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Venice Office
Regional Bureau for Science
and Culture in Europe

Science, Higher Education and Innovation Policy in South Eastern Europe



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Director of Publication: Engelbert Ruoss
Editor and Series Coordinator: Iulia Nechifor
Collaborator: Marina Gilebbi

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UNESCO Office in Venice
UNESCO Regional Bureau for Science and Culture in Europe (BRESCE)
Palazzo Zorzi, 4930 Castello, Venice, Italy
Tel: (39) 041 260 1511
Fax: (39) 041 528 9995
Email: veniceoffice@unesco.org
<http://www.unesco.org/venice>

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A decorative graphic consisting of a grid of squares that recedes into the distance, creating a sense of depth and perspective. The grid is composed of light gray lines on a white background, and it is positioned in the upper right quadrant of the page, partially overlapping the main title text.

Science, Higher Education and Innovation Policies in South Eastern Europe

OUTCOMES OF
THE INTERNATIONAL POLICY FORUM
AND HIGH LEVEL ROUND TABLE

Budva, Montenegro, 1-3 July 2008

Contents

Introduction	7
I. Conclusions and Recommendations from Plenary Sessions	9
1. Higher Education, Science and Innovation for Socio-economic Development	11
2. Knowledge triangle: Education, Research and Innovation in National Policies	15
3. Roles of Governments, Parliaments, Universities, Academies and the Private Sector in National Research and Innovation Systems	19
4. Changes Needed in Science and Higher Education Institutions and Practices	23
5. European and International Cooperation in the Field of Higher Education, Science and Innovation	29
II. Recommendations from Parallel Sessions	37
III. Final Communiqué	39
Annexes	
<i>Annex I: Programme</i>	45
<i>Annex II: List of Participants</i>	49

Introduction

The South Eastern European (SEE) *Science, Higher Education and Innovation Policy Forum* was organized from 1 to 3 July 2008 in Budva, Republic of Montenegro. At the invitation of Mr Streten Skuletić, Minister of Education and Science of Montenegro and of Mr Engelbert Ruoss, Director of UNESCO Venice Office, more than one hundred participants from seventeen countries, as well as representatives of many international and European organizations took part in this event. The SEE countries representatives included Ministers responsible for science and higher education, Chairpersons of Parliamentary Committees with responsibility for science and technology, Presidents of the Academies of Sciences, university rectors, representatives of research funding bodies.

The overall goal of the Forum was to support the adoption of a forward-looking approach in the governance of higher education, science and innovation with a view to contribute to the building of knowledge societies in South Eastern Europe. The rationale for the organisation of the Forum was based on the acknowledgement of the fact that important policy reforms must be enacted without delay if the countries of South Eastern Europe are to play an active role in the production and dissemination of scientific knowledge in the future. The event was also intended to be a regional contribution to the celebration of ten years since the organisation of the World Conference on Science (Budapest, 1999) and the World Conference on Higher Education (Paris, 1998). Financial contribution was provided by the Italian Ministry of Foreign Affairs, the State Secretariat for Development and Research of the Swiss Confederation, the Swedish International Development Agency (SIDA-SAREC). UNESCO Venice Office equally supported the organization of this Forum through a financial contribution of its regular programme.

The Forum was organized in three main sessions (with three parallel working groups each) and a Ministerial Round Table. The following topics were covered by the main sessions: Higher education, science and innovation for socio-economic development; Knowledge triangle – education, research and innovation in national policies; Roles of governments, parliaments, universities, academies and the private sector in national research and innovation systems; Changes needed in science and higher education institutions and practices; European and international cooperation in the field of higher education, science and innovation.

The findings and conclusions, as well as the recommendations for future actions needed, were adopted by the Forum participants in the form of a Final Communiqué. These outcomes were largely discussed throughout the Forum's plenary and parallel sessions. They have been appreciated by the participants as being key elements to be taken into consideration by policy-makers when shaping national research and innovation policies, embedded into the broader framework of national and regional development in South Eastern Europe.

This brochure presents the conclusions and recommendations of the various sessions as well as the Final Communiqué. Detailed information concerning the Forum, including integral versions of keynote speeches and of the presentations made by the invited experts are available at www.unesco.org/venice.

Engelbert Ruoss



I. Conclusions and Recommendations from Plenary Sessions

1. Higher Education, Science and Innovation for Socio-Economic Development¹

The South Eastern European Policy Forum has been considered by participants as an important opportunity to assess the state-of-the-art concerning the reforms in higher education, science and innovation in the region, to share experience and good practices on the reform process, and to discuss policy-oriented measures needed for the future. The representatives of governments have brought forward current regional initiatives for cooperation in the area of science and technology (S&T), as well as the need for ensuring synergies between the various initiatives.

While several countries have already initiated reforms in the area of science and higher education, there were many open issues, where exchange of views have positively contributed to shaping new dynamics of the reform implementation. It was emphasized that the adoption of *forward-looking approaches* in the formulation of higher education, science and innovation policies, as well as good governance of these policies, can contribute to the economic and social development of societies, with the ultimate objective of building a knowledge-based society in South Eastern Europe. In this respect, new focus should be put in the future in addressing the following areas of specific interest:

- adopting effective decision-making and legislative processes in S&T;
- ensuring better governance of higher education, and research and development (R&D);
- establishing a constructive dialogue among various stakeholders;
- improving management practices in higher education, S&T and innovation;
- defining new synergies to efficiently combine international, regional and national R&D strategies and strengthen their implementation through cooperation.

¹ Summary prepared by Maja Bučar, University of Ljubljana, Slovenia, Rapporteur. The opening session was moderated by Sreten Skuletić, Minister of Education and Science of Montenegro. Speakers were H.E. Milo Dukanović, Prime Minister of Montenegro, Engelbert Ruoss, Director, UNESCO Venice Office, Mojca Kucler Dolinar, Minister of Higher Education, Science and Technology of Slovenia, Mario Ali, Director-General, Strategies for Development and Internationalization of S&T Research, Ministry of Education and Research, Italy, Jüri Engelbrecht, President, ALLEA, Janos J. Bogardi, Vice Rector, United Nations University.

Countries of SEE region are supported in their efforts by international organizations like UNESCO, as well as by the European Union. Several of them participate in the 7th Framework Programme as well as in other specific schemes. Very important mechanism to further strengthen scientific co-operation among SEE countries is the ERA-NET scheme. European projects, especially ERA-WEST BALKAN, SEE-ERA.NET and WBC-INCO.NET aim at structuring and expanding the European Research Area (ERA) to South-East European countries by coordinating and upgrading R&D activities conducted at bilateral level.

Outdated research infrastructure is a huge obstacle to establish research cooperation between Western Balkans and EU research institutions, for cooperation at the regional level and primarily, for national research capabilities. The *renewal of research infrastructures* is one of the most urgent needs of the Western Balkan countries. In order to raise awareness of this problem among the general public and relevant stakeholders, the Ministry of Higher Education, Science and Technology of the Republic of Slovenia and the SEE-ERA.NET project consortium have launched the Herman Potocnik-Noordung Award for donations within the framework of RTD collaboration with the Western Balkan countries at the beginning of 2008. The aim of this initiative was to invite the potential donors (research and technology organisations, universities, philanthropic organisations, development assistance organisations and private companies) from the EU and other European countries to contribute to the development of infrastructures and research equipment in Western Balkans countries through financial or material donations. This initiative was welcomed by the participants of the Forum and recommended to be extended.

One of the key resources of the SEE countries which need to be systematically build-up through reforms and improvements of higher education are *human resources*. Especially critical in this area is the *accreditation and quality control process in higher education*. The promotion of higher education enrolment as well as scientific careers must be treated as important elements of the strategies for science and higher education, with specific attention paid to potential danger related to 'brain drain'.

It is therefore crucial to *raise public awareness about the role of science, technology and innovation* which are of utmost importance for assuring economic growth and development. More appropriate policies, both national and international are therefore needed. In addressing these complex issues, SEE countries have to face the challenge of finding the right balance between restrictive economic policies, clearly necessary for macroeconomic stabilisation purposes, and other types of policies with long-term effects that can contribute to raising economic competitiveness, such as increased investment in human capital, including R&D and education. Higher Education, Research and Innovation are important fields of human activity in which SEE countries should increasingly cooperate at all levels thus overcoming barriers and facing challenges.

The importance of international, regional and bilateral cooperation in higher education, S&T and innovation and, in this regard, the significant supporting role of the European Commission (Framework programmes, ERA.Nets), UNESCO and other international organisations was also stressed. The Forum thus provided the unique opportunity for valuable exchanges of information, ideas and best practices in several relevant and interesting fields, which will promote the regional cooperation and progress in SEE countries.

2. The Knowledge Triangle - Education, Research and Innovation in National Policies

Presentations were made by Ministers and high-level representatives of South Eastern European countries as follows: Mr Genc Pollo, Minister of Education and Science, Albania; Ms Bjljana Čamur, Assistant Minister for Science and Culture, Ministry of Civil Affairs, Bosnia and Herzegovina; Ms Albena Vutsova, Ministry of Education and Science, Bulgaria; Ms Slavica Grkovska Loskova, MP, Parliamentary Assembly, Former Yugoslav Republic of Macedonia, Mr Mario Ali, Director-General, Directorate for Strategies and Development of International, Scientific and Technological Research, Ministry of Education, Universities and Research, Italy; Mr Sreten Skuletić, Minister of Education and Science, Montenegro; Ms Mojca Kucler Dolinar, Minister of Higher Education, Science and Technology, Slovenia.

Summary of presentations by country representatives²

All countries are undergoing structural reforms in their higher education (HE) and science sectors. They have already or are in the process of preparation of long term strategies for the HE and R&D sectors with the ambition to improve the capabilities in both areas, raise the quality of human resources and contribute to the national economic and social development.

In the area of *higher education*, several countries opted for the adoption of the Bologna process and have reformed their curricula and accreditation system in this direction. The increase in the enrolment rates has been noticed in all countries, correlated with the growth in number of institutions, including private ones.

One of the key issues in these processes is the accreditation of various programmes and universities with a view to assure the highest possible level of quality and thus secure comparability of the degrees internationally. *The exchange of experiences as well as specific help in the accreditation process at the regional level was called for.*

² By Maja Bučar, Rapporteur.

Higher education sector is entrusted with the important role of increasing the capacity and quality of human resources, which is an essential capital not only for overall economic and social development, but also for improved performance in the R&D sector and innovation.

A better integration of research into higher education is also among the challenges of the reforms of higher education system. The tradition of separating higher education from research, which was conducted either in special national research institutes or/and within Academies of science, needs to be overcome, since closer integration of higher education and research can result in mutual synergies. In several countries the formal inclusion of research institutes into universities has been implemented, but the full integration of research and higher education can only be achieved gradually.

In spite of on-going reforms in the research sector, the levels of overall *funding* are still relatively modest, especially compared to EU average. Also, the role of the private sector is in most countries minor. Increase of the overall level of funding and a better integration of the private sector in the R&D sector have been stressed as the two key priorities in R&D strategies of SEE countries. Increased funding calls for political commitment of the governments, while the recognition of the importance of R&D for the development towards knowledge based society is growing. Thus most countries have experienced an increase in the nominal amount of resources available for R&D and project further growth.

The meager success so far has been noted in the area of *innovation*. Low participation of the business sector in R&D activity is common to all SEE countries. Policies to better integrate the R&D sector with industry are being developed, but one of the prerequisites is to restore/improve the growth capacity of the industry which, in turn, will increase its need for R&D and innovation.

The importance of *human resources for R&D sector* has been also emphasized. SEE countries are introducing various programmes and measures to stimulate young people to enter the research field. Several countries have designed measures to attract researchers who have left their countries to come back ('brain-gain' initiatives) and transfer their knowledge to the national R&D system. Programmes to assist researchers in participating in international conferences or in international R&D projects have been introduced.

Improving R&D infrastructure is also high on the agenda of many SEE countries. This is one of the areas where regional cooperation and international assistance can play a crucial role.

All the countries in the region consider *international and regional cooperation* very important in the process of reforming their higher education and science sectors.

Not only the financial resources which come through various international programmes, but also the very possibility to learn from each other and from third countries has proved to be of significant value in designing and implementing national policies. The ERA.Nets have been frequently mentioned, as well as the participation in the Framework Programmes. More, however, still needs to be done to *support regional cooperation*, since not only the opportunities for cooperation exist, but also the topics of interest and the problems faced are similar and could benefit from joint actions. The Forums organised by UNESCO are therefore highly valued in the participating countries.

The signing of bilateral agreements within the SEE region is an important basis for the development of a successful regional cooperation. For reasons that are known, the countries of this region have considerable differences with European countries, especially in the field of education and research. The European Commission assistance in the framework of IPA programme and beyond will be essential to enable the reduction of differences and the entire region development.

In conclusion, it was noted that while improvements are on the way, the reform process should be speeded up. Specific focus of further actions should be put on enhancing the quality and strive towards excellence in higher education, science and innovation. With this as a target, joint international/regional programmes to improve higher education (like joint degree programmes, cooperation in accreditation, exchange programmes) need to be developed. The implementation of the planned reforms calls for further improvement of governance, policy-making and increased funding in the areas of higher education, science and innovation. The exchange of information and good practice can be very helpful in this regard. This calls for further improvement and enhancement of sub-regional and regional cooperation.

3. Roles of Governments, Parliaments, Universities, Academies and the Private Sector in National Research and Innovation Systems³

In recent years, the methodology addressing 'National Research and Innovation Systems' is increasingly used for designing policies. Based on institutional rather than mainstream economics this methodology aims at identifying key actors in research and innovation and their linkages: if the right actors and interactions are in place then technology is diffused and productivity rises. In order to maximise results the scientific, research and commercialisation systems need to interact. Both systemic thinking and the more recently emerging concept of "Open Innovation", whereby innovation is a result of cooperation rather than internal corporate efforts alone, suggest that policies (science, research and innovation policies) need to interact in a complex manner to assure human resources, access to knowledge and the combination of technologies to create innovative products. For advanced countries with increasing labour costs, this is the only way to assure competitiveness and economic sustainability. In this context, policies supporting capacity-building and the modernisation of actors, interaction of stakeholders and measures like clustering or other linkages are becoming the cornerstone of successful policies.

National innovation governance systems

A national innovation system is composed of the main actors involved in research: research organisations (i.e. higher educational institutions and research centres),

³ Conclusions prepared by Lena Tsipouri, Professor, University of Athens, Greece, Rapporteur of Session III. The session was chaired by Zdravko Uskoković, Vice-Rector, University of Montenegro. Invited speakers were: Franci Demšar, Director, Slovenian Research Agency, Momir Durović, President, Academy of Sciences and Arts, Montenegro, Aleksa Bjelić, Rector, University of Zagreb, Croatia, Slavica Grkovska, Chairperson, Committee on Education, Science and Sports, Parliament Assembly, Former Yugoslav Republic of Macedonia.

knowledge transfer organisations and individual businesses; the system also includes their linkages and institutions (formal and informal rules and their enforcement characteristics). To improve the system governments face a number of challenges for adopting, implementing and monitoring effective policies. A good governance system means not only creating and involving the right actors but also assuring their commitment and effective linkages. Research and innovation involve a broad number of ministries (at least those responsible for economic development, competitiveness, education and research issues), corresponding implementation agencies and stakeholders like private businesses, researchers and trade unions.

There are often deep tensions within a national innovation system; governments should be aware of and able to deal with. The increasing need for more coherent innovation policy agendas spanning ministerial boundaries and including many other policy areas is the subject of innovation governance. It refers in particular to the coordination of all actors involved, sharing of responsibilities, modalities of implementation, monitoring and evaluation.

Effective governance (studied in detail in the OECD MONIT study and the European PRO INNO Trendchart) can be summarised in coordination and stakeholder involvement. Coordination takes place at many levels and uses many alternative models. Three basic models (which are not encountered in such a pure form in the real world) can be distinguished: those with strong inter-organisational co-ordination throughout the policy cycle; strong co-ordination based on hierarchical relations between ministries and other policy-making and implementation organisations/agencies; and fragmented systems with more actors following individual agendas, some of them efficiently but with limited synergies and potential friction. In some cases, in particular in smaller countries, this model functions reasonably well, because informal relations substitute for formal communication channels.

Stakeholder involvement depends partly on policy design and partly on how informed and involved stakeholders themselves are. Both dimensions vary. With raising ambitions, the involvement of stakeholders can have three targets: simply inform them, make them aware of the potential outcome and finally, involve them at an early stage and give them the opportunity to contribute to policy design. Another dimension is how inclusive consultations are. Finally, consultation can be mandatory or non-binding. However, the legal form is not necessarily leading to the best consultation process.

National governance is path dependent and changes are usually slow; moreover, there is no single optimal structure of coordination or a single best mix of tools. Although there is by now a lot of knowledge on appropriate tools, there is a lack of off-the-shelf recipes on how to combine them. But beside stakeholder involvement, commitments agreed and reported in white papers, systematic policy monitoring

with standardised indicators, the adoption of an evaluation culture, benchmarking and foresight exercises are ways that help reinforce the national research and innovation systems.

Applying policy lessons for good RTDI policies in the SEE countries

Progress in the National Research and Innovation Systems in South Eastern Europe is visible. Most actors have already been or are in the process of adopting strategies and identifying their strengths and weaknesses. The role of international organisations and donors is acknowledged in helping to set up programmes and projects useful in this process. It is however patently obvious that the degree of success and maturity varies among countries and among actors.

When looking at actors, the following issues are common as pointed out by individual presentations and recommendations:

- At the political level **Governments** are increasingly taking STI policies into consideration, however with limited priority. It is recommended that governments limit themselves in strategically important areas. The support of donors is recognised as crucial. Parliaments feel that they cannot intervene effectively since the budget composition is already defined when submitted to the Parliament.
- **Universities** have a clear path determined by the general acceptance of the Bologna process and their mission for linking education with research, acknowledging at the same time their role for the community. The EU FP participation has been a very helpful instrument supporting excellence (integration for critical mass, research priority setting and internationalisation were raised as important elements in the model case of the University of Zagreb).
- **Academies** have a crucial role to play in linking science and society as well as playing a bridge role between the scientific sector and the political authorities; their role is seen in moral and societal responsibility and public accountability. In some countries they can also play a role in priority setting.
- **Individual agencies** (intermediaries, RTOs) with sufficient resources can play a crucial role (the Slovenian Research Agency was presented as a model with clear orientation towards excellence, monitoring and analysis).
- **The private sector** is underrepresented, very much below the Barcelona target of 2/3 of GERD and difficult to involve (there are grant schemes as well as suggestions for spin offs and FDI as ways to improve the situation).

Looking at the major issues across actors it was agreed that *STI is not a sole public responsibility* and can only be successful in partnership with the (still emerging in this area) private sector. *Performance indicators are crucial* elements of success (e.g. efficiency measured on money from other sources/core funding). *Size matters* because experience shows that sub-critical will end up in trouble (e.g. increasing

average size of project funding is a positive sign, merging too small actors is an option to be considered). Finally *a good Knowledge Management System* (KMS) is an element of success and can be built up by individual actors or cooperative schemes.

Three following priority challenges are open:

- While actors look at their own individual roles there is limited effort to look at synergies; each actor expects the other one to perform 'reasonably well'.
- Financial resources are important but human resources and coordination to increase efficiency and effectiveness are even more important.
- There is progress in the exchange of good practices but there is still a long way to go into this direction.

Recommendations

Based on these challenges and the overall discussions there are some clear recommendations for increasing ambitions in the future. UNESCO can intervene very constructively in all of them:

- a. National development strategies need to be agreed as foundations for STI strategies.
- b. Coordination enhancement of national innovation systems in SEE can improve radically only if there is an overarching strategy encompassing all actors. UNESCO can help through conferences, individual diagnostics and technical assistance or with platforms presenting good practices.
- c. UNESCO can play a catalytic role, complementing (and not competing with) current EU support schemes through the facilitation of networks between EU member States and other countries indicating good practices on topics not yet addressed; examples are:
 - network for identifying performance indicators by activity;
 - network discussing methodologies and practices of evaluation mechanisms;
 - capacity building in human resources;
 - innovation practices in the private sector;
 - awareness raising on the science and society interaction.
- d. UNESCO should also continue to organise and sponsor conferences when specific topics need to be addressed.

4. Changes Needed in Science and Higher Education Institutions and Practices⁴

The objectives put forward by the European Union Lisbon strategy, of making the EU the most competitive knowledge-based economy and society by 2010, have acquired increasing importance in recent years on the agenda of policy-makers in South Eastern Europe. Along with economic integration with other countries in the region and with the EU, the SEE countries have also been subject to increasing international competition, rendering necessary the implementation of profound changes of their scientific and educational institutions, more geared towards the requirements of the knowledge-based economy. The Lisbon objectives have been reflected in concrete Plans of action of SEE governments and ongoing reforms of the most important institutions responsible for Science, Higher Education and Innovation (SHEI). Still, a lot remains to be done. The question of the necessary changes in institutions and practices in the area of SHEI in SEE was addressed from rather different perspectives. The session 'Changes needed in science and higher education institutions and practices' illustrated some achievements accomplished so far in SEE, positive experiences gained elsewhere, more general problems regarding evaluation methods, and some challenges for the future.

Progress achieved so far

Over the past decade, there has been substantial progress in all the SEE countries in reforming the most important institutions responsible for SHEI – including the responsible ministries, universities, research institutes, and academies of sciences. Along with substantial reforms of existing institutions, a number of new institutions have also been set up with the aim of diversifying available education systems, promoting Research and Development (R&D) and the diffusion of innova-

⁴ Conclusions by Milica Uvalić, University of Perugia, Italy, Rapporteur. The Session was chaired by Adrian Curaj, Director, Executive Agency for Higher Education and Research Funding, Romania. Presentations were made by Jorgaq Kacani, Rector, Polytechnic University Tirana, Albania, Radu-Grigore Grosu, Director-General, Science and Technology Park 'Tehnopolis', Iasi, Romania, Jürg Pfister, Secretary-General, Swiss Academy of Science, Switzerland, Torsten Kälvemark, National Agency for Higher Education, Sweden.

tion, and establishing more intense collaboration networks between SHEI institutions and business enterprises in the private sector. Across the SEE region, most SHEI institutions have been reformed and new ones have been established.

Parallel with reforms of the key institutions in the SEE countries, practices in the area of SHEI have also been continuously changing. Though these reforms have not always been quick and complete, as discrepancies frequently arise between the adoption of new legislation and its implementation, progress achieved so far across the SEE region has been generally satisfactory, and there are a number of exemplary cases with remarkable achievements.

A good example of quick and effective transformation of a key institution is the ongoing reforms of the Polytechnic University of Tirana. The presentation by the Rector, Professor Jorgaq Kacani, illustrated the development of the Polytechnic University of Tirana from 1951 to its present days. Since it became independent in 1991, the Polytechnic University of Tirana has prospered and developed in many important ways. Today the University consists of an institutional structure with six schools and two institutes, attended by some 8,000 students and with over 800 teaching staff. A new system of education has been implemented in line with the Bologna process, introducing the 3-2 system, parallel with reforms in the field of scientific research. These changes have been supplemented by a new legislative framework and in 2007 several new laws have been adopted - including a Law on Science and Technological Development and a Law on Doctoral Studies. The Polytechnic University today collaborates with a number of European universities and is increasingly joining international research networks.

Innovative practices in the SEE region include also the creation of new institutions which have helped promote science, research and innovation. An exemplary new institution is the technology park set up in Iasi, Romania, described in detail by Professor Radu-Grigore Grosu who is also its Director-General. The adoption of the Romanian National Research, Development, and Innovation Plan for the period 2007-13 introduced new innovation instruments and promoted the setting up of science and technology parks. This led to the creation of the Science and Technology Park 'Tehnopolis' in Iasi which became operational in June 2005. Its structure includes three sectors: for R&D, business incubators, and investment. The 'Tehnopolis' Park organises symposiums, conferences and exhibitions and has several associated members: the County Council, the City Hall of Iasi, and four major universities. The 'Tehnopolis' Park offers various general and specific services to its clients. The results so far have been excellent: 20 companies have been admitted to the Park, 820 new jobs have been created, the 10,000 square meters of space have been fully rented, the business incubators occupancy has also been 100%, and the Park has been financially viable. The Science and Technology Park 'Tehnopolis' is an excellent example of how proposed instruments can be translated into successful practices.

Learning from others

The need to implement continuous changes in the systems of science and higher education is a world-wide phenomenon, whose importance is clearly not limited to Southeast Europe. As illustrated by Mr. Jurg Pfister from the Swiss Academy of Sciences, continuous reforms are being implemented in Switzerland related to scientific and higher education policies, legislation, funding mechanisms and the research performing organizations. Science and technology has been identified as the national priority over many other sectors. The reforms have included the simplification of governance of the higher education system, the creation a system based on both competition and cooperation, the reorientation of universities of applied sciences towards research, the revision of funding mechanisms for universities, and the introduction of international compatibility with the Bologna process, the EU Framework Programme, etc. Specific funding instruments have been put in place and are forcing universities to set priorities more explicitly. A variety of institutions are directly involved, including universities and the Federal Institutes of Technology, the Swiss National Scientific Foundation as an important funding agency, and the Swiss Academy System which includes four different academies. While the whole system is subject to constant changes, the role of each of the institutions is clearly defined and specific functions have been assigned to each of them. The important changes implemented in SHEI in recent years in Switzerland illustrate how national policy in this area, supported by priority setting and political will to implement changes, can be essential.

One of the most critical questions today in the area of SHEI concerns the methods of evaluation of research, researchers, and scientific and higher education institutions, as illustrated by Mr. Torsten Kalvemark from the National Agency for Higher Education in Sweden. Although we dispose of sophisticated evaluation methods, many issues remain controversial and are presently widely debated. Mr. Kalvemark pointed to the problem of the abuse of rankings and statistics on universities, as they can be rather misleading. The first ranking from Shanghai's Jiao Tong University, published in 2003, has made an enormous impact, yet its tables must be used with extreme caution: the ranking is far from satisfactory, since a number of universities well-known for their excellence are not even among the top 200 (such as the London School of Economics). Rankings offer the image of false precision that is not warranted by the data. Other problems of rankings regard the different traditions in publications in natural sciences and medicine on the one hand, and humanities and social sciences, on the other hand. Existing scientific data bases and citation indexes suffer from the well-known English language bias, and therefore are not sufficiently comprehensive.

Related to the heterogeneity of practices is also the important question of affiliation of highly cited researchers to universities: whereas in the Netherlands and Sweden the ratio is 85%, in the USA, 76% and in the UK, 71%, in many other countries

it is much lower, as in Germany (50%) or in France (only 33%). This points to the need to distinguish between the two functions, research and teaching. Though the two functions are usually considered jointly, they need to be treated separately; indeed, excellent teachers are not necessarily productive scientists and vice versa. Therefore, higher education institutions cannot be aligned on a single scale, as there are important differences in educational systems and their missions, as well as in the contents and quality of higher education.

Recommendations: Future challenges for SEE

The workshops of Session III formulated some recommendations regarding the promotion of SHEI for knowledge based societies in the future. A major conclusion was that the SEE countries are still confronted with specific problems, despite being at different stages regarding reforms of SHEI systems. Among the major problems that influence the decision-making process and action planning are:

- the lack of inter-sectoral cooperation between ministries responsible for higher education, research, and innovation;
- the traditional organization of universities, as there are no, or very few, integrated universities;
- and in many countries, the lack of an university development strategy.

Despite continuous reforms, inconsistencies frequently arise due to insufficient consideration or neglect of previous reforms, effectively resulting in major discontinuities. In most countries there is lack of action planning, though there are also examples of good practices (e.g. Croatia).

The main recommendations, therefore, pointed to the need to:

- develop, in each SEE country, an integrated national Research-Education-Innovation strategy and accompanying policy;
- further raise awareness of major political actors in SEE about the actual needs of the research and academic communities;
- implement strategic planning at university level (where the Croatian experience can serve as a good example);
- establish better links between universities and the business sector;
- strengthen capacity for prioritisation; in order to have a stronger impact on actual policies, the quality of prioritisation needs to be raised;
- define, in addition to national priorities, regional priorities, as well as priorities at lower levels;
- assure better synergies and coordinated action between the public and private sector; a common problem to all countries is how to involve SMEs in R&D.

Still today there is a continued need to raise public awareness about the knowledge-based economy and the key role of innovation and technological development for

economic growth. Despite limited budgets, SEE countries governments should consider more appropriate treatment of SHEI and increased expenditure on R&D. Policies must be implemented which could raise economic competitiveness in the long run, including more investment in human capital, education, life-long training and re-qualifications.

In promoting Research, Education and Innovation, there is a need to identify a regional strategy based on the division of labour among the SEE countries. Joint efforts must be undertaken to develop, in particular, research infrastructure and regional centres of excellence. SEE universities need to position themselves in the European Higher Education and Research areas. One recommendation, therefore, was the organization of a regional workshop on the role of universities in the knowledge triangle, focusing on the impact of research on economic and social development.

The collection of reliable and comparable statistics on R&D, based on the Eurostat methodology, is another urgent priority, particularly in those SEE countries where statistics on the most important R&D indicators are still not available. As a first step, a regional workshop attended by country representatives and international experts on R&D statistics is recommended.

5. European and International Cooperation in the Field of Higher Education, Science and Innovation⁵

Science and innovation in the frame of international cooperation

According to Albena Vutsova, Director, Bulgarian Research Fund, it is important for countries to invest in science and innovation because it is closely linked to the level of economic development and the wellbeing of people. Nevertheless, many countries' political commitment does not translate these priorities into action for various reasons. European Community, USA, Japan and the BRIC⁶ countries recognize science and innovation as being important forces for building knowledge based societies. European Treaty integrates these notions in one of the policy pillars and in Article 163.

Opportunities with international cooperation

International cooperation creates favourable conditions for multidisciplinary and cross technological research. It can improve the overall quality and performance of innovation and research. Hence, international cooperation could strengthen the competitiveness on the global market and it is for this reason that governments should promote and encourage research entities to take an active part in international activities. The current EC programme frameworks support central aspects of international cooperation such as mobility exchanges, coordination and dissemination activities and investment in equipment. Remote areas are supported through the facilitation of access to data bases and load sharing facilities (LSF). The current programme frameworks however, are lacking in supporting actual research and opportunities for research and innovation facilities.

Bulgaria and European funding programmes

In Bulgaria, researchers and companies are open to international cooperation through various partnerships. The interest towards international programs is grow-

⁵ Conclusions prepared by the rapporteur Asa Olsson, UNESCO. The session was chaired by Radmila Marinković-Neducin, Rector, University of Novi Sad, Serbia.

⁶ BRIC: Brazil, Russian Federation, India, China.

ing and at present, 30 percent of the consolidated research budgets come from a variety of international programs. The number of applications for the Seventh Framework Programme (FP7) calls is increasing but there is still some interest in the programs provided by the European Cooperation in the field of Scientific and Technical Research (COST) and the Joint Research Centre (JRC). Applications reveal a good balance between various research entities in Bulgaria, such as universities, companies, municipalities to activate public and private partnerships.

At present there is poor information available on how to access these international programs and therefore State support is targeted at centres of excellence in research and innovation, preparatory grants, various fellowships and matching schemes for FP7 projects.

Key elements to consider for excellence in science and innovation

The Bulgarian case illustrates some essential elements which are necessary to create an environment of excellence in science and innovation such as long-term political commitment, high quality of management, concentration of resources, and promotion of cooperation amongst various actors to secure a fast transfer of skills. Additionally, linking different science and innovation programs to obtain synergy effects, analysing the comparative advantages of the investments and increasing expertise and knowledge created elsewhere to a domestic context is also of considerable importance.

Turkish research policy and international cooperation⁷

The Turkish innovation system involves a large number of actors who report directly to the Prime Minister. The 'Vision 2023' strategy is linked to the 100 year Anniversary of the Turkish Republic and aims at developing an affluent society which is competent in science. Technology should be utilised consciously and Turkey should be capable of developing new technology and skills to convert such technological development into social and economic benefits.

Experts from universities appointed as members of twelve foresight panels are in charge of transforming this vision into a tangible reality. A document is produced on the current status of Turkey in the field of science and technology and this is then linked to long-term scientific and technological developments in the world. Furthermore, strategic technology areas, which are important for progress, are being identified and recommendations are given for policies to support the targeted areas.

⁷ Presentation made by Prof. Dr. Dincer Ulku, Turkish Academy of Science.

Turkey lacks large scale industries and therefore medium size and small companies are important actors in promoting research and innovation. In the Medium-Term Programme (2006-2008) the objective was to increase the capacity of science, technology and innovation and transform these capacities into a socio-economic value.

Current targets are set to:

- Improve coordination and bestow a central role upon the private sector,
- Increase the private sector's demand and capacity for research and development,
- Strengthen the cooperation between the private sector and public universities,
- Improve the efficiency of public procurement and raise awareness for science, technology and innovation in order to gain further support from society.

Furthermore, it has been recognised that Turkey has a great potential to increase international cooperation with the European Community, the South Eastern European countries and the Black Sea Economic Community.

Increasing expenditures of research and development

Turkey has increased the Gross Domestic Expenditure of Research and Development (GERD) percentage of GNP from 0,32 in 1990 to 0,76 in 2006. The policy target set by the Supreme Council of Science and Technology (SCST) is to increase the investment of GERD to 2 percent of GDP by 2010 and half of the investment is supposed to come from the industry.

Key figures showing Turkey's progress in science, technology and innovation

Some figures should be stressed to convey the success of the increasing investment in science, technology and innovation. The number of full time researchers in the field of R&D was 11 000 in 1990 and in 2006 Turkey had more than 40 000 researchers. The number of scientific publications has expanded from a moderate 208 in 1973 to 18406 in 2006, which ranked Turkey on the 44th place on Thomson's ISI in 2007. The Turkish Patent Institute (TPI) granted 763 foreign and 58 domestic patents in 1995 and this figure increased to 4303 foreign and 120 domestic patents in 2006. Turkey is developing National Innovation System Performance Indicators in the context of SCST decision to monitor the results of their investment.

Despite the progresses made, Turkey has some future challenges ahead. To date, only half of the universities are publishing work in international journals and it is relatively difficult to acquire and retain well qualified researchers when the private sector is still, to a certain extent, small. Investment will need to ensure that future opportunities are available for the current young population.

Research capacity in the universities and in the industry

Several initiatives have been created to increase university and industry research capacity. The joint University-Industry-Research program (USAMP) involves six

centres to date which are funded by TUBITAK. Universities and the private sector also contribute to funding. The centres are established to stimulate university-industry collaboration, to promote industry oriented projects and to strengthen the research potential of the universities. In 1996 a new project called SAN-TEZ was launched to promote university and industry collaboration with a view to commercialise academic knowledge and to transfer academic knowledge into high value added technological products. Additionally it aims to solve problems which arise in the industry production process, to cooperate with universities and to encourage a R&D and technological culture in small and medium sized enterprises.

Turkey has 20 technology development zones (TDZs) and to date 463 firms have been established out of which 388 are local, 20 foreign and 55 are incubation firms. 5266 R&D staff and 1677 technical support personnel are employed in the TDZs and public support has been provided for land, infrastructure and for the construction and management of buildings. These zones benefit from tax exemptions until 2014 and provide incentives for the mobility of researchers.

In the Lisbon communiqué the Technology Development Foundation of Turkey (TTGV), which was established in 1991 to support R&D development, is mentioned as an organisation which is required to attain public R&D funds to support the private sector. The TTGV bridges the crucial gap between the regulation of the private and public sectors. TTGV provides long-term credit, which is repaid by companies. This requires the compulsory contribution of companies to alleviate costs incurred in the project. The public funds are therefore directed to the R&D project more effectively through the “multiplier effect” of the revolving fund.

Research and innovation policy-making in South Eastern Europe⁸

Importance of increasing national funding base

The first policy question regarding the triangle science - higher education - innovation is funding. In order to develop a competitive national research base, it is vital to increase the budget allocated to research, which could be complemented by European Community and international funding. The Seventh Framework Program (FP7) increases the research funding in South East Europe and Turkey and the associate members can participate through fulfilling minimum requirements. This allows for the formation of consortia. As observers of the programme, South East Europe and Turkey can take an active part in the policy-making process by participating as observers in programme committees via their governments. Therefore it is important to have a close link between researchers and governments.

⁸ Presentation made by Tania Friederichs, DG Research, European Commission.

Importance of an integrated research policy

Research is much more than mere funding. South East Europe and Turkey should create an integrated research policy including funding priorities and value added funding strategies on how to become successful as a part of the pre-accession agreements. At present European Commission has increasing cooperation with Turkey on FP7 and provided a good model for stimulating cooperation between industry and academia.

Importance of capacity building

Capacity-building is another very significant aspect of policy-making. There is a need to analyze and map the strengths and weaknesses of the integrated research policies. Other crucial aspects are the investments in both hard and soft infrastructure and financial strategies to support the investments. All countries need a critical mass of scientists supported by an administration. There is a need to reinforce administrative procedures; establish self-monitoring systems, indicators to measure success and access statistics which underpin analysis findings. South East Europe and Turkey are invited as observers at Le Centre de Recherche en Economie et en Statistique (CREST) which looks at how to increase capacities in this area.

The research infrastructure in Europe

The issue of establishing a solid research infrastructure has been neglected in Europe. Historically, Europe reverts to national level policies. Laboratories are not adequately equipped; as a result, researchers are dissuaded and leave their home countries. In the future it is necessary to cooperate with European Community members, at least in one or two investment areas in order to keep up with global research and to bring back top-level researchers.

Since Europe cannot provide many good examples on successful investment strategies across national boundaries, it might be interesting to study other successful examples elsewhere.

Regarding innovation policies, the DG Research has a few policies which mainly stimulate the integration of industry and research. Another area of interest is the question of how to encourage research in the education reform in the Bologna process. Many universities resist to mobility due to institutional obstacles in addition to the visa restrictions. An initiative to overcome this was launched by the European Community: it is a Code of conduct supported by 20 member States in relation to universities. It could be adopted on a voluntary basis by universities; countries in South East Europe and Turkey are encouraged to study it in further detail with a view to implement the Code in their specific context.

Global trends, massification of higher education. South Eastern Europe and the international context⁹

It is important to analyse global trends to assess the comparative advantages for South East Europe in a broader context and to learn from experiences of other countries with similar challenges.

The most important global trend for higher education in recent years is the massification of higher education. In 2004 there were 132 million tertiary students (UNESCO Institute of Statistics) and in the past 10 years China and India have doubled their enrolments. There is a growing demand for post-secondary education and with declining State budgets countries are unable to meet the demand.

Private higher education, including cross-border higher education, has alleviated some of the obstacles concerning the expansion of higher education. Access in the developing countries and countries in transition has increased due to the establishment of private actors. In East Asia, private higher education is a growing phenomenon and stands for 80 percent of the enrolments in Japan, South Korea and Philippines. In Latin America and the Caribbean (Brazil, Chile, El Salvador, Colombia etc.) 50 to 75 percent of the enrolments are in private higher education. In Western Europe private higher education only stands for 10 percents of the enrolments in contrast with Central and Eastern Europe (Estonia, Poland and Romania) where the enrolment is 25 percent in private higher education. Due to the expansion of private higher education quality assurance and regulation are central issues.

Distance education, e-learning and open education resources are additional growing phenomena in order to alleviate the increasing demand. In 1988 ten Open Universities in the Commonwealth led this new development and by 2005 there were more than ten Open Universities established in India alone. Open education resources aim at reducing the costs of distance and eLearning wherever it is possible to operate at scale.

Student Mobility

In 2004, 2.4 million students went abroad, which is 3 times the initial figure in 1980. Interestingly, African students are the most mobile, with 1 out of 16 studying abroad. In the *2025 Global Student Mobility Report*, it was forecasted that the demand for international education will increase to 7.2 million students in 2025.

Australia is a prime example of a country which attracts a lot of foreign students. In 2004, 33% of all international students were enrolled in Australian institutions. China had a 9-fold increase in foreign programmes between 1995-2003. Contrasting with that is Singapore, where more undergraduate students have accessed a foreign programme from Singapore than studied abroad in 2000.

⁹ Summary of the presentation made by Stamenka Uvalić-Trumbić, Higher Education Division, UNESCO.

The diversification of learners is also an important trend where both life-long learning and adult learners at distance are expanding.

The growth in cross-border higher education is also significant and ICT has enhanced cross-boarder higher education, which is likely to become an even more significant development in the coming years.

The increase of private higher education and cross-boarder higher education led to academic fraud including degree mills and bogus colleges. A frequent problem is bogus institutions misusing UNESCO's name to give the impression of being an internationally recognised provider of higher education.

Policy questions to consider for the future

The expansion of private higher education and cross-boarder higher education in developing countries has brought some policy questions to the forefront: Are private higher education and cross-border higher education good ways to expand access to HE in the developing world? What policies can governments and institutions adopt to ensure that new providers make a positive contribution? What regulatory frameworks assure equity of access and quality of provision?

UNESCO works in several ways to respond to these issues as a part of its functions as a standard-setter (UNESCO Conventions for the Recognition of Degrees in Higher Education and 2005 Guidelines for Quality Provision in Cross-boarder Higher Education), clearinghouse (UNESCO Global Forum on Quality Assurance, Accreditation and the Recognition of Qualification) and capacity-builder (UNESCO-World Bank Global Initiative for Quality Assurance Capacity, UNESCO Portal of Recognized Higher Education Institutions, Study Abroad, and International Community of Interest on OERs).¹⁰

Relevance for South East Europe

For the transition to a knowledge-based economy, Research and Development (R&D) is perceived as key force for competitiveness and long-term growth. For countries aspiring to join the EU it is important to link up to Lisbon and Barcelona European Councils and to take part in European and international programmes such as EU Framework Programmes, COST, Bologna Process, EUREKA, TEMPUS and ERASMUS-Mundus. These programmes support a gradual integration into European Research Area. It is also important to stress the value to build on regional networks in higher education and research and development, to support capacity building and institutional reforms.

¹⁰ For a full explanation of the whole programme, please visit the web www.unesco.org/education/higher-education/quality.

II. Recommendations from Parallel Sessions

Create Incentives for Cooperation and Mobility in the field of Science and Higher Education

- Mobility of researchers and students facilitate brain-drain and therefore it is important to create a favorable research environment at national level.
- It is essential to firstly strengthen the national base and gradually and progressively to look forward to the regionalisation of research capacities.
- Joint degrees and attractive European Programmes, such as CEEPUS, ERASMUS Mundus, Tempus are prime examples of opportunities available.
- In Albania, the Government and UNDP have developed a programme to promote brain gain and this model could be applied elsewhere in South East Europe.

Identify ways and means to increase competitiveness through international cooperation

- It is vital to ensure that research in the region becomes competitive and to exploit existing EU and regional programmes, including networks for opening up national research systems to regional and international cooperation.
- There is a need to identify regional infrastructures that can be inter-linked and to find mechanisms to provide access and to keep them updated at regional and European level; such an initiative has started within the WBC-INCO.Net Project.
- The potential to identify centres of competence to provide expertise and training for the region should be explored.
- There is a need to remove legal barriers, notably problems related to visa.

Institutional foundations for regional and international cooperation

- There is a need for better administrative support for scientists allowing them to participate in a greater number of collaboration projects.
- It is recommended that a technical support body be established to increase capacity and to facilitate access to funding programmes.
- Individual contacts and initiatives should be facilitated and there is also a need to remove barriers between researchers and inter-university cooperation.

III. Final Communiqué

- I. We, the Ministers with responsibility for science and higher education, participating or represented, in the 'Science, Higher Education and Innovation Policy' Forum and High Level Round Table, together with members of Parliamentary Committees for Science and Education, representatives of Universities, Academies, and research centres and funding agencies present in Budva, Montenegro, from 1 to 3 July 2008 at the invitation of the Ministry of Education and Science of Montenegro and UNESCO's Regional Bureau for Science and Culture in Europe (BRESCE)
- a. *Welcome* the opportunity afforded by UNESCO to Member States from South Eastern Europe to meet periodically, at sub-regional level, to discuss major issues in science, technology and innovation (STI) and higher education (HE) policies;
 - b. *Convinced* of the vital role of STI&HE as major driving force for socio-economic and sustainable development and as essential tools for the building of knowledge societies in South Eastern Europe;
 - c. *Recognize* that STI&HE are potentially the main contributors towards meeting basic human and societal needs, protecting the environment, coping with global climate change, promoting education and bringing about the cultural and intellectual enrichment of humanity and therefore deserve special policy attention;
 - d. *Acknowledge* that most countries of the sub-region are undergoing structural reforms in STI&HE sectors and that specific measures are being undertaken for the elaboration of long-term strategies, the strengthening of capacity and quality of human resources (through 'brain-gain' initiatives) and the (slight) increase in the nominal amount of financial resources available for R&D;
 - e. *Acknowledge* that topics of interest and the problems faced are similar across the sub-region and that great benefit could be obtained from exchanges of best practices, joint actions and programmes for sub-regional cooperation;
 - f. *Express agreement* with actions taken by the European and international institutions and representatives of civil society to contribute to the development of STI&HE in the sub-region and *welcome* the joint initiative by the Slovenian Min-

istry of Higher Education, Science and Technology and SEE-ERA.Net of the 'Her- man Poto nik Noordung' Award for donations to improve the R&D infrastructure in the Western Balkan countries;

II. We have reached the following conclusions:

- a. *Governments* should recognize the crucial role of STI&HE in their national development policies and strategies and see STI&HE as the lever for socio-economic development, solving social and human challenges and reaching sustainable development. With this in mind, the reform processes in STI & HE need to be speeded up.
- b. *Parliaments* should be involved more actively in the shaping of an appropriate legal framework for STI&HE, parliamentary debates on STI&HE, adequate budget allocation and thus contribute to proper inclusion of STI&HE in national development policies.
- c. *Universities and other HE institutions* should further implement the common path determined by the Bologna process, foster the link between the education and research; work towards increasing the quality and excellence in higher education through enhanced accreditation and quality control.
- d. *Academies of Sciences* have an important role advising society and governments including priorities setting, linking science and society, as well as playing a bridging role between scientists and political authorities; their role is also seen in fostering moral and societal responsibility and public accountability.
- e. *Individual agencies* (intermediaries, Research and Technological Organizations) with sufficient resources can play a crucial role in the implementation of the reform processes, focusing the resources on the national STI&HE policy priorities, establishing monitoring and evaluation capability as well as continuous data analysis.
- f. *The private sector* is still under-represented in STI funding, very much below the Barcelona target of 2/3 of GERD and difficult to involve. Special attention must be given in the reform processes to finding innovative ways of increasing the participation of private sector in policy formulation and funding of R&D. The promotion of *public-private mechanisms* to facilitate innovation with the involvement of medium-sized enterprises and creation of start-up and spin off companies is one of such ways.

III. We agree that the following actions should be implemented:

- a.** Governments should design concrete plans for strategic use of available resources towards the enhancement of an efficient national basis for research and research cooperation, avoiding fragmentation.
- b.** All stakeholders, especially national governments, should strive towards increased funding allocated to Higher Education and Research (including for the modernization of research infrastructures) and long-term studies and programmes.
- c.** All stakeholders, and especially national governments should pay specific attention in policy making to programmes and measures to stimulate young people to enter the research field; increased capability of human resources is essential for the successful implementation of the national strategies in STI&HE.
- d.** All the stakeholders and especially national governments should create the conditions to promote international mobility of researchers.
- e.** Promote the identification of priorities in HE&STI based on local, national and sub-regional needs and cautiously move towards regional centers of excellence.
- f.** Cooperate in developing a STI&HE strategy at SEE level based on division of labour and the sharing of research infrastructures.
- g.** Reinforce policy fora such as the Steering Platform on Research for WBC, the Task force 'Fostering and Building Human Capital of the RCC', and UNESCO SEE fora, coordination and support actions for regional cooperation such as SEE-ERA. Net, Western Balkans Countries (WBC) INCO.NET, and funding programmes such as the EU FP, COST and EUREKA; further support sub-regional cooperation in the following areas:
 - improvement of the R&D infrastructures;
 - improvement of higher education standards through like joint degree programmes; cooperation in accreditation, exchange programmes;
 - joint RTDI programmes.

IV. Concrete recommendations to UNESCO and other international organisations:

- a.** Make all possible efforts to facilitate and promote the better understanding by decision-makers of the crucial role that STI&HE and, especially their commercial applications play in social, economic and cultural development of nations;

- b.** Reinforce policy work aimed at giving guidance and providing best practices, technical assistance and individual diagnosis for the formulation of long-term national policies and strategies in STI&HE through ensuring coordination-synergies and the enhancement of national innovation systems in SEE; the creation of a UNESCO Chair in Science and Innovation policy (initiative of Romania).
- c.** Urgently provide support for the collection of reliable and internationally comparable R&D and education statistics and indicators.
- d.** Contribute to the capacity-building of decision-makers in science, technology and innovation policies, including forward-looking approaches, foresight techniques to set long term priorities for STI&HE.
- e.** Play a catalytic role through the facilitation of networks between EU member States and other countries indicating good practices in topics not yet addressed: e.g. networks for identifying performance indicators by activity, discussing methodologies and practices for evaluation mechanisms and monitoring systems, promoting innovation practices in the private sector, raising awareness on the science and society interaction, etc.
- f.** Support initiatives for free access to data-bases and scientific information for SEE countries as well as access to available research, monitoring and evaluation of systems for HE, research and innovation.
- g.** Ensure greater sub-regional and international cooperation in S&T as essential means to meet global challenges (economic growth, health, sustainable development, enhanced safety and security) and to promote peace and dialogue in South Eastern Europe.
- h.** Convene Ministerial Round Tables on a regular basis and facilitate exchanges in the intervening period. Albania offered to host the next SEE Ministerial Round Table in Higher Education, Science and Innovation in 2009 in Tirana.
- i.** Enhance communication at sub-regional and national level in STI&HE.

This document constitutes a contribution of South Eastern European countries to the World Conference on Higher Education (Paris, July 2009) and World Science Forum (Budapest, November 2009).

Annexes



Programme

Wednesday, 2 July 2008

OPENING SESSION

Higher Education, Science and Innovation for Socio-Economic Development

Chairperson: Sreten SKULETIĆ, Minister of Education and Science of Montenegro

Welcome: H.E. Milo DUKANOVIĆ, Prime Minister of Montenegro

Speakers: Engelbert RUOSS, Director, UNESCO BRESCE
Mojca KUCLER DOLINAR, Minister of Higher Education, Science and Technology, Slovenia
Mario ALLI, Director-General, Strategies for Development and Internationalization of S&T Research, Ministry of Education and Research, Italy
Jüri ENGELBRECHT, President, ALLEA
Janos J. BOGARDI, Vice Rector, United Nations University

SESSION I

Knowledge Triangle - Education, Research and Innovation in National Policies

Chairperson: Engelbert RUOSS, Director UNESCO BRESCE

Rapporteur: Maja BUČAR, University of Ljubljana, Slovenia

Presentations by Ministers responsible for Education and Science from:

Albania, Bosnia and Herzegovina, Bulgaria, Croatia, Former Yugoslav Republic of Macedonia, Greece, Republic of Moldova, Montenegro, Romania, Serbia, Turkey

SESSION II: Roles of Governments, Parliaments, Universities, Academies, and the Private Sector in National Research and Innovation Systems

Chairperson: Zdravko USKOKOVIĆ, Vice-Rector, University of Montenegro
Rapporteur: Lena TSIPUORI, University of Athens, Greece
Speakers: Franci DEMŠAR, Director, Slovenian Research Agency
Momir ĐUROVIĆ, President, Academy of Sciences and Arts, Montenegro
Aleksa BJELIŠ, Rector, University of Zagreb, Croatia
Slavica GRKOVSKA, Chairperson, Committee on Education, Science and Sports, Parliament Assembly, Former Yugoslav Republic of Macedonia

Working Groups Discussions

WG1: National Science Systems: Role of Institutions

Moderator: Lars Lynge NIELSEN, President, EURASHE

WG2: Funding Mechanisms in Higher Education and Research

Moderator: Mira VUKČEVIĆ, President, Council for S&T, Montenegro

WG3: Public-private Mechanisms to facilitate Innovation

Moderator: Berit OLSSON, Director, SIDA-SAREC, Sweden

Thursday, 3 July 2008

SESSION III:

Changes Needed in Science and Higher Education Institutions and Practices

Chairperson: Adrian CURAJ, Director, Executive Agency for Higher Education and Research Funding, Romania
Rapporteur: Milica UVALIĆ, University of Perugia, Italy
Speakers: Jorgaq KACANI, Rector, Polytechnic University Tirana, Albania
Radu-Grigore GROSU, Director-General, Science and Technology Park 'Tehnopolis', Iasi, Romania
Jürg PFISTER, Secretary-General, Swiss Academy of Science, Switzerland
Torsten KÄLVEMARK, National Agency for Higher Education, Sweden

Working Groups Discussions

WG1: Decision-making Processes and Plans of action

Moderator: Viktor NEDOVIĆ, Ministry for Science, Serbia

WG2: Identification of Priorities in Higher Education, Science and Innovation

Moderator: Barbara WEITGRUBER, Federal Ministry of Science and Research, Austria

WG3: Promotion of Higher Education, Science and Innovation for the Building of Knowledge Societies

Moderator: Nikos SIDIROPOULOS, Secretariat for Research and Technology, Greece

SESSION IV:

European and International Cooperation in the Field of Higher Education, Science and Innovation

Chairperson: Radmila MARINKOVIĆ-NEDUCIN, Rector, University of Novi Sad, Serbia

Rapporteur: Asa OLSSON, UNESCO

Speakers: Dinçer ÜLKÜ, Chairman, International Relations Commission, Academy of Sciences, Turkey
Albena VUTSOVA, Director, Bulgarian Research Fund
Tania FRIEDERICHS, DG Research, European Commission
Stamenka UVALIĆ-TRUMBIĆ, Higher Education Division, UNESCO
Jan SADLAK, Director, UNESCO CEPES
Siegel GUENTER, COST

Working Groups Discussions

WG1: Institutional Foundations for Regional and International Cooperation

Moderator: Virginie AIMKARD, United Nations University (UNU)

WG2: Identify Ways and Means to increase Competitiveness through International Cooperation

Moderator: Elisabeth SORANTIN, Central CEEPUS Office

WG3: Create Incentives for Cooperation and Mobility in the field of Science and Higher Education

Moderator: Stamenka UVALIĆ-TRUMBIĆ, UNESCO

CONCLUDING SESSION

Chairperson: Engelbert RUOSS, Director, UNESCO BRESCE

Reports from the Sessions 1 - 4

Guest Speaker: Janez POTOČNIK, Commissioner for Science and Research, European Commission (confirmed)

Interventions of Ministers of SEE Countries

Panel discussions

Adoption of a 'Final Communiqué, Budva 2008'

Final Remarks: Sreten SKULETIĆ, Minister of Education and Science of Montenegro

List of Participants

Albania

- Mr Genc POLLO
Minister of Education and Science
- Mr Teki BIÇOKU
President, Academy of Sciences
of Albania
- Mr Gjergj GJINKO
Director of the Minister's Office
- Mr Jorgaq KACANI
Rector, Polytechnic University
of Tirana
- Mr Albano ZHAPAJ
Head of the Projects' Unit
Scientific Research Directorate
in MoES

Austria

- Ms Elke DALL
Center for Social Innovation (ZSI)
- Ms Barbara WEITGRUBER
Federal Ministry for Science,
Education and Culture

Bosnia and Herzegovina

- Ms Aleksandra BAJIĆ
Academy of Sciences and Art
Republic Srpska
- Mr Anto BAOTIĆ
Secretary-General
Parliament of the Federation of B.I.H.
- Ms Biljana ČAMUR
Deputy Minister for Culture, Science
and Sport
Ministry for Civil Affairs
- Mr Sead DIZDAREVIĆ
Chairperson
Parliament of the Federation of B.I.H.
- Ms Gordana DUKIĆ
Chairperson
National Assembly of the Republic
of Srpska
- Mr Dragoljub MIRJANIĆ
Academy of Sciences and Art
Republic Srpska
- Mr Željko MIRJANIĆ
Chairperson
National Assembly of Rep. of Srpska
Legislative Board

- Mr Zijo PAŠIĆ
Academy of Sciences and Arts
- Mr Safet SOFTIĆ
Chairperson,
Parliament of Bosnia and Herzegovina
- Mr Gordan VUKELIĆ
Ministry of Science and Technology
Republic of Srpska

Bulgaria

- Mr Konstantin KOSSEV
Academician, Bulgarian Academy
of Sciences
- Mr Ivan NEDKOV
Professor, Bulgarian Academy
of Sciences
- Ms Albena VUTSOVA
Director of Research and Analysis
Department
Ministry of Education and Science

Croatia

- Mr Aleksa BJELIŠ
Rector
University of Zagreb
- Ms Melita KOVAČEVIĆ
Vice-Rector for Science and
Technology
University of Zagreb
- Ms Ivana PULJIZ
Ministry of Science, Education and
Sports

- Mr Goran RADONIĆ
Croatian Institute of Technology
- Mr Dražen VIKIĆ-TOPIĆ
Ministry of Science, Education and
Sports
- H.E. Petar TURČINOVIĆ
Ambassador of the Republic of Croatia
to Montenegro

Former Yugoslav Republic of Macedonia

- Mr Bojan ŠOPTRAJANOV
Vice-president
Academy of Sciences
- Ms Slavica GRKOVSKA
Chairperson
Committee on Education, Science
and Sports
Macedonian Assembly

Greece

- Mr Nikos SIDIROPOULOS
Hellenic Ministry of Development
General Secretariat for Research
and Technology
- Ms Lena TSIPOURI
Professor of Economics and
Innovation policy
Center of Financial Studies

Hungary

- Mr Ferenc HUDECZ
Rector, 'Eötvös Loránd' University
- Mr Miklós ZRÍNYI
Vice-President
Budapest University of Technology
and Economics

Italy

- Mr Mario ALI'
Director General of Directorate
for Strategies and Development
of International Scientific and
technological Research – Ministry
of Public Education, Universities
and Research
- Mr Franco ASCIUTTI
Commission for Education
Senate of the Italian Republic
- Ms Rosella DI CESARE
Adviser
Commission for Education
Senate of the Italian Republic
- Ms Rosanna PAIOLO
Technical Secretariat and Special
Assistant of Director General Dr Mario
Ali, Ministry of Public Education,
Universities and Research
- Ms Milica UVALIĆ
Professor of Economics
University of Perugia

Moldova (Republic of)

- Mr Sergiu PORCESCU
Head, Department of International
Relations, Academy of Sciences

Montenegro

- H.E. Milo ĐUKANOVIĆ
Prime Minister
- Mr Sreten ŠKULETIĆ
Minister of Education and Science
- Mr Momir ĐUROVIĆ
President, Montenegrin Academy
of Sciences and Arts
- Ms Slobodanka KOPRIVICA
Deputy Minister for Science and
Higher Education
- Ms Valentina RADULOVIĆ
ŠĆEPANOVIĆ
Montenegro Parliament
Committee for Education, Science,
Culture and Sport
- Mr Zdravko USKOKOVIĆ
Vice-Rector
University of Montenegro
- Ms Mira VUKČEVIĆ
President of the Council
for Scientific-Research Activities
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Institute of Marine Biology

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Researchers – FUPI
- Mr Radovan STOJANOVIĆ
Executive director of FUPI
University of Montenegro,
Faculty of Electrical Engineering
- Mr Saša POPOVIĆ
Council for Research Activity
Faculty of Economics
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GTZ
- Mr Uroš ZEKOVIĆ
GTZ
- Ms Vesna MARAŠ
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'PLANTAŽE' a.d.
- Ms Jelena ĐUROVIĆ
Director
Central National Library of
Montenegro
- Ms Sanja VLAHOVIĆ
University "Mediteran"
- Ms. Mladenka TESIC
Programme Manager
World University Service (WUS) –
Austria, Podgorica Office
- Mr. Goran DRAKUL
Programme Manager
World University Service (WUS) –
Austria Podgorica Office

Romania

- Mr Adrian CURAJ
Director
Executive Agency for Higher Education
and Research Funding
Ministry of Education and Research
- Mr Radu-Grigore GROSU
Director-General
Science and Technology Park
"Tehnopolis" Iasi
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to Montenegro

Serbia

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Minister of Science
- Mr Viktor NEDOVIĆ
Assistant Minister for International
Scientific and Technological
Cooperation
Ministry of Science
- Ms Radmila MARINKOVIĆ-NEDUČIN
Rector, University of Novi Sad
- Mr Časlav OČIĆ
Corresponding Member
Serbian Academy of Sciences and Arts
- Ms Ana PAVLIĆ
Chief of cabinet
Ministry of Science
- Ms Tanja RANKOVIĆ
Coordinator for health and education
Government of Serbia

- Mr Dušan TEODORVIĆ
Vice-rector, University of Belgrade

- Ms Srbijanka TURAJLIĆ
Centre for Education Policy

Slovenia

- Ms Mojca Kucler DOLINAR
Minister of Higher Education, Science and Technology

- Ms Maja BUČAR
University of Ljubljana

- Mr Franci DEMŠAR
Director, Slovenian Research Agency

- Ms Slavi KRUŠIČ
Undersecretary, Ministry of Higher Education, Science and Technology

- Ms Mateja NEMEC-LUKMAN
Ministry of Higher Education, Science and Technology

- Ms Maja PAVLOVIĆ
Spokesperson
Ministry of Higher Education, Science and Technology

- Mr Tomaž SELJAK
Director, Institute of Information Science

- Mr Pero ŠOBOT
Head of COBBIS system maintenance,
Institute of Information Science

- H.E. Jernej VIDETIČ
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- Mr Torsten KALVEMARK
National Agency for Higher Education

- Ms Berit OLSSON
Director, Swedish International Development Agency (SAREC)

Switzerland

- Mr Benedikt HAUSER
Swiss State Secretariat for Education and Research

- Mr Jürg PFISTER
Secretary-General, Swiss Academy of Sciences (SCNAT)

Turkey

- Mr Omer Ziya CEBECI
Vice-President, Scientific and Technological Research Council of Turkey (TUBITAK)

- Mr Dincer ULKU
Turkish Academy of Sciences – TÜBA

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President

European Commission

- Ms Kristina BOLE
Policy assistant
- Ms Tania FRIEDERICHS
DG Research
- H.E. Mr. Leopold Maurer
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Delegation of the European
Commission to Montenegro
- Mr Janez POTOČNIK
Commissioner for Science and
Research
- Ms Milena RAYKOVSKA
JRC

Institute for European Training and Information (IETI)

- Mr Erdin KADUNIC
Deputy Secretary-General

OSCE

- Ms Paraschiva BADESCU
Ambassador
Head of the Mission in Montenegro
- Ms Ivana VUJOVIĆ
National Education Officer

United Nations Development Programme (UNDP)

- Mr Bernard ZENELI
Coordinator, 'Brain Gain' Programme
UNDP Albania

United Nations Educational, Scientific and Cultural Organization (UNESCO)

- Ms Marina GILEBBI
Programme assistant
(BRESCE)
- Ms Ana Maria MACHADO
Deputy Assistant-Director General for
Education
- Ms Iulia NECHIFOR
Programme Specialist
Science Policy and Capacity-Building
- Ms Asa OLSSON
Higher Education Division

- Mr Engelbert RUOSS
Director
Regional Bureau for Science and
Culture in Europe
- Mr Jan SADLAK
Director
European Centre for Higher Education
(CEPES)
- Ms Stamenka UVALIC-TRUMBIC
Chief, Section for Reform, Innovation
and Quality Assurance
Higher Education Division

United Nations University (UNU)

- Ms Virginie AIMARD
Academic Officer in Charge of Science
Policy Dialogues
- Mr Janos J. BOGARDI
Vice-Rector

Science, Higher Education and Innovation Policy in South Eastern Europe

'Governments should recognize the crucial role of Science, technology and Innovation (STI) and of Higher Education (HE) in their national development policies and strategies and see STI&HE as the lever for socio-economic development, solving social and human challenges and reaching sustainable development. With this in mind, the reform processes in STI & HE need to be speeded up'.

[excerpt from the *Final Communiqué* adopted by the High-Level Round Table and International Policy Forum, Budva, Montenegro, July 2008].



United Nations
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Montenegro

Ministry of Education and Science