



ORGANIZATION OF THE BLACK SEA ECONOMIC COOPERATION

Attachment IV to BS/STM/R(2014)1

THIRD BSEC ACTION PLAN ON COOPERATION IN SCIENCE AND TECHNOLOGY (2014-2018)

I. Introduction

The impact of Science and Technology (S&T) on the sustainable economic development and prosperity is widely recognized. In this respect, the BSEC Member States, based on their rich, long-lasting and common traditions in S&T, are devoting particular attention for the further development and strengthening of that field, both at national level and in the Organization as a whole.

The purpose of the present third BSEC Action Plan is to:

- **Renew the commitment** of the BSEC Member States to cooperate in the development of S&T;
- **Reconfirm the policy orientations** for such cooperation, taking into consideration the developments in the policy landscape in the BSEC, but also building on the achievements of and lessons learned from the previous two Action Plans.

Furthermore, the third Action Plan in addition to the reconfirmation of broader policy orientations proposes a series of **specific initiatives and tools** that will provide tangible results, increasing at the same time the visibility and effectiveness of the BSEC activities in the field of S&T in the eyes of the research community and of the society at large.

II. Broader landscape

The third BSEC Action Plan on Cooperation in Science and Technology (2014-2018) pursues the second BSEC Action Plan on Cooperation in Science and Technology (2010-2014) which was adopted by the Ministers Responsible for Science and Technology of the BSEC Member States (Sofia, 9 April 2010) and takes also into consideration the Reports on the implementation of the successive Plans of Action, which are closely linked to the overarching second Action Plan, presented by the Country-Coordinators of the BSEC Working Group on Cooperation in Science and Technology, namely the Hellenic Republic (2012) and the Republic of Turkey (2014), as well as information provided by BSEC Member States on developments at national level addressing Action Plan recommendations.

Since the adoption of the second BSEC Action Plan on S&T (2010-2014) there have been a number of important developments in the policy landscape in the BSEC region that have significant implications for cooperation in various fields including Science and Technology.

Within the BSEC one important development has been the 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).

In addition, 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.

Several significant projects have been successfully implemented with the participation of various organizations from the BSEC Member States as well as the International Centre for Black Sea Studies (ICBSS) in different EU Research and Development Programmes.

There are new possibilities for the BSEC Member States and for BSEC as a whole to participate in ongoing international programmes such as EU Framework Programme for Research and Innovation '*Horizon 2020*' (2014 – 2020).

The BSEC Member States, the Permanent International Secretariat of the BSEC (BSEC PERMIS) and the BSEC Related Bodies should promote the development of the synergies between the organization's own activities and the ones foreseen in the projects, including the formulation of proposals for mutually beneficial joint actions.

III. Reconfirmation of Policy Orientations

In the course of the past four years progress has been observed along the lines drawn in the second Action Plan (2010-2014). However, there is a need to reconfirm the most pertinent ones, taking into account the broader landscape and the achievements so far, in the fields of *Human resources, Capacity building, Research infrastructures and Innovation*.

Human resources

The BSEC Member States possess long tradition in the field of Science and Technology and their scientific communities can present notable accomplishments. 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. In this respect, the following policy orientations should be addressed in priority:

1. Recognition and consolidation of the role of researchers in addressing Societal Challenges and in a knowledge-based sustainable development of each country and the region as a whole;
2. Stimulation and enhancement of the performance of the local research personnel through intensive internationalization activities such as mobility schemes, participation in scientific events, promotion of international networking and participation in international projects. In that context, the use of the numerous bilateral cooperation schemes among the BSEC Member States, BSEC PERMIS and the BSEC Related Bodies constitutes a tool of paramount importance.
3. Provision of a stable working environment for the researchers associated however to a revision and, wherever necessary, introduction of state-of-the art evaluation

approaches for the performance for the research personnel, in order to further promote emulation and meritocracy.

4. Increasing the recruitment of researchers and introduction of incentives for pursuing careers in RTD locally in order to avoid further brain-drain. In that respect the organization of Summer Schools in different Member States of BSEC with participation of invited prominent scientists, already initiated under the second Action Plan should be further promoted.

Capacity building

Over the past 20 years in most of the BSEC Member States in-depth re-organization of the research systems and structures has taken place, in order to accommodate the needs of a changing environment. In this context, there is now a need to assess the progress, to consolidate the achievements and to address any weaknesses. The cooperation within the BSEC can be instrumental in this process through benchmarking activities, exchange of good practices, sharing experiences, etc. that will enrich the development and implementation of national future-oriented S&T policies. Considering that developing national science and education policies plays an essential role in the building of sustainable knowledge-based societies, the BSEC should also act as a platform for dialogue, cooperation and exchange of information and experience between decision-makers and the scientific community of the region.

Actions promoting and strengthening education and capacity-building in Science and Technology will be enhanced through the involvement of relevant institutions in the BSEC Member States, such as the national academies, research councils and science foundations active in the establishment of a knowledge-based society. An increased attention to the synergy between research and higher education should be promoted and the interdisciplinary communication and research enhanced. A special focus should be placed on highly-skilled researchers mobility issues, encouraging, on the one hand, international mobility of talents and, on the other hand, mitigating the negative effects of 'brain-drain'. Cooperation and coordination at regional and international level will be essential and to this end, synergies should be explored, particularly with the EU. In this respect the following activities could be considered:

1. Further promoting the implementation of Policy Mix Peer reviews assessing the performance and potential of the national research systems. Such reviews have already been initiated under the second Action Plan, resulting in valuable recommendations towards the national authorities, which are now under consideration.
2. Assessment of the efficiency and impact of existing national research programmes, including the bilateral cooperation schemes among the BSEC Member States;
3. Improvement of the legal framework and setting up incentives for an increased participation of the private sector in the research systems in the region;
4. Implementation of evaluation procedures such as Benchmarking exercises, international evaluations, etc. for research centres and institutes based on internationally accepted standards. Such exercises have already been implemented in certain countries under the second Action Plan with positive outcomes.
5. Reviewing the legal and administrative dispositions concerning the protection of intellectual property rights (IPR) in the BSEC Member States in line with international standards, as a prerequisite for the promotion of the internationalization of the research activities;

6. Promotion of lifelong learning training schemes for policy makers and research administrators on state-of-the art organization and management of national research systems;
7. Supporting the operation of research centres that have undertaken to coordinate activities for the entire BSEC region in specific domains such as water quality, seismological research, etc. for the implementation of evaluation studies, road maps, etc.

Research Infrastructures

The research infrastructures in the BSEC Member States are gradually improving as a result of national investments and/or grants from national and international donors. However, there is still a lot to be done in order to reach a competitive level that will support the internationalization of the research systems.

At the same time, due to the complexity and the continuously increasing costs for both high- and mid- level research infrastructures, innovative type of infrastructures are under development worldwide including ‘distributed/multi-site’ research infrastructures, ‘virtual’ research infrastructures, etc. In that respect, issues such as interoperability, data sharing, open access, etc. are becoming essential when managing and operating research infrastructures.

Worldwide and in the EU in particular, important initiatives are undertaken for the coordination in the development and operation of research infrastructures of major importance. These initiatives include the European Strategy Forum for Research Infrastructures (ESFRI) that already developed a Roadmap for research infrastructures.

The *e*-infrastructures constitute a specific type of infrastructure providing a generic ICT platform for contemporary research, which increasingly requires handling large volumes of data (storing, transferring, analyzing, processing, etc.) for a wide range of scientific disciplines. In that respect, the national research and education systems in the BSEC countries play a key role and their availability and constant upgrading, as well as the provisioning of computing and storage resources for manipulating the generated data is of paramount importance. Where relevant, coordination and synergies among the BSEC Member States should be created and the *e*-infrastructure resources should be pooled at national and regional levels.

In that context the BSEC Member States should:

1. Further promote the development or renewal of national research infrastructures. In doing that, in-depth consultation processes need to take place in order to prioritize the national needs, possibly through the development of national research infrastructure roadmaps;
2. Coordinate their efforts at BSEC level, possibly through the elaboration of a regional research infrastructure roadmap, for the development of research infrastructures of regional importance, in order to avoid duplications and unnecessary spending;
3. Ensuring the coherent development of research infrastructures in the BSEC with major international initiatives such as the ESFRI Roadmap, in order to constitute the BSEC an integral part of major international developments;

4. Promote the adoption of state-of-the art approaches in research infrastructures management and operation. In that respect, awareness campaigns and trainings on issues such interoperability, data sharing, open access, etc. should be envisaged;
5. Enlarging, strengthening and ensuring the 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;
6. Enlarging, strengthening and ensuring the sustainability of the national and regional computing infrastructures including Grid and High-Performance Computing, as well as emerging Cloud Computing and Data Infrastructures paradigms, and their relationship with pan-European initiatives.

Innovation

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. In this context, sharing experiences and good practices within the BSEC and close cooperation with innovation forerunners in the EU and beyond, is essential. To this end there is a need for:

1. Assessment of the performance of the national innovation systems and of the innovation-related structures.
2. Networking of innovation units at a regional level and with similar international structures, including those in the EU, to intensify the exchange of information and best practices.
3. Organization of training activities for specialists and managerial personnel involved in innovation structures.

IV. Specific initiatives and tools

In addition to the aforementioned objectives in terms of Human resources, Capacity Building and Research Infrastructures that need to be pursued and implemented at either national or regional level, there is a need to implement a series of initiatives that will provide stronger visibility to the scientific and technological cooperation among the BSEC (i.e. a 'BSEC label') countries.

Among such initiatives the following could attract particular attention:

Registry of BSEC Research Infrastructures

In view of the importance of the coordination among the BSEC countries in terms of research infrastructure renewal and development, the introduction of such a Registry will:

- Provide an overview in order to promote the capabilities of the BSEC as a whole;
- Promote the optimal use of the available infrastructures by all the scientific community in the BSEC;

- Facilitate the identification of needs for new infrastructure development, paving the way for the development of a research infrastructure Roadmap at regional level and in a compatible/complementary way with the ESFRI Roadmap and other international initiatives;

The development of such a Registry has already been initiated and needs to be further continued and strengthened. The BSEC PERMIS and the ICBSS, that has a continuous, active participation in S&T Projects, could actively contribute to the definition of the criteria and to the setting-up of such a Registry with input from the BSEC Member States.

Registry of BSEC innovation related structures

The development of such a Registry has already been initiated and needs to be further continued and strengthened.

Such a Registry will support the efforts undertaken at the BSEC level for the promotion and strengthening of innovation in the region. More specifically, the Registry will:

- Provide an overview of the innovation related structures in the region;
- Promote contacts, networking and exchange of good practices among these structures;
- Facilitate the organization of training and other capacity building activities at regional level;
- Facilitate the identification of needs for additional innovation related infrastructures at both national and regional levels.

Support to projects

a) Project Development Fund

The rehabilitation and the successful operation of the Project Development Fund (PDF) will constitute a tangible evidence of the willingness of the BSEC Member States to jointly fund and implement concrete research projects. It is however obvious that in a period of scarce public funding the research projects the Fund could 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.

b) Project Management Unit

The creation of the Project Management Unit (PMU) is considered to be an important step to support BSEC's endeavour to improve its project output and to promote good practices in project management. Its establishment was evaluated as a necessary step to close the gap between the organization's focus on projects and the limited internal project management capacities. The PMU was also defined as an important tool to improve the organization's position in the competition for funding and to attract donor and partner organizations for joint project activities.

The Council of Ministers of Foreign Affairs of the BSEC Member States (Varna, 19 June 2014) "welcomed the creation of a Project Management Unit (PMU) within the BSEC PERMIS and agreed to the Guidelines of the PMU. The Council reiterated the project-

oriented dimension of the BSEC activities and invited the Member States and BSEC PERMIS to implement the Guidelines with a result-oriented approach.”

The Member States are invited to submit projects in S&T in compliance with the PMU Guidelines.

Nomination of BSEC contact points/persons in S&T

In order to promote a more systematic and well-timed information about national activities of relevance for the other BSEC Member States, the nomination of contact points/persons in the field of S&T should be envisaged. The information that such points/persons could share with their BSEC counterparts can include:

- National calls for proposals that are open (according to the national legislation) for participation from other BSEC Member States;
- Important developments in the field of research infrastructures or innovation related structures;
- Important national initiatives such as implementation of Policy Mix Peer reviews, Benchmarking exercises, good practice examples;
- Conferences, workshops, brokerage events, etc. that could be of interest to the other BSEC Member States.

The exchange of such information can significantly contribute to an enhanced cooperation among the BSEC Member States.

BSEC S&T Webpage

In order to make more visible and further promote the cooperation among the BSEC Member States in the field of S&T there is a need to establish a dedicated information point in the form of a BSEC S&T Webpage.

Such an S&T specific Webpage will significantly contribute to the dissemination of the activities and potential of the BSEC region, promoting therefore a ‘BSEC Label’.

Synergies and support to multilateral horizontal projects

Several multilateral horizontal projects are under implementation supported by external funding sources, among which the European Community’s Seventh Framework Programme for Research and Technological Development (FP7) or its successor Horizon 2020 has a prominent place, and involving many BSEC Member States, BSEC PERMIS and the BSEC related bodies, on a variable geometry basis. These projects are highlighting on one hand the dynamics of the research community in the BSEC Member States and, on the other hand, the interest of external funding institutions for the region.

BSEC should seek to maximize the synergies among the aforementioned projects and should provide the necessary support in terms of e.g. sharing of data and good practices, participation in relevant events, etc. in a mutually beneficial way. More specifically such multilateral horizontal actions should be considered as a tool for BSEC for the identification of strategic partnerships in selected fields of S&T resulting in an increased participation of scientists from the region in H2020 projects and national programmes of science and technologies.

In the context of such multilateral horizontal projects a considerable effort has been devoted for setting-up a 'Black Sea Research Programme' with concrete objectives and procedures, that would involve both BSEC and EU Member States. Succeeding in setting-up such a Programme is a challenging goal, especially when considering its financial viability, and therefore the BSEC WG on S&T should be actively engaged in this process. In that respect, an intensified information flow between the projects and BSEC, and BSEC WG on S&T in particular, through PERMIS and ICBSS, would be instrumental.

In parallel, information from all projects of this type addressing the regions could be uploaded in the BSEC S&T Webpage and, vice-versa, important BSEC developments in the field of S&T should be disseminated through the projects' channels (websites, newsletter, etc.).

Bilateral cooperation programmes

The numerous bilateral cooperation programmes constitute an undeniable capital of the BSEC Member States and of the BSEC as a whole. Despite the incontestable national prerogatives on their strategy and content, such programmes should be further promoted and an increasing awareness on their functioning should be encouraged. Wherever possible, mobility towards BSEC research infrastructures and BSEC Innovation related structures should be supported through these programmes.

In that respect, information on new calls for proposals, on scientific events (conferences, workshops, forums, etc.) organized under these programmes could be communicated through the BSEC contact persons, through the forthcoming online BSEC Newsletter, and uploaded to the BSEC S&T Webpage.

Summer Schools

Summer schools mainly addressed to young researchers from the BSEC Member States have already been organized under the second Action Plan and should be further continued and multiplied. Support for the organization of such Summer Schools, as well as for the associated travel grants could be provided by the bilateral cooperation programmes, the BSEC PDF, national sources, etc.

V. Sources of Funding

It is not envisaged at this stage to have a dedicated budget at the BSEC level allocated to the implementation of the third BSEC Action Plan. The funding for relevant activities will be provided on a project-by-project basis from the currently available national and international financing schemes or a combination of them. It should also be noted that the participation in the foreseen initiatives should always be on a voluntary and variable geometry basis for the BSEC Member States, reflecting their national views and priorities.

In order to facilitate the access to, and rational use of, the available sources of funding, the following measures are recommended:

- I. Promoting the dissemination of relevant information concerning the operation of the BSEC Project Development Fund and the Guidelines for the BSEC Project Management Unit, including the technical requirements for accessing various sources of funding (the European Union Programmes, national programmes in science and technologies, other

financial instruments for sub-regional and bilateral activities under EU programmes, development aid programmes administrated by various United Nations agencies, the World Bank and other IFIs, bilateral assistance schemes, private foundations, etc.), with the support of the BSEC contact persons and information multipliers, to prospective users throughout the BSEC region;

- II. Encouraging co-funding schemes for joint programs and projects by partner countries, allocating funds to virtual or real common pots;
- III. Supporting joint calls implemented through Horizon 2020 projects and national programmes of science and technologies relevant for the region;
- IV. Promoting modes of funding combing national, regional, EU and other international funds and exploring PPP models especially in the field of research infrastructures.

VI. Implementation, Monitoring and Evaluation

The BSEC Working Group on Cooperation in S&T, as a permanent subsidiary body of BSEC, shall monitor the implementation of the third Action Plan and submit regular progress reports to the BSEC Committee of Senior Officials, the Council of Ministers of Foreign Affairs and to the Ministers responsible for Science and Technology of the BSEC Member States. The practical steps envisaged to that end could include the following:

- I. The Working Group will engage, on a regular basis, in exchange of information and practical cooperation with other BSEC Working Groups in related spheres of activity in order to provide better coordination and to create new synergies for the implementation of the third Action Plan;
- II. The Working Group, at the initiative of the Country-Coordinator or the Chairmanship-in-Office of BSEC, should prepare an evaluation report with a view to convening a mid-term meeting of the Ministers in charge of Science and Technology of the BSEC Member States to review progress in the implementation of the third Action Plan and to chart the way forward;
- III. The European Commission in its capacity as Observer to the BSEC shall be invited to attend the meetings of the Working Group on Science and Technology in order to exchange views and identify synergies between the third Action Plan and the EU Research and Development Programmes and initiatives.

VII. Duration and Revision of the Action Plan

The duration of the third BSEC Action Plan shall be four years. It is subject to revision by the Meetings of the Ministers in charge of Science and Technology, to be endorsed by the Council of Ministers of Foreign Affairs of the BSEC Member States.