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## Southeast European ERA.NET

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# White Paper on Gaps, Overlaps, and Opportunities in View of the Extension of Bilateral RTD Programmes and Initiatives towards Multilateral Approaches

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## 1 Executive summary

On their way to the European Union, all of the Western Balkan countries have undertaken strong efforts and made significant progress in implementing substantial institutional and legislative reforms. However, in the course of the transition towards market economies, reorganisation as well as modernisation of the science and technology (S&T) sector is an issue high on the political agenda of the Western Balkan countries. S&T policy is seen as a crucially important tool in bringing these countries further along the road to the EU and in consolidating stability and raising the regional standard of living to an average European level. The aim of this paper is to contribute to this process by strengthening S&T cooperation within the region as well as between the Western Balkan countries and the EU Member States. The specific goal is the complete integration of the Western Balkan countries into the European Research Area (ERA) and their active participation in the EU Framework Programme for Research and Technological Development.

The present White Paper offers strategic recommendations for further activities of the SEE-ERA.NET consortium together with other major stakeholders throughout Europe. In a separate paper, the Joint Action Plan (http://www.see-era.net/doc/otherdocs/view?id=5043), concrete implementation scenarios for these activities are provided. Building on each other's strengths and common interests and acknowledging recent challenges faced by the integration process, the authors deal on the one hand with the national and

transnational framework for S&T cooperation. They also propose concrete joint action through the setting up of a Regional Research and Technological Development (RTD) Programme, building on the experience and the monitoring results of SEE-ERA-NET's successful Pilot Joint Call (PJC) as a first pilot case of a joint regional call for joint research proposals.

In order to strengthen the scientific and innovative potential of the Western Balkan countries, to address their strategic economic and social needs and to improve the context of cooperation between the scientific communities all over Europe, a number of specific objectives and implementation scenarios are proposed.

1. For the **Western Balkan countries** it is highly recommended that S&T be considered one of the core priorities to assure economic growth and social prosperity while also addressing the European Lisbon goal. This priority should be reflected in national policy making. Here, core objectives are a modern S&T infrastructure, attractive career opportunities and a stimulating environment for activating the full potential of Europe-wide and international S&T cooperation. To assure international competitiveness, the reform of the higher education institutions should be fostered and a systematic evaluation of science institutions as well as the introduction of competitive national S&T funding schemes should be envisaged. With regard to the Barcelona target apart from public research and development (R&D) spending, private investments in R&D should be encouraged through an integrated research and technological development and innovation (RTDI) policy. To ensure that local industry is innovative and engaged in research, a policy mix should particularly strive to assure the compatibility of S&T policy with economic, fiscal, labour market, regional and foreign policies.

2. Building on the ground prepared by the Western Balkan countries, both the countries of the region and the **EU Member States and Accession countries** stand to benefit from a number of opportunities, given closer cooperation based on existing governmental agreements and implemented through a variety of national, bilateral and EU programmes. Core elements of such cooperation are bi- and multilateral policy dialogues facilitating mutual learning and the transfer of relevant experiences as well as a whole set of joint measures for increasing individual mobility, networking and cooperation among scientific institutions and innovative companies. The joint exploitation of scientific results should also be envisaged.

3. Another priority for joint action should be given to making use of the full potential that the **7th EU Framework Programme on Research, Technological Development and Demonstration activities (FP7)** offers for cooperation with the Western Balkan countries, either on the basis of an Association Agreement or, in the absence of such an Agreement, as so-called "third countries". A major prerequisite to this process is the development of National Contact Points (NCP) in the Western Balkan countries; these should

be strengthened and linked to the established NCP networks among the EU Member States and Associated Countries. There are manifold opportunities to support international S&T co-operations within FP7, the 7th EU Framework Programme on Research, Technological Development and Demonstration Activities. As well as participating jointly in the call for proposals, teams from the EU Member States and the Western Balkan countries will be addressed in a targeted way through Specific International Cooperation Activities (SICAs), which address subjects of particular common interest by engaging with the strengths and needs of the Western Balkan countries. Further coordination activities on offer include: an International Cooperation Network (INCO-NET) for facilitating bi-regional dialogue and improving the participation of the Western Balkan countries in the 7th EU Framework Programme on Research, Technological Development and Demonstration Activities; the European Research Area Network (ERA-NET (plus) etc.), which facilitates the setting up of joint S&T funding programmes in the EU Member States and the Western Balkan countries; and, last but not least, the several horizontal actions in favour of R&D in small and medium-size enterprises, of innovation activities, of regional cooperation and for linking S&T infrastructure in order to foster cooperative research.

Other Community Programmes such as the Instruments of Pre-accession Assistance (IPA), the Life Long Learning Programme (LLL) and the Competitiveness and Innovation Framework Programme (CIP) should also be considered as part of the context of opportunity for S&T capacity building, human potential development and the development of innovative research structures.

4. In order to facilitate S&T policy-related dialogue between the Western Balkan countries, the EU Member States, and additional countries associated with the EU Framework Programme for RTD and the European Commission, a **Steering Platform on Research for the Western Balkan countries** was launched in 2006. This dialogue platform is expected to play a central role in stimulating, monitoring, and supporting policy development in the Western Balkan countries and S&T cooperation throughout Europe. From 2008 on, it is envisaged that the Platform will be supported by an INCO-NET consortium which will provide analytical and practical support for knowledge-based dialogue with a view to implementing a number of joint activities to foster cooperation throughout Europe.

5. The integrative role of the Southeast European ERA.NET **(SEE-ERA.NET)** in establishing a sustainable network of policy makers and funding bodies from EU Member States, Western Balkan countries and other associated countries makes the SEE-ERA network project consortium an important player in the region, strongly positioned as a facilitator of joint S&T related activities. The future-oriented approaches of the SEE-ERA.NET consortium are described in detail in the corresponding Joint Action Plan.

## 2 Brief introduction

The integration of Albania, Bosnia and Herzegovina, Croatia, the Former Yugoslav Republic of Macedonia, Montenegro and Serbia – the so-called Western Balkan countries – into the European Union was given particular momentum at the EU summit in Thessaloniki in June 2003. The Western Balkan countries have hitherto made substantial political and economic progress and are still undergoing a continuous reform process. Acknowledging the achievements of the past years, the EU accession negotiations with Croatia have begun, and the Former Yugoslav Republic of Macedonia has been granted the status of a Candidate Country. However, the number of challenges the Western Balkan countries are still facing in terms of their full integration into EU structures differ a lot.

One of the major European visions reflected in the Lisbon strategy is the vision of Europe as one of the most competitive knowledge-based economies in the world. Here, major assets are the strong national systems of education, science and innovation as well as the potential for optimising these through regional and international cooperation. Against this background, and building on the national strengths of the Western Balkan countries, the integration of this region into the growing European Research Area has benefited greatly from the EU–Western Balkan countries Action Plan in Science and Technology, which was launched in June 2003 by the Greek EU Presidency. Additional momentum was provided during the Austrian EU Presidency in 2006 through the establishment of the Steering Platform on Research for the Western Balkan countries as a joint initiative of the EU member states heavily supported by the EU Commission. The role of the Western Balkan countries in the European Higher Education Area was also highlighted during the Austrian presidency in a Ministerial Conference on 16–17 March 2006 on "Strengthening Education in Europe".

The particular added value of the Southeast European Era-Net (SEE-ERA.NET) in this context lies in its enhancement of the cooperation between the Western Balkan countries and the EU Member States and Associated States through the development and implementation of scenarios for coordinating bilateral S&T programmes among these countries. Since September 2004, 17 institutions from 14 European countries – including all of the Western Balkan countries – have been actively implementing this project, which is funded by the EU Commission under the 6th Framework Programme on Research and Technological Development. Initial results were presented to the public at the SEE-ERA.NET Conference in Zagreb on 15–16 December 2005, and major recommendations were summarised in its conclusions on "Regional and Europe-wide Co-operation in Southeast Europe". The launch of the Pilot Joint Call for joint research projects in November 2006 by all SEE-ERA.NET partners constituted a major

breakthrough for the integration of the science community in the Western Balkan countries.

Building on the experience of the SEE-ERA.NET partners, on the analytical work of the consortium and on interviews and discussion with representatives of national, European and international organisations, the present White paper offers strategic recommendations for further activities of both the SEE-ERA.NET consortium and other major stakeholders throughout Europe. Building on each other's strengths and common interests, and acknowledging recent challenges faced by the integration process, the authors address the national and transnational framework for S&T cooperation; they also propose concrete joint action through the setting up of a Regional RTD Programme.

Interested organisations are invited to contribute to this process.

## 3 Western Balkan countries: On the road to the EU – The background and current state of S&T in the Western Balkan countries and of S&T cooperation

### 3.1 Background and overall aim

Even though the current situation of the Western Balkan countries is still profoundly affected by the political and military conflicts of the past and the difficult transition period, it must be acknowledged that all countries have undertaken strong efforts and made significant progress in implementing substantial institutional and legislative reforms. The Western Balkan countries today are well on their way to joining the European Union. Croatia already entered in negotiations with the EU about accession. Although the Former Yugoslav Republic of Macedonia achieved official candidate status for EU accession by the end of 2005, the initiation of the Former Yugoslav Republic of Macedonia's accession process has yet to be announced. Albania, Bosnia and Herzegovina (BiH), Montenegro and Serbia are potential candidates for accession. The candidate status of the latter two countries was, however, put on hold by the European Commission on 3 May 2006, due to a negative assessment of the cooperation between Serbia and Montenegro. Serbia's candidate status will not be reinstated until the country has met its obligation to cooperate fully with the International Criminal Tribunal for the former Yugoslavia (ICTY).

The area of science and technology was one of the spheres most negatively affected during the transition period. However, in the course of the transition towards market economies, reorganisation as well as modernisation of the S&T sector is an issue high on the political agenda of the Western Balkan countries. S&T policy is seen as a crucially important tool in bringing the countries further along the path towards EU membership and in consoli-

dating stability and raising the regional standard of living to an average European level.

The aim of this paper is to contribute to this process by strengthening S&T cooperation within the region as well as between the Western Balkan countries and the EU Member States. The specific goal is the complete integration of the Western Balkan countries into the European Research Area (ERA) and their active participation in the EU Framework Programme for Research and Technological Development.

## 3.2 The current state of S&T in the Western Balkan countries

### 3.2.1 Summary

In all Western Balkan countries, S&T and higher education are perceived as important prerequisites for the development of a knowledge-based information society. Governments are making substantial efforts to develop modern and innovative science and research systems. Most countries have adopted new legislation in pursuit of this aim, defining the role of education and research in the development of the respective country's economy and its international status. Several new laws, for instance concerning scientific and research activities, higher education and intellectual property rights, have been implemented or at least have passed the parliaments. While some countries have assigned the topics of R&D and higher education to two different sectors, others pursue the strategy of integrating the two subjects into one sector. In addition, some countries are trying to integrate science policy with other important policy fields such as environmental or innovation policy.

The executive power of the government departments relating to S&T Policy varies from country to country (e.g., very fragmented in Bosnia and Herzegovina). In addition, most countries have established S&T advisory boards and research and/or innovation councils to draft strategies regarding S&T development for the future and to manage the allocation of research funds. The private sector in Western Balkan countries is as yet only tangentially involved in R&D, but recent efforts undertaken by the national governments to strengthen the cooperation between private enterprise and public research institutions have improved the situation.

One important factor stimulating the national reforms is the Western Balkan countries' aspiration to full EU membership. However, to a greater or lesser extent all of the countries show progress in setting national RTDI development priorities and in creating long-term strategies, previously identified as one of the weaknesses of the region. Further progress has been made in some countries such as Serbia in developing a target-oriented funding system combined with systematic evaluation procedures adopting international evaluation standards.

**Table 1.** Gross expenditure on R&D (GERD) and governmental expenditure on R&D (GOVERD) as percentage of GDP[1]

| Year | Albania[2] (GERD) | Bosnia and Herzegovina[3] (GERD) | Croatia[4] (GERD) | Former Yugoslav Republic of Macedonia[5] (GERD) | Montenegro[6] (GERD) | Serbia[7] (GERD) | EU 15 average[8] | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | GERD | GOVERD |
| 2002 | | n.a. | 1.12 | 0.27 | 0.14 | 1.45 | 1.95 | 0.66 |
| 2003 | 0.17–0.19 | n.a. | 1.14 | 0.22 | 0.09 | 0.79 | 1.93 | 0.67 |
| 2004 | | n.a | 1.24 | 0.25 | 0.19 | 0.50 | 1.91 | 0.66 |
| 2005 | n.a. | n.a | n.a. | n.a. | 0.18 | n.a. | 1.91 | 0.66 |
| 2006 | n.a | 0.05–0.15 | n.a. | n.a. | n.a | n.a. | n.a. | n.a. |

[1] Due to the lack of standardised statistics in some of the Western Balkan countries, sometimes different types of data have had to be used here
[2] Source: Following presentation of Prof. Vladimir Nika from the Academy of Sciences of Albania (see www.aso.zsi.at/attach/ValdimirNika.ppt accessed 02.03.2007)
[3] Source: Husein Panjeta, Ministry of Foreign Affairs of Bosnia and Herzegovina
[4] Source: Svarc, J., E. Becic (2006): Croatian Innovation Policy Meets Reality. Available from: http://www.investsciencesee.info/PRESENTATIONS.html, accessed 20.12.2006
[5] Source: Stefov, V. (2006): Macedonian Science Policy. Available from: http://www.investsciencesee.info/PRESENTATIONS.html
[6] Source: MONSTAT, Statistical Yearbook of the Republic of Montenegro 2006; Ministry of Finance of the Republic of Montenegro (data on GDP)
[7] Source: Kutlaca, D. (2007) Review of the S&T Report in January 2007. see-science.eu
[8] Estimated values by EUROSTAT, accessed 18.04.2007

Nevertheless, despite the recognisable progress that has been made, substantial efforts are still necessary to provide adequate funds for RTDI (Table 1).

The following country reports illustrate the achievements and needs in more detail and also demonstrate the existing variation between the countries.

### 3.2.2 Country reports from the six Western Balkan countries

*Albania*

In July 2005 a new government was elected in Albania. This new government has placed the reform of higher education and science high on its agenda. In March 2006, a group of government-selected experts presented its final report containing conclusions and proposals for the reform of the research and higher education sector in Albania. The report concerns the integration of research and education in all Albanian universities. This process is continuing.

As part of the reform, 2006 saw the inauguration of several ministries and of a new Academy of Science. Furthermore, two new laws were previewed

and will be adopted this year: the Law for Higher Education and Science and an amended version of the Law for the Academy of Science. Another important achievement of the reform is the creation of the National Council for Higher Education and Science. Furthermore, priorities for science and education policy in Albania have been determined for the years 2007–2009, creating the framework for the Council's work.

While the funds allocated for S&R are still insufficient, this year the government will increase the budget for national programmes and bilateral cooperation by about 35% compared to the year 2006. As an important precondition, statistics on scientific research and education in Albania have been collated during 2006.

The current priority in Albania is the creation of an academic (research and education) network (AAN), to be linked with GEANT. Development and cooperation is led by the Ministry of Education and Science and is co-financed by the European Commission through the SEEREN2 project (FP6).

### *Bosnia and Herzegovina*

Bosnia and Herzegovina does not have a Ministry of Education and Science at the state level, nor a state R&D fund nor even state legislation on science. Together with the current low level of funding for R&D (0.05–0.15% of GDP), these are the most significant weaknesses of the S&T system in Bosnia.

Through its Department for Education, Science, Culture and Sports, the Ministry of Civil Affairs bears the constitutional responsibility for the field of education and science in Bosnia and Herzegovina and plays a decisive role in coordinating state and regional policies within the country. Its recommendations and decisions, however, are not binding, as the Ministry of Civil Affairs cannot impose decisions and the funding of the S&T sector is not envisaged in its budget. At the international level, the Ministry has responsibility for meeting international obligations, but it has no legitimate instruments or mandates at its disposal in order to pursue the implementation of those obligations at national level.

In spite of all existing obstacles and with very limited resources, the Ministry of Civil Affairs of Bosnia and Herzegovina has managed to integrate the S&T sector as a distinctive chapter into the medium-term development strategy of Bosnia and Herzegovina and has made it a precondition for the overall social development of the country. It also managed to include S&T as one of the national priorities for future IPA funding and is currently negotiating with the European Commission delegation in Bosnia and Herzegovina about funding for the S&T sector in Bosnia and Herzegovina or at least the ''entrance fee'' which will allow Bosnia and Herzegovina to be associated with the 7th EU Framework Programme on Research, Technological Development and Demonstration Activities.

The country's aspiration towards EU membership and the overall political consensus on this goal has made a number of reforms possible. It has also been possible to transfer authority and competence from regional or local levels to the state level. Since the S&T sector has only recently been recognised by both the Government and the European Commission as a key partner in the accession process, much remains to be done in this area, but the way is open for necessary reform to become the subject of future constitutional change. If political consensus over the necessary constitutional change is obtained after the constitution of a new Government, there will be a good opportunity to establish a Ministry of Science and Technology at state level.

The reestablishment of the research system in Bosnia and Herzegovina requires the development of a national strategy, fully supported and implemented by the state. For this purpose, Bosnia and Herzegovina has invited UNESCO experts to compile the UNESCO-ROSTE report "Guidelines for a Science and Research Policy in Bosnia and Herzegovina". The report also supports the ideas of establishing a national R&D ministry, creating a National Agency for Science and Research, setting up an interministerial committee for S&T activities and an advisory S&T committee, as well as establishing a national R&D fund in Bosnia and Herzegovina. The follow-up of this report, which is due to be presented shortly, is the strategy proposal of the Academy of Arts and Sciences of Bosnia and Herzegovina, entitled "Strategy for the S&T Development of Bosnia and Herzegovina".

### *Croatia*

Increasing investment in science and technology is a strategic priority for the Republic of Croatia as a candidate country for membership of the European Union. The current goal, as stated in the Lisbon Strategy, is to reach 3% of GDP by 2010, with two-thirds of the funds coming from the private sector. In order to increase investment in science, especially private sector participation, it is necessary both to foster connections between science, industry and society and to implement the required changes in the legal system, through tax policies and activities of scientific institutions. The strategic and developmental document "Science and Technology Policy", completed in October 2006, sets forth the mid-term goals and methods of the Science and Technology Policy of the Government of the Republic of Croatia.

The chapter to be first finalised in European Union accession negotiations in June 2006 was Chapter 25, "Science and Research". This bears witness to the sound basis of the stated goals, while confirming the status of Croatia as an equal participant in the European Research Area. The competitiveness of Croatian scientists on the European level is confirmed by successful participation in the European technology programme EUREKA, the COST Frame-

work and the 6th Framework Programme, in which Croatia is one of the most successful transition countries in terms of ratio of invested versus approved funding for projects. Furthermore, the response generated by the "Project for Repatriation of Croatian Scientists", with help from Croatian scientific institutes and universities, indicates that numerous initiatives of this Ministry and other institutions are positively received and have the support of the scientific community. Successful implementation of the Science and Technology Policy, as well as changes in the education system, will rely in the long term on a broad base of social support for the idea of a "society based on learning".

Education, both formal and in the more general sense of life-long learning as a way of life, both for individual citizens and for Croatian society as a whole, will thus play a crucial role in future development The creation of this strategy has been helped by a large number of Croatian scientists based both in Croatia and abroad, as well as by scientific and other institutions and industry. The strategy by no means constitutes a final and completed document, but primarily a framework for system development, open to change, growth and improvement. The results already achieved within the science and technology systems, as well as the policy for their development until 2010, provide the basis for developing a society based on knowledge and the application of knowledge.

### *Former Yugoslav Republic of Macedonia*

The Ministry of Education and Science of the Former Yugoslav Republic of Macedonia is responsible for the country's science policy, which is organised and executed by the Department of Science and Technology and advised by the Council for Science and Research. Due to the overall political, social and economic conditions the country has faced during the past number of years, the funding of scientific research has been very limited. This situation has been further exacerbated by a continuous decline in the number of active researchers in the country. However, the Ministry has promoted and stimulated activities towards an integrated approach within research activities, especially regarding regional and international cooperation.

The governmental measures for improving the S&T sector are defined in several programmes, such as the programme for the improvement of S&T and the programme for enhanced technological development. Measures are being taken in order to stimulate and support the cooperation between the universities and the industrial sector, to improve and intensify the use of scientific research results in industry, and to promote the technological development of enterprises with a view to improving their competitiveness.

During 2004 and 2005 a complete database was set up for the first time in Former Yugoslav Republic of Macedonia, containing publications in scientific

journals with impact factors (journals referred in SCI and citations of institutions and researchers). A database containing all patent activities in the country was also established. In 2006, the Ministry of Education and Science of the Former Yugoslav Republic of Macedonia signed an agreement for national access to the electronic scientific database Scopus, which can be accessed by all faculties and institutes at national universities in the country.

In 2005 the new Council for Science and Research was established. A completely new system of project evaluation was established, including assigned national coordinators for every scientific discipline. The national coordinators manage the evaluation process for scientific projects in their respective fields.

In 2006 the Government of the Former Yugoslav Republic of Macedonia approved a programme for the development of scientific research activities in the country for the period 2006–2010. The new strategy for improving S&T defined in this document points the way to an integrated approach to research activities, characterised by necessity and quality. Increasing the funding for research and technological development projects and for fellowships for young researchers are some of the immediate priorities, as is the intensification of regional and international cooperation. Furthermore, the definition of national priorities in the S&T sector as well as improved intragovernmental coordination between ministries has been emphasized as a key concern for the development of the country. This strategy for future science policy also includes the definition of criteria for supporting S&T as a prerequisite for establishing a new peer evaluation procedure.

As one of the strategic objectives, five potential centres of excellence have been identified in the Former Yugoslav Republic of Macedonia, based on the results of scientific research: the Institute of Chemistry at the Faculty of Natural Sciences and Mathematics; the Research Centre for Genetic Engineering and Biotechnology at the Macedonian Academy of Sciences and Arts; the Nephrology Clinic at the Faculty of Medicine; the Research Centre for Energy, Informatics and Materials Science at the Macedonian Academy of Sciences and Arts and the Institute for Earthquake Engineering and Engineering Seismology. These centres are also internationally recognised due to their publications, citations and international cooperation.

### *Montenegro*

As a part of the overall reform of the economy, reform of the higher education system and the research system has already been initiated in Montenegro, the newest European country, which became an independent state in 2006. The reform process in Montenegro certainly faces numerous problems and obstacles, but this is not unusual for a country in transition.

With a view to reconstructing the S&T system, the new Law on Scientific Research Activities was passed in November 2005. In combination with its accompanying directives, this law regulates issues concerning S&T. Among its aims are the integration of Montenegro into the ERA and the EU Framework Programmes, the promotion of sustainable development in the country, the introduction of international quality standards, the increase of investment into scientific and research activities and the establishment of networks between researchers at national and international levels. The law also regulates mechanisms of fiscal policy intended to provide an incentive for the development sector to increase its investments into S&T and innovation.

In accordance with this law, the Government of Montenegro has already established a Council for S&T at the national level, consisting of government representatives and representatives of the research community. This body is developing a draft strategy regarding S&T development over the next eight years. This strategy will define governmental funding priorities for S&T development. It will also define the annual budgetary increase (as a percentage of GDP) to be allocated to S&T for the period concerned and will develop instruments for monitoring the strategy's implementation. After the draft has been proposed, the final version will be submitted to the government for enactment.

Support programmes of the Ministry of Education and Science include:

- national scientific research projects (basic research, applied research and technology development projects);
- a human resources development programme (support for scholarships for MSc and PhD students and attendance of international conferences);
- an international collaboration programme (providing grants for bilateral projects and supporting projects in the context of multilateral cooperation);
- mobility programmes for students and researchers.

Other ministries participate in funding research projects in their respective fields.

Progress has been made in information and communication technology (ICT), both at institutional level and among small- and medium-sized enterprises. The Montenegrin Research and Education Network (MREN) was established in June 2005 and is already connected to GEANT. MREN is also a member of TERENA.

Although Montenegro has had some success in the development of its S&T system, the funds allocated for S&R are still insufficient for the support of scientific research activities and the reconstruction of S&T infrastructure. This situation carries with it the risk of an uncontrolled future brain drain. Links between the research community and the private sector hardly exist. The public

funding of S&T activities provided by the Government of Montenegro has been raised from 0.14% of the GDP in 2000 up to 0.24% of the GDP in 2006. In 2007 the rate of increase will be 60% relative to the funding level of 2006. In particular, the provision of research equipment such as laboratories has yet to meet a level compatible with the carrying out of competitive projects. Furthermore, the process of guaranteeing researcher mobility has yet to be initiated.

80% of the S&T budget is spent on salaries and overheads for the projects, leaving only 20% for other important purposes such as investment, human resource development[1], laboratory equipment, international cooperation and information system building. The information and communication technology (ICT) development of Montenegro has significantly increased in the preceding period.

### *Serbia*

The main reform objectives with regard to the S&T system in Serbia are to provide high quality research in specific research areas of national significance and to encourage the research community to contribute substantially to the country's economic growth by focussing on problems relevant to long- or short-term national development programmes.

The legal basis of this process is provided by the Law on Innovative Activity (2005), the Law of Scientific Research Activities (2005), which clearly calls for the application of international evaluation criteria to scientific activities in Serbia, and the University Law (2002).

The public funding of R&D provided by the government of Serbia has increased continuously since the democratic changes in 2000 from 0.10% of the GDP up to 0.40% in 2005. Furthermore, efforts have been made to establish a target-oriented research funding system. The basic research programme, for instance, has been used to fund basic and applied research in physics, chemistry, mathematics and mechanics, biology, geo-sciences, medicine, social sciences and humanities. Under this scheme of grant funding, projects may last up to five years. The technological development programme aims to help local companies to develop or implement new technologies, thus improving their competitiveness on the global market. However, co-financing by the company itself is a precondition for submitting a project proposal. The issues currently addressed by this programme include energy efficiency, biotechnology and agro-industry. Other areas covered by the programme are information technology, electronics and electrical engineering, mechanical engineering, construction and civil engineering. Further programmes aim at the improvement of S&T infrastructure, provide grants for international bilateral or multilateral collaboration projects and support attendance at international conferences, study trips and scholarships for post-doctoral fellows, PhD and MSc students.

Beside these funding programmes, Serbia also has an increasingly strong track record in research evaluation. In order to receive funding, project proposals (especially in the basic sciences) undergo a procedure of international peer review processed according to international standards.

Meanwhile, top researchers in Serbia have stable and relatively well paid research positions. They are obliged to work with young researchers and produce world class S&T results. In order to identify top researchers, transparent measures have been introduced regarding the evaluation of the quality of their work and the assessment of the researchers themselves.

However, Serbia still suffers from a severely damaged S&T infrastructure, a result of the country's isolation before 2000. Very little investment has been made in modernising and sustaining the existing technical equipment in S&T institutions. In many cases, technical provision does not keep pace with modern technological development. Furthermore, private investments into the S&T sector are practically non-existent. Although the recovery of the S&T sector started in 2001, the severe consequences of the neglect suffered by the country's vital needs under the old regime continue to be felt. Furthermore, the unfavourable treatment of some (not all) Western Balkan countries by the EU regarding obstacles to mobility, e.g., visa requirements, constitutes a serious obstacle to cooperation with scientists abroad. It has also had serious effects on the young population's awareness and attitude towards the values and heritage of the EU. (These barriers still exist.)

### 3.3 S&T cooperation between EU Member States and Western Balkan countries

In order to contribute to stability in the region and to the integration of the Western Balkan countries into the European Research Area, international development promotion programmes, particularly over the past five years, have begun to relaunch the initiation and development of multilateral, bilateral and regional scientific and technological cooperation in the Western Balkan countries. Important roles have been played by both international organisations and bilateral agreements with Western countries. A high proportion of financial support was provided in the framework of the Stabilisation and Association Process and special programmes.

All Western Balkan countries participated in the 6th EU Framework Programme. Participation in the different thematic areas differs in form and intensity, as can be seen from Table 2, which reflects the number of FP6 contracts for each Western Balkan country according to the FP6 Common Research Data Warehouse (CORDA) database, status of 17 July 2006.

Funded under the Sixth EU Framework Programme FP6, the Southeast European Era-Net (SEE-ERA.NET) is a networking project aimed at integrating EU member states and Southeast European countries in the Euro-

**Table 2.** FP6 contracts in Western Balkan countries [1]

| Priority area | Albania | Bosnia and Herzegovina | Croatia | Former Yugoslav Republic of Macedonia | Serbia and Montenegro [2] |
|---|---|---|---|---|---|
| 1. Life sciences, genomics and biotechnology for health | 0 | 0 | 6 | 0 | 3 |
| 2. Information society technologies | 3 | 3 | 15 | 4 | 7 |
| 3. Nanotechnologies and nanosciences, knowledge-based multifunctional materials and new production processes and devices | 1 | 0 | 1 | 0 | 1 |
| 4. Aeronautics and space | 0 | 0 | 0 | 0 | 0 |
| 5. Food quality and safety | 1 | 1 | 5 | 0 | 3 |
| 6. Sustainable development, global change and ecosystems | 0 | 0 | 4 | 0 | 6 |
| 7. Citizens and governance in a knowledge-based society | 1 | 3 | 8 | 0 | 5 |
| Policy support and anticipating scientific and technological needs | 0 | 1 | 7 | 0 | 1 |
| Horizontal research activities involving SMEs | 0 | 0 | 1 | 0 | 0 |
| Specific measures in support of international cooperation | 11 | 18 | 20 | 17 | 32 |
| Support for the coordination of activities | 0 | 1 | 2 | 1 | 1 |
| Support for the coherent development of research and innovation policies | 0 | 0 | 0 | 0 | 0 |
| Research and innovation | 1 | 0 | 3 | 1 | 1 |
| Human resources and mobility | 0 | 0 | 4 | 0 | 0 |
| S&T infrastructures | 3 | 2 | 6 | 2 | 3 |
| Science and society | 1 | 1 | 2 | 0 | 2 |
| Euratom | 0 | 0 | 0 | 0 | 0 |
| Total | 22 | 30 | 84 | 25 | 65 |

Source: FP6 Common Research Data Warehouse (CORDA) database status of 17 July 2006
[1] FP6 FUSION contracts (under EURATOM) are not included and SME participation statistic is still incomplete
[2] The data for Serbia and Montenegro are not separated because Montenegro was part of the FRY at the beginning of FP6

pean Research Area by linking research activities within existing national, bilateral and regional RTD programmes. This project is preparing the ground for the forthcoming INCO-NET with regard to S&T cooperation with the Western Balkan countries under the Seventh EU Framework Programme. The further integration of the Western Balkan countries into the European Research Area has gathered momentum under the Greek EU Presidency, with the adoption of the EU–Western Balkan countries Action Plan in Science and Technology, and under the Austrian EU Presidency with

the launch of the Steering Platform on Research for the Western Balkan countries.

The Western Balkan countries are also strongly interested in associating to the recently launched 7th EU Framework programme (FP7), but the status of participation differs between the countries. The *Former Yugoslav Republic of Macedonia, Croatia* and *Serbia* have all signed association agreements linking them to the 7th EU Framework Programme on Research, Technological Development and Demonstration Activities, which means they enjoy the same status as countries within the EU. *Montenegro* is currently in the process of signing an association agreement that would link it to the 7th EU Framework Programme on Research, Technological Development and Demonstration Activities. *Bosnia and Herzegovina* and *Albania*, pending the signing of an association agreement, are considered as third countries with the status of "International Cooperation Partner Countries" (ICPCs). Even though *Bosnia and Herzegovina* clearly intends to associate to the 7th EU Framework Programme on Research, Technological Development and Demonstration Activities, it is unlikely that the country will be able to pay the "entrance fee", despite the rebate given by the European Commission ranging from 80% to 50% between 2007 and 2013. In total, Bosnian participation in the 7th EU Framework Programme on Research, Technological Development and Demonstration Activities will require about 13.2 million euros over seven years.

Furthermore, all Western Balkan countries are involved in numerous bilateral and multilateral projects. *Albania* negotiated bilateral protocols with the Former Yugoslav Republic of Macedonia and Slovenia in 2006, complementing the already established bilateral collaboration with Greece and Italy. In the *Former Yugoslav Republic of Macedonia*, project cooperation was established for the first time with Albania, Bulgaria, China, Croatia, France, Japan, the Russian Federation and Serbia, involving more than a hundred bilateral projects. In the near future, cooperation with Austria, Israel, Spain and the United States will also be initiated. There is an open call for joint project proposals with institutions from countries with which the *Former Yugoslav Republic of Macedonia* has not yet signed agreements for scientific cooperation. In 2006 *Montenegro* was involved in 47 bilateral projects, with continued and projected further enhancement of research perspectives in bilateral and multilateral activities. *Serbia* has ongoing active bilateral programmes with the Former Yugoslav Republic of Macedonia, France, Greece, Slovenia and Slovakia. During the last two years, Serbia supported and actively participated in activities within the German Call for International Cooperation in Education and Research in the Central, Eastern and South Eastern European Region, as well as the Programme of Scientific Cooperation between Eastern Europe and Switzerland (SCOPES). New bilateral agreements have been concluded with the Centre National de la Recherche Scientifique (CNRS) of France and the German Academic Exchange Service

(DAAD) of Germany. Further bilateral agreements with Belarus, Israel, Japan, the Russian Federation, Ukraine and the United States are in preparation. New bilateral programmes are emerging from the intensive contact between civil service representatives of Science and Technology in Austria, Bosnia and Herzegovina, Bulgaria, Croatia, Hungary and Romania.

Table 3 provides a summary of bilateral agreements between the Western Balkan countries and countries from the European Union (EU27) and additional countries associated to the 7th EU Framework Programme on Research, Technological Development and Demonstration Activities.

Other important international cooperation initiatives are the participation in COST and EUREKA. Tables 4 and 5 give an overview of activities and main topics relating to COST and EUREKA in the Western Balkan countries.

### 3.4 First results of SEE-ERA.NET's Pilot Joint Call for joint research proposals

Funded under the Sixth EU Framework Programme (FP6), the Southeast European Era-Net (SEE-ERA.NET) is a networking project aimed at integrating EU member states and Southeast European countries in the European Research Area. The integrative role of SEE-ERA.NET in establishing a sustainable network of policy makers and funding bodies drawn from EU Member States, Western Balkan countries and other associated countries makes the project consortium of the network an important player in the region and a facilitator of joint S&T related activities. A milestone within the activities of the project was the successful launch of a Pilot Joint Call as the first pilot case of a Joint Call on 30 November 2006. All 14 countries participating in the SEE-ERA.NET project joined this Pilot Joint Call. The deadline for the submission of proposals for research projects, network projects and summer Schools was 31 March 2007. The call is operated by INTAS, the SEE-ERA-NET's Central Administrative Body, which developed a web-based tool tailored to the needs of SEE-ERA-NET online applications.

In the frame of the Pilot Joint Call, 345 applications submitted successfully including 1515 research teams. Analytically, they were collected 225 proposals for research projects, 75 proposals for network projects and 45 proposals for summer schools.

After the preliminary control of the 345 applications' eligibility, 25 of them were found ineligible because they did not meet the requirements as regards the composition of the consortium according to the PJC's rules of participation. The 25 ineligible proposals were separated at 11 research projects, 5 network projects, and 9 summer schools. In the 320 finally eligible proposals are involved 1432 research teams. The eligible applications are separated at 214 research projects, 70 network projects, and 36 summer schools.

**Table 3.** Bilateral agreements with Western Balkan countries [1]

| | Albania | Bosnia and Herzegovina | Croatia | Former Yugoslav Republic of Macedonia | Montenegro | Serbia |
|---|---|---|---|---|---|---|
| Austria | | | X | P | P | |
| Belgium | | | | | | P |
| Bulgaria | | | | X | | P |
| Czech Republic | | | | | | P |
| Cyprus | | | | | | |
| Denmark | | | | | | |
| Estonia | | | | | | |
| Finland | | | | | | |
| France | | | X | X | X | X |
| Germany | | X | X | X | X | X |
| Greece | X | P | X | P | X | X |
| Hungary | | | X | | | X |
| Ireland | | | | | | |
| Italy | X | | | | | P |
| Latvia | | | | | | |
| Lithuania | | | | | | |
| Luxembourg | | | | | | |
| Malta | | | | | | |
| Netherlands | | | | | | |
| Poland | | | | | | |
| Portugal | | | | | | |
| Romania | X | | P | | | X |
| Slovak Republic | | | | | | X |
| Slovenia | X | X | X | X | X | X |
| Spain | | | | | | |
| Sweden | | | | | | |
| United Kingdom | | | | X | | |
| Israel | | | | X | | P |
| Norway | | | | | | X |
| Switzerland | | | | X | | X |
| Turkey | X | | | X | | P |

[1] X, already established bilateral agreements; P, those under negotiation

The assessment of the 320 eligible proposals will be carried out as an international peer review process. INTAS and its scientific officers will be in charge for this process. Each application is evaluated by 2 independent peer reviewers. For the assessment of the proposals, will be used 1414 peer reviewers to serve as evaluators in the PJC. The final approval of the evaluation processes and the selected projects will be made by a committee representing Ministries and/or agencies from all participating SEE-ERA.NET members on 4–5 June 2007.

**Table 4.** Participation of Western Balkan countries in COST

| Country | Total number of activities (ongoing and completed) |
|---|---|
| Albania [1] | 1 |
| Bosnia and Herzegovina [1] | 1 |
| Croatia | 47 |
| Former Yugoslav Republic of Macedonia | 21 |
| Montenegro [2] | – |
| Serbia [3] | 49 |

Source: EUREKA/COST – Office of the German Federal Ministry of Education and Research, as at February 2007
[1] Albania and Bosnia and Herzegovina are not yet COST members, but nevertheless participating in COST Actions
[2] Even though Montenegro is a COST member country, it is currently not participating in any COST activities. All former activities of Serbia-Montenegro have been attributed to Serbia
[3] All former activities of Serbia-Montenegro have been attributed to Serbia as the legal successor of Serbia-Montenegro

**Table 5.** Participation of Western Balkan countries in EUREKA

| Country | Projects (ongoing/ completed) | Project share in million EUR (ongoing/ completed projects) | Contact member in number of ongoing projects | Participating member in number of ongoing projects |
|---|---|---|---|---|
| Albania [1] | 0/0 | 0/0 | 0 | 0 |
| Bosnia and Herzegovina [1] | 0/1 | 0/0 | 0 | 0 |
| Croatia [2] | 17/15 | 8.0/5.0 | 7 | 10 |
| Former Yugoslav Republic of Macedonia [3] | 1/1 | 0.04/0.1 | 0 | 1 |
| Serbia [2] | 23/4 | 8.0/2.0 | 6 | 17 |

Source: EUREKA/COST – Office of the German Federal Ministry of Education and Research, as at February 2007
[1] Albania and Bosnia and Herzegovina are not yet EUREKA members, but Albania is conducting the establishment of a national contact point
[2] Croatia and Serbia are EUREKA members; Serbia is the legal successor of Serbia-Montenegro, hence all former activities of Serbia-Montenegro have been attributed to Serbia
[3] The Former Yugoslav Republic of Macedonia holds the status of a Participating member

## 4 Meeting the challenges: approaches to future cooperation

### 4.1 Specific objectives and instruments for strengthening S&T cooperation with the Western Balkan countries

Both the Western Balkan countries and the EU Member States face a number of challenges when it comes to addressing the common objective of the European Research Area in such a way as to benefit all partner countries. In order to strengthen the scientific and innovative potential of the Western Balkan countries while addressing their strategic economic and social needs and improving the cooperative environment for scientific communities throughout Europe, a number of specific objectives and implementation scenarios are proposed.

Reaching these objectives depends on the Western Balkan countries and on the EU Member States both building on common interest. Existing national, European and international instruments should be leveraged so as to strengthen European cooperation (such as the European Framework Programme on Research and Technological Development) and to assist the Western Balkan countries on their way to the EU (such as the Instrument of Pre-accession Assistance, IPA).

#### Objective 1: Developing policy strategies in the Western Balkan countries to optimise the potential of S&T cooperation

European and international S&T cooperation is considered an asset for the growth and prosperity of every national economy. A central question for the Western Balkan countries as they approach the EU is how to achieve European standards and how to implement the Lisbon strategy. One major prerequisite for active S&T cooperation with the Western Balkan countries is the establishment of adequate national political strategies, aimed at strengthening national S&T potential and providing a favourable environment for S&T cooperation.

There is a strong need for policy actions that would increase the attractiveness and visibility of S&T in the Western Balkan countries and allow active co-operation with European and worldwide partners. These actions have to be complementary and coherent. With regard to the development of national policies, the following measures are proposed:

a An **integrated national RTDI policy** should be set up through the coordination of the various stakeholders, according to the priority setting in the region (such as economy, finance, energy, etc.). This would involve several ministries in each of the Western Balkan countries, and should be implemented through a wide range of instruments building on the experiences of EU Member States.

Here, the **Steering Platform on Research for the Western Balkan countries**, which was launched by the Austrian EU Presidency in 2006 based on a related proposal of the EU Commission, provides the adequate umbrella for European policy dialogue.

To facilitate mutual learning, the participation of the Western Balkan countries with observer status in the Open Method of Coordination (OMC) among the Member States (implemented via CREST) should also be envisaged.

b In terms of European integration, the **EU Lisbon Strategy** is also a key target for the region. Its major goal is for Europe to become the most competitive and dynamic knowledge-based economy in the world, capable of sustainable economic growth with more and better jobs and greater social cohesion.

Stress must be placed on the **EU Barcelona target.** For the Western Balkan countries, the Barcelona target of increasing R&D expenditure to 3 percent of gross domestic product (GDP), as is the case in the European Union, remains an important focus for the future. For the time being, most countries are well below the Barcelona target.

Due to the interdependence of higher education and scientific research, the **Bologna process** is crucial in the development of the European Higher Education Area, aiming at high quality and and high standards within European education systems.

The 3 percent Barcelona target with regard to R&D expenditure, as well as the Bologna process, clearly show the key role played by research, education and training in the attainment of the Lisbon objectives. The mid-term review of the Lisbon agenda distinctly indicates that knowledge and innovation are crucial for growth.

c With regard to the Barcelona target, it is significant to leverage and encourage effects on private investment. This involves **strengthening the private sector** through public policy measures such as awareness raising, direct subsidies, loans, tax incentives, creation of a favourable legal framework for investment and technological transfer in RTDI, etc. In this respect, the experienced European partner countries could contribute mainly through the sharing of experience and the transfer of know-how on policy, institution and capacity building (as for example through the twinning of European and Western Balkan countries partners).

In the recent policy debates in the EU and OECD context, **tax incentives** for carrying out R&D activities have been given high priority. These might be offered by the Western Balkan countries to local research organisations and industries. Such incentives are intended to encourage RTDI development by lessening the burden placed on research institutions and by improving private investment in research. Apart from tax incentives, under the "EU–Balkan countries Cooperation in Science and Technology" concerning the stimulation of investment in research, several other measures aim to

encourage industry – in particular **small and medium enterprises (SME)** – to engage in research and innovation; to stimulate innovative products and services through public procurement; and to offer grants to SMEs which cooperate with universities and other research entities.

d Protection of **intellectual property rights** is another sine qua non for innovation. Without adequate protection of inventions and creations, there is no motivation to invest in them. Establishing affordable patent procedures that balance cost with quality and legal certainty, accompanied by timely, cost-effective and predictable dispute resolution, must be a priority and is especially needed by SMEs.

e The regional dimension requires particular attention. In an effective **regional innovation system**, the various components act together intelligently. This effective cooperation – from science and universities to industry and SMEs, from SMEs to capital markets, etc. – is usually facilitated by intermediary institutions, such as technology and science parks, clusters, etc. It is very important that such entities understand themselves as active players in the regional innovation system; it is a crucial responsibility of national and regional policy-making to be aware of the potential of these agents and to foster their development. The pre-accession assistance funds (IPA) and subsequently the structural funds can also play a part in fostering these institutions, and in making the regional innovation system generally more effective.

f In order to provide a knowledge base for developing national policy strategies and respective priorities, **national and regional foresight initiatives** should be considered at some point. Here, European funding instruments such as **INCO-NET** (7th Framework RTD Programme) provide an operational tool for bi-regional dialogue among the EU Member States, Associated States and the Western Balkan countries, including joint strategic analytical work with a focus on connecting global trends with issues of regional and national specificity.

g Policy measures should aim at **attracting foreign investment in RTDI** to the Western Balkan countries as part of the process of its stabilisation. Attractiveness requires scientific strengths and a stable and conducive legal environment for foreign entities.

### Objective 2: Fostering institutional reforms, institution building and S&T infrastructure development in the Western Balkan countries

In order to fulfil national economic and social needs more effectively and to strengthen the performance and increase the attractiveness of the academic institutions in the Western Balkan countries, the structures and capacities of higher education and other scientific institutes should continue to be im-

proved. In general terms, this involves the development of existing research structures. Additional emphasis should be given to creating and consolidating scientific networks and to establishing an efficient consultancy system. Institution and capacity building should also be reinforced throughout the Western Balkan countries Ministries, Agencies, Councils and Patent Offices and related institutions.

In this respect the following measures are recommended:

a To prepare the ground, it is important to **evaluate and benchmark existing institutions** on a regular basis (research institutions, but also higher education institutions, National EU Contact Points and other institutions) on the basis of a common and standard methodology in the region. The action line within the research potential call in the 7th EU Framework Programme on Research, Technological Development and Demonstration Activities (REGPOT-2007-2), namely, "providing evaluation facilities for research organisations in the EU's convergence and outermost regions", should be utilised to this end.

b A debate on the establishment of **Regional Centres of Excellence** (real or virtual) should be initiated. Regional centres of excellence most impressively represent the research and innovation potential of the Western Balkan countries. It would be especially advisable to establish a joint centre of excellence **in 1 or 2 priority areas** where all Western Balkan countries have a strong interest and where a concentration of unique and critical research infrastructure and a critical mass of resources is possible. The centres could be supported by the IPA and, in the long-term perspective, by the structural funds, allowing the modernisation of local equipment and the development of new S&T infrastructures. Creating links between these centres and the European key research centres is highly recommended as a contribution to the European Research Area.

c The **mapping of excellence** is a fundamental issue in the Western Balkan countries, as it helps to define common areas and to gauge the research and innovation potential of the region's best research centres. Such mapping will facilitate European networking at a high level of excellence.

d **New service structures** (e.g., a National Service Agency for International Relations) could foster the contacts with international institutions as well as attracting direct foreign investment. Agencies of this kind would play a leading role in the promotion of RTDI in the Western Balkan countries. Additional service structures such as efficient and effective **National Contact Point Systems (NCPs) for EU programmes** should be promoted, as should the networking of NCPs in the Western Balkan countries with those in the EU Member States and candidate countries.

e **Capacity building in S&T and innovation indicators and statistics** addressed to national statistical institutes should be initiated and fostered.

f The **Instruments of Pre-Accession Assistance (IPA)** should be used in a more efficient manner in order to help the S&T institutions of the Western Balkan countries to attain EU standards.

g In meeting the needs of the European Research Area, **updating and improving S&T infrastructure** in the Western Balkan countries so as to optimise the capacity of existing S&T infrastructures should be a central task. The scope of this point is stressed by the "Needs Analysis Report of the Western Balkan countries", one of the deliverables of the Southeast European ERA.NET (SEE-ERA.NET), and by the establishment of a Working Group on Regional Issues under the European Strategy Forum on Research Infrastructures (ESFRI). S&T infrastructures include specialised equipment, electronic databases, libraries, and equipment for research laboratories. In order to make S&T in the Western Balkan countries more attractive, it is important to develop new **S&T infrastructures** and update those that already exist; this includes the maintenance of such infrastructure and the training of staff in its operation. The excellent initiatives South Eastern European Grid-enabled eInfrastructure Development (SEE-GRID) and South-East European Research and Education Networking project (SEERN) are good examples in this context.

h Furthermore, scenarios should be developed which provide the scientific community in the Western Balkan countries with **access to European and international S&T infrastructures**. An inventory of the existing large-scale infrastructure in the European Research Area, including a description of the access to its installations, would be a major support in this context.

In the Western Balkan countries, **dialogue on innovation infrastructures** such as technology parks, incubators and Innovation Relay Centres must be developed with a view to **respective scenario development** for future action.

Another basic prerequisite is the development of high-speed information infrastructures. **Linking to the European information network GÉANT,** including access to scientific electronic journals, electronic databases, and libraries, should be a top priority.

### Objective 3: Improving human capacity building and international mobility

Creating attractive scientific career opportunities should be high on the political agenda of every country in the region. Similarly, the international mobility of students and junior and senior researchers should be prioritised in order to sustain the high level of the national academic sector, to avoid massive and continuous "brain drain" and to re-attract expatriate researchers. In this regard, human potential should be viewed as a major potential asset and prioritised as such in the intensification of S&T cooperation with the Western Balkan countries.

The following initiatives are proposed as a way of dealing with the issue of human capacity building and international mobility, in combination with quality assurance in the higher education system within the scope of the Bologna process and with a labour market policy that meets the needs of the academic sector.

a With respect to international inward and outward mobility, it should be commonly acknowledged that encouraging **brain circulation** is an opportunity for the Western Balkan countries as well. It is essential that Western Balkan scientists can move freely within the growing European Research Area and outside Europe. The host countries should support access for Western Balkan researchers by **simplifying their visa regimes**. The ''researchers' package'', a Directive and two Recommendations on the admission of third-country nationals to carry out scientific research in the European Community are on course for implementation by the Member States by October 2007 and will result in various improvements in relation to previous national rules: a common definition of ''researcher'' will be provided; family reunification and intra-EU mobility will be facilitated.

   In addition, the framework for researcher mobility could be improved by **introducing inward and outward oriented fellowship programmes, including return fellowships for expatriate scientists from the Western Balkan countries** and by launching bilateral or multilateral project oriented exchange programmes.

b The Western Balkan countries should provide a stimulating environment for visiting scientists from Europe and all over the world. In order to improve visibility to the international community of student and graduate scientists, it is recommended that an **inventory of English-speaking PhD courses** in the region be provided as a way of increasing mobility to the Western Balkan countries.

c The **''European network of mobility centres – ERA-MORE''** should be extended to the Western Balkan countries and the opportunities for establishing, with Community and national support, mobility centres in all Western Balkan countries should be examined. Mobility centres would improve access to adequate information on fellowships, grants and vacancies throughout these countries as well as on entry conditions, access to employment, social security rights, taxation and cultural aspects of the host country.

d **Location-specific action should be taken** to raise awareness throughout the research institutions and universities of the Western Balkan countries with regard to the **''European Charter for Researchers''** and the **''Code of Conduct for the Recruitment of Researchers''**. Adopted by the European Commission in 2005, these documents are key elements in the EU's policy of making research an attractive career and of improving employment and

working conditions for researchers. As such, the Charter and Code of Conduct are vital elements in the EU strategy for stimulating employment and economic growth.

e A high level of management skills within the scientific community in general terms and more specifically within S&T administration should be assured through the development of specific training measures for Western Balkans science managers. The main recommendations in this regard are the establishment of **National Academies on Science Management** and complementary **visiting programmes offered by science administration in the European Member States**. The Academies should offer both basic and post-graduate science management courses. Specific **partnership programmes** should be promoted **with training academies or higher education institutions in EU Member States.**

f Particular **training programmes** for the staff of **the National Contact Points for European Programmes** should be set up in close cooperation with the established NCP systems in EU Member States.

g Awareness needs to be raised with regard to **"European Researchers' Night"**. Opportunities to support such initiatives in some of the Western Balkan countries should be discussed.

h Particular attention should be given to making the best **use of the potential of women in science and research**, particularly in managerial positions. Awareness should be given to progress made in implementing equal opportunities for women in science and research and to the enhancement of women's career prospects.

### Objective 4: Fostering innovation potential in the Western Balkan countries through academia–industry relationships

Innovation potential is strongly correlated with the interface between the academic sector and research oriented industries, with particular emphasis on small and medium sized companies (SME). In the Western Balkan countries, this relationship is poorly developed at present. The most important priority is to build up a common understanding and a relationship of trust between academia and industry. Academia should prove to industry that it is capable of solving the specific problems of industry or of opening new markets. This is the only motivation for the private sector to increase its investment. Therefore, there is an urgent need to foster the academia–industry relationship.

In this respect the proposals are as follows:

a The **exchange of personnel between the academic sector and innovative companies** should be encouraged through specific national programmes. Existing European funding schemes like the "Peoples" programme as part

of the 7th EU Framework Programme on Research and Technological Development should be exploited to promote mobility between the public and the private sector.

b Particular measures should be adopted to create a **stimulating environment for scientists to build their own innovative businesses and develop their entrepreneurial activity**. This requires on the one hand appropriate institutional structures that would foster the necessary management skills and the development of realistic business plans by scientists both independently and with the professional assistance of consultancy structures. On the other hand, seed money is required either through public funds or through a positive investment climate, i.e., through risk coverage by public funds.

c "Cluster policy" should be recognised as an important element of national innovation policies. **Clusters** help to close the gap between business, research, and resources, thereby bringing knowledge faster to the market and improving **knowledge transfer** between the public research base and industry. Specific action should be taken by the Western Balkan countries to tailor cluster development to their national strategic policies and agendas in such a way as to address existing obstacles and problems.

d Wider awareness is required with regard to ongoing policy development and to the direction of **Community innovation policies**. Specifically, action should be taken to make Western Balkan countries research stakeholders acquainted with the new financial instruments of the EU that aim at boosting research and innovation, such as the European Technology platforms; Joint Technology Initiatives; Risk sharing financial instruments, etc.

### Objective 5: Using the full potential of the EU Framework Programmes on Research and Technological Development for the integration of the Western Balkan countries into the European Research Area

A number of European instruments already exist for preparing the ground and directly supporting S&T cooperation with the Western Balkan countries. This potential should be harnessed for the development of S&T capacity.

The following proposals should be considered:

a In order to increase S&T capacities in the Western Balkan countries, it should become a national priority to **harness fully the potential of the Instruments of Pre-accession Assistance (IPA)**. Following the successful uses made of the European Structural Funds by the EU Member States, the following measures should be envisaged: investment in national S&T institutions and infrastructures; the improvement of regional innovation infrastructures, including the networks between academia and industry; specific measures towards human capacity building; and, last but not least, support for the cost of participation in European programmes.

b The 7th EU Framework Programme on Research and Technological Development provides unique opportunities for European S&T cooperation to include the Western Balkan countries. With the launch of this programme, a change of paradigm in international cooperation with third countries was implemented through the introduction of the **Specific International Cooperation Actions** (**SICAs**). Within the themes of the specific programme "Cooperation", these actions are designed to meet the joint interest with major partner countries or a partner region through dedicated calls for proposals. To use this instrument successfully, it is crucial to raise awareness of the potential of the SICAs, to set up joint dialogues with the partner countries with a view to defining common topics and – once a SICA is launched – to provide the partnership with active support through the institutions of the Western Balkan countries. The newly established EU instrument of the **INCO-NETs,** which facilitate bi-regional dialogue between the Member States and the Western Balkan countries, should be applied to this purpose.

c For those Western Balkan countries which are associated to the 7th EU Framework Programme on Research, Technological Development and Demonstration Activities (namely, Croatia, the Former Yugoslav Republic of Macedonia, and Serbia), appropriate measures should be implemented to **ensure a high level of 7th Framework Programme participation among S&T institutions and a high level of response to calls for proposals**. Appropriate measures in this context include consultancy and assistance at the proposal stage, networking with developing European consortia and financial support for the preparation of proposals.

d **Additional** bilateral or multilateral **funding schemes** with coordinated calls should be developed by interested EU Member States and the Western Balkan countries. Here the **EU ERA-NET or ERA-NET plus scheme** might be applied. Within the new **ERA-NET** plus scheme, additional EU financial support is offered to "top up" the national contributions to joint calls.

e Even outside the scope of bilateral or multilateral funding schemes, **the joint peer review** of project proposals remains important as a way of evaluating and benchmarking scientific performance in the Western Balkan countries and for improving the knowledge of European standards in science management.

### Objective 6: Establishing new mechanisms to allow the docking of Western Balkans institutions to established European consortia

In order to facilitate the integration of S&T institutions and innovative companies in the Western Balkan countries into the European science and innovation community, specific **assistance** should be offered **to allow for the**

**docking of new project partners to ongoing S&T and innovation projects**. Particular attention should be given to those consortia which are funded within the EU Framework Programme for Research and Technological Development, EUREKA and COST.

## 4.2 Role of different organisations and institutions in the fostering of European S&T cooperation

### 4.2.1 Summary

In full awareness of the challenges facing the full integration of the Western Balkan countries into the European Research Area, all relevant national, European, and international stakeholders are invited to contribute to the implementation of the activities described in section 4.1. More specifically, based on analytical work and information from interviews and discussions with various organisations, it seems appropriate to formulate recommendations for major players. In addition, it must be emphasised that the coordination of the efforts of different stakeholders could be improved in such a way as to ensure the coherence and complementarity of their activities.

1. For the **Western Balkan countries** it is highly recommended that S&T be considered one of the core priorities to assure economic growth and social prosperity while also addressing the European Lisbon goal. This should be reflected in national policy making. Here, core objectives are a modern S&T infrastructure, attractive job offers and a stimulating environment for activating the full potential of Europe-wide and international S&T cooperation. To assure international competitiveness, the reform of the higher education institutions should be fostered and a systematic evaluation of science institutions as well as the introduction of competitive national S&T funding schemes should be envisaged. With regard to the Barcelona target apart from public R&D spending, private investments in R&D should be encouraged through an integrated RTDI policy. To ensure that local industry is innovative and engaged in research, a policy mix should strive to assure the compatibility of S&T policy in particular with economic, fiscal, labour market, regional and foreign policies.

2. Building on the ground prepared by the Western Balkan countries, both the countries of the region and the **EU Member States and Accession countries** stand to benefit from a number of opportunities, given closer cooperation based on existing governmental agreements and implemented through a variety of national, bilateral and EU programmes. Core elements of such cooperation are bi- and multilateral policy dialogues facilitating mutual learning and the transfer of relevant experiences as well as a whole set of joint measures for increasing individual mobility, networking and cooperation among scientific institutions and innovative companies. The joint

exploitation of scientific results should also be envisaged.

3. Another priority for joint action should be given to making full use of the potential that the **7th EU Framework Programme on Research, Technological Development and Demonstration activities (FP7)** offers for cooperation with the Western Balkan countries, either on the basis of an Association Agreement or, in the absence of such an Agreement, as so-called "third countries". A major prerequisite to this process is the development of National Contact Points (NCP) in the Western Balkan countries; these should be strengthened and linked to the established NCP networks among the EU Member States and Associated Countries. There are manifold opportunities to support international S&T cooperations within 7th EU Framework Programme on Research, Technological Development and Demonstration Activities. As well as participating jointly in the call for proposals, teams from the EU Member States and the Western Balkan countries will be addressed in a targeted way through Specific International Cooperation Activities (SICAs), which address subjects of particular common interest by engaging with the strengths and needs of the Western Balkan countries. Further coordination activities on offer include an INCO-NET for facilitating bi-regional dialogue and improving the participation of the Western Balkan countries in the 7th EU Framework Programme on Research, Technological Development and Demonstration Activities, and ERA-NET (plus), etc., which facilitates the setting up of joint S&T funding programmes in the EU Member States and the Western Balkan countries. Last but not least, the several horizontal actions in favour of R&D in small- and medium-size enterprises, of innovation activities, of regional cooperation and for linking S&T infrastructure in order to foster cooperative research should be taken into account.

Other Community Programmes such as the Instruments of Pre-accession Assistance (IPA), the Life Long Learning Programme (LLL) and the Competitiveness and Innovation Framework Programme (CIP) should also be considered as part of the context of opportunity for S&T capacity building, human potential development and the development of innovative research structures.

4. In order to facilitate S&T policy-related dialogue between the Western Balkan countries, the EU Member States, and additional countries associated with the EU Framework Programme for RTD and the European Commission, a **Steering Platform on Research for the Western Balkan countries** was launched in 2006. This dialogue platform is expected to play a central role in stimulating, monitoring, and supporting policy development in the Western Balkan countries and S&T cooperation throughout Europe. From 2008 on, it is envisaged that the Platform will be supported by an INCO-NET consortium which will provide analytical and practical support for knowledge-based dialogue with a view to implementing a number of joint activities to foster cooperation throughout Europe.

5. The integrative role of **SEE-ERA.NET** in establishing a sustainable network of policy makers and funding bodies from EU Member States, Western Balkan countries and other associated countries makes the project consortium of the SEE-ERA network an important player in the region and a facilitator of joint S&T related activities. The future-oriented approaches of the SEE-ERA.NET consortium are described in detail in the corresponding Joint Action Plan.

### 4.2.2 Recommendations concerning major players

#### 4.2.2.1 Western Balkan countries

In the transition of the Western Balkan countries to knowledge-based economies, there is a need for stronger political awareness of the fact that R&D is considered an important prerequisite and a facilitator of national growth and stability as well as of transnational cohesion. Heightened political awareness is the first step towards concrete action based on a clear and sustainable governmental strategy that will directly address the Lisbon goal. Within the development of the own national S&T policy also the policies of the EU member states as well as the thematic priorities of the FP7 should be taken into account. Appropriate instruments on the multilateral level could be the ERA-NETs, INCO-NETs and the Steering Platform. One of the central preconditions for the further development of S&T in the Western Balkan countries has to be laid down by the respective countries themselves through a number of policy measures. Providing the right setting for a successful cooperation should be also the goal of the national S&T policy.

*Strengthening S&T as a national priority, integrating S&T policy in a comprehensive approach for a national RTDI policy, and setting up the necessary implementation measures*

Competitive research needs an appropriate infrastructure. As part of an initial approach and building on national priorities, those scientific fields should be identified which are of importance for the knowledge base of the national economies – taking into account the particular strengths of the science system and the available human resources. Following an assessment of existing laboratory infrastructure, national programmes should be launched to allow an **update of the apparative basis of the S&T institutions**. In this context, European programmes such as the Instruments for Pre-accession Assistance and the support of European and international organisations like the European Bank for Reconstruction and Development and the World Bank should be utilised by the national governments. The establishment of an

attractive S&T infrastructure will also facilitate networking and improved cooperation with leading European institutions while helping to (re)attract excellent scientists to the Western Balkan countries.

In order to strengthen the performance of public S&T institutions, a **national system of benchmarking and evaluation** should be established, inviting groups of independent national and foreign experts to review existing institutions and make recommendations.

The ongoing **reform of the academic sector** should be continued with a view to developing human capacity.

**National competitive R&D funding programmes constitute** a key instrument for assuring the high performance of the scientific community, particularly in those fields that are of national importance**.** However, an appropriate mix between basic institutional funding and competitive funding programmes should be envisaged in order to guarantee academic flexibility and creativity as a fundamental aspect of the medium and long term knowledge base of the innovation chain.

One of the major challenges is the creation of links between the higher education system, the full range of S&T institutions, and local industries in order to prepare the ground for optimising national innovation processes. The launch of specific **programmes** that allow for **regional trans-institutional S&T networking** should be considered. The development of **Industrial PhD**[2] is considered promising as a way of triggering cooperation between the public and private sectors.

Additional measures should encourage industry to engage in research and to innovate. Fiscal measures allowing **tax deductions for research investment should be introduced**; innovative products and services should be stimulated through **public procurement**; **grants should be made available to innovative SMEs**. This could also result in a significant increase of private investment in R&D, a core aspect of the Barcelona target. Furthermore, networking and consortium-building activities should be supported across institutional boarders, e.g., between academia, SME and industry but also amongst SMEs, with due consideration to be given where appropriate to the role of intermediaries.

Assuring the coherence of different S&T policy measures and addressing their interdependence with other policy fields such as economic policy, education policy, labour market policy and fiscal policy, a **comprehensive national policy approach** will result in an optimum research and innovation system in the Western Balkan countries.

The Western Balkan countries should each develop a "National Action Plan" in order to reach the **EU Barcelona targets,** especially with regard to the increase of R&D expenditure to 3 percent of gross domestic product (GDP).

*Stimulating participation in the EU 7th Framework Programme*

The Western Balkan countries, both individually and on a regional basis, should **raise the profile of their academic skills and growing R&D capacities** in the EU Member States, in terms of excellent scientists and internationally acknowledged institutions. The establishment of a **National Service Agency** to promote and support international relations is recommended for each of the countries as a way of fostering international contacts and partnerships. National Service Agencies would be expected to play a leading role in the international promotion of RTDI in the Western Balkan countries, attracting **direct foreign R&D investment to** the region.

One of the key instruments for implementing the European Research Area is the European Framework Programme on Research and Technological Development, which is open to the participation of the Western Balkan countries. Based on **full association to the RTD Framework Programme,** full participation including work on the programme committees will be possible. **The further development of efficient national consultancy systems such as National EU Contact Points** is recommended as a way of helping the communities in the Western Balkan countries to prepare for successful participation in the EU Framework Programme for Research and Technological Development

*Stimulating regional S&T cooperation*

Regional networking will be of importance in meeting the growing needs of increased trans-disciplinary research and will help to increase the visibility and critical mass of S&T institutions. In terms of addressing common regional priorities, a **regional policy dialogue** and **regional programmes and S&T infrastructures** should be envisaged.

The recommendations concerning the Western Balkan countries address the full range of national stakeholders from policy makers to the scientific community and industries.

#### 4.2.2.2 EU Member States

Given the ongoing European integration of the Western Balkan countries, the growth and prosperity of this particular partner region are clearly in the interest of the EU Member States. Furthermore, the academic potential of the Western Balkan countries could provide additional momentum to the growing European Research Area. However, there is still a need to raise political and scientific awareness in the EU Member States with regard to the challenges related to the integration of the Western Balkan countries into the ERA.

Building on common interest, a number of policy measures should be envisaged by the EU Member States:

### *Activating the full potential of cooperation with the Western Balkan countries through existing and newly established instruments of bilateral cooperation*

A number of Member States have long-lasting bilateral relations with the Western Balkan countries, which date back to relations with the former Yugoslavia. Building on the tradition of bilateral programmes, new instruments should be developed and implemented in such a way as to meet the systemic needs of the integration process. These would include: **information campaigns in the EU Member States** on the scientific benefits of close cooperation with institutions in the Western Balkan countries; **brokerage events** in selected scientific fields of particular common interest; flexible **short term mobility grants to facilitate contacts** and to integrate Western Balkan institutions into European research networks. **(Preferential) access for Western Balkan countries to S&T infrastructure in the Member States could also be arranged.** Above and beyond mobility schemes, it is of importance to initiate **a targeted bilateral opening of each other's national programmes** in order to support joint projects currently based on the "juste retour" principle.

The **integration of innovative small and medium enterprises into bilateral collaborative research schemes** should be considered.

Bilateral cooperation should also cover contributions to institution and capacity building in the reform processes in the Western Balkan countries, including the offer of experience and assistance. In concrete terms, this would mean combining **post-graduate science management courses at higher education institutions in the Member States** with the relevant fellowship programmes; exploring the possibility of **twinning models between institutions in the EU Member States and Western Balkan countries**; and **facilitating staff exchanges for the national science administration** or National Contact Points for EU programmes.

**Inter-university dialogue** on the implementation of the **Bologna process** and on **know-how transfer** with regard to the **establishment of Innovation Relay Centres** in the Western Balkan countries should also be given greater support.

### *Improving the coherence and coordination of the EU Member States' activities towards the Western Balkan countries*

Building on common objectives and interests, the activities and relevant bilateral programmes of the EU Member States should be coordinated to use

synergies. In this context, European schemes like ERA-NETs or INCO-NETs and the level of dialogue achieved within the scope of the Stability Pact for South East Europe and its successor initiatives ("Regional Council") provide a basis for coordinating activities among the Member States and with the Western Balkan countries.

*Removing still existing legal and administrative barriers for the cooperation*

The highest priority in this area is the introduction of a **smart visa regime** for scientists of the Western Balkan countries to allow them easy access to the scientific community in the Member States.

#### 4.2.2.3 European Union

The Western Balkan countries have been invited to associate to a number of European programmes (i.e., the EU Framework Programme on Research and Technological Development, the Life Long Learning Programme). Prior to March 2007, association to the 7th Framework Programme was agreed on with Croatia, Serbia, and the Former Yugoslav Republic of Macedonia. In addition, the Instruments of Pre-accession Assistance aim at assisting the Western Balkan countries with regard to the process of accession to the European Union. The respective Action Plans are jointly prepared with the governments of the Western Balkan countries.

It is in the common interest of the Western Balkan countries, the EU Member States and the EU Commission to plan and implement European programmes in the best possible way. With this in view, a number of activities are proposed:

*All necessary measures to be undertaken to support the successful participation of the Western Balkan countries in the 7th Framework Programme for Research and Technological Development (DG Research, DG Information Society)*

The thematic directorates of the EU Commission should be particularly aware of the ongoing integration process of the Western Balkan countries. In this respect, appropriate measures should be planned to **promote the opportunities of the 7th Framework Programme in the Western Balkan countries: awareness should be raised in the European Union with regard to the respective strengths of the Western Balkan countries**; also, **brokerage activities and specific topping up calls should be implemented to allow the docking of Western Balkan institutions to existing project consortia**. In view of the themes of the Specific Programme "Cooperation", and building

on the strengths and needs of the Western Balkan countries, **Specific International Cooperation Actions (SICAs) towards this region should be defined and implemented** within all future annual work programmes. In addition, appropriate measures to support and promote the **docking of eligible organisations from the Western Balkan countries to thematic ERA NETs** plus should be envisaged.

An appropriate instrument for such activities will be provided by the forthcoming INCO-NET. Coordination between the INCO-NET and complementary activities funded within the themes of the "Cooperation" programme would be most appropriate in this context.

The Specific Programme "People" should pay more attention to the needs of the region. One option is to introduce **sur-place fellowships within the Marie Curie scheme,** linking Western Balkan scientists to leading S&T institutions in the EU Member States. In addition, there is a strong need for special **training elements, in particular with reference to science management**, which could be **integrated into the existing mobility schemes** of the "People" Programme. In particular, **industrial PhDs** from the Western Balkan countries should be invited to join the fellowship schemes of the "People" Programme.

Particular measures should be foreseen to **integrate the National Contact Points (NCPs) of the Western Balkan countries more fully into the EU network of NCPs**. Building on the experience of the ERA-WEST BALKAN and ERA-WESTBALKAN+ projects, the forthcoming INCO-NET will support capacity building and ensure the integration of these NCPs. In addition, invitations for NCPs from the Western Balkan countries to join the networking activities of the thematic NCPs of the Member States to be funded within the Framework Programme should be encouraged.

The Specific Programme "Capacities" contains several horizontal actions supporting small- and medium-size enterprises, innovation, regional cooperation and S&T infrastructure. Here, options should be explored by the relevant Directorates in the EU Commission and the relevant Programme Committees in such a way as to allow optimum use of these activities in favour of the Western Balkan countries.

### *All necessary measures to be undertaken to support the successful participation of the Western Balkan countries in other European initiatives*

Other initiatives for the Western Balkan countries to participate in are, e.g., the Competitiveness and Innovation Framework Programme (CIP) (DG Enterprise) or EUREKA and Eurostars.

*Optimal use to be made of the opportunities of the Instruments of Pre-accession Assistance (IPA) for S&T institution and capacity building and human potential development in the Western Balkan countries (DG Enlargement)*

Olli Rehn (Commissioner for Enlargement) has highlighted higher education and research as priority areas both in the national and regional indicative programmes (letter of Olli Rehn to all ministers of Western Balkan countries, 10 October 2006). However, the current state of regional IPA programme planning indicates only a limited budget of 1.5% for S&T related activities for the whole target region (including Turkey). Therefore, both the European Commission and the Western Balkan countries should emphasise the **need for strong investment in the RTDI sector** as part of the process of developing future **annual indicative programmes on national and regional level**.

A concrete example of how the reintegration of the Western Balkan countries can be accelerated and their innovative potential increased is through the overcoming of the continuing "digital divide" through the provision of a **regional high-speed internet network** which would link S&T institutions in the region with the Europe-wide network GÉANT. This network allows optimal communication and data exchange as well as access to electronic libraries. There is still a need for basic technical infrastructure such as campus networks, and for implementing a suitable regional organisational model to assure connectivity to GÉANT. This could be realised through the regional IPA Programme.

Additional activities to be supported would include institution and capacity building encompassing training elements in accordance with the European Structural, Cohesion and Social Funds.

*Capacities of the Joint Research Centre (JRC) to be exploited in favour of the integration process of the Western Balkan countries*

The Joint Research Centre (JRC) plays an important role in providing scientific and technological support for EU enlargement and integration. **Specialised workshops and advanced training courses should be shaped according to the particular needs of the Western Balkan countries** and **these events should be promoted in the Western Balkan countries through regional JRC Information Offices**. Priority should be given in this context to science management, S&T evaluation and benchmarking, but also to other activities which increase the skills required to develop and implement a national RTDI policy.

**Joint project proposals for the 7th EU Framework Programme of Western Balkan institutions and JRC institutes** should be encouraged. Two institutes of the JRC could be of specific interest: the JRC Institute for Pro-

spective Technological Studies (IPTS), Seville, Spain, has extended its networks to the applicant countries, stimulating cooperation amongst them as well as between future and present Member States; and the Institute for Reference Materials and Measurements (IRMM), which promotes a common European measurement system in support of EU policies, particularly in the areas of health and consumer protection, environment, agriculture, internal market and industrial standards.

*Western Balkan countries to be invited on observer status to join the "Open Method of Coordination" of the EU Member States and Associate States via the CREST working groups*

CREST is currently implementing mutual learning exercises addressed to a variety of relevant topics in order to enhance the RTDI policy performance of the Member States and Associated States. The Western Balkan countries could gain valuable experience by joining these discussions as observers. Furthermore, the coherence of policy approaches throughout Europe is to be ensured as a prerequisite of the growing European Research Area.

*S&T statistics and indicators in the Western Balkan Countries to be improved through observer status at the appropriate EUROSTAT committees*

In response to the need for an adequate database for S&T statistics and indicators in the Western Balkan countries, and in light of the ongoing statistical work of EU member countries, the possibility of giving the Western Balkan countries observer status in the appropriate EUROSTAT committees should be seriously considered.

*Information on the Western Balkan countries' national research and on the state of their innovation policy and development to be integrated into ERAWATCH*

ERAWATCH is the integrated information system which facilitates access to information on national and/or regional research policies, programmes and activities, with a view to developing a long term strategic intelligence service in support of evidence-based policy-making in the field of research, thus helping to accelerate the realisation of the ERA.

#### 4.2.2.4 Steering Platform on Research for the Western Balkan countries

The Steering Platform may play a central role in stimulating, monitoring, and supporting cooperation between the countries of the European Union and of

the Western Balkans in the areas of research and technological development. It will facilitate political **interaction between the Western Balkan countries and the EU Member States and the European Commission.** Its main objective is to support the enhanced integration of the Western Balkan countries in the European Research Area. In view of the potential of the Steering Platform it is of **utmost importance to make the Steering Platform operational.**

With a view to promoting the implementation and development of European research cooperation, thereby supporting technological and economic development in the Western Balkan countries, the Steering Platform should

a act as a **dialogue forum for exchanging information** and views and elaborating recommendations on R&D policy in and towards the Western Balkan countries, especially with regard to the EU Framework Programme on Research and Technological Development, making use of the common information base on this subject;
b **monitor RTD and innovation policies** and developments in higher education, and intervene with specific recommendations where necessary;
c **propose concrete actions** to be taken in the context of furthering EU–Western Balkan countries S&T cooperation and the respective bi- and multilateral cooperation activities;
d **identify issues of mutual importance** to be addressed in the context of the Platform.

As a concrete example and with reference to urgent needs, the Steering Platform could **initiate dialogue on European "good practice" and targeted scenarios for innovation infrastructures in the Western Balkan countries**, such as technology parks, incubators, Innovation Relay Centres, etc.

The Information Office for the Steering Platform on Research (http://www.see-science.eu) currently provides assistance in the form of a knowledge base for the Platform while supporting its operational work. Further support is to be provided by the forthcoming INCO-NET. It is envisaged that the Steering Platform will also steer the activities of the INCO-NET along these lines.

#### 4.2.2.5 SEE-ERA.NET

The integrative role of **SEE-ERA.NET** in establishing a sustainable network of policy makers and funding bodies from EU Member States, Accession Countries and Western Balkan countries means that the SEE-ERA network project consortium is strongly placed as an important player in European S&T cooperation and a facilitator of a wide variety of joint activities with other stakeholders. SEE-ERA.NET has already demonstrated its ability to develop joint funding schemes involving governmental organisations of the EU

Member States and Western Balkan countries through the successful launch of its "Pilot Joint Call" in November 2006.

Building on the achievements of the network, the consortium plans to

*– enlarge the joint programmatic approach of various European funding institutions with a view to developing a Regional Programme for S&T Cooperation with South-East Europe*

The aim is to support collaborative research in areas of particular joint interest by linking the national or bilateral programmes of EU Member States, the Western Balkan countries and other interested parties. **Use of the ERA-NET plus funding scheme is strongly recommended** as a way of providing additional EU financial support to "top up" joint calls for S&T project proposals.

In addition, the regional programme will encourage those national organisations which offer European mobility grants (fellowships) to coordinate their efforts through a **Young Scientist Programme**, offering fellowships dedicated to inward and outward mobility between the Western Balkan countries and the EU Member States. The coordination of such efforts with the "People" programme and the "Life Long Learning Programme" of the EU is recommended in order to assure coherence and complementarity.

A **Joint Innovation Programme** is also proposed, with a view to supporting cooperation between potentially innovative regions in the Western Balkan countries and experienced regional innovation networks and clusters in the EU Member States. Relevant European stakeholders are invited to coordinate their respective activities within the scope of the Regional Programme.

Details are given in the Joint Action Plan.

*– contribute to strategic planning processes within the 7th Framework Programme on Research and Technological Development and other EU programmes (Instruments of Pre-accession Assistance, Life Long Learning, Innovation), the Joint Research Centre and the Steering Platform on Research for the Western Balkan countries*

Drawing on the experience of the SEE-ERA.NET partners and the analytical results of the project, SEE-ERA.NET can offer the EU Commission essential **strategic input for the development of future work programmes** (7th Framework Programme, CIP Programme, etc.) and for **future annual indicative programmes** (IPA). The present White Paper already provides a number of recommendations that could form the basis for in-depth dialogue with the EU Commission.

It is recommended that the present White Paper and other past and future **deliverables of SEE-ERA.NET be considered in the strategic dialogue to be**

**established through the Steering Platform on Research for the Western Balkan countries.** Along these lines, the **forthcoming European INCO-NET** is invited to build its activities to a large extent on the **results and experiences of SEE-ERA.NET** as far as cooperation with the Western Balkan countries is concerned. The future activities of both projects should be coordinated in such a way as to assure full coherence and complementarity.

*– use the SEE-ERA.NET as a platform for the coordination of concrete activities in support of S&T cooperation between the EU Member States and the Western Balkan countries*

Building on the analytical work of SEE-ERA.NET and on the implementation of the "Pilot Joint Call", and in view of the proposed "Regional Programme", all interested stakeholders are invited to **use the knowledge and experience of the project consortium and to complement or indeed participate in the future activities of SEE-ERA.NET**.

Concrete examples for potential cooperation with individual institutions include the following:

The **EU Joint Research Centre has** indicated interest in joint activities with the SEE-ERA.NET consortium, such as **joint information days** in the Western Balkan countries, **joint summer schools, specialised workshops and training courses** with the JRC institutes. These activities could be implemented through the specific measures of SEE-ERA.NET accompanying the Pilot Joint Call.

**COST** is invited to participate in the "Accompanying Measures" of the Pilot Joint Call, as well as to hold a **joint strategic dialogue** on scenarios for **future joint activities with the Western Balkan countries**. A **joint evaluation process of the SEE-ERA.NET project proposals** could be envisaged as a way of assuring complementarity with the activities of COST.

In 2006, the **Stability Pact for South-East Europe** defined "Human Capital" as a new core objective within Working Table I (Democratisation and Human Rights) with reference to education and research. The dialogue with SEE-ERA.NET is already established; concrete joint activities within the scope of the planned Regional Programme may be envisaged.

Other potential partners for intensive cooperation could include:

– the UNESCO Regional Bureau for Science and Culture in Europe (BRESCE),
– the World Bank,
– the Central European Initiative (CEI).

### 4.2.3 Coordination and cooperation of different actors and activities

The best approach to the integration of the Western Balkan countries into the European Research Area is a **coordinated** one which combines the

activities of the Western Balkan countries, the EU Member States and other relevant national, multinational, European or international institutions, building on common objectives and prioritising the interests of the Western Balkan countries. If such an approach is developed, the use of the various instruments of different organisations will lead to synergies while avoiding redundancies and inconsistencies.

This requires **transparency** with regard to the various activities, openness on the part of the various organisations for coordinated or joint approaches and sufficient scope for regular dialogue between the various organisations.

Institutions allowing such a dialogue, both already existing and due to come on stream in the near future, have already been mentioned above:

- the **Steering Platform on Research for the Western Balkan countries** supported by the Information Office for the Steering Platform on Research and the forthcoming **INCO-NET for S&T cooperation with the Western Balkan countries**,
- the **SEE-ERA.NET** for the planning and implementation of joint S&T funding activities including accompanying measures,

and in general terms,

- the **Stability Pact for South-East Europe**, which has defined human potential development as one of its core objectives.

The particular potential of the Steering Platform, supported and accompanied by the Information Office, the INCO-NET and the SEE-ERA.NET, should be activated to set up a knowledge-based coordination process beyond the scope of the EU Member States and Western Balkan countries. This process should be driven by the central common goal of integrating a strong Western Balkan science community into the European Research Area. It should result in coherent or even joint activities involving various stakeholders with a main focus on the institutions of the Western Balkan countries. The Regional Programme proposed by the SEE-ERA.NET consortium would offer a good platform for a joint operational approach.

Although a number of recommendations, addressing more than one stakeholder, have already been made in section 4.2.2, the following additional measures involving several organisations are proposed.

- **Regional foresight initiatives** as a basis for knowledge-driven policy development in the Western Balkan countries should involve experienced institutions from the Western Balkan countries and EU Member States as well as the Joint Research Centre. Such initiatives could be funded through appropriate Community programmes (i.e., through the INCO-NET, through

the prolongation of the existing SEE-ERA.NET project, or through the Social Sciences and Humanities Programme) and the OECD/UNIDO.
- The introduction of a **systemic national approach to evaluation and benchmarking** of the S&T institutions, HE institutions, etc., in the Western Balkan countries could be based on the experiences of the EU Member States and the Joint Research Centre. The planning and implementation of this process could be partially supported by the SEE-ERA.NET (accompanying measure) and the forthcoming EU INCO-NET for the Western Balkan countries. A specific Coordination and Support Activity in the future "Capacities" Work Programme within the 7th Framework Programme on Research and Technological Development would be even more appropriate. The OECD could also be approached.
- The initiation of a debate on **Regional Centres of Excellence** (real or virtual) would involve all Western Balkan countries. This discussion should be built on the **mapping of excellence in the Western Balkan countries**. Here in particular, the analytical work of the forthcoming INCO-NET could be of assistance.

The implementation of a programme for establishing Regional Centres of Excellence in the Western Balkan countries could be supported through institution and capacity building measures within the **Instruments of Pre-accession Assistance (IPA)**. Complementary support within the "Capacities" Programme of the 7th Framework Programme on Research and Technological Development could be envisaged, following the previous example of relevant measures in favour of Centres of Excellence in the new EU Member States. For the latter, the objective would be to link the Regional Centres of Excellence in the Western Balkan countries to leading S&T institutions in the EU Member States.

## 5 Outlook

The present White Paper contributes to the ongoing discussion between various institutions from the Western Balkan countries and EU Member States, including European as well as international players with strong political, scientific, or industrial interests in the integration of the Western Balkan countries into the European Research Area. As members of the SEE-ERA.NET consortium, the authors of the present paper are open to sharing their experiences and thoughts in full with interested institutions.

In this respect, the activities of the Steering Platform on Research for the Western Balkan countries, supported by the Information Office of the Steering Platform and the forthcoming INCO-NET, are set to provide new momentum and a forum for the required systematic dialogue.

Forthcoming activity should focus on three priorities:

1. strengthening the strategic reform processes with regard to the national research and innovation systems in the Western Balkan countries in such a way as to ensure their sustainability through institution and capacity building (these processes to be owned by the Western Balkan countries)
2. assuring a high level of participation of the Western Balkan countries in the 7th EU Framework Programme on Research and Technological Development (a process to be jointly owned by the Western Balkan countries, EU Member States, and EU Commission)
3. introducing new, coherent and complementary or joint cooperation instruments involving various national and multinational institutions that exceed the terms of the 7th Framework Programme, allowing full European integration of the S&T community in the Western Balkan region (a process to be owned by all interested institutions from the Western Balkan countries and EU Member States, as well as on multinational level)

In concrete terms, with particular reference to no. 3 but with implications for no. 2 as well, SEE-ERA.NET proposes to launch a **Regional Programme for Cooperation with South-East Europe** (ReP-SEE), and invites all interested institutions to contribute. A draft concept is currently in preparation and is outlined in the corresponding Joint Action Plan. Implementation is planned for early 2008.

## Notes

1 721 scientists holding a PhD or MSc degree are currently employed at the University of Montenegro. Among the scientists working outside of the university, 222 hold a PhD and 529 an MSc degree.

2 Involving the cooperation of a university, an "Industrial PhD student" carries out a defined research and development project in an enterprise.

## Annex

### I SEE-ERA.NET profile

The Southeast European Era-Net (SEE-ERA.NET) is a networking project aimed at integrating EU member states and Southeast European countries into the European Research Area by linking research activities within existing national, bilateral and regional RTD programmes. SEE-ERA.NET is financed by the European Commission and managed by a consortium of 17 institutions from 14 European countries.

The objectives of SEE-ERA.NET are:

– to enhance S&T cooperation in Europe by fostering the integration of Southeast Europe into the growing European Research Area

- to add value to existing bilateral S&T agreements through multilateral coordination
- to improve interregional S&T cooperation following the principles of the stabilisation and association process in Southeast Europe

These objectives will be met through:

- systematic exchange and dissemination of information and best practice models on bilateral RTD activities. This will contribute to a sound understanding of research systems and policy approaches in the SEE-ERA.NET partner countries;
- needs analyses from the viewpoint of researchers, S&T organisations and policy makers in the target countries, concentrating on international S&T cooperation;
- support of the policy dialogue on ERA-integration of the countries referred to as the Western Balkan countries and related awareness-raising activities in the European Union;
- identification of complementary approaches followed by the implementation of joint instruments and initiatives, including a joint evaluators database and joint calls for research proposals in 2007 and in 2008.

These efforts will lead to the identification of opportunities for enhanced ERA-integration in order to develop and implement joint strategic research activities and policy recommendations while contributing to economic growth in the target region.

SEE-ERA.NET is managed by a consortium of 17 institutions from 14 European countries. The consortium consists of ministries and agencies from (in alphabetical order): Albania, Austria, Bosnia and Herzegovina, Bulgaria, Croatia, France, Germany, Greece, Hungary, the Former Yugoslav Republic of Macedonia, Montenegro, Romania, Serbia, and Slovenia.

Based on the 6th EU Framework Programme for Research and Technological Development, SEE-ERA.NET is committed to the networking of research activities within national, bilateral and regional research programmes throughout Europe, with a particular focus on Southeast Europe. Its main objective is to explore and exploit synergies among bilateral S&T agreements of the partner countries. The network conducts its work primarily through data analyses, exchange of best practice, strategic planning and research programme coordination at meetings, workshops and conferences. These measures facilitate the identification of complementarities and the implementation of joint initiatives, resulting finally in multilateral calls for research proposals in 2007 and in 2008, open to researchers from participating SEE-ERA.NET partner countries. In this way, SEE-ERA.NET stands to make an essential contribution to the realisation of the European Research Area.

## II Conclusions of the SEE-ERA.NET Conference "New approaches for RTD cooperation in the European Research Area: Regional and Europe-wide cooperation with Southeast Europe", Zagreb, 15–16 December 2005

The integration of the Southeast European Countries Albania, Bosnia and Herzegovina, Croatia, the Former Yugoslav Republic of Macedonia, Montenegro and Serbia into the growing European Research Area (ERA) is of utmost political and economic importance both for the Southeast European region and for the European Union. At the 2003 EU summit in Thessaloniki, the region's accession perspective was confirmed by giving these countries (often referred to as the Western Balkan countries) the status of Potential Candidate countries. Since then, Croatia has been acknowledged as a Candidate country.

In order to support the integration of the Western Balkan countries, in 2004 a consortium representing organisations from 14 European countries, including all Western Balkan countries, was formed to launch the Southeast European ERA-NET (SEE-ERA.NET). This initiative is funded within the 6th European R&D Framework Programme. Its primary aim is to develop and implement scenarios for the co-ordination of nationally funded co-operation programmes between EU Member States, Accession Countries and Potential Candidate Countries.

In order to share and to discuss the preliminary analytic results of the work of the SEE-ERA.NET consortium, to raise the awareness of the opportunities for intensified co-operation with the Western Balkan countries in R&D, and to discuss scenarios for accelerating the integration of the region into the European Research Area, experts from all over Europe representing national, European and international organisations were invited by the Croatian Ministry for Science, Education and Sports to participate in and contribute to this conference.

The main conclusions of the conference are the following.

### Perspectives and expectations

1. There is unanimous agreement among all participants concerning the high priority of the economic, social and political integration of the Western Balkan countries into the European Union. However, it was confirmed that the accession process requires tremendous coherent and complementary efforts at the national, regional and European levels.
2. R&D is considered an important prerequisite and a facilitator of national growth and stability and of trans-national cohesion; it is thus a crucial supporting element in the transition of the Western Balkan countries to knowledge-based economies. Political awareness of this has to be

strengthened in most of the Western Balkan countries and should galvanise governments into concrete action based on a clear and sustainable political strategy. The ongoing reform of the academic sector and the many positive achievements to date were acknowledged.

### Opportunities and chances

3. The significant R&D potential of the region in terms of excellent scientists and internationally acknowledged institutions is considered a main pillar of co-operation. There are a number of opportunities, both for the countries of the region, the region as a whole and the EU Member States and Accession countries to be exploited through closer co-operation.

### Co-operation as an asset

4. The regional dimension of the integration process was highlighted. Coherent strategies among the Western Balkan countries are needed in order to achieve synergies by setting up a concept for a research area incorporating specialisation, networking and joint institutions.
5. Opportunities for the integration of the Western Balkan countries into the ERA need to be highlighted, while political and scientific awareness of the challenges facing this process should also be raised in the EU Member States and the EU Commission. Building on previous close contacts and making the best use of bilateral and EU programmes, coherent activities of the Member States and the EU Commission should be devoted to
   - informing the scientific communities in the EU Member States of new opportunities for (re)establishing a close co-operation,
   - facilitating contacts by building on bilateral project oriented mobility and setting up European research networks involving the institutions of the Western Balkan countries
   - providing (preferential) access to S&T infrastructure and supporting infrastructural development in the Western Balkan countries in specific areas of need
   - contributing to the development of innovative small and medium enterprises as a main pillar of national innovation systems by integrating them into collaborative research; establishing Innovation Relay Centres and linking these to the existing European network, and
   - fostering the active participation of the Western Balkan countries in European Union R&D programmes.
6. Joint multilateral activities of the EU Member States, Accession Countries and Western Balkan countries based on existing close bilateral relations shall contribute to a co-ordinated and coherent integration of the region.

These should include joint calls that support targeted R&D projects as well as accompanying measures, for instance joint use of databases for evaluation purposes, brokerage events, information and dissemination activities, and training at institutional level. Existing legal and administrative barriers to such activity should be removed.

### Requirements and challenges

7. It was pointed out that the Western Balkan countries, the EU Member States and Accession Countries are faced with a number of challenges that must be addressed if the region is to be successfully integrated into the European Research Area. Of utmost importance is the establishment of an attractive S&T infrastructure. This will facilitate closer networking and improved co-operation with leading European institutions while at the same time helping to (re)attract leading scientists to the Western Balkan countries. It was stressed that infrastructure development is an important element of R&D policy that has to be based on national priority settings and requires first of all national investment, including appropriate budgets.
8. The participants welcome the Austrian initiative to introduce the strategic importance of infrastructure development in the Western Balkan countries on the one hand and of access to the European infrastructures on the other hand within the frame of ESFRI – the European Strategic Forum on Research Infrastructure. In planning the perspectives of European S&T infrastructure development, the Western Balkan countries should be taken into consideration.
9. It is recommended that the EU and the Western Balkan countries agree to include R&D into the CARDS programme of the EU and its successor IPA, aimed at assisting the West Balkan countries in the EU integration process. Activities to be funded might include infrastructural development as well as institution and capacity building, encompassing training elements in accordance with the European Structural, Cohesion and Social Funds.

   Additional contributions of EU member states and European and international organisations in line with national strategies are most welcome.
10. A key element of the re-integration of most of the Western Balkan countries is the overcoming of the continued digital divide. High-speed internet access is a basic requirement for S&T institutions in the region, as is access to electronic libraries. Basic technical infrastructure, campus networks, a suitable regional organisational model to assure connectivity to GÉANT – the European Electronic Scientific Network – and a model for accessing existing scientific eLibraries under preferential conditions are

all necessary. These needs could be met through a Regional CARDS Programme. It is recommended that the Western Balkan countries approach the European Delegations or the European Agency for Reconstruction in the respective countries with regard to these issues.

11. The participants recommended that the European institutions acknowledge the Western Balkan countries as Potential Candidates and Croatia as Candidate in the European RTD Framework Programme. Based on the experiences of the ongoing 6th Framework Programme, appropriate instruments should be developed to strengthen participation in the framework programme. These might include integration into ongoing projects, the facilitation of networking, the provision of support for capacity building, the introduction of specific training activities or the launch of calls in specific thematic priorities according to the strengths of the Western Balkan countries.
12. Furthermore, the Western Balkan countries should continue to build up an efficient consultancy system based on National Contact Points, the promotion of their academic strengths in the EU and the setting up of their own instruments in support of European networking and participation in EU programmes.
13. Particular attention should be paid to the development of human potential in R&D in the Western Balkan countries as part of its re-integration into ERA. In this regard, the introduction of "human capital development" as a new core objective of the Stability Pact for Southeast Europe was recommended. Relevant joint activities of EU Member States, Accession Countries and Western Balkan countries should be envisaged.
14. Most of the researchers and scientists in the Western Balkan countries are employed at universities. Therefore, the reform of Higher Education systems and universities in the region has to be closely linked to future joint activities of the SEE-ERA.NET as well as activities of other multilateral R&D agents in the region. Continued support should be given to the implementation of the Bologna Process.
15. Introducing a smart visa regime for scientists of the Western Balkan countries is a matter of highest priority.
16. Existing "people oriented programmes" of the EU, such as the Marie Curie programme, should pay more attention to the needs of the region. One option is to introduce sur-place fellowships. In addition, there is a strong need for special training elements, in particular for science management at institutional level. The development of National Contact Points in the West Balkan countries should be strengthened by building on the experience of the successful ERA-WEST BALKAN project. Established NCPs in the EU should be twinned with the new ones in the Western Balkan region.

## What next?

17. During the conference, the need for an adequate database for R&D and related S&T activities in the Western Balkan countries was highlighted. With regard to the ongoing statistical work of the EU member countries, representatives of the European commission were invited to examine the possibility of giving the Western Balkan countries observer status in the appropriate EUROSTAT committees.
18. The activities of SEE-ERA.NET are acknowledged as playing a key role in the coordination of bilateral activities; above and beyond this role, SEE-ERA.NET also takes account of the relevant activities of European and international organisations, developing scenarios for a co-ordinated approach. The currently ongoing exploratory talks between the consortium and the relevant organisations will be continued. Preliminary results indicate a high level of support for the interest of the EU Joint Research Centre in joint activities with the SEE-ERA.NET consortium. It was also reported that UNESCO-ROSTE was open to discussing complementary strategies, and could prove a valuable partner for joint activities in the near future.

    The integrative role played by SEE-ERA.NET in establishing a sustainable network of institutions from EU Member States, Accession Countries and West Balkan countries was highlighted.

    It was recommended that the ERA-NET plus mechanism, which is under discussion for the 7th European Framework Programme, be considered as a tool for increasing the efficiency of the joint activities of the SEE-ERA.NET consortium.
19. Based on a Greek proposal, it was agreed that a Task Force be established with a view to developing and implementing a scenario for introducing R&D to the CARDS Programme and its successor IPA. The Task Force will draw up a proposal for respective short-term activities. Contributions from participants are welcome and should be submitted to George Bonas (bonas@gsrt.gr). Other urgent issues might also be dealt with by this Task Force.
20. In view of the conclusions of the conference, the Incoming Austrian EU Presidency was cordially thanked for the initiative they displayed in prioritising the integration of the Western Balkan countries into the European Research Area. Of particular importance is the EU Commission's proposal to set up a high level "Steering Platform" in order to follow up this process and develop scenarios for its improvement.

Zagreb, December 16, 2005

**III Matrix of activities of different organisations and institutions**

| Stakeholder | Task | | | | | |
|---|---|---|---|---|---|---|
| | Development of R&D policy | Human capacity building, mobility | S&T infrastructure | Institution building | Bilateral, regional and multilateral cooperation in joint R&D activities | Foster participation of Western Balkan countries scientists in EU Programmes |
| Western Balkan countries | – Strengthen S&T as a national priority<br>– Set up an integrated RTDI policy<br>– Develop national R&D programmes open to international cooperation<br>– Reform HEIs<br>– Set up promotion campaigns and attract foreign investments in RTDI<br>– Pursue policy measures in favour of R&D in the private sector<br>– Set up a platform for strategic analysis | – (Re-) attraction of excellent scientists to Western Balkan countries<br>– Public-private partnership through industrial PhDs and other exchange of personnel between academia and industry<br>– Development of national mobility centres network<br>– Science management training<br>– Inventory of PhD courses | – National programme on S&T infrastructure<br>– Mapping of large-scale infrastructure in Western Balkan countries<br>– Use of IPA funding | – Knowledge base through evaluation and benchmarking<br>– Building up an efficient EU consultancy system based on NCP<br>– Setting up a National Service Agency for international relations (promotion and assistance)<br>– Establishment of IRCs<br>– Twinning models with EU MS<br>– Initiate a debate on the establishment of regional centres of excellence | – New instruments for bilateral and multilateral cooperation<br>– European coordination of programmes (i.e., ERA-NETs)<br>– Promoting the academic strengths of the Western Balkan countries in the EU | – Building efficient consultancy systems based on NCP<br>– Instruments to support participation in EU programmes (preparatory grants)<br>– Association to FP7<br>– Dialogue on SICAs with the EU Commission |

| Stakeholder | Task | | | | | |
|---|---|---|---|---|---|---|
| | Development of R&D policy | Human capacity building, mobility | S&T infrastructure | Institution building | Bilateral, regional and multilateral cooperation in joint R&D activities | Foster participation of Western Balkan countries scientists in EU Programmes |
| EU Member States | – Dialogue and assistance<br>– Management training for S&T administrations<br>– Twinning models<br>– Invitation to join the "Open Method of Coordination" as observers | – Dialogue and assistance for the Bologna process<br>– Exchange programmes, new instruments<br>– Programmes for science management training (incl. fellowships)<br>– Implementation of visa regulations in EU member states | – Preferential access to S&T infrastructure, electronic infrastructure and computer networks for Western Balkan countries<br>– Transfer of used infrastructure<br>– Donations | – Dialogue and assistance<br>– Support of evaluation and benchmarking<br>– Give Western Balkan countries observer status in EUROSTAT committee<br>– Twinning models | – Strengthening bilateral cooperation instruments (i.e., joint funding schemes, Integration of innovative SME and intermediaries)<br>– Smart visa regime<br>– European coordination of programmes (i.e., ERA-NETs) | – Dialogue and assistance<br>– Preparatory grants and brokerage events<br>– Twinning of NCPs<br>– Decision making in EU Programme Committees |
| DG Research | – Specific support activities towards R&D policy development and S&T indicators | – Integration of specific science management training activities into existing mobility schemes;<br>– Introduction of sur-place fellowships and "industrial PhDs" within the Marie Curie scheme | – Funding of laboratory equipment for Western Balkan countries S&T institutions involved in collaborative research<br>– Inclusion of Western Balkan countries into the | – Support for the integration of the Western Balkan NCPs into the EU network of NCPs<br>– Contribution to the work of the Steering Platform on Research for the Western Balkan countries | – Participation of Western Balkan countries in collaborative research projects<br>– Fostering multilateral funding schemes through ERA-NETs | – Promoting FP7 opportunities in Western Balkan countries<br>– Launching of specific calls for docking of institutions from Western Balkan countries to ongoing projects (collaborative |

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| | | – Targeted actions and support for introducing the "European researchers' Night" initiative into some of the Western Balkan countries<br>– Online information on the progress in the MS to implement the researchers package by the FP6 funded Information Office of the Steering Platform on Research for the Western Balkan countries | networks of European S&T infrastructure (Capacities Programme)<br>– Easy access to GEANT E-network | | research)<br>– Definition and implementation of SICAS towards Western Balkan countries<br>– Funding a bi-regional dialogue through the INCO-NET scheme |
| DG Enlargement (esp. IPA) | – Stressing the need for investments in RTDI in future annual indicative IPA programmes on national and regional level<br>– Fostering the link between the academic sector and innovative industries (IPA) | – Support of training elements in accordance with the European Structural, Cohesion and Social Funds (IPA) | – Infrastructure funding (IPA)<br>– Overcoming the "digital divide" through a regional high-speed internet network (supported by regional IPA programme) | | – Support for the participation of the Western Balkan countries in Community programmes (IPA) |

| Stakeholder | Task | | | | | |
|---|---|---|---|---|---|---|
| | Development of R&D policy | Human capacity building, mobility | S&T infrastructure | Institution building | Bilateral, regional and multilateral cooperation in joint R&D activities | Foster participation of Western Balkan countries scientists in EU Programmes |
| Joint Research Centre | – Specific support by IPTS | – Shaping specialised workshops and training courses according to the needs of Western Balkan countries | – Transfer of used laboratory equipment from JRC institutes to Western Balkan countries | – Special training elements on science management at institutional level | | – FP7: Joint applications of Western Balkan countries institutions and JRC Institutes (e.g., IPTS, Seville or IRMM, Geel) |
| Steering Platform | – Provision of a forum for exchanging information and views and elaborating recommendations on R&D policy in and towards the Western Balkan countries<br>– Monitoring of R&D and innovation policies | | – Initiation of dialogue on innovation infrastructure in the Western Balkan countries (e.g., technology parks, incubators) | | – Proposal of concrete actions in the context of furthering S&T cooperation between EU and Western Balkan countries and the respective bi- and multilateral co-operation activities<br>– Steering the activities of INCO-NETs | |

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| SEE-ERA.NET | – Awareness raising activities | – "Young Scientist Programme" as one pillar of the proposed "Regional Programme" to offer mobility fellowships<br>– Support for science management training through an accompanying measure | | – Stimulation of evaluation and benchmarking of S&T institutions through an accompanying measure | – Platform for coordination of activities supporting S&T cooperation of EU MS and Western Balkan countries<br>– Enlargement of the joint programmatic approach of various European funding institutions to develop a "Regional Programme" for S&T Cooperation with South-East Europe<br>– Platform for drafting ERA-NET plus proposal | – Offering strategic input to the EU Commission for the development of future work programmes (FP7, CIP, etc.) and future annual indicative programmes (IPA)<br>– Providing results and experiences on which the forthcoming INCO-NET could be built |

**IV List of abbreviations**

| | |
|---|---|
| AAN | Albanian Academic Network |
| AC | Associated Country |
| BiH | Bosnia and Herzegovina |
| BRESCE | UNESCO Regional Bureau for Science and Culture in Europe |
| CARDS Programme | Community Assistance for Reconstruction, Development and Stabilisation |
| CC | Candidate Country |
| CEI | Central European Initiative |
| CIP | Competitiveness and Innovation Framework Programme |
| CNRS | National Centre for Scientific Research, France |
| CORDA | Common Research Data Warehouse |
| COST | European Co-operation in the field of Scientific and Technical Research |
| DAAD | German Academic Exchange Service |
| DANTE | Delivery of Advanced Network Technology to Europe |
| DG | Directorate General |
| DG Enlargement | Directorate General responsible for the enlargement process of the European Union |
| DG Research | Directorate General responsible for Science, Research and Development |
| ERA | European Research Area |
| ERA-NET | European Research Area Network |
| ESFRI | European Strategy Forum on Research Infrastructures |
| EURATOM | European Atomic Energy Community |
| EUREKA | European Research Coordination Agency |
| EUROSTAT | Statistical Office of the European Communities |
| FP7 | 7th EU Framework Programme on Research, Technological Development and Demonstration Activities |
| GDP | Gross Domestic Product |
| GEANT | European multi-gigabit computer network for research and education purposes |
| HEIs | Higher Education Institutions |
| ICT | Information and Communication Technology |
| ICTY | International Criminal Tribunal for the former Yugoslavia |
| INCO-NET | International Cooperation Network |
| IPA | Instrument of Pre-accession Assistance |
| IPTS | Institute for Prospective Technological Studies |
| IRMM | Institute for Reference Materials and Measurements |
| JRC | Joint Research Centre |
| LLL | Life Long Learning Programme |
| MREN | Montenegrin Research and Education Network |
| MS | Member State |
| MSc degree | Master of Science degree |
| NCP | National Contact Point |
| OECD | Organisation for Economic Cooperation and Development |
| PhD | Philosophiae Doctor (lat.) |
| R&D | Research and Development |
| ReP-SEE | Regional Programme for the Cooperation with South-East Europe |
| RTD | Research and Technological Development |
| RTDI | Research and Technological Development and Innovation |
| S&R | Science and Research |
| S&T | Science and Technology |
| SCI | Science Citation Index |
| SCOPES | Scientific Co-operation between Eastern Europe and Switzerland |

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|---|---|
| SEE-ERA.NET | Southeast European ERA-Net |
| SFR Yugoslavia | Socialist Federal Republic of Yugoslavia |
| SICA | Specific International Cooperation Actions |
| SME | Small and Medium Enterprises |
| TERENA | Trans-European Research and Education Networking Association |
| UNESCO | United Nations Educational, Scientific and Cultural Organization |
| UNESCO-ROSTE | UNESCO Regional Office for Science and Technology in Europe |
| WBC | Western Balkan countries (Albania, Bosnia and Herzegovina, Croatia, Former Yugoslav Republic of Macedonia, Montenegro, Serbia) |

**V SEE-ERA.Net participants**

| SEE-ERA.NET Participant | Short name | Country |
|---|---|---|
| Centre for Social Innovation (Co-ordinator) | CSI | Austria |
| Ministry of Science and Education | MoES | Albania |
| Ministry of Science and Research | BMWF | Austria |
| Ministry of Foreign Affairs of Bosnia and Herzegovina | MVP | Bosnia and Herzegovina |
| Ministry for Education and Science | MON | Bulgaria |
| Ministry of Science, Education and Sports | MZOS | Croatia |
| Ministry of Foreign Affairs | MAE | France |
| National Center for Scientific Research | CNRS | France |
| Federal Ministry of Education and Research | BMBF | Germany |
| International Bureau of the Federal Ministry of Education and Research at the German Aerospace Center | IB-PT-DLR | Germany |
| General Secretariat for Research and Technology | GSRT | Greece |
| National Office of Research and Technology | NKTH | Hungary |
| Ministry of Education and Science | MON-MK | Former Yugoslav Republic of Macedonia |
| Ministry of Education and Science of Montenegro | MPIN | Montenegro |
| National Authority for Scientific Research | ANCS | Romania |
| Ministry of Science | MS | Serbia |
| Ministry of Higher Education, Science and Technology | MHEST | Slovenia |