was approved by the government in May 2011, based on the Law on the National Academy of Sciences, allowing the Academy to carry out wider business activity towards the commercialisation of R&D outcomes and the creation of spin-offs. Recently, NAS established a set of innovation support activities, including:

- a Science Development Foundation was established to support research activities with innovative potential, commercialization of research outcomes and infrastructure modernization;

- a set of innovative research projects has been compiled for submission to the Government;
- plans to establish a technology transfer office to support commercialization and technology transfer in the NAS RA system.

In last years the Government has been supporting several so-called “system-forming” regional scientific-technological projects with main objective of attaining scientific excellence, strengthening international networks and regionalization of scientific-technological activities focusing on innovation-related aspects. The most ambitious project is the CANDLE - Center for the Advancement of Natural Discoveries using Light Emission, seeking to establish a third generation synchrotron light source for basic, industrial and applied research in biology, physics, chemistry, medicine, material and environmental sciences. The Center for Radiation Medicine and the Armenian Center of Excellence in Oncology are other projects seeking to build scientific potential.

Several governmental acts and decisions focusing on regulation of S&T and innovation policy in the country have been adopted during the last few years.

In May 2001, the government approved the concept on development of information technology industry in Armenia. It emphasizes the existence of adequate potential in the country for the development of the IT sector, and the need for further improvement of the infrastructure and the legislation, supporting the development of the IT industry.

In May 2010, the Government adopted the Strategy on Development of Science in Armenia, which outlined the state policy towards development of science in 2011-2020. In this Strategy the following 6 targets are underlined:

- Creation of a system providing sustainable development in science and technology;
- Efficient reproduction of scientific potential, modernization of scientific infrastructure;
- Promotion of fundamental and applied researches;

- Creation of synergetic system of education, science and innovation;
- Advanced development of Armenology;
- Achievement of prime location for scientific specialization within the European research area.

Based on this strategy, the Action Plan 2011-2015 on the development of science in Armenia was approved by the government in 2011. It incorporates the following targets for the stated period :

- Improving the S&T management system and ensuring adequate conditions for sustainable development;
- Measures on increasing the number of young and talented specialist involved in research, education and technological development, upgrading of research infrastructure;
- Creating adequate conditions for the development of integrated science, technology and innovation system;
- Developing international cooperation in RTD.

In December 2014, the Government approved the following new science and technology development priorities for 2015-2019:

- Armenian Studies;
- Life Sciences;
- Secure and Efficient Energy;
- Key Enabling Technologies, Information and Communication Technologies;
- Space, Earth Sciences, Sustainable Use of Natural Resources;
- Basic Researches for Key Problems of Scientific and Socio-Economic Development.

However, the government decision doesn't specify additional measures or mechanisms to channel additional support or funds for the development of priority research areas.

In addition to horizontal innovation and science policies, the Government strategy includes focusing on support schemes for selected industries. Within this context, since 2011 the State Committee of Science has started a programme inviting private sector participation on a co-financing basis in research projects targeting applied results. Within this programme projects have been funded in the field of pharmaceuticals, medicine and biotechnology, agriculture modernization and machine building, electronics, engineering, chemistry and ICT.

In the last years a few private initiatives have also been launched, e.g. Technology Transfer Association, Viasphere Technopark and IT park in Yerevan, etc.

Integration into international scientific and technological system is one of the priorities of Armenia stated in the Law on Scientific and Technological Activity.

2.5.2. Azerbaijan

The national innovation system of Azerbaijan is at an early stage of its development. It is necessary to have a variety of the intermediary organisations which should promote the further development of innovative systems in the country. There are some unresolved problems in the field of innovation systems to be addressed: 1) the absence of an understanding of the essence and the meaning of an innovation system among politicians; 2) a necessity to develop a system of venture investment (off-budget financing of projects with high risk) in the scientific and technical sphere; involving objects of the intellectual and industrial property in economic circulation and maintenance of reliable protection against unauthorised use; 3) the need to develop a methodological manual on innovations for receiving comparative results at international level. Currently, there are no think tanks, lobby groups, political bodies, trade associations, or employers' associations to champion innovation in the country. Different government organisations should be involved in the innovation process, but they tend to operate in relative isolation without a clear and shared policy vision. The government does not encourage a more active role of lower levels of the government in promoting innovation in local industries, and promoting mutual policy learning and

networking between policy-making at regional and national levels. However, in some sense, innovation issues are included into a large number of State Programmes which have been approved during the last 10 years. These programmes have their own objectives and targets and some of them could be interpreted as objectives of the innovation policy of the government. Unfortunately, in many cases, these objectives are not quantified and specific targets are not set.

The Government's attempts to increase the role of innovation – implicitly as opposed to explicitly – are expressed in the following governmental legal documents: National Information and Communication Technologies Strategy for the Development of the Republic of Azerbaijan (2003-2012); State Programme on Development of ICT in the Azerbaijan Republic in 2005-2008 (Electronic Azerbaijan); Creation of Regional Innovation Zone in Azerbaijan; State Programme on the Development of Fuel and Energy Complex of the Azerbaijan Republic (2005-2015); State Programme on Using Alternative and Renewable Energy Sources in the Azerbaijan Republic; Establishment of “Azerbaijan Investment Company”; Scholarship Programme for the Azerbaijani Youth to Study Abroad; etc. Unfortunately, all these documents contain only a qualitative description of the objectives, but lack concrete quantitative targets and indications of the appropriate budget allocations.

2.5.3. Bulgaria

In July 2011, the main policy-making body in the Bulgarian research system – the Parliament - adopted the National Strategy for Scientific Research 2020, which set five priority areas, presenting the national R&D investment targets by 2020, namely: i) energy, energy efficiency and transport; ii) development of green and eco technologies; iii) biotechnologies and bio-foods; iv) new materials and technologies; v) cultural and historical heritage. Other important policy developments in the science, technology and innovation field include: Law for the Bulgarian Academy of Sciences (1991 – last amendment in 2007); the Scientific Research Promotion Act (2003); the Innovation Strategy (2004); National Roadmap for Research Infrastructure (2011); Innovation Strategy for Smart Specialisation (2014).

Research funding in Bulgaria is provided mainly by the public sector with the main bodies being the National Science Fund (NSF) and the National Innovation Fund

(NIF). The NSF is the main public instrument for funding research of both public and private research performers, while the NIF is the main government instrument for direct financial support for business R&D.

According to the Global Competitiveness Report 2012-2013, Bulgaria ranks 97th among a total of 144 countries in terms of innovations and excellence in business factors and 92nd under the innovation development indicator. The insufficient funding for R&D and innovation (92nd place in private business investment in R&D), as well as the weak links between education, research organisations and the business, have been outlined to be the cause for this ranking. Furthermore, Bulgaria is ranked 117th in interaction between universities and industry in the field of R&D and innovations. According to the Innovation Union Scoreboard 2014, which measures the innovation performance of EU member states, Bulgaria is not only in the group of the modest innovators (the other three groups are innovation leaders, innovation followers and moderate innovators) but occupies the last place.

Bilateral and multilateral agreements as well as cooperative programmes prevail the international cooperation in the field of science and technology in Bulgaria. The National Science Fund is responsible for the implementation of the bilateral scientific collaboration agreements. Bulgaria also participates in several programmes and initiatives such as the European Framework Programmes for research, technology development and demonstration activities (FP5 (1998-2002), FP6 (2002-2006), FP7 (2007-2013), and Horizon 2020 (2014-2020)), some European Research Area initiatives like the European Cooperation in Science and Technology programme (COST) as well as the schemes for coordination of national research programmes.

To sum up, despite the modest growth in innovation performance in recent years, the Bulgarian 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. Trends in 2014 indicate that the government neglects national funding, resulting in a deteriorating technological portfolio at higher education institutions, which were outperformed by the NGOs according to the “source of R&D financing” indicator. Private R&D expenses are also insufficient although a trend for increasing them has been observed in recent years. Therefore, based on these facts, one can currently determine the Bulgarian research and innovation system as unbalanced.

2.5.4. Georgia

In 2014, Research and Innovation Council (RIC), chaired by the Prime Minister, was established with the purpose to identify economic priorities and major trends for RDI policy development.

In 2014 Georgia's Innovation and Technology Agency (GITA), was established under the aegis of the Ministry of Economy and Sustainable Development (MoESD) with the purpose to coordinate and mediate innovation and technology development.

Principal instrument for guiding and funding public research on competitive basis is the Shota Rustaveli National Science Foundation (SRNSF). Since 2010 SRNSF has provided competitive grants with overall budget of GEL 77 mil. in the framework of around 15 programs mainly in support of innovative research, young scientists and mobility actions.

The RDI activities in Georgia are regulated by 2 legal acts: "Law on Science and Technologies and their Development", and the "Law of Georgia on Higher Education". Besides, the "Law on National Academy of Sciences" highlights the scope of the Academy's activities. The IPR protection system comprises all the elements necessary for its functioning. Georgia is a party to all main international agreements concerning IPR.

Besides, the Law on Innovation is on the early stage of its preparation with active involvement of Georgia's Innovation and Technology Agency (GITA) and once the draft of the document is ready it will be widely discussed by international experts, public/private sector representatives and other stakeholders. Adoption of the law is in the agenda of Research and Innovation Council and, most probably, it will be submitted to the Government by the end of 2015.

Necessity of cooperation between universities, research and business, in general terms, is considered in governmental documents. However, clear and targeted policy/actions for encouragement and/or regulation such as trilateral cooperation is not available. Also, no information has been found concerning innovation/knowledge clusters or any other relevant instruments.

Both government and private sector spending on research and development (R&D) remains low, which is reflected in various international evaluations and ratings: the 2013 edition of the (GII) ranks Georgia 73rd, the 2012 edition of the Innovations Capacity Index (ICI) ranks Georgia 44th (out of 131 countries), and the 2013-2014 edition of the World Economic Forum's Global Competitiveness Index (GCI) ranks Georgia in the following positions (out of 148 countries surveyed): capacity for innovation—118th; and company spending on R&D —128th.

Both Georgia's access to the latest technologies and overall level of technological development remain low: according to the GCI, Georgia holds the following positions: availability of latest technologies—100th; and firm-level technology absorption—117th.

Levels of protection of intellectual property—a major factor in the implementation of innovations—are also unsatisfactory: Georgia currently holds the 124th place in terms of protection of intellectual property.

2.5.5. Greece

The major players in research and innovation policy-making are the General Secretariat of Research and Technology (GSRT), a policy design and implementation agency, with the National Council of Research and Technology (NCRT) acting as Advisory Board.

An initiative aiming to attract R&D investments of high technology and innovation is the adoption of a new law on research and technological development, which renames GSRT to General Secretariat of Technology and Innovation.

GSRT is operating under the auspices of the Ministry of Education and Religion and is responsible for devising competitive R&D programmes in important sectors of the Greek economy, supports the transfer and diffusion of advanced technologies, contributes to the enhancement of R&D potential, represents the country in the respective bodies of the European Union, promotes international cooperation in the areas of research and technology, monitors the national research institutions.

The National Strategic Reference Framework (NSRF) recognises research, technology and innovation as the main drivers for restructuring the Greek model

towards a knowledge economy. Within this context, the Strategic Development Plan for Research, Technology and Innovation sets as a main goal for research policy to increase and improve investments in knowledge and excellence aiming at sustainable development.

NSRF is the main funding source for research and innovation. While research is a clear competence of the Ministry of Education and Religion, economic development is a competence of the Ministry of Development and Competitiveness. As innovation is a crucial component of development, there is de facto dual responsibility, however, without evidence of coordination between the two.

The Ministry of Development and Competitiveness is currently devising measures to support innovation policy. In December 2013, Law 4224/2013 created Innovation for Growth, a new fund for the financing of SMEs and infrastructure projects in Greece. The Minister of Development and Competitiveness presented the NSRF for the new programming period 2014-2020, with a total budget of €20.8b. The proposed NSRF allocates 65% of its budget to 4 directions: Competitiveness, Entrepreneurship and Innovation; Transport, Environment and Sustainable Development; Human Resources, Training and Lifelong Learning; and Restructuring of the Public Sector. Changes are also proposed in the governance of the funding mechanism with the establishment of dedicated units within each Ministry for better coordination between the beneficiaries and the Managing Authorities.

The National Research and Innovation Strategy set up priorities in areas where Greece has traditionally a competitive advantage, namely agriculture and food production, ICT for manufacturing and services, health services, biomedical and pharmaceuticals, energy and chemicals.

Most of the competitive funding addresses public-private R&D collaboration and aim to increase private spending on R&D. The main measure in terms of budget for stimulating greater R&D investments in R&D performing firms facilitates companies' access to high quality research facilities and groups through collaborative research with HEIs and PROs. Funding is provided to networks of SMEs developing intramural R&D in SMEs. The measure "Creation - support to new innovative enterprises, notably highly knowledge intensive" started at the end of 2009 and supports spin offs

of public research organisations and new firms spinning-out from established or new innovative companies. In 2010, the new “Investment Law”, was launched with the aim to improve access to finance for the creation of new firms. Research in new firms is provided also by the measure “Support newly established firms in their R&D activities”. Innovation Voucher for SMEs supports subcontracting of small R&D and innovation tasks to research and innovation organisations. The first effort dedicated to attracting research intensive FDIs by developing the necessary enabling conditions, is a mini policy mix initiative, called the “Thessaloniki Innovation Zone” in Thessaloniki. The boundaries of the zone within the greater area of Thessaloniki were defined by Ministerial Decision in May 2012.

2.5.6. Moldova

The Moldovan Government, which took office in January 2011, has envisaged in its Government Programme important reforms of the R&D and innovation system. The legal and institutional framework for R&D and innovation shall be improved to bring it to European standards. Modifications of the Code on Science and Innovation and the approval of a new Code on Education are expected in this respect. Institutionally it is considered to establish two new agencies, a National Agency for Research, Innovation and Technology Transfer, with functions to promote research and innovation policies, and a National Agency for Quality Evaluation of Higher Education and Research, with functions of monitoring and external quality assessment in higher education and research.

Research in higher education institutions, as well as the interaction of research with business shall be strengthened. Cooperation with foreign partners, including large multinational companies shall be enhanced in order to get access to advanced research and high technology. Governmental R&D funding shall be decentralised and opened to all R&D and innovative organisations, beyond the currently accredited research organisations. The research fields in energy and natural resources have been singled out for specific stimulation with funding instruments.

Three documents approved by the Government in September 2013 can indirectly influence the development of R&I system. The Roadmap for the Government actions

to eliminate critical constraints for business 2013-2014 and the National Strategy for Regional Development 2013-2015 contain the provisions with potential to develop connections between private sector and research and expanding R&I activities at regional level. The National Strategy for Development of Information Society „Digital Moldova 2020” is meant to create a proper ground for the development and widespread use of the potential of the information technology and electronic communications by public institutions, business community and society in general, through the optimal intervention of the State.

On November 27, 2013 the Innovation Strategy of the Republic of Moldova for the period 2013-2020: “Innovations for competitiveness” was approved. It provides that the role of the Ministry of Economy in coordinating innovation policy will increase. The strategy formulates that Moldovan firms should be supported to absorb, generate and disseminate innovation. Business should be better connected to universities and research centres. A list of practical measures for implementing the strategy has been compiled and annexed to the strategy in an Action Plan.

On December 26, 2013 the Strategy of research-development of the Republic of Moldova until 2020 was approved. The strategy was based on a foresight exercise, which elaborated a vision for the development of research and innovation until 2020, with the aim to develop a research and innovation system capable of creating high-performance scientific knowledge. This knowledge should lead to an increased competitiveness of the national economy and of the welfare of the population. The strategy focuses on governance issues of the research and innovation system, on internationalisation and regional cooperation (in particular with the EU), on links between science and society, and on implementation measures for the strategy.

In January-February 2014 it has continued the debate on science and higher education reforms in MD. This included consultations on amending the Code of Science and Innovation, as well as on the draft Education Strategy-2020 and the draft Code of Education.

2.5.7. Romania

The draft National RDI Strategy 2014-2020 emphasizes the role of R&D for competitiveness and proposes: a stimulating environment for private sector initiative

(e.g., venture capital, credit guarantees, full implementation of the tax deduction), a spectrum of instruments in support of smart specialisation (e.g., R&D projects for different phases from ideas to market, long term public-private projects, commercialisation support, tech transfer infrastructure), activation of public demand, integration of the fundamental research into international communities, and institutional R&D funding based on performance (including universities, which do not have special research funding at the moment). Most of the actions are directly reflected in the draft implementation instruments (i.e., National RDI Plan and Operational Programmes), but some of the action lines need further governmental policies (e.g., public procurement for innovation) or simply additional reforms (e.g., the restructuring of public R&D institutes). Within the current actions for STI cooperation three main pillars have been taken into consideration: business firms become key actors in innovation (supported by fiscal incentives, IP regime, interfaces with the public sector); the RDI sector is a space of opportunity for the talented (supported by international openness, access to infrastructures, education for creativity) and breakthroughs in priority domains (supported by long term programmes, international strategic partnerships, translational research, rewards for excellence).

National RDI funding is complemented by some Sectoral Operational Programmes (SOP) that are relevant for RDI activities.

SOP Increasing Economic Competitiveness aims to increase the competitiveness of Romanian enterprises and reduce the productivity gaps between Romania and the EU. SOP IEC mainly targets the private sector, and is much more demand-driven and dependent on its attractiveness to potential beneficiaries.

SOP Regional Development is the main instrument for regional development policies. Relevant for innovation objectives is Priority Axis 4 'Strengthening regional and local business environment' which supports regional and local business support structures (e.g. industrial, business parks, business incubators etc.), especially in the less developed and declining areas, rehabilitation of industrial sites, regional and local entrepreneurial initiatives in order to attract investors, job creation and sustainable economic growth, technology transfer to micro enterprises, in line with the Regional Innovation Strategies.

SOP Human Resources Development supports the development of human capital and the increase of competitiveness by linking education, lifelong learning and labour market and providing enhanced opportunities for future participation in the labour market. Relevant for RDI objectives are Priority Axis 1: Education and training in support for growth and development of knowledge-based society, which promotes doctoral and post-doctoral programmes in support of research, and Priority Axis 3: Increasing adaptability of workers and enterprises, which supports the development of entrepreneurial skills and training in new technologies.

2.5.8. Russia

The Strategy of Innovation Development of the Russian Federation until 2020 the “Innovative Russia 2020,” which defines aims, priorities and instruments of the state policy in innovation development of the country, was approved in December 2011. “Innovative Russia 2020” focuses on the creation of an effective economic and moral impetus to attract the most qualified specialists, active entrepreneurs and creative youth to education and science, which are the economic sectors forming innovation progress. The Strategy specifies long-term milestones for innovation parties as well as objectives to finance basic and applied research and results commercialisation. The restructuring in higher education focuses on promotion of R&D in universities, enlargement of communication between universities and industries, universities and research centres, as well as integration of Russian universities into education and research communities world-wide, inter alia by means of academic mobility enhancement, Russian personnel training in the leading universities abroad and engaging of highly qualified specialists including foreign nationals to Russia. The new approach focused on integrating science, business and education can be accomplished through developing the environment with laboratories and world level competence centers; establishing a competitive market of the specialists trained in Russia and abroad; the graduates of the universities have to respond to the needs of the corporate environment and the needs of the civil service; foreign partners also should be interested in the skills gained by the graduates of the Russian universities.

The Foundation for Assistance to Small Innovative Enterprises (FASIE) is the Russian innovation support fund for the SME sector and is linked to the Ministry of Education and Science. It was established in 1994 and takes care of funding programmes for applied and market oriented research with the aim of developing innovative and technology oriented enterprises and start-ups. It offers support for research consortia, teams and individuals. It applies co-funding requirements for companies, which participate in collaborative projects supported under its different action lines. FASIE participates in co-funding of innovative projects with TEKES (Finland), BPI France, BMBF (Germany), as well as in the framework of ERA.Net projects: ERA.Net RUS, ERA.Net RUS Plus, ERA-IB, EuroTransBio, ERA-SME, M-ERA.

The federal “Law on special economic zones in the Russian Federation” introduces specific accounting features in tax bodies of organisations that have received the status of R&D and commercialization projects. SEZ were created for the development of processing industries, high-tech industries, production of new products, transport infrastructure, as well as tourism and recreation resorts. They are conceived as an instrument for attracting investment to Russia.

Around 80 Technoparks are currently operational in Russia. They have been established at leading Russian universities, such as the Moscow State University or Tomsk University, at research institutes or have been linked to some of the Russian scientific cities (e.g. Sarov). A smaller group of 29 of these technoparks got together in the umbrella organisation Russian Union of Innovation and Technology Centers, which serves as a platform for information exchange and for advancing the innovation infrastructure in Russia.

Technology transfer offices (TTOs) are meanwhile in place at a broad range of scientific institutions. They support partner search for technology development and implementation, and facilitate the know-how and technology transfer to the private sector. Sixty six TTOs from 29 Russian regions are linked in the Russian Technology Transfer Network (RTTN). The Russian innovation infrastructure has been linked to the Enterprise Europe Network (EEN) via the project Gate2RuBIN - Gate to Russian Business Innovation Networks.

An Association of Innovative Russian Regions (AIRR) was set up in 2010. It aims at coordinating and enhancing the innovation activities of its member regions.

In 2012, the concept of Innovative Territorial Clusters (ITCs) was implemented in the Russian Federation. Cluster policies are dealt with by the Ministry of Economic Development and the regional authorities. By the year 2013, 25 clusters were selected for funding via an open competition. The main priorities of ITC are the enhancement and strengthening of cooperation among cluster members and encouragement of entrepreneurial activity in those regions, which belong to an ITC. Clusters from any region of Russia can participate in an ITC. No specific scientific and industrial sector is targeted, so ITCs can be established in any relevant field.

The Russian Technology Platforms (RTP) were formed in 2011-2012 by the Russian Government to further enhance innovation and growth in Russia. Currently, there are 35 self-organised platforms involving a large number of companies and academic institutions. TPs are intended to shaping and modernising the innovation cycle, from education over research to business innovation, in their technology sectors.

The Industry Development Fund was established in 2014 as a result of a reorganisation of the Russian Foundation for Technological Development. It provides preferential loan financing launching the production of innovative and high-tech products, for technological upgrading, and for new production to substitute imports (so-called “import substitution”).

Venture Funds are another field, where Russia has initiated several measures for providing innovation support. The Russian Venture Company was set up in 2006 by the state and it disposes a founding capital of around RUB30b (€588m). It invests into the development of Russian venture infrastructure, and sets up specialised venture funds in Russian thematic priority fields. Several smaller thematic and regional venture funds have been created.

For nanotechnologies the State Corporation Rusnano was established in 2007. Rusnano has the role of an investment fund, which invests in close to the market technology development and into commercialisation of results of nanotechnology research.

The latest measure in support of innovation concerns a project to establish a Russian silicon valley in Skolkovo, near Moscow. Innovative companies shall find here advantageous conditions for developing their activities, e.g. tax breaks, infrastructure, and a business school, which is already established in Skolkovo.

2.5.9. Turkey

The STI governance in Turkey is dominated by a central system in which the main governmental actors are the Ministry of Science, Industry and Technology and TUBITAK. These two institutions are the main input providers in policy-making process as well as the main channels of funding flows for research and innovation activities. Evaluation policy has been reinforced and an inter-ministerial co-ordination board has been set up to review all R&D, innovation and entrepreneurship support schemes under the presidency of TUBITAK.

The STI strategy is based on two officially approved documents: “Vision 2023” and the “The National Science, Technology and Innovation Strategy (2011-16)”. National STI Strategy 2011-2016 (UBTYS) aims to strengthen national R&D and innovation capacities in order to upgrade the industrial structure towards high-technology industries. The strategic framework laid down in this document approaches STI governance through three vertical pillars: mission oriented approach in areas with strong R&D capacity; need oriented approach in areas with a demand for gaining acceleration; and bottom up approaches in basic and frontier research.

TUBITAK’s main funding instrument, the Industrial R&D Funding Programme, has increased grants by 10% for certain technology fields (IT, biotechnology, environment-related technologies, advanced materials). A new small business innovation and research support programme was implemented in 2012.

More than half of the funding budget is allocated to innovation actors within the country through the Innovation Grants Mechanisms managed by TUBITAK. Private sector entities of various technology readiness levels are eligible for these grants through which from 60 to 75 % of entire project costs can be claimed from TUBITAK. These grants are predominantly delivered to innovative private sector projects in the following fields: automotive, defense industry, and informatics.

Smart specialisation and clustering have recently attracted policy attention. Province-level innovation platforms were set up in 2010 to transform local knowledge into economic and social benefits by stimulating cooperation. In 2011 TUBITAK launched a competitive funding programme to set up regional innovation platforms and cooperation networks at the local level. The law on technology development zones (TDZ) fosters the creation of technology parks. Financial support is provided through tax incentives for land procurement, infrastructure and buildings.

Techno-entrepreneurship grants, mission-oriented high budgeted calls and the introduction of an index for the entrepreneurial and innovative performance of the universities are some of the notable best practice examples. This index measures the said parameters on the basis of criteria such as articles, R&D projects, collaboration, licences and spin-offs.

2.5.10. Ukraine

Research policy in Ukraine is driven predominantly by the annual budget cycles, although there is the National Strategy for Social and Economic Development of Ukraine for 2004-2015 (the only such document at the national level, approved by the Parliament). Research policy focuses strongly on supporting public research sector and the training of skilled researchers but has relatively weak impact on economic development.

Block grants dominate the state system of R&D funding, although in recent years competitive rules for fund distribution are becoming more popular. Cooperation between the public and the private sector is based mainly on bilateral contacts at the level of research organisations and industrial enterprises.

In 2014, the new President announced his Plan of reforms, and S&T were included in the list of priorities of this Plan, but they do not possess central place in it. In the first half of 2015, substantial changes were prepared in the legal system, related to S&T, including new version of the Law on scientific, and scientific and technological activities, Law on innovation activities and some others. However, at the moment of writing of this paper, these changes have not passed through Parliament.

Traditionally, the Parliament determines key priorities for R&D for the next five years, which, as a rule, correspond to the priorities of national development. Thus, six

priorities were included in the last State Law of Ukraine on Priorities in Science and Technology Development N2519-VI in 2010: basic research of the key scientific problems in different disciplines; environmental studies; ICT; energy generation and energy-saving technologies; new materials; life sciences and the methods of fighting of the main diseases.

Additionally to the R&D priorities, the following priorities in the field of innovation, which are in place till 2021, have been defined:

- development of new technologies for energy transportation, energy efficiency, resource saving technologies, development of alternative energy sources;
- development of new technologies for high-tech transport system, space industry, aircraft and shipbuilding, armament and military equipment;
- development of new technologies for the production of materials, processing and connectivity, creating nanomaterials and industry nanotechnology;
- technological renovation and development of agriculture complex;
- implementation of new technologies and equipment for high-quality medical care, treatment, pharmaceuticals;
- widespread use of clean production technologies and environment protection;
- development of modern information, communication technologies, robotics.

Each of these strategic priorities is detailed into midterm priorities, which are established for a 5-year period (2012-2016).

Bearing in mind the complicated situation in the East of the country, the government has provided extra financial resources for military-related R&D in recent months.

Ukraine has signed the Agreement on association with the EU in 2014 and another one on Association membership in Horizon-2020 (on March 20, 2015). This will have important impact on determining R&D priorities in the future.

2.6. Joint institutions- experience

The benefits of developing and using research infrastructures in collaboration have a great impact in all participating countries in technology, innovation, socio-economic development of the region, education, regional policies and cost supportability. The needs of researchers are met by membership in international organizations, e.g. BG in European Organization for Nuclear Research CERN ("Conseil Européen pour la Recherche Nucléaire") and the European Organisation for the Exploitation of Meteorological Satellites EMETSAT, RU and GR in CERN (founding member), ESA, EMBL, EMETSAT, RU in Joint Institute for Nuclear Research JINR, ESA, EMETSAT as well as in INTER and TR in EMETSAT. New research infrastructures in the Black Sea region will be in most cases built with the combined resources of the structural funds, national resources and EU contributions. The countries named above participate in several ESFRI projects, e.g. GR, RU in XFEL, BG, GR and RO in ELI etc. Furthermore, one of the key areas of Russia-EU S&T cooperation involves also the development of global research infrastructures, including the large-scale "mega-science" projects. Further countries from the target region are interested in participation in these international infrastructures (e.g. Ukraine in FAIR, RU is already a member in FAIR).

As a model of multilateral political and economic initiative aimed at fostering interaction and harmony among the Member States, as well as at ensuring peace, stability and prosperity by encouraging friendly and good-neighbourly relations in the Black Sea region, new organisations have been built in this context. An important aspect in this development was the establishment of the International Centre for Black Sea Studies (ICBSS). It was founded in 1998 as a non-profit organization and it has fulfilled a dual function: on one hand, it is an independent research and training institution focusing on the wider Black Sea region, on the other hand, it is related to the Organisation of the Black Sea Economic Cooperation (BSEC) and serves as its acknowledged think-tank. The Centre elaborates and publishes research papers and studies, organises a variety of scientific events, and manages research projects that seek to foster a comprehensive and cohesive approach towards important issues of the Black Sea region, with explicit measurable (qualitatively and quantitatively) results and gains at both the academic and political level.

Another action-focused and multidisciplinary network of policy-oriented research institutes targeting the region is the Black Sea Research Network (BSRN) that develops research programmes on issues of importance to the political, social and economic development. It represents an innovative attempt to structure and coordinate a network of research institutes (and researchers) focusing on the wider Black Sea region. It offers:

- Bibliographical Databases;
- BSRN Library and Documentation Centre Directory;
- Factual Databases (country specific and thematic);
- Information on current events (conferences, projects, etc.) relevant to the Black Sea region Joint Events and Research.

An important tool for the elaboration and promotion of projects with a high degree of regional cooperation and a focus on economic development in the BSEC region is the BSEC Project Development Fund (PDF, <http://www.bsec-organization.org/Pages/developmentfund.aspx>). Each BSEC Member State seeks to make voluntary contributions to the Fund within the period of three years. At the early stage of the projects` conception, BSEC Working Groups offer guidance and make recommendations. The Fund envisages providing financial support to eligible proposals that are able to lead to specifically targeted projects. Since 2003 24 PDF projects in the fields of agriculture and agroindustry, education, energy, environmental protection, ICT, health and pharmaceuticals, science and technology, SMEs were approved, 21 were accomplished, three are ongoing.

Inter-university cooperation projects have been established in the Black Sea Region, fostering the collaboration among several academic institutions and providing networking opportunities in the field of education and research. The Black Sea Universities Network (BSUN) has been founded in 1998 as an inter-university cooperation framework for the Black Sea Economic Cooperation Organization. Among the cooperation topics for scientific research, the following priority themes have been approved:

- Sustainable Development;

- Networking on Innovation and Knowledge Transfer;
- Energy Security & Renewable Energy Sources;
- Advanced & Multifunctional Materials;
- IT&C - Networking & High Performance Computing;
- E-health & Telemedicine;
- Social & Cultural Cohesion in the BSR.

The Online Black Sea University project (OSUN) is based on the idea of enhancing ties and providing new opportunities for networking among the universities/research centres of the Black Sea countries. The Universities, which have confirmed their partnership with the OBSU project so far, include: Odessa National University (UA), Bucharest University (RO), Moscow State University of International Relations MGIMO (RU), Izmir University of Economics (TR), Sophia University (BG), Yerevan State University (AM), Tbilisi State University (GE), Khazar University (AZ).

3. Conclusions

This paper has shown the huge research and development potential in the BS countries. Chapter 2 shows that science and technology is the field which has been identified as a priority field among all BS countries. In terms of S&T cooperation of with the EU, some of these countries have signed a Cooperation Agreement in S&T with the EU (RU, UR) or have become International Cooperation Partner Countries – ICPC (AR, AZ, GE). Key policy documents like the the “Black Sea Synergy- A new regional cooperation initiative COM” and the “Eastern Partnership” by the European Commission have defined the aims of the EU – BS STI collaboration. 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;

- to stimulate bi-regional STI cooperation and to strengthen the EU's economic competitiveness;
- 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.

Furthermore the analyses have shown that in the field education, science and innovation, different funding instruments, at EU as well as at bilateral level, have been developed.

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.

As a model of multilateral political and economic initiative aimed at fostering interaction and harmony as well as at ensuring peace, stability and prosperity by encouraging friendly and good-neighbourly relations in the Black Sea region, new organisations have been built between EU MS and BS countries.

Despite the current developments in 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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ANNEXES

Annex A. Questionnaire

Dear Colleague!

We invite you to take part in the Black Sea Horizon interview on the State-of-the-Art of International Science and Technology (S&T) Cooperation of the Countries of the Black Sea Region with the European Union (EU).

This interview is carried out in the framework of the project “Enhanced bi-regional STI cooperation between the EU and the Black Sea Region” (Black Sea Horizon) currently implemented under the EU Framework Programme for Research and Innovation “Horizon 2020”. The project team involves 19 partners from different countries, including Germany, Turkey, Bulgaria, Romania, Austria, Georgia, Moldova, Russia, Azerbaijan, Armenia, and other. The project goal is to sustainably enhance bi-regional science, technology and innovation (STI) cooperation between the EU and the Black Sea region. The result of the project’s STI dialogue support will be an improved knowledge base about EU’s external environment and of the current framework for STI cooperation as well as an increased awareness to contribute to the elimination of remaining obstacles and to further intensify bi-regional STI cooperation based on a jointly developed EU-Black Sea STI Cooperation Programme.

With the aim to examine state-of-the-art of international S&T cooperation of Black Sea Region countries with the EU and to shape recommendations for cooperation improvement, you are kindly asked to answer the following questions.

Thank you very much!

Questionnaire

Country you represent _____

1. State-of-the-art of international S&T cooperation of Black Sea Region countries⁴ with the EU and role of the European Research Area

1.1 Please assess the state-of-the-art of S&T cooperation of Black Sea Region countries with the EU

Very good	
Good	
Poor	

1.2 Does your country participate in the EU S&T programmes? Yes, No

1.2.1 Please specify concrete programmes

1.3 Should S&T cooperation between Black Sea Region countries with the EU be improved? Yes, No _____

1.3.1 How to improve it?

1.4 How could the EU countries contribute to S&T development in Black Sea Region countries?

1.5 Are you aware on specific EU-Black Sea Region policy papers and strategies (for list of selected policy papers and strategies, please refer to Appendix)? Yes/No

1.5.1 Please specify concrete examples of such strategies, programmes:

⁴ Black Sea Region Countries and Member States of the Black Sea Economic Cooperation Organisation: Republic of Albania, Republic of Armenia, Republic of Azerbaijan, Republic of Bulgaria, Georgia, Hellenic Republic, Republic of Moldova, Romania, the Russian Federation, Republic of Serbia, Republic of Turkey, Ukraine <http://www.bsec-organization.org>

1.5.2 Do you think the existing strategies and programmes are sufficient for effective S&T cooperation between EU and countries of Black Sea Region? Yes / No

1.6 Do you consider the creation of new “EU-Black Sea Cooperation Programme in STI” feasible and desirable? Yes / No _____

Only for representatives of Black Sea Region countries:

2. State-of-the-art of international S&T cooperation among countries of the Black Sea Region.

2.1 Does your country undertake/participate in the measures aimed at identification of joint S&T objectives and respective priorities for S&T cooperation among countries of the Black Sea Region?

Yes / No _____

2.1.1 Please specify concrete measures undertaken (joint S&T cooperation committee; joint working groups; joint S&T programmes; joint action plans; joint projects, other)

Annex B. Results of the online survey

The aim of the questionnaire is to observe the attitude for cooperation in the region, considering the target group. The results of this survey will lead to a better proposal for an “EU-Black Sea Cooperation Programme in STI” (BSCP).

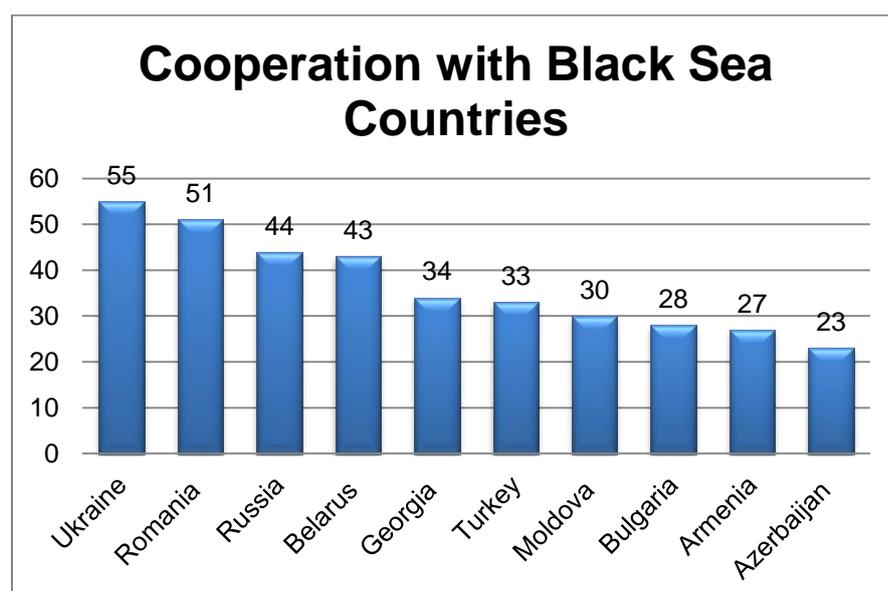
General Information:

The interview was addressed to representatives of governmental bodies/funding agencies, researchers, SME partners, representatives of EU projects, incrEAST users (broad approach)

It distinguished between the different institutional sectors and geographical locations of the stakeholders. 107 questionnaires were filled out in this survey. The main group of participants were researchers (48 %) followed by Representatives of a governmental body (15 %). Most of the partners are working in Moldova (33 %), Ukraine (20 %) and Russia (11 %).

1. Have you ever cooperated with Black Sea countries (Armenia, Azerbaijan, Belarus, Georgia, Moldova, Russia, Ukraine as well as Bulgaria, Romania, Turkey)?

A total of 85 % of the respondents have worked with Black Sea countries. Please refer to the statistics below indicating the number of cooperation realized with the single Black Sea Countries.



1b) What kind of cooperation activity?

The evaluation of the survey revealed that emphasis was placed on actions to support cooperation. Basic research and Researchers' Exchange/mobility were especially frequently marked.

1c) In which scientific field?

Numerous scientific fields were entered in the questionnaire but the fields economics, physics, ICT and biology were the most prominent ones.

2) In your opinion: Should the cooperation with Black sea countries be “developed, maintained or decreased”?

85 % agreed that the cooperation with Black sea countries should be developed.

Here are some examples of the votes:

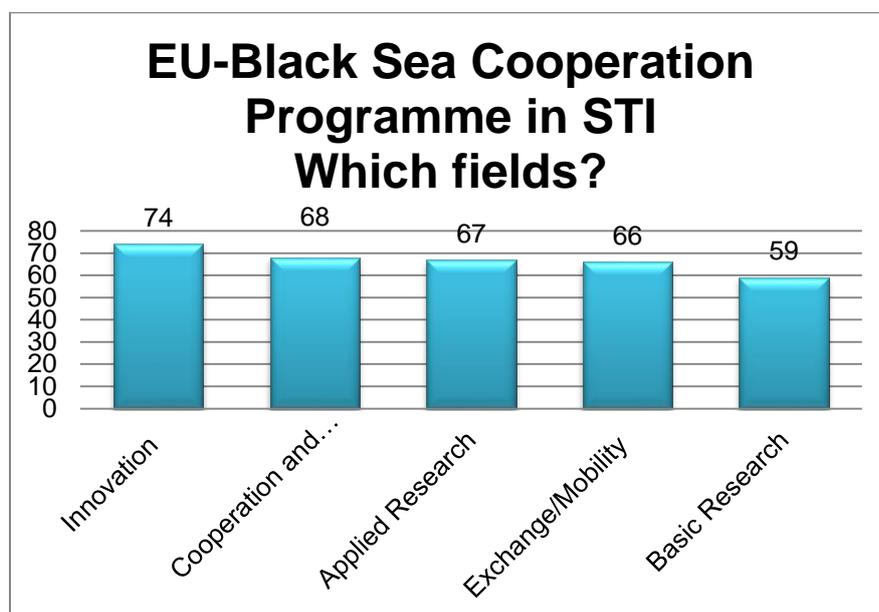
All these countries have to face similar problems. It is easier to identify the best solutions to the existing challenges while sharing knowledge and experience and working together.
Any information and experience exchange are very useful for increasing knowledge in the related fields
Because innovation has much multiplied effect if our cooperation is developed
Because it is the unique and perspective region from the historical and resource points of view.
Because needed more intensively to work together
This is a way to keep the region stable (politically and economically). To cooperate in the common aim to preserve clean Black see and its region.
Because there are a lot of common problems we have to resolve together
Because there are no connection between the countries in this region. So the studies, especially on the biological sciences, independently resumed. But cooperation is very important for biological sciences.
Because there is a big potential of resources which should be developed and protected
Better and improved cooperation = better scientific results and regional integration
Today horizontal contacts in the region have weakened. Cooperation within the BSCP will promote qualitatively new relations that will reduce the probability of conflict, help in the creation of regional entities, focused on sustainable development of the Black Sea region.

3) How would you estimate the creation of an “EU-Black Sea Cooperation Programme in STI” (BSCP)?

95 % of the interviewees were positive that it is necessary to continue (or establish) a EU-Black Sea Cooperation.

3 a) In which field?

Here is the distribution among the various fields. Innovation with 74 counts is the most called field in this evaluation, although one can interpret that - the counts being so close together – everything seems to be important.



4Q How could such an initiative be funded for the creation of an “EU-Black Sea Cooperation Programme in STI” (BSCP)?

There is a 43 % and 42 % balance between funding a cooperation by the participant countries (EU/Black Sea) and through international organisations (EU/UN).

Annex C. Analysis of the Studies and Strategy Papers

Questions and Answers**A. The 2nd BSEC Action Plan On Cooperation In Science And Technology (2010-2014) (CeRISS)****1. Which are the fora/stakeholders, who have prepared the paper?**

Meeting of the Ministers who are responsible for Science and Technology of the BSEC Member States.

2. Which are the fora/stakeholders, who are responsible for the implementation of the paper?

BSEC Working Group on Cooperation in S&T (permanent subsidiary body of BSEC)

3. What is the general attitude/scope regarding EU – Black Sea STI cooperation described in the paper?

The general attitude of BSEC is a) to renew the commitment of the BSEC MS to cooperate in the development of S&T b) to reconfirm the policy orientations building on BSEC policy and action plan 2005-2009 and c) to propose more specific initiatives and tools.

The general attitude regarding EU-Black Sea STI cooperation includes important developments in political as well as operational/project level such as;

a) Political Level

- the establishment of the ad-hoc Group of experts on BSEC-EU Interaction.
- the adoption of the Working Paper BSEC-EU Interaction: “the BSEC Approach” by the BSEC Committee of Senior Officials upon by the authorization by the Council of Ministers Foreign Affairs of the BSEC MS.
- two key policy documents that define the EU’s strategy towards the wider Black Sea area, namely, the “Black Sea Synergy- A new regional cooperation initiative COM (2007) 160 and the “Eastern Partnership” com (2008) 823/4 by the European Commission.

b) Operational/project level

Significant initiatives under implementation are the three EU funded projects:

- S&T International Cooperation Network for Eastern European and Central Asian Countries’- (IncoNet EECA, 2008)
- ‘Networking on Science and Technology in the Black Sea region. (BS-ERA.NET, 2009)
- SEE ERA.NET+ Project (focus on the strengthening of the networking among S&T stakeholders)

4. Which funding sources (if any) have been defined within the document?

It is not envisaged to have a dedicated budget at the BSEC level allocated to the implementation of the 2nd Action Plan. The funding will be provided on a project by

project basis from the currently available national and international financing schemes or a combination of them.

Measures are recommended in order to facilitate the access and use of the existing sources of funding aiming to:

- a) Support joint calls through ERA-Nets.
- b) Consider joint programs by partner countries allocating funds to virtual or real common pots.
- c) Encourage the national authorities in the BSEC MS to provide adequate information, training and advisory services in order to assist their application for funding.
- d) Promotion of the operation of BSEC Project Development Fund and various sources of funding (EU, UN, WB, IFIs, private sector).

5. Which are the thematic priorities set with the paper?

This policy document gives the broad perspective of the BSEC Cooperation in Science and Technology, thus there is no particular focus on any thematic priority; instead, sectoral priorities are clearly mentioned while there is a need to reconfirm the most pertinent such as:

1) Human Resources

The promotion of the crucial social role of the experts for a knowledge-based sustainable development, the enhancement of the performance of local research personnel through mobility schemes, incentives to young researchers to pursue careers in RTD locally in order to avoid further brain-drain through various actions such as; a) the launching of a long-term targeted programme (TP) in support of mobility and career development of young researchers citizens of BSEC by establishing networks of laboratories, b) summer schools in different BSEC MS, c) promotion and strengthening of the science education, d) training of policy makers and research administrators.

2) Capacity Building

Introduction of a regional system of national contact points designed for the analysis of the activity of the Units cooperating in the BSEC framework, involvement of competent institutions in the BSEC MS, promotion of the synergy between research and higher education, focus on highly skilled researchers mobility issues, harmonisation of the existing national standards and certification systems in the BSEC MS.

3) Research Infrastructure

Multinational infrastructure development projects of regional importance, sustainability of the interlinking of national research and education electronic networks of the BSEC MS to the European gigabit network GEANT/GEANT-2 and to other European e-infrastructures.

4) Innovation

Sharing experiences and good practices, networking of innovation units at a regional level and with similar international structures, multilateral schemes for the training of specialist and managerial personnel involved in innovation structures, feasibility studies for the development of new innovation structures and identification of available resources.

6. Are there specific recommendations and implementation actions defined in the paper? If yes, which?

There is also a need to focus on more specific initiatives and tools that will facilitate the implementation of concrete actions in the field of S&T. Such initiatives should:

- Build on the political commitment for an increased cooperation among the BSEC Member States that has been expressed already in the 'BSEC Action Plan for cooperation in S&T' (2005-2009).
- Take into consideration the capabilities available in the region.

In addition, a lot of effort should be put in the following initiatives;

- Maximise the synergies and support to multilateral horizontal projects.
- Preparation of Memorandum of Understanding to promote cooperation in S&T.
- Black Sea Sectoral Partnerships (new tool).
- Optimal use of the Project Development Fund (BSEC initiative which has successfully used by the BSEC community).
- Further promote the bilateral cooperation programmes (new type of activities should be investigated).
- Organisation of thematic workshops and brokerage events.
- Improvement of science communication.

7. Have the authors named specific barriers in the EU-Black Sea STI collaboration? If yes, which?

- ✓ There is the need to strengthen, stimulate and exploit remarkable long lasting expertise and creative potential as assets for national and regional development.
- ✓ Need to assess the progress made by reorganising the research systems and structures, to consolidate the achievements and to address any weaknesses.
- ✓ The renewal or upgrading of the research infrastructures. Complementary to the imperative national financial investments, financing through public/private partnerships and/or external sources of funding should be further promoted.
- ✓ The optimum exploitation of the research results and in particular their transformation into innovative products and processes.

B. The 3rd BSEC Action Plan On Cooperation In Science And Technology (2014-2018) (CeRISS)

1. Which are the fora/stakeholders, who have prepared the paper?

Meeting of the Ministers Responsible for Science and Technology of the BSEC Member States.

2. Which are the fora/stakeholders, who are responsible for the implementation of the paper?

BSEC Working Group on Cooperation in S&T (permanent subsidiary body of BSEC).

3. What is the general attitude/scope regarding EU – Black Sea STI cooperation described in the paper?

The general attitude of BSEC is a) to renew the commitment of the BSEC MS to cooperate in the development of S&T b) to reconfirm the policy orientations building on BSEC policy and previous action plans and c) to propose more specific initiatives and tools.

The general attitude regarding EU-Black Sea STI cooperation includes important developments in political level such as;

- Adoption (in June 2012) of the ‘BSEC Economic Agenda: Towards an Enhanced BSEC Partnership’, which makes explicit reference to the need to ‘Strengthen Regional Cooperation in Scientific Research and Technology’ (Goal 11).
- New possibilities for the BSEC Member States and for BSEC as a whole to participate in ongoing international programmes such as ‘Horizon 2020’ (2014 – 2020).
- European Strategy Forum for Research Infrastructures (ESFRI) already developed a Roadmap for research infrastructures.
- Significant projects have been successfully implemented with the participation of various organizations from the BSEC Member States.
- The BSEC and the Government of the United States of America signed a Memorandum of Intent on Science and Technology Cooperation on 26 November 2010.

4. Which funding sources (if any) have been defined within the document?

It is not envisaged to have a dedicated budget at the BSEC level allocated to the implementation of the 3rd Action Plan. The funding will be provided on a project by project basis from the currently available national and international financing schemes or a combination of them.

Measures are recommended in order to facilitate the access and use of the existing sources of funding aiming to:

- a) Encourage co-funding schemes for joint programs
- b) Promote modes of funding combining national, regional, EU and other international funds and exploring PPP models.
- c) Support joint calls through HORIZON 2020 project.
- d) Promote the operation of BSEC Project Development Fund and the Guidelines for the BSEC Project Management Unit including various sources of funding (EU,UN,WB,IFIs, private sector).

5. Which are the thematic priorities set with the paper?

This policy document gives the broad perspective of the BSEC Cooperation in Science and Technology, thus there is no particular focus on any thematic priority;

instead, sectoral priorities are clearly mentioned while there is a need to reconfirm the most pertinent such as:

1) Human Resources

Recognition and consolidation of the role of researchers in addressing Societal Challenges, stimulation and enhancement of the performance of the local research personnel through intensive internationalization activities, increasing the recruitment of researchers and introduction of incentives for pursuing careers in RTD locally.

2) Capacity Building

Involvement of competent institutions in the BSEC MS; promotion of the synergy between research and higher education, focus on highly skilled researchers mobility issues; promoting the implementation of Policy Mix Peer reviews assessing the performance and potential of the national research systems; improvement of the legal framework and setting up incentives for an increased participation of the private sector in the research systems in the region, protection of intellectual property rights (IPR) in the BSEC Member States in line with international standards, promotion of lifelong learning training schemes for policy makers and research administrators.

3) Research Infrastructure

Development or renewal of national research infrastructures and coordination of their efforts at BSEC level possibly through the elaboration of a regional research infrastructure roadmap; development of research infrastructures in the BSEC with major international initiatives such as the ESFRI Roadmap, strengthening and ensuring the sustainability of the national and regional computing infrastructures including Grid and High-Performance Computing, sustainability of the interlinking of national research and education organizations of the BSEC Member States and their relationship to the pan-European gigabit network GEANT.

4) Innovation

Optimum exploitation of the research results and in particular their transformation into innovative products, assessment of the performance of the national innovation systems and of the innovation-related structures, organization of training activities for specialists and managerial personnel involved in innovation structures

6. Are there specific recommendations and implementation actions defined in the paper? If yes, which?

Initiatives should be taken that will provide stronger visibility to the scientific and technological cooperation among the BSEC countries such as;

- Nomination of BSEC contact points/persons in S&T (more systematic and well-timed information about national activities).
- Synergies and Support to multilateral horizontal projects (considered as a tool for BSEC for the identification of strategic partnerships in selected fields of S&T).
- Establishment of Project Management Unit (PMU) (it was evaluated as a necessary step to close the gap between the organization's focus on projects and the limited internal project management capacities).
- BSEC S&T Webpage (more visible and further promote the cooperation).
- Bilateral Cooperation programmes (undeniable capital of the BSEC as a whole).
- Support to Project Development Fund (PDF).

- Registry of BSEC Research Infrastructures (overview, optimal use and identification of capabilities).
- Registry of BSEC innovation related structures (already exists but has to be further developed).
- Summer Schools (already organized but should further continued and multiplied).

7. Have the authors named specific barriers in the EU-Black Sea STI collaboration? If yes, which?

- ✓ Need to consolidate, stimulate and strengthen the scientific communities.
- ✓ In a period of scarce public funding of research projects, the Fund`s support will decrease and as a result its impact will be limited. Additional efforts are needed to find a solution for the replenishment of the PDF.
- ✓ Instrumental cooperation in the assessment of the progress and the consolidation of the achievements and the address of any weakness.
- ✓ Complexity and continuously increasing costs for both high and mid-level research infrastructures lead to under development of innovative type of infrastructures.
- ✓ Innovation capacity is influenced by legal barriers such as IPR and industry.

C. The EaP Roadmap for International Cooperation in R&I (2014) (CeRISS)

1. Which are the fora/stakeholders, who have prepared the paper?

Commission Staff Working Document

2. Which are the fora/stakeholders, who are responsible for the implementation of the paper?

EU, EU's partner countries (institutions, agencies, stakeholders etc).

3. What is the general attitude/scope regarding EU – Black Sea STI cooperation described in the paper?

There is no particular reference in the Roadmap to the Black Sea Region as an EU “partner”, as it is considered for the Eastern Partnership Countries. However, the importance of this document is high since almost all the countries consisting the Eastern Partnership are also included in the Black Sea region (exception: Belarus).

Regarding the EaP countries, the general attitude as described includes the following developments;

- ✓ The EaP follows two parallel tracks: bilateral and multilateral. The bilateral dimension supports closer bilateral relations between EU and some Eastern partner country. The multilateral dimension provides a forum for dialogue and exchange via thematic platforms and flagship initiatives and strengthens activities in support of the EU bilateral relationship with some of the Eastern European partners.
- ✓ A dedicated Panel on research and innovation, attached to the 4th platform was launched on 13 November 2013. This new “EaP Panel on Research and Innovation” gathers senior officials and experts from Member States and Eastern

European partner countries, as well as the Committee of the Regions and the EaP Civil Society Forum.

- ✓ On-going FP7 project, INCONET EaP, supporting the policy dialogue established through the EaP Panel on Research and Innovation.
- ✓ The Eastern Partnership countries are also targeted as a partner for cooperation in the first Horizon 2020 work programme (2014-15), with topics encouraging cooperation in areas such as transport or raw materials.
- ✓ The EaP is supported through the European Neighbourhood Policy Instrument (ENPI). For the period 2010-2013 the overall allocation to Eastern European countries has been EUR 205 billion of which EUR 358.6 million have been granted to regional initiatives (ENPI-East).

4. Which funding sources (if any) have been defined within the document?
FP7, H2020, ENI (European Neighbourhood Instrument).

5. Which are the thematic priorities set with the paper?

The document describes clearly the thematic priorities for future activities;

→ *health, demographic change and well-being*

Cooperation in multilateral initiatives aimed at addressing global health challenges, such as the Global Research Collaboration for Infectious Disease Preparedness (GloPID-R).

→ *climate action and environment*

Priorities are identified in key areas such as water quality, waste management, air pollution, natural disaster prevention and preparedness, climate change, and Forest Law Enforcement and Governance (FLEG).

→ *secure, clean and efficient energy*

-Stakeholders from EaP research and industrial entities are therefore invited to create partnerships with the corresponding SET Plan interlocutors, such as the European Industrial Initiatives and the European Energy Research Alliance (EERA).

-In the field of nuclear energy, Ukraine is an important partner for the EURATOM cooperation in both fission and fusion research.

Apart from the thematic priorities, particular focus is also on the key enabling technologies listed in H2020 (ICT and Nanotechnologies).

6. Are there specific recommendations and implementation actions defined in the paper? If yes, which?

Cross-cutting issues to address in priority are defined clearly, such as;

- Sharing best practices between EU MS-EaP countries in research and innovation management and establish a regional evaluation platform
- Providing technical assistance and training to support EaP countries in improving their national research and innovation systems
- Promoting researchers mobility and common use of research infrastructures (creation of a regional network of Centres of Excellence connected to ESFRI), take advantage of the regional research and education network connected to GEANT

- Promoting the link between the state of the art EU initiatives such as research-intensive clusters and technology platforms with similar structures in EaP countries and enhance the participation of EaP countries private companies.

7. Have the authors named specific barriers in the EU-Black Sea STI collaboration? If yes, which?

- ✓ There is a further need to consolidate, stimulate and strengthen the scientific communities that constitute an essential element for a sustainable growth and economic development.
- ✓ All EaP countries have a long tradition of scientific excellence, but they 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.
- ✓ In the EaP countries, the research is largely funded from the state budget with very limited contributions from the private sector.
- ✓ All countries have launched ambitious national strategies to modernise and boost their research and innovation systems, notably through improving conditions for encouraging business activities and commercialization of R&D outcomes. In recent years, this resulted in the emergence of many technology parks and incubators and reforms concerning venture funding or IPRs.

D. The Joint Strategy for the EU-EaP R&I cooperation by the EaP Panel on R&I (CeRISS)

1. Which are the fora/stakeholders, who have prepared the paper?

The EaP Panel on Research & Innovation.

2. Which are the fora/stakeholders, who are responsible for the implementation of the paper?

The EaP Panel on Research & Innovation (attached to the EaP Platform 4 "Contacts between People").

3. What is the general attitude/scope regarding EU – Black Sea STI cooperation described in the paper?

The general attitude and intention in the paper is a) to concentrate the efforts of all cooperation stakeholders on a set of common priorities in order to produce concrete results and b) to maximise the impact of the cooperation.

4. Which funding sources (if any) have been defined within the document?

There is no particular reference to funding sources.

5. Which are the thematic priorities set with the paper?

The thematic priorities are set for future activities which are namely;

- health, demographic change and well-being
- climate action and environment
- secure, clean and efficient energy

Apart from the thematic priorities, particular focus is also on the key enabling technologies listed in H2020 (ICT and Nanotechnologies).

In addition, INCONET-EaP will organize thematic workshops involving scientific experts from both EU Member States and EaP countries in order to specify the relevant sub-themes and topics for cooperation.

6. Are there specific recommendations and implementation actions defined in the paper? If yes, which?

Cross-cutting issues

- Sharing best practices between EU MS-EaP countries in research and innovation management and establish a regional evaluation platform.
- Provide technical assistance and training to support EaP countries in improving their national research and innovation systems.
- Promote researchers mobility and common use of research infrastructures (creation of a regional network of Centres of Excellence connected to ESFRI), take advantage of the regional research and education network connected to GEANT.
- Promote the link between the state of the art EU initiatives such as research-intensive clusters and technology platforms with similar structures in EaP countries and enhance the participation of EaP countries private companies.

7. Have the authors named specific barriers in the EU-Black Sea STI collaboration? If yes, which?

No specific barriers in the EU-BS STI collaboration have been mentioned in the Paper.

White Paper on Opportunities and Challenges in View of Enhancing the EU Cooperation with Eastern Europe, Central Asia, and South Caucasus in Science, Research and Innovation (DLR)

1. Which are the fora/stakeholders, who have prepared the paper?

IncoNet EECA (mainly ICBSS, ZSI, DLR)

2. Which are the fora/stakeholders, who are responsible for the implementation of the paper?

Policy makers, researchers, SME from the EU MS and the target region

3. What is the general attitude/scope regarding EU – Black Sea STI cooperation described in the paper?

The White Paper provides a knowledge-base on the state of affairs of STI policies in the EU Member

States and the European Neighbourhood, and in the Central Asian countries, identifies a series of challenges

and recommendations on enhancing the EU-EECA STI cooperation and proposes a short-term implementation scenario to a variety of stakeholders.

4. Which funding sources (if any) have been defined within the document?

There is no particular reference to funding sources. In general national funding agencies as well as the EC should support the STI activities between the EU MS and the target region

5. Which are the thematic priorities set with the paper?

The White paper provides recommendations in the following fields:

- ➔ Adjusting and Implementing Policy Strategies
- ➔ Strengthening Research Conducting Institutions
- ➔ Strengthening of Human Resources
- ➔ Strengthening the Role of the Private Sector
- ➔ Strengthening the sub-Regional Cooperation

In general the suggested activities focus thematically on global and societal challenges.

6. Are there specific recommendations and implementation actions defined in the paper? If yes, which?

1. Advancing national STI statistics - strengthening national statistical offices and raising capacities of staff
2. Increase capacities of national think tanks to inform and advise policy
3. Implement strategic policy mix reviews of national policies
4. Strengthening comprehensive knowledge-based cross-sectoral policy approaches at governmental level
5. Raising awareness and communicating good practice of regulatory frameworks stimulating international STI cooperation and fostering ethical standards for conducting research at national level.

6. Assess and – if appropriate – advance the national regulatory framework for the protection and utilization of intellectual property according to international standards.
7. Strengthening the implementation of national STI strategies through mutual learning of policy makers and STI administrations
8. Improve the quality of programme implementation through systematic evaluation and benchmarking according to inter-national standards.
9. Analyze the barriers for increasing public and private S&T expenditures
10. Foster mutual learning and training of policy stakeholders in EU and EECA on how to address global and societal challenges.
11. Contribute to international dialogue processes as well as to the international knowledge base on societal and global challenges.
12. Foster the international coordination of programmes addressing societal and global challenges beyond EU and EECA.
13. Advance functional STI policy dialogue fora between the EU and EECA countries
14. Optimizing existing international STI cooperation frameworks at national level through mutual learning of policy stakeholders
15. Increase capacities of National Information Points and National Contact Points for the EU RTD Framework Programme and for international cooperation in general terms
16. Increasing efficiency of national programmes through opening-up to foreign organisations and through trans-national coordination
17. Prepare and implement joint benchmarking exercises as well as systematic assessment procedures of research performing institutions
18. Twinning activities between research centres or institutes
19. Training on institutional management tools
20. Implement SWOT analyses, BSC approaches and foresight exercises in the research performing institutions.
21. Establishing a joint roadmap on improving existing S&T infrastructures and jointly building new ones in EECA, as well as on the mutual opening of infrastructures in both EU and EECA
22. Exploiting options of utilizing ENPI/DCI funds for investing in STI infrastructure
23. Joint training in managing S&T infrastructures
24. Setting up joint training activities on science management

25. Setting up twinning arrangements for training young researchers
26. Enhanced alignment with the Bologna process through practical activities which support international scientific education schemes and a balanced students and researchers mobility
27. Establishment of a regional exchange instrument for joint doctoral programmes
28. Further facilitate the issuing of scientific visa
29. Promotion of science communication to increase public understanding and support including aspects of international S&T cooperation to tackle regional and global challenges
30. Implementing an EU-EECA Year of Science and Scientific Cooperation to communicate science for society and the benefits from bi-regional cooperation
31. Initiate mutual learning activities on framework setting for private engagement in STI
32. Involving the private sector in national and international STI policy dialogue processes
33. Promoting the link of state-of-the art EU initiatives such as research intensive clusters and technology platforms with similar structures in EECA and enhancing the participation of private companies from EECA in these structures
34. Initiate mutual learning activities focussing on best practice examples for private sector involvement in EU, in particular in the transition economies in the newer EU Member States
35. Setting up joint training courses on innovation management and entrepreneurship
36. Setting up collaborative competitive innovation funding programmes
37. Implementing mutual learning activities on framework setting for investments in innovation
38. Promoting and encouraging investments from EU in the innovation sector in EECA
39. Initiate mutual learning activities in the field of international standards
40. Foster networking of STI policy makers and researchers in EECA sub-regions to increase critical mass and efficiency when addressing the European STI community
41. Building regional centres of excellence through ENPI/DCI

7. Have the authors named specific barriers in the EU-Black Sea STI collaboration? If yes, which?

EaP:

- low R&D expenditure
- current decrease in the number of researchers
- low research funding from the private sector
- weak career prospects and motivation for young researchers

Russia

- current decrease in the number of researchers
- low mobility of young researchers

Innovation in the Wider Black Sea Region (DLR)

1. Which are the fora/stakeholders, who have prepared the paper?

ICBSS (policy brief), HSE

2. Which are the fora/stakeholders, who are responsible for the implementation of the paper?

National authorities; BSEC

3. What is the general attitude/scope regarding EU – Black Sea STI cooperation described in the paper?

The aim of this paper is: to present the latest developments in innovation policies and in the European Commission's initiatives, to provide insight on successful innovation policies and activities in the countries of the wider Black Sea region including the establishment and operation of innovation related infrastructure such as technological parks, incubators, etc., and to investigate concrete opportunities for regional cooperation in the field of innovation.

4. Which funding sources (if any) have been defined within the document?

There is no particular reference to funding sources.

5. Which are the thematic priorities set with the paper?

societal challenges, innovation, technological parks, incubators, urban planning for smart cities (smart economy, smart mobility, smart environment, smart people, smart living and smart governance)

6. Are there specific recommendations and implementation actions defined in the paper? If yes, which?

- Governments have an important role to play in fostering research and innovation led growth;
- Actions are needed on many policy fronts if widespread obstacles are to be overcome and the performance of the science base improved; This will involve efforts to ensure adequate inputs to the science base; to rationalise funding mechanisms and public sector research structures; to improve research outputs; and to link the science base with other elements of national and EU innovation systems;
- Even if adequate measures are put in place to improve the performance of the science base, research budgets need to be maintained or increased if desirable growth levels are to be attained;
- Focused policy packages are needed to avoid spreading resources too thinly, to tackle major societal challenges, and to ensure that the science base is adequately linked to other innovation system elements;
- Strong emphases on competition, excellence, building on strengths and cluster development have to recommend them, especially in conjunction with complementary measures that attempt to rectify weaknesses in innovation systems and ensure their smooth running;
- In terms of the development of the ERA, greater efforts are needed to develop legislative and regulatory frameworks capable of facilitating cross-border funding;
- Effective human resource development and circulation strategies are critical to the success of any attempts to improve the performance of the science base in the EU.

The development of a virtual network is proposed here, the "Virtual Black Sea Innovation Centre" [VBSIC), which will be flexible and efficient, in order to make policy recommendations, promote similar activities throughout the transition economies and share lessons learned and experiences gained within the member States of Black Sea Economic Cooperation [BSEC], foster the exchange of experience by similar organizations, and lessons drawn, and be a gateway-platform for knowledge and innovation to the region.

With regards to policy making, recommendations will be provided for addressing existing problems associated with the lack of support structures and for adapting relevant actions to enhance the role of intermediates in the National Innovation Systems of the Black Sea countries. The challenge we are facing in BSEC region is that there are a lot of fragmental approaches and initiatives towards the development of such Innovation System in the area. A holistic approach should be adopted and

networks of such Innovation Centres could support to the better understanding of National Innovation Systems (NIS) and facilitate the elaboration of such Systems by learning from each other. The cooperation in between them will have multiply positive results towards the development of comprehensive NIS in each country.

Although many regulatory and administrative practices affecting research and innovation rest largely on the responsibility of each BSEC Member State, there is still room for the exchange of good practices among the BSEC countries.

The Commission on The Black Sea created a new overarching concept and policy, under the name 2020 Vision - A Black Sea Dimension by the actors and countries in the region, focusing on the year 2020. Urban planning for Smart Cities could provide a context in tactical terms and relations following the 2020 vision action lines. The results of the public debate on these issues could lead to a future city roadmap and provide a common understanding among city actors and policy makers, there are important proactive urban planning actions (e.g. within port cities) that need to be taken to enhance the readiness of Black Sea cities for a smart policy uptake.

7. Have the authors named specific barriers in the EU-Black Sea STI collaboration? If yes, which?

Regarding technoparks, it should be noted that the performance of Black Sea countries is very poor.

The BSEC countries have a wealth of human capital, know-how, and technological innovation that remains untapped. This is largely due to the lack of a coordination mechanism that would:

- a. educate the local governments and policy makers on the benefits of Innovation
- c. group, chart and organize the knowledge and skill inventory of the region and the specialization in certain areas and
- d. maybe most importantly, match the region's potential and know-how with interested parties (foreign investors, governments, international organizations, research institutions) in a •one-stop-shop• in order to achieve cooperation, financing, research, business joint ventures and/or foreign direct investment. (see Black Sea Innovation Centre: concept available)

Black Sea Synergy - A New Regional Cooperation Initiative (TUBITAK)

Which are the fora/stakeholders, who have prepared the paper?

Commission Staff Communication

Which are the fora/stakeholders, who are responsible for the implementation of the paper?

EU Member states and the governments of the Black Sea Region

What is the general attitude/scope regarding EU – Black Sea STI cooperation described in the paper?

Instead of formulating a brand new strategy, the Black Sea Synergy proposes invigoration, further evolution, and bilateral implementation of the existing policies, namely, the pre-accession strategy with Turkey, strategic cooperation with Russian Federation and the European Neighbourhood policy. The main tool to accomplish this target is specified to be development of intra-region cooperation. It is also supposed to develop synergies with the existing regional initiatives. It should also be noted that a link between Black Sea approach and the Strategy for Central Asia is sought, considering the potential extension of the concerned actions beyond the region.

Thirteen cooperation areas are listed in the document which includes a wide array of domains of governance ranging from democracy and human rights to science and technology (S&T). Specifically with respect to S&T, it is noted that the synergy should be promoted through activities and topics of mutual interest in FP7 and potential other EC supported programmes.

Which funding sources (if any) have been defined within the document?

It is stated that while co-funding will be the principle rule; appropriate Community financial support could be utilised in national, regional and cross-border programmes of the ENPI. Other external financing instruments such as Regional Development Fund and the regional activities of the EBRD could also create opportunities for the enhancement of the synergy.

Which are the thematic priorities set with the paper?

Thematic priorities are very widely defined within the scope of the document, as mentioned under the section on the “general attitude” (listed below) while no sub-themes were prescribed under S&T field.

- Democracy, respect for human rights and good governance
- Managing movement and improving security
- The “frozen” conflicts
- Energy
- Transport

- Environment
- Maritime Policy
- Fisheries
- Trade
- Research and Education Networks
- Science and Technology (S&T)
- Employment and social affairs
- Regional Development

Are there specific recommendations and implementation actions defined in the paper? If yes, which?

There is lack of specific initiatives and tools aiming at facilitating the implementation of concrete actions in the field of S&T. Promotion of capacity building and S&T policy dialogue through EC financial support are the two fields of priority within the scope of the section on S&T.

Have the authors named specific barriers in the EU-Black Sea STI collaboration? If yes, which?

The following are referred in the document that obstruct the EU- Black Sea collaboration in general:

- Presence of unresolved conflicts,
- Insufficient border controls, organized crimes
- Low pace of economic reforms in the region

However, no barriers are mentioned specifically with respect to S&T cooperation.

D. Joint Staff Working Document on the Black Sea Synergy

8. Which are the fora/stakeholders, who have prepared the paper?

Joint Staff Working Document

Which are the fora/stakeholders, who are responsible for the implementation of the paper?

EU Member states and the governments of the Black Sea Region

What is the general attitude/scope regarding EU – Black Sea STI cooperation described in the paper?

Following up on “the Black Sea Synergy”, this document mainly pursues the same attitude but reviews the progress achieved in the meantime. Notable conclusions drawn in the document on the S&T cooperation are the following:

- the EU was active in the Black Sea region in the research and innovation areas notably through the framework programmes for research and innovation FP7 (2007-2013) and Horizon (2014-2020),
- Horizon 2020 is encouraging researchers, enterprises and institutions from the Black Sea to team up with their European partners to make best use of the opportunities under the framework programme,
- Various coordination and support actions are being used to step up the cooperation and coordination of research activities carried out at national or regional level in the EU Member States and the Black Sea region,
- BS-ERA NET was a notable example with regard to the principles of Black Sea Strategy.

Which funding sources (if any) have been defined within the document?

- BS-ERA NET in particular; and
- FP7 and H2020 in general sense.

Which are the thematic priorities set with the paper?

Same priority areas are listed in the document albeit with minor changes in categorization (e.g. science and education are merged under the same title.) and still no sub-priority themes are referred under S&T cooperation.

Are there specific recommendations and implementation actions defined in the paper? If yes, which?

It is underlined in the report that the EU should better focus on a limited number of priority areas; avoid dispersion and duplications. A coherent, result oriented and effective regional policy requires tailored approach that suits different needs with appropriate measures.

In addition, with an emphasis on the need for further progress in the cooperation, the paper draws several conclusions in the form of recommendations:

- **Fostering a partnership approach:** The impact of EU assistance in the region will remain limited unless it is matched by commitment from the littoral countries. Whether in the area of fisheries or marine environment, weak political commitment is the primary obstacle to greater integration,
- **Increasing stakeholder participation:** Bridging the gap between high-level political commitments and their actual implementation at the lower

administrative and community levels, requires increased stakeholder participation.

- **Enhancing synergies and coherence between interventions:** The Black Sea offers a platform for numerous projects and initiatives related to the sea, including in the area of logistics, environmental protection, climate action and energy. More could be done to ensure greater coherence and synergies between these projects, notably between those financed by the EU
- **Improving data collection and dissemination:** One of the main challenges for policymakers dealing with the Black Sea basin is the limited availability of accurate reliable and comparable marine and maritime data.
- **Enhancing social and cultural dialogue:** Coastal tourism makes a substantial, if not the largest contribution, to the blue economy in the countries around the Black Sea. Despite the efforts of the littoral States and targeted funding by the Black Sea CBC programme, its potential to offer innovative solutions remains rather low. Efforts to further pan-regional cultural tourism, including the restoration, reconstruction and conservation of cultural monuments, would result in economic benefit to the region as a whole.
- **Flexible cooperation framework and design:** With the changing political situation across the sea-basin a flexible approach should be factored into both policy and programme design, allowing partners to opt in and out depending on their willingness, capacity and readiness to participate.
- **Regular coordination with regional and international organisations from the region:** Participation at high level meetings and at working groups contribute to EU visibility in the region. The EU is a permanent observer to the BSEC and the BSC. EU accession to the Bucharest Convention remains an important priority.
- **Sectoral cooperation:** Environment, civil society, cross-border cooperation, maritime affairs and fisheries, research and innovation, education offer good examples of enhanced regional cooperation during 2009-2014.

Have the authors named specific barriers in the EU-Black Sea STI collaboration? If yes, which?

The first and foremost barrier mentioned in the paper is the events in Ukraine that erupted in late 2013 together with the annexation of Crimea by Russia which eventually resulted in suspension of EU-funded projects in the peninsula. Other problems are described in the section titled “Lessons Learnt”:

- Lack of political commitment from the littoral countries,
- The gap between high-level political commitments and their actual implementation at the lower administrative and community levels,
- Lack of coordination among existing EU funded initiatives,
- Limited availability of accurate data and so on.

Report on the First Year of Implementation of the Black Sea Synergy

Which are the fora/stakeholders, who have prepared the paper?

Commission Staff implementation report

Which are the fora/stakeholders, who are responsible for the implementation of the paper?

EU Member states and the governments of the Black Sea Region

What is the general attitude/scope regarding EU – Black Sea STI cooperation described in the paper?

Similar to the Joint Staff Working Document on the Black Sea Synergy, this paper describes the progress achieved in implementing the tasks set by the 2007 Communication. It also provides an account of the series of contacts and discussions with countries in the Black Sea region. These have led to the launch and endorsement of the Synergy as a collective set of efforts and produced a number of future initiatives.

The document summarises progress in every theme and dedicates a section on Cross-Border Cooperation including joint efforts with civil society which promotes cooperation between local authorities of bordering regions with the aim of addressing common challenges.

Which funding sources (if any) have been defined within the document?

Erasmus Mundus
IncoNeT EECA
Black Sea Cross Border Cooperation
ENPI
IPA

Which are the thematic priorities set with the paper?

The document does not make reference to any specific priority themes under the section on S&T cooperation.

Are there specific recommendations and implementation actions defined in the paper? If yes, which?

While the initiative's main goal is mentioned to invigorate action at regional level promoting stability and prosperity in the Black Sea area, there is further need for progress in the accomplishment of the tasks laid down in 2007. In this regard, the action items prescribed in the paper are listed below:

- Long-term, measurable objectives in fields like transport, environment, energy or maritime safety should be set to spur more concerted action. These would require the support of all BSS members. In each case a lead country and/or organisation should be identified to ensure coordination of activities which might be undertaken at national or regional level to achieve the objectives set.
- To facilitate the realisation of projects, sectoral partnerships could be established to provide a framework for co-financing (including through the NIF) and a basis for the involvement of IFIs. These partnerships might bring together all or some of the Black Sea Synergy participants to cooperate on a series of projects. The successful experience of the Northern Dimension¹⁴ provides a useful example of how this could work.
- The frequency of ministers' meetings should reflect concrete needs. In some cases they could take place in the existing sectoral frameworks (such as TRACECA or the Baku Initiative) or could follow the Kyiv model (back-to-back with BSEC meetings, with full EU participation or involving an open troika). Foreign ministers could meet as required to mark the major milestones of the process.

In addition to abovementioned recommendations, a number of proposals were made in order to study further:

- involvement of Belarus in some of the sectoral activities, related to the Synergy
- creation of a Black Sea Civil Society Forum
- strengthening of academic and student networks
- establishment of an Institute of European Studies in the Black Sea Region

Have the authors named specific barriers in the EU-Black Sea STI collaboration? If yes, which?

No barriers are specified in the paper.

The EU's Black Sea policy: Where do we stand?

Which are the fora/stakeholders, who have prepared the paper?

DG External Policies

Which are the fora/stakeholders, who are responsible for the implementation of the paper?

EC and the governments of the Black Sea Region

What is the general attitude/scope regarding EU – Black Sea STI cooperation described in the paper?

The general attitude and intention in this position paper is to analyse the Black Sea Synergy's failure to fulfil its objectives and make recommendations on how to overcome the existing barriers for future initiatives. It draws conclusions from existing successful examples such as Northern Dimension Environmental Protection (NDEP).

Which funding sources (if any) have been defined within the document?

EU Cross Border Cooperation
ENPI
IPA
Black Sea Basin Cross-Border Programme

Which are the thematic priorities set with the paper?

No priority areas are defined within this document except for some areas referred as examples under various cooperation tools (e.g. coastal zone management, social well-being, transport).

Are there specific recommendations and implementation actions defined in the paper? If yes, which?

This position paper devotes a large section on recommendations through which the Synergy is expected to be put on track again in accordance with the ex-ante projections.

- The policy approach should be evolved into a strategy (as stated in the resolution by the European Parliament as well) which would add a medium to long term vision to the Synergy. This progress, according to the paper, can be reached through concluding agreements with international financing institutions; devising a decision-making process with which all parties feel comfortable and organising a donor's conference and presenting examples of projects produced in cooperation with regional and/or international organisations.
- The EU should enhance its presence in the Black Sea, and not consider the region only as an area where several of its external policies converge.

- The particular interests of the EU's three Black Sea Member States should now also be taken into account
- The Commission and the EEAS should provide clear Black Sea Synergy objectives, both in terms of political guidance and also in terms of sectors and priorities
- Appropriate means – a minimum of funding, structures and human resources – should be devoted to the Black Sea Synergy by the Commission and the EEAS
- The Black Sea Synergy and the Eastern Partnership should be fully developed in tandem. The two policies are important and consistent with the EU's vision on how to develop relations with Turkey, Eastern Europe and Russia. The policies are not incompatible, but they should be kept distinct
- The European Parliament (EP) could make the first move by removing the responsibility for following relations with PABSEC from the hands of the Euronest Delegation
-

Have the authors named specific barriers in the EU-Black Sea STI collaboration? If yes, which?

- Insufficient economic well-being of the region vis-à-vis other regions with successful implementation cases (Baltic cooperation),
- Unwillingness on the side of Turkish and Russian governments about involving EU in the affairs of the region
- Ongoing conflicts (Ukraine, South Osetia, Abkhazia and, Transnistria)
- Cold reactions from some Member States towards Black Sea Synergy since the launch of the Eastern Partnership. These Member States tend to consider the two policies as incompatible at the EU Council
- The reluctance of the principal international financial institutions active in the region, the EBRD and the EIB. These banks did not commit expertise and funding to Black Sea Synergy partnerships until a fund was created with capital assured by a number of contributors
- The disqualification of the BSTDB, the BSEC's investment bank, as manager of the ENPI funds. The EU (which is to say, EU Member States) hold a minority stake in the BSTD's capital. As a result, the BSTDB cannot play the relatively important role that the Nordic Investment Bank (NIB) has played in the NDEP – providing valuable local expertise and increasing the sense of local ownership
- The fact that no EU ENPI funds were specifically reserved to finance Black Sea Synergy partnerships or dedicated Black Sea Synergy funds, as had been the case for the Northern Dimension. In the Black Sea region, this was interpreted not only as a contradiction, but a sign of the EU's weak engagement with the initiative. The lack of dedicated funding may have derived in part from the lack of a common language of EU Black Sea Member States at the EU Council

- The Commission's overly optimistic projections for the three Black Sea Partnerships. Because the Commission hoped to please its three Black Sea Member States, it assigned each a partnership and projected that the programmes could be launched in a few years. (This was unlike the Northern Dimension model, which required longer to consolidate and in which the role of EU Member States, although important was less significant than that of the EU.
- The rather strict divisions between programmes and activities, financial instruments and administrative sub-structures of the EU institutions for the three different policies in the Black Sea region (enlargement for Turkey; the Strategic Partnership for Russia and the Eastern Partnership for Ukraine, Moldova and the three South Caucasus countries). These divisions have created obstacles for developing the Black Sea Synergy
- Inadequate human resources within the EEAS. (This was also previously the case in the Commission's former DG RELEX) and in the Commission units dealing with Black Sea Synergy: Very few staff monitor and coordinate the Black Sea Synergy, while the Eastern Partnership has monopolised an increasing number of staff. Fortunately, the staff allocated to the two policies have remained distinct in the EEAS (as was also the case in DG RELEX). This separation has not been the case in the Commission's sectoral DGs, except in DG MARE, and the larger policy – the Eastern Partnership – is prioritised.

Joint Consultation Paper: Towards a new European Neighbourhood Policy

Which are the fora/stakeholders, who have prepared the paper?

Commission Staff Joint Consultation Paper

Which are the fora/stakeholders, who are responsible for the implementation of the paper?

EU institutions and the governments of the ENP member countries

What is the general attitude/scope regarding EU – Black Sea STI cooperation described in the paper?

This consultation paper reviews the assumptions upon which the ENP is based and makes suggestions for a better policy design to meet the needs of the policy.

The list of questions raised in the document aims at exploring how the ENP can become a more effective tool for promoting EU's interests and those of its partners in order to develop stronger partnership.

Which funding sources (if any) have been defined within the document?

There is no particular reference to funding sources. In general national funding agencies as well as the EC should support the STI activities between the EU MS and the target region. The aim is to construct a discussion for a detailed examination of the ENP.

It should be noted that there is no particular reference to any thematic components of the ENP including cooperation in S&T.

Which are the thematic priorities set with the paper?

Migration, health security, environment and climate change.

Are there specific recommendations and implementation actions defined in the paper? If yes, which?

Although none of the below are directly linked with the field of S&T, the document makes reference to various recommendations for future implementation:

- The EU agenda of ENP should be tailored in order let all target countries to share aligned goals with the Union,
- The EU and its Member States need to do more together with our partners to address the security threats that arise from conflict situations, from organised crime and from terrorism, and to develop our ability to jointly manage crises and disasters.
- Substantial efforts are needed in the context of the ENP review to improve both the ownership of this policy by partner countries and to improve communication of its objectives and results both within the EU and in the partner countries.

Have the authors named specific barriers in the EU-Black Sea STI collaboration? If yes, which?

The barriers referred in the text are listed below (although not specifically related to S&T cooperation):

- Differences among target countries' approach to the EU and the NP,
- Political instability in the region as a result of crises experience in Ukraine, Georgia and so on.

Annex D. Interviews results

Armenia**AM Partner 1:****1. State-of-the-art of international S&T cooperation of Black Sea Region countries⁵ with the EU and role of the European Research Area**

1.1 Please assess the state-of-the-art of S&T cooperation of Black Sea Region countries with the EU

Very good	
Good	X
Poor	

1.2 Does your country participate in the EU S&T programmes? _____ Yes _____

1.2.1 Please specify concrete programmes ____FPs, COSME, COST

1.3 Should S&T cooperation between Black Sea Region countries with the EU be improved? Yes

1.3.1 How to improve it?

The Cooperation should be strengthened by intensifying the integration process.

1.4 How could the EU countries contribute to S&T development in Black Sea Region countries?

By identifying the S&T priorities and by conducting a better monitoring to reveal the S&T potential of BS countries.

1.5 Are you aware on specific EU-Black Sea Region policy papers and strategies (for list of selected policy papers and strategies, please refer to Appendix)? Yes

⁵ Black Sea Region Countries and Member States of the Black Sea Economic Cooperation Organisation: Republic of Albania, Republic of Armenia, Republic of Azerbaijan, Republic of Bulgaria, Georgia, Hellenic Republic, Republic of Moldova, Romania, the Russian Federation, Republic of Serbia, Republic of Turkey, Ukraine <http://www.bsec-organization.org>

1.5.1 Please specify concrete examples of such strategies, programmes:

There are some strategies and policy papers outlined in the framework of BSEC , but to my knowledge none of them is efficient

1.5.2 Do you think the existing strategies and programmes are sufficient for effective S&T cooperation between EU and countries of Black Sea Region? Yes

1.6 Do you consider the creation of new “EU-Black Sea Cooperation Programme in STI” feasible and desirable? Yes

Only for representatives of Black Sea Region countries:

3. State-of-the-art of international S&T cooperation among countries of the Black Sea Region.

2.1 Does your country undertake/participate in the measures aimed at identification of joint S&T objectives and respective priorities for S&T cooperation among countries of the Black Sea Region?

Yes

2.1.1 Please specify concrete measures undertaken (joint S&T cooperation committee; joint working groups; joint S&T programmes; joint action plans; joint projects, other)

Joint Pilot Caal in the framework of FP7 Black Sea EraNet Project with participation of National Academy of Sciences and State Committee on Science- a good mechanism for boosting STI cooperation in the region

AM Partner 2:

1. State-of-the-art of international S&T cooperation of Black Sea Region countries⁶ with the EU and role of the European Research Area

1.1 Please assess the state-of-the-art of S&T cooperation of Black Sea Region countries with the EU

Very good	
Good	X

⁶ Black Sea Region Countries and Member States of the Black Sea Economic Cooperation Organisation: Republic of Albania, Republic of Armenia, Republic of Azerbaijan, Republic of Bulgaria, Georgia, Hellenic Republic, Republic of Moldova, Romania, the Russian Federation, Republic of Serbia, Republic of Turkey, Ukraine <http://www.bsec-organization.org>

Poor	
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1.2 Does your country participate in the EU S&T programmes? Yes, No _____yes

1.2.1 Please specify concrete programmes

FP7,____HORIZON 2020 , COST

1.3 Should S&T cooperation between Black Sea Region countries with the EU be improved? Yes, No yes

1.3.1 How to improve it?

establish new collaborations

1.4 How could the EU countries contribute to S&T development in Black Sea Region countries?

involve more projects

1.5 Are you aware on specific EU-Black Sea Region policy papers and strategies (for list of selected policy papers and strategies, please refer to Appendix)? Yes/No
no

1.5.1 Please specify concrete examples of such strategies, programmes:

1.5.2 Do you think the existing strategies and programmes are sufficient for effective S&T cooperation between EU and countries of Black Sea Region? Yes / No

1.6 Do you consider the creation of new “EU-Black Sea Cooperation Programme in STI” feasible and desirable? Yes / No yes

Only for representatives of Black Sea Region countries:

2. State-of-the-art of international S&T cooperation among countries of the Black Sea Region.

2.1 Does your country undertake/participate in the measures aimed at identification of joint S&T objectives and respective priorities for S&T cooperation among countries of the Black Sea Region?

Yes / No _____

2.1.1 Please specify concrete measures undertaken (joint S&T cooperation committee; joint working groups; joint S&T programmes; joint action plans; joint projects, other)

AM Partner 3:

1. State-of-the-art of international S&T cooperation of Black Sea Region countries⁷ with the EU and role of the European Research Area

1.1 Please assess the state-of-the-art of S&T cooperation of Black Sea Region countries with the EU

Very good	
Good	+
Poor	

1.2 Does your country participate in the EU S&T programmes? Yes

1.2.1 Please specify concrete programmes _____Horizon2020_____

1.3 Should S&T cooperation between Black Sea Region countries with the EU be improved? Yes

1.3.1 How to improve it?

By more active cooperation via international projects

1.4 How could the EU countries contribute to S&T development in Black Sea Region countries?

By introducing S&T Programmes sepcificaly targeting BSR

1.5 Are you aware on specific EU-Black Sea Region policy papers and strategies (for list of selected policy papers and strategies, please refer to Appendix)? - More or less

⁷ Black Sea Region Countries and Member States of the Black Sea Economic Cooperation Organisation: Republic of Albania, Republic of Armenia, Republic of Azerbaijan, Republic of Bulgaria, Georgia, Hellenic Republic, Republic of Moldova, Romania, the Russian Federation, Republic of Serbia, Republic of Turkey, Ukraine <http://www.bsec-organization.org>

1.5.1 Please specify concrete examples of such strategies, programmes:

ICBSS

1.5.2 Do you think the existing strategies and programmes are sufficient for effective S&T cooperation between EU and countries of Black Sea Region? Yes

1.6 Do you consider the creation of new “EU-Black Sea Cooperation Programme in STI” feasible and desirable? Yes

Only for representatives of Black Sea Region countries:

2. State-of-the-art of international S&T cooperation among countries of the Black Sea Region.

2.1 Does your country undertake/participate in the measures aimed at identification of joint S&T objectives and respective priorities for S&T cooperation among countries of the Black Sea Region?

Yes

2.1.1 Please specify concrete measures undertaken (joint S&T cooperation committee; joint working groups; joint S&T programmes; joint action plans; joint projects, other)

Joint S&T programmes, joint projects.

AM Partner 4:

1. State-of-the-art of international S&T cooperation of Black Sea Region countries⁸ with the EU and role of the European Research Area

1.1 Please assess the state-of-the-art of S&T cooperation of Black Sea Region countries with the EU

Very good	
Good	V
Poor	

⁸ Black Sea Region Countries and Member States of the Black Sea Economic Cooperation Organisation: Republic of Albania, Republic of Armenia, Republic of Azerbaijan, Republic of Bulgaria, Georgia, Hellenic Republic, Republic of Moldova, Romania, the Russian Federation, Republic of Serbia, Republic of Turkey, Ukraine <http://www.bsec-organization.org>

1.2 Does your country participate in the EU S&T programmes? Yes, No

1.2.1 Please specify concrete programmes Horizon 2020

1.3 Should S&T cooperation between Black Sea Region countries with the EU be improved? Yes, No _____

1.3.1 How to improve it?

It can be improved by the cooperation between the Armenian and EU scientists.

1.5 Are you aware on specific EU-Black Sea Region policy papers and strategies (for list of selected policy papers and strategies, please refer to Appendix)? Yes/No

1.5.1 Please specify concrete examples of such strategies, programmes:

'EU Strategy for the Black Sea' to enhance the coherence and visibility of EU action in the region

1.5.2 Do you think the existing strategies and programmes are sufficient for effective S&T cooperation between EU and countries of Black Sea Region? Yes / No

1.6 Do you consider the creation of new "EU-Black Sea Cooperation Programme in STI" feasible and desirable? Yes / No _____

Only for representatives of Black Sea Region countries:

2. State-of-the-art of international S&T cooperation among countries of the Black Sea Region.

2.1 Does your country undertake/participate in the measures aimed at identification of joint S&T objectives and respective priorities for S&T cooperation among countries of the Black Sea Region?

Yes / No _____

2.1.1 Please specify concrete measures undertaken (joint S&T cooperation committee; joint working groups; joint S&T programmes; joint action plans; joint projects, other)

joint S&T programmes; joint projects.

AM Partner 5:

1. State-of-the-art of international S&T cooperation of Black Sea Region countries⁹ with the EU and role of the European Research Area

1.1 Please assess the state-of-the-art of S&T cooperation of Black Sea Region countries with the EU

Very good	
Good	
Poor	+

1.2 Does your country participate in the EU S&T programmes? Yes, No
_____ **Yes** _____

1.2.1 Please specify concrete programmes _____ *FP6, FP7, Horizon2020*

1.3 Should S&T cooperation between Black Sea Region countries with the EU be improved? Yes, No _____ **Yes** _____

1.3.1 How to improve it?

Help to create Incubators, support SME-s, more grants for S&Technology

1.4 How could the EU countries contribute to S&T development in Black Sea Region countries?

Create a policy framework for enforcing S&T and Industry. Particularly the renewable energy and Energy Efficiency should be in focus. E.g. creation of a comprehensive R&D and Incubation center. Very important to provide funds for capacity building, i.e. creation of reference centers, labs, incubators.

1.5 Are you aware on specific EU-Black Sea Region policy papers and strategies (for list of selected policy papers and strategies, please refer to Appendix)? Yes/No _ **Yes, but limited**

1.5.1 Please specify concrete examples of such strategies, programmes:

H2020, INNOVER East

⁹ Black Sea Region Countries and Member States of the Black Sea Economic Cooperation Organisation: Republic of Albania, Republic of Armenia, Republic of Azerbaijan, Republic of Bulgaria, Georgia, Hellenic Republic, Republic of Moldova, Romania, the Russian Federation, Republic of Serbia, Republic of Turkey, Ukraine <http://www.bsec-organization.org>

1.5.2 Do you think the existing strategies and programmes are sufficient for effective S&T cooperation between EU and countries of Black Sea Region? Yes / No
 _____ **NO** _____

1.6 Do you consider the creation of new “EU-Black Sea Cooperation Programme in STI” feasible and desirable? Yes / No _____ **YES** _____

Only for representatives of Black Sea Region countries:

4. State-of-the-art of international S&T cooperation among countries of the Black Sea Region.

2.1 Does your country undertake/participate in the measures aimed at identification of joint S&T objectives and respective priorities for S&T cooperation among countries of the Black Sea Region?

Yes / No _____ **YES** _____

2.1.1 Please specify concrete measures undertaken (joint S&T cooperation committee; joint working groups; joint S&T programmes; joint action plans; joint projects, other)

INNOVER-EAST 1st International Policy Conference National State of Innovation in EaP Countries in RES/EE, July 8, 2015, Yerevan

AM Partner 6:

1. State-of-the-art of international S&T cooperation of Black Sea Region countries¹⁰ with the EU and role of the European Research Area

1.1 Please assess the state-of-the-art of S&T cooperation of Black Sea Region countries with the EU

Very good	
Good	
Poor	Poor

¹⁰ Black Sea Region Countries and Member States of the Black Sea Economic Cooperation Organisation: Republic of Albania, Republic of Armenia, Republic of Azerbaijan, Republic of Bulgaria, Georgia, Hellenic Republic, Republic of Moldova, Romania, the Russian Federation, Republic of Serbia, Republic of Turkey, Ukraine <http://www.bsec-organization.org>

1.2 Does your country participate in the EU S&T programmes? Yes, No _ **Yes**__

1.2.1 Please specify concrete programmes

1.3 Should S&T cooperation between Black Sea Region countries with the EU be improved? Yes, No _____ **Yes**_____

1.3.1 How to improve it?

By supporting ongoing state-of-the-art real scientific infrastructure projects

1.4 How could the EU countries contribute to S&T development in Black Sea Region countries?

By involving the ongoing state-of-the-art projects into the European research infrastructure network

1.5 Are you aware on specific EU-Black Sea Region policy papers and strategies (for list of selected policy papers and strategies, please refer to Appendix)? Yes/No _____ No_____

1.5.1 Please specify concrete examples of such strategies, programmes:

1.5.2 Do you think the existing strategies and programmes are sufficient for effective S&T cooperation between EU and countries of Black Sea Region? Yes / No _____ No_____

1.6 Do you consider the creation of new “EU-Black Sea Cooperation Programme in STI” feasible and desirable? Yes / No _____ Yes_____

Only for representatives of Black Sea Region countries:

2. State-of-the-art of international S&T cooperation among countries of the Black Sea Region.

2.1 Does your country undertake/participate in the measures aimed at identification of joint S&T objectives and respective priorities for S&T cooperation among countries of the Black Sea Region?

Yes / No _____ - _____

2.1.1 Please specify concrete measures undertaken (joint S&T cooperation committee; joint working groups; joint S&T programmes; joint action plans; joint projects, other)

Germany

GER Partner 1:

Interview Black Sea Horizon – Hagedorn, DLR-PT

I. Part: State of the art of the Science and Technology international cooperation – role of S&T partnership with EU and European Research Area

In general, the EU strategy for the Danube region (EUSDR) can play an important part for interconnecting the European Research Area with the Black Sea region.

II. Part:

1. S&T International cooperation (role and existing programmes) in general, and more specifically:

a. Romania's main international partners in R&D cooperation are (the Western European countries) France and Germany.

b. The European platform Netwatch qualifies Romania as an „ERA-participant on EU average”, the only country among the Central European and South East European countries.

c. The Romanian funding agency ANCSI has administered R&D cooperation programmes in relation to 17 countries of the world. 13 of those programmes were related to European countries (11 EU-members), only two of those are related to the Black Sea region (Russia, Turkey).

d. Only one Black Sea country (Ukraine) is covered by the running R&D cooperation programmes.

e. Romania has closed bilateral R&D agreements with approx. 50 countries, nearly all Black Sea countries are covered (Armenia, Azerbaidjan, Bulgaria, Rep. Moldovo, Russia, Turkey, Ukraine – only exception is Georgia).

2. State of the art of the cooperation with EU/Black Sea Region countries. How to improve it?

a. Romania has gathered considerable experience in its ERA-Net activities. Black Sea initiatives might gain from these good practice examples.

3. Mechanisms for the identification of joint S&T objectives and respective priorities

a. Romania's running national R&D strategy for 2014-2020 identifies four priority fields:

1. energy and environment,
2. Material,
3. gene technology and basic research,
4. health

b. Romania lays high priority on research of the Danube Delta-Black Sea-transition, and looking for partners and funding within the EU-Danube Region strategy (EUSDR).

4. How could the EU countries contribute to support current trends in the STI development of the target region?

a. participation in EUSDR activities for the lower Danube countries could result in strengthening that part of the Black Sea region.

5. Are the implemented EU-Black Sea strategies e.g. EU-Black Sea Synergy (http://eeas.europa.eu/blacksea/index_en.htm) (if available – national strategies) successful? Why? What should be done additionally?

a. –

6. Which framework conditions (instruments, action plans etc. in your country) could be improved for a better use of synergies among the both regions?

a. maybe raising awareness about funding instruments for cooperation with Romania and Bulgaria (e.g. in BMBF programmes like „CESEER“ and “IWINDOR”

7. Do you consider the creation of “EU-Black Sea Cooperation Programme in STI” (BSCP) feasible and desirable?

a. further instruments are desirable for strengthening Romania as a European R&D innovation-follower

Georgia**GE Partner 1:****1. State-of-the-art of international S&T cooperation of Black Sea Region countries¹¹ with the EU and role of the European Research Area**

1.1 Please assess the state-of-the-art of S&T cooperation of Black Sea Region countries with the EU

Very good	
Good	X
Poor	

1.2 Does your country participate in the EU S&T programmes? Yes X, No

1.2.1 Please specify concrete programmes
FP 7; Horizon 2020;

1.3 Should S&T cooperation between Black Sea Region countries with the EU be improved? Yes X, No**1.3.1 How to improve it?**

- Making efforts to thoroughly identify research priority domains to be of mutual importance and topicality;
- Concentration of efforts on identified research priorities;
- Concluding of sound bilateral as well as multilateral S&T cooperation agreements;
- Creation of fully operational "Black Sea Research Programme;
- Activation of efforts with a view to promote joint BS and EU research groups participation in EU funded projects such as H2020, etc.

1.4 How could the EU countries contribute to S&T development in Black Sea Region countries?

¹¹ Black Sea Region Countries and Member States of the Black Sea Economic Cooperation Organisation: Republic of Albania, Republic of Armenia, Republic of Azerbaijan, Republic of Bulgaria, Georgia, Hellenic Republic, Republic of Moldova, Romania, the Russian Federation, Republic of Serbia, Republic of Turkey, Ukraine <http://www.bsec-organization.org>

-More intensively develop S&T policy dialogue with a view to elaborate a streamlined set of concrete/sound actions and mechanisms for effective cooperation;

-Sharing of best practice and experience in research management, capacity building, etc.

- Mobilizing additional financial instruments in support of widening the EU and BS scientific cooperation;

1.5 Are you aware on specific EU-Black Sea Region policy papers and strategies? Yes/No

1.5.1 Please specify concrete examples of such strategies, programmes:

- White Paper on Opportunities and Challenges in View of Enhancing the EU Cooperation with Eastern Europe, Central Asia, and South Caucasus in Science, Research and Innovation;
- BSEC ACTION PLANS ON COOPERATION IN SCIENCE AND TECHNOLOGY;
- Eastern Partnership Panel on Research and Innovation;
- EU-Black Sea Synergy;

1.5.2 Do you think the existing strategies and programmes are sufficient for effective S&T cooperation between EU and countries of Black Sea Region? Yes X / No

1.6 Do you consider the creation of new “EU-Black Sea Cooperation Programme in STI” feasible and desirable? Yes X / No

Only for representatives of Black Sea Region countries:

5. State-of-the-art of international S&T cooperation among countries of the Black Sea Region.

2.1 Does your country undertake/participate in the measures aimed at identification of joint S&T objectives and respective priorities for S&T cooperation among countries of the Black Sea Region?

Yes / No

2.1.1 Please specify concrete measures undertaken (joint S&T cooperation committee; joint working groups; joint S&T programmes; joint action plans; joint projects, other)

- BSEC Working Group on S&T Cooperation;

GE Partner 2

1. State-of-the-art of international S&T cooperation of Black Sea Region countries¹² with the EU and role of the European Research Area

1.1 Please assess the state-of-the-art of S&T cooperation of Black Sea Region countries with the EU

Very good	
Good	X
Poor	

1.2 Does your country participate in the EU S&T programmes? **Yes**

1.2.1 Please specify concrete programmes

Europe as a Global actor: *Encouraging the research and innovation cooperation between the Union and selected regional partners – proposals targeting Southern Mediterranean Neighbourhood, Eastern Partnership.*

Joint Operational Program “BLACK SEA BASIN 2007-2013”

1.3 Should S&T cooperation between Black Sea Region countries with the EU be improved? **Yes**

1.3.1 How to improve it?

S&T cooperation must comprise applied problems. On the other side it is necessary more active participation of Georgian organizations in the forthcoming Black Sea programs.

¹² Black Sea Region Countries and Member States of the Black Sea Economic Cooperation Organisation: Republic of Albania, Republic of Armenia, Republic of Azerbaijan, Republic of Bulgaria, Georgia, Hellenic Republic, Republic of Moldova, Romania, the Russian Federation, Republic of Serbia, Republic of Turkey, Ukraine <http://www.bsec-organization.org>

1.4 How could the EU countries contribute to S&T development in Black Sea Region countries?

I suppose that the system should be the same as in H2020 only it must be declared the allocation of additional amount of money in future programs.

1.5 Are you aware on specific EU-Black Sea Region policy papers and strategies?
No

1.5.1 Please specify concrete examples of such strategies, programmes:

In my opinion it will be useful development of future cooperation in Black Sea region in ICT, in tourism; between SMEs/CSOs, etc.

1.5.2 Do you think the existing strategies and programmes are sufficient for effective S&T cooperation between EU and countries of Black Sea Region? Yes / No

Of course the existing situation is not sufficient and future enhancement of such cooperation will be desirable.

1.6 Do you consider the creation of new “EU-Black Sea Cooperation Programme in STI” feasible and desirable? **Yes**

Only for representatives of Black Sea Region countries:

2. State-of-the-art of international S&T cooperation among countries of the Black Sea Region.

2.1 Does your country undertake/participate in the measures aimed at identification of joint S&T objectives and respective priorities for S&T cooperation among countries of the Black Sea Region?

I suppose – Yes.

2.1.1 Please specify concrete measures undertaken (joint S&T cooperation committee; joint working groups; joint S&T programmes; joint action plans; joint projects, other)

For example there was very good project which implied creation of an online platform accessible from anywhere in the world and available in official languages of the region. The overall objective was to enable the cross-border exchange between

Black Sea countries of culture by providing an innovative, multi-lingual IT platform, based on available open source social platform solutions and adapted for culture producers, culture operators and other actors of the culture market. The platform became an online tool, where all entities related to the culture are able to advertise, discuss and organize cultural assets and events in the region. The platform also became an important source of information about the culture and related cultural events for the culture consumers. Such services are available anywhere in the world while its cultural content will be focused on the Black Sea Region.

GE Partner 3

1. State-of-the-art of international S&T cooperation of Black Sea Region countries¹³ with the EU and role of the European Research Area

1.1 Please assess the state-of-the-art of S&T cooperation of Black Sea Region countries with the EU

Very good	
Good	X
Poor	

1.2 Does your country participate in the EU S&T programmes? **Yes** X, No

1.2.1 Please specify concrete programmes

Erasmus Plus Programme;

Horizon 2020

Besides, Georgia successfully participated in previous EU the Seventh Framework Programs, showing the second best position after Ukraine in the post-soviet region. The Same holds true for higher education institutions of Georgia in terms of their successful participation in Erasmus Plus Programme and its predecessor ones (Tempus, Erasmus Mundus etc);

Maria Sklodowska Curie Actions with its component of PhD student mobility and joint doctoral degrees, etc)

Also, Georgia participates in Jean Monnet activities that seek to support teaching or research in European integration issues through dedicated Modules, Chairs or Centers of Excellence.

Black Sea Interconnection (BSI) intends to build an international network infrastructure among research and education networks in the South Caucasus region and connecting it to the pan-European research network. The network interconnected Armenia, Azerbaijan and Georgia and also provide the connectivity for these countries to GÉANT2.

¹³ Black Sea Region Countries and Member States of the Black Sea Economic Cooperation Organisation: Republic of Albania, Republic of Armenia, Republic of Azerbaijan, Republic of Bulgaria, Georgia, Hellenic Republic, Republic of Moldova, Romania, the Russian Federation, Republic of Serbia, Republic of Turkey, Ukraine <http://www.bsec-organization.org>

1.3 Should S&T cooperation between Black Sea Region countries with the EU be improved? **Yes X**, No

1.3.1 How to improve it?

Intensification of dialogue; Putting in place of more concrete/tangible instruments in support of cooperation

1.4 How could the EU countries contribute to S&T development in Black Sea Region countries?

Experience sharing, provision of additional support to capacity building;

1.5 Are you aware on specific EU-Black Sea Region policy papers and strategies?
Yes/No

Yes,

1.5.1 Please specify concrete examples of such strategies, programmes:

Black Sea Synergy Initiative that involves cooperation of Black Sea region countries in issues related to energy, transport, environment and etc.

TRANsport Corridor Europe-Caucasus-Central Asia (TRACECA) programme that launched in 1993 to develop a transport corridor from Europe to China, via the Black Sea, the Caucasus, the Caspian Sea and Central Asia. The main aim of the programme is to strengthen economic relations, trade and transport links between the EU and programme's participating countries, such as: Azerbaijan, Armenia, Bulgaria, Georgia, Kazakhstan, Kyrgyzstan, Moldova, Romania, Tajikistan, Turkmenistan, Ukraine and Uzbekistan.

Black Sea Interconnection (BSI) intends to build an international network infrastructure among research and education networks in the South Caucasus region and connecting it to the pan-European research network. The network interconnected Armenia, Azerbaijan and Georgia and also provide the connectivity for these countries to GÉANT2._

Georgia actively participate in the Protection of the Black Sea Against Pollution (BSC) and MONINFO project ("Environmental monitoring of the Black Sea Basin; Monitoring and Information Systems for Reducing oil pollution"), funded by the European Commission and granted to the Black Sea Commission.

Georgia is member of regional economic Organization of the Black Sea Economic Cooperation (BSEC), and thus involved in various projects implemented by the organization.

Within the framework of cross-border cooperation in Black Sea basin, Georgia participated in ENPI-CBC Black Sea Basin joint operational programme implemented under the European Neighborhood & Partnership Instrument (ENPI) of the EU;

Improving Environmental Monitoring in the Black Sea (EMBLAS) is an EU-UNDP regional initiative for Georgia, Russia and Ukraine, which helps strengthen the capacities of the three countries for biological and chemical monitoring of water quality in the Black Sea in line with EU water-related legislation. (Ended 2014)

1.5.2 Do you think the existing strategies and programmes are sufficient for effective S&T cooperation between EU and countries of Black Sea Region? **Yes X / No**

1.6 Do you consider the creation of new “EU-Black Sea Cooperation Programme in STI” feasible and desirable? **Yes X / No**

Only for representatives of Black Sea Region countries:

2. State-of-the-art of international S&T cooperation among countries of the Black Sea Region.

2.1 Does your country undertake/participate in the measures aimed at identification of joint S&T objectives and respective priorities for S&T cooperation among countries of the Black Sea Region?

Yes X / No

2.1.1 Please specify concrete measures undertaken (joint S&T cooperation committee; joint working groups; joint S&T programmes; joint action plans; joint projects, other)

-BSEC Working Group on S&T Cooperation;

Moldova

MD Partner 1

• State-of-the-art of international S&T cooperation of Black Sea Region countries with the EU and role of the European Research Area

1.1 Please assess the state-of-the-art of S&T cooperation of Black Sea Region countries with the EU

Very good	
Good	V
Poor	

1.2 Does your country participate in the EU S&T programmes? **Yes**

1.2.1 Please specify concrete programmes: **H2020 (and the previous FP6, FP7), Trans boundary Cooperation, COST, bilateral cooperation with Romania, Italy, France, Germany.**

1.3 Should S&T cooperation between Black Sea Region countries with the EU be improved? **Yes**

1.3.1 How to improve it?

To promote INCO calls, to provide access to EU research infrastructure for participants from Black Sea Region, to include specific calls for Black Sea Region in different programmes.

1.4 How could the EU countries contribute to S&T development in Black Sea Region countries?

To will be more open for partners from Black Sea region: to accept in consortia for different projects, to be interested in calls for Black Sea region.

1.5 Are you aware on specific EU-Black Sea Region policy papers and strategies (for list of selected policy papers and strategies, please refer to Appendix)? **Yes**

1.5.1 Please specify concrete examples of such strategies, programmes:

1.5.2 Do you think the existing strategies and programmes are sufficient for effective S&T cooperation between EU and countries of Black Sea Region? **Yes**

1.6 Do you consider the creation of new "EU-Black Sea Cooperation Programme in STI" feasible and desirable? **Yes**

Only for representatives of Black Sea Region countries:

- **State-of-the-art of international S&T cooperation among countries of the Black Sea Region.**

2.1 Does your country undertake/participate in the measures aimed at identification of joint S&T objectives and respective priorities for S&T cooperation among countries of the Black Sea Region?

Yes

2.1.1 Please specify concrete measures undertaken (joint S&T cooperation committee; joint working groups; joint S&T programmes; joint action plans; joint projects, other)

As country associated to EU and H2020 we participate at H2020 PC meetings, Groups of Senior Officials. We are part of some JPI (BBI, Waters).

MD Partner 2:

State-of-the-art of international S&T cooperation of Black Sea Region countries with the EU and role of the European Research Area

1.1 Please assess the state-of-the-art of S&T cooperation of Black Sea Region countries with the EU

Very good	
Good	V
Poor	

1.2 Does your country participate in the EU S&T programmes? Yes, No **Yes**

1.2.1 Please specify concrete programmes

H2020 Programme for Science and Innovation, COSME Programme, Creative Europe.

1.3 Should S&T cooperation between Black Sea Region countries with the EU be improved? Yes, No **Yes**

1.3.1 How to improve it?

Stimulate closer S&T cooperation within the region.

Develop specific instruments for enhancing and fostering S&T cooperation within the region

Offer funds (competitive financing) for institutional development and strengthening cooperation

1.4 How could the EU countries contribute to S&T development in Black Sea Region countries?

Strengthen institutional capacity of S&T organizations by means of cooperation

Attract the participation of Black Sea Region countries in current EU programmes (submitted projects)

Encourage a broader and deeper peer exchange and institutional peer review & evaluation

1.5 Are you aware on specific EU-Black Sea Region policy papers and strategies (for list of selected policy papers and strategies, please refer to Appendix)? Yes/No

Yes

1.5.1 Please specify concrete examples of such strategies, programmes:

EU Strategy for the Danube Region, BSEC Action Plan on Cooperation in Science and

Technology, Black Sea Synergy, White Paper on Opportunities and Challenges in View of Enhancing the EU Cooperation with Eastern Europe, Central Asia, and South Caucasus in Science, Research and Innovation

1.5.2 Do you think the existing strategies and programmes are sufficient for effective S&T cooperation between EU and countries of Black Sea Region? Yes / No

Yes

1.6 Do you consider the creation of new “EU-Black Sea Cooperation Programme in STI” feasible and desirable? Yes / No

Yes

Only for representatives of Black Sea Region countries:

State-of-the-art of international S&T cooperation among countries of the Black Sea Region.

2.1 Does your country undertake/participate in the measures aimed at identification of joint S&T objectives and respective priorities for S&T cooperation among countries of the Black Sea Region?

Yes / No

Yes

2.1.1 Please specify concrete measures undertaken (joint S&T cooperation committee; joint working groups; joint S&T programmes; joint action plans; joint projects, other)

Bilateral projects based on bilateral agreements signed by the Academy of Sciences of Moldova with similar organisations from the region.

MD Partner 3:

State-of-the-art of international S&T cooperation of Black Sea Region countries with the EU and role of the European Research Area

1.1 Please assess the state-of-the-art of S&T cooperation of Black Sea Region countries with the EU

Good	
------	--

1.2 Does your country participate in the EU S&T programmes?

Yes

1.2.1 Please specify concrete programmes:

Horizon 2020, ERASMUS +, COSME.

1.3 Should S&T cooperation between Black Sea Region countries with the EU be improved?

Yes

1.3.1 How to improve it?

More efforts should be focused on supporting social sciences studies from the Black Sea Region countries to better integrate in the European Research Area through circular mobility schemes and joint research projects.

1.4 How could the EU countries contribute to S&T development in Black Sea Region countries?

Joint projects on supporting scientific infrastructure development in Black Sea Region countries, capacity building of research institutions, mobility of young researchers, dedicated open-calls for enhancement of scientific cooperation, and open access to top of the art scientific publications.

1.5 Are you aware on specific EU-Black Sea Region policy papers and strategies (for list of selected policy papers and strategies, please refer to Appendix)?

Yes

1.5.1 Please specify concrete examples of such strategies, programmes:

Black Sea Synergy

1.5.2 Do you think the existing strategies and programmes are sufficient for effective S&T cooperation between EU and countries of Black Sea Region?

No

1.6 Do you consider the creation of new “EU-Black Sea Cooperation Programme in STI” feasible and desirable?

Yes

Only for representatives of Black Sea Region countries:

- **State-of-the-art of international S&T cooperation among countries of the Black Sea Region.**

2.1 Does your country undertake/participate in the measures aimed at identification of joint S&T objectives and respective priorities for S&T cooperation among countries of the Black Sea Region?

Yes

2.1.1 Please specify concrete measures undertaken (joint S&T cooperation committee; joint working groups; joint S&T programmes; joint action plans; joint projects, other)

Joint projects such as “Enhanced bi-regional STI cooperation between the EU and the Black Sea Region”

Russia

RU Partner 1:

1. State-of-the-art of international S&T cooperation of Black Sea Region countries¹⁴ with the EU and role of the European Research Area

1.1 Please assess the state-of-the-art of S&T cooperation of Black Sea Region countries with the EU

Very good	yes
Good	
Poor	

1.2 Does your country participate in the EU S&T programmes? Yes, No
 _____ Yes _____

1.2.1 Please specify concrete programmes _____ H2020, COSME, Lifelong Learning _____

1.3 Should S&T cooperation between Black Sea Region countries with the EU be improved? Yes, No _____ Yes _____

¹⁴ Black Sea Region Countries and Member States of the Black Sea Economic Cooperation Organisation: Republic of Albania, Republic of Armenia, Republic of Azerbaijan, Republic of Bulgaria, Georgia, Hellenic Republic, Republic of Moldova, Romania, the Russian Federation, Republic of Serbia, Republic of Turkey, Ukraine <http://www.bsec-organization.org>

1.3.1 How to improve it?

_____seminars, information days, online news

1.4 How could the EU countries contribute to S&T development in Black Sea Region countries?

_____Providing information about successful project results, scientific publications, newsletters

1.5 Are you aware on specific EU-Black Sea Region policy papers and strategies (for list of selected policy papers and strategies, please refer to Appendix)? Yes/No

_____No_____

1.5.1 Please specify concrete examples of such strategies, programmes:

_____N/A

1.5.2 Do you think the existing strategies and programmes are sufficient for effective S&T cooperation between EU and countries of Black Sea Region? Yes / No

1.6 Do you consider the creation of new “EU-Black Sea Cooperation Programme in STI” feasible and desirable? Yes / No _____Yes_____

Only for representatives of Black Sea Region countries:

6. State-of-the-art of international S&T cooperation among countries of the Black Sea Region.

2.1 Does your country undertake/participate in the measures aimed at identification of joint S&T objectives and respective priorities for S&T cooperation among countries of the Black Sea Region?

Yes / No _____Yes_____

2.1.1 Please specify concrete measures undertaken (joint S&T cooperation committee; joint working groups; joint S&T programmes; joint action plans; joint projects, other)

_____N/A

RU Partner 2

1. State-of-the-art of international S&T cooperation of Black Sea Region countries¹⁵ with the EU and role of the European Research Area

1.1 Please assess the state-of-the-art of S&T cooperation of Black Sea Region countries with the EU

Very good	yes
Good	
Poor	

1.2 Does your country participate in the EU S&T programmes? Yes, No
 _____ Yes _____

1.2.1 Please specify concrete programmes _____H2020, COSME, Lifelong Learning_____

1.3 Should S&T cooperation between Black Sea Region countries with the EU be improved? Yes, No _____Yes_____

1.3.1 How to improve it?

_____seminars, information days, online news

1.4 How could the EU countries contribute to S&T development in Black Sea Region countries?

_____Providing information about successful project results, scientific publications, newsletters

1.5 Are you aware on specific EU-Black Sea Region policy papers and strategies (for list of selected policy papers and strategies, please refer to Appendix)? Yes/No

_____No_____

1.5.1 Please specify concrete examples of such strategies, programmes:

¹⁵ Black Sea Region Countries and Member States of the Black Sea Economic Cooperation Organisation: Republic of Albania, Republic of Armenia, Republic of Azerbaijan, Republic of Bulgaria, Georgia, Hellenic Republic, Republic of Moldova, Romania, the Russian Federation, Republic of Serbia, Republic of Turkey, Ukraine <http://www.bsec-organization.org>

N/A

1.5.2 Do you think the existing strategies and programmes are sufficient for effective S&T cooperation between EU and countries of Black Sea Region? Yes / No

1.6 Do you consider the creation of new “EU-Black Sea Cooperation Programme in STI” feasible and desirable? Yes / No ____ Yes_____

Only for representatives of Black Sea Region countries:

7. State-of-the-art of international S&T cooperation among countries of the Black Sea Region.

2.1 Does your country undertake/participate in the measures aimed at identification of joint S&T objectives and respective priorities for S&T cooperation among countries of the Black Sea Region?

Yes / No ____ Yes_____

2.1.1 Please specify concrete measures undertaken (joint S&T cooperation committee; joint working groups; joint S&T programmes; joint action plans; joint projects, other)

____N/A

Ukraine

UA Partner 1:

1. State-of-the-art of international S&T cooperation of Black Sea Region countries¹⁶ with the EU and role of the European Research Area

1.1 Please assess the state-of-the-art of S&T cooperation of Black Sea Region countries with the EU

Very good	
Good	x
Poor	

¹⁶Black Sea Region Countries and Member States of the Black Sea Economic Cooperation Organisation: Republic of Albania, Republic of Armenia, Republic of Azerbaijan, Republic of Bulgaria, Georgia, Hellenic Republic, Republic of Moldova, Romania, the Russian Federation, Republic of Serbia, Republic of Turkey, Ukraine <http://www.bsec-organization.org>

1.2 Does your country participate in the EU S&T programmes? Yes, No **Yes**_____

1.2.1 Please specify concrete programmes _____Horizon 2020

1.3 Should S&T cooperation between Black Sea Region countries with the EU be improved? Yes, No _____**Yes**_____

1.3.1 How to improve it?

Due to the synergy between EU's instruments and strategies, such as those developed for the Mediterranean Region

Identification of common issues / needs

1.4 How could the EU countries contribute to S&T development in Black Sea Region countries?

By organizing the specific target projects for Black Sea Region

1.5 Are you aware on specific EU-Black Sea Region policy papers and strategies (for list of selected policy papers and strategies, please refer to Appendix)? Yes/No
_____Yes_____

1.5.1 Please specify concrete examples of such strategies, programmes:

Roadmaps for international cooperation (*Accompanying the Report from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions*)

Black Sea Synergy

White Paper on Opportunities and Challenges in View of Enhancing the EU Cooperation with Eastern Europe, Central Asia, and South Caucasus in Science, Research and Innovation

Joint Consultation Paper "Towards a new European Neighbourhood Policy

1.5.2 Do you think the existing strategies and programmes are sufficient for effective S&T cooperation between EU and countries of Black Sea Region? Yes / No No. It is a lack of the target resources

1.6 Do you consider the creation of new "EU-Black Sea Cooperation Programme in STI" feasible and desirable? Yes / No _____Yes_____

8. State-of-the-art of international S&T cooperation among countries of the Black Sea Region.

2.1 Does your country undertake/participate in the measures aimed at identification of joint S&T objectives and respective priorities for S&T cooperation among countries of the Black Sea Region?

Yes / No _____ Yes _____

2.1.1 Please specify concrete measures undertaken (joint S&T cooperation committee; joint working groups; joint S&T programmes; joint action plans; joint projects, other)

Agreements of NAS of Ukraine for scientific and technological cooperation with the countries of the Black Sea Region

Black Sea – Danube Joint Research Projects

UA Partner 2:

1. State-of-the-art of international S&T cooperation of Black Sea Region countries¹⁷ with the EU and role of the European Research Area

1.1 Please assess the state-of-the-art of S&T cooperation of Black Sea Region countries with the EU

Very good	
Good	+
Poor	

1.2 Does your country participate in the EU S&T programmes? Yes, No **Yes**_____

1.2.1 Please specify concrete programmes _____Horizon 2020

1.3 Should S&T cooperation between Black Sea Region countries with the EU be improved? Yes, No _____ **Yes**_____

1.3.1 How to improve it?

¹⁷Black Sea Region Countries and Member States of the Black Sea Economic Cooperation Organisation: Republic of Albania, Republic of Armenia, Republic of Azerbaijan, Republic of Bulgaria, Georgia, Hellenic Republic, Republic of Moldova, Romania, the Russian Federation, Republic of Serbia, Republic of Turkey, Ukraine <http://www.bsec-organization.org>

Due to the synergy between EU's instruments and strategies, such as those developed for the Mediterranean Region

Identification of common issues / needs

1.4 How could the EU countries contribute to S&T development in Black Sea Region countries?

By organizing the special project on specific problems of the Black Sea Region

1.5 Are you aware on specific EU-Black Sea Region policy papers and strategies (for list of selected policy papers and strategies, please refer to Appendix)? Yes/No
_____ Yes _____

1.5.1 Please specify concrete examples of such strategies, programmes:

1.5.2 Do you think the existing strategies and programmes are sufficient for effective S&T cooperation between EU and countries of Black Sea Region? Yes / No
_____ No. It is a lack of the target resources

1.6 Do you consider the creation of new "EU-Black Sea Cooperation Programme in STI" feasible and desirable? Yes / No _____ Yes _____

2. State-of-the-art of international S&T cooperation among countries of the Black Sea Region.

2.1 Does your country undertake/participate in the measures aimed at identification of joint S&T objectives and respective priorities for S&T cooperation among countries of the Black Sea Region?

Yes / No _____ Yes _____

2.1.1 Please specify concrete measures undertaken (joint S&T cooperation committee; joint working groups; joint S&T programmes; joint action plans; joint projects, other)

Bilateral agreement, which include joint calls on some research projects.

UA Partner 3:**1. State-of-the-art of international S&T cooperation of Black Sea Region countries¹⁸ with the EU and role of the European Research Area**

1.1 Please assess the state-of-the-art of S&T cooperation of Black Sea Region countries with the EU

Very good	
Good	x
Poor	

1.2 Does your country participate in the EU S&T programmes? Yes, No **Yes**_____

1.2.1 Please specify concrete programmes _____Horizon 2020, Danube Strategy and some others

1.3 Should S&T cooperation between Black Sea Region countries with the EU be improved? Yes, No _____ **Yes**_____

1.3.1 How to improve it?

- Extend integrated programs on the regions
- Avoid duplication of the content in some programs

1.4 How could the EU countries contribute to S&T development in Black Sea Region countries?

- By organizing the specific goal-oriented projects for Black Sea countries, for instance, on pollution of the sea shores or on problems of cargo ports
- By improving of information about common activities

1.5 Are you aware on specific EU-Black Sea Region policy papers and strategies (for list of selected policy papers and strategies, please refer to Appendix)? Yes/No _____ **Yes**_____

1.5.1 Please, specify concrete examples of such strategies, programmes:

¹⁸Black Sea Region Countries and Member States of the Black Sea Economic Cooperation Organisation: Republic of Albania, Republic of Armenia, Republic of Azerbaijan, Republic of Bulgaria, Georgia, Hellenic Republic, Republic of Moldova, Romania, the Russian Federation, Republic of Serbia, Republic of Turkey, Ukraine <http://www.bsec-organization.org>

Roadmaps for international cooperation (*Accompanying the Report from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions*)

1.5.2 Do you think the existing strategies and programmes are sufficient for effective S&T cooperation between EU and countries of Black Sea Region? Yes / No
 NO.

1.6 Do you consider the creation of new “EU-Black Sea Cooperation Programme in STI” feasible and desirable? Yes / No **YES**

9. State-of-the-art of international S&T cooperation among countries of the Black Sea Region.

2.1 Does your country undertake/participate in the measures aimed at identification of joint S&T objectives and respective priorities for S&T cooperation among countries of the Black Sea Region?

Yes / No **Yes**

2.1.1 Please specify concrete measures undertaken (joint S&T cooperation committee; joint working groups; joint S&T programmes; joint action plans; joint projects, other)

- Eastern Partnership, Danube strategy
- Bilateral co-operation between the countries on the base of corresponding international agreements