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Co-ordination of Research Policies with the Western Balkan Countries

WBC-INCO.NET

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Report on each of the thematic priorities defined in the first phase of the identification and consultation processes (ICT and Agro Food)

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1 Executive summary

Consultation sessions within the WBC-INCO.NET are the final phase of the priority setting process, which is the topic of Work Package 2. The aim of this process is to identify joint RTD priorities and RTD potentials for the Western Balkan region in a transparent and methodologically sound and developed way..

Initially, it was planned to encompass all 10 priorities of the FP7 Cooperation programme. However, after consultations among the governmental stakeholders from the region, and based on the current existing potentials and needs, it was concluded that there are only five areas of mutual interest, which priority setting should address. These areas are: ICT, Agro Food, Health, Transport and Environment. This report contains a description including the results of the first two consultation sessions held on ICT and Agro Food. The remaining three sessions on Health, Transport and Environment will follow and complete the series of consultation sessions.

There are two most important expected results of each of the five sessions: a set of at least 3 but not more than 5 thematic research priorities should be identified. Further, recommendations for major generic activities (e.g. in the field of research infrastructure, capacity building or networking activity) for each of the fields should be given.

Thanks to the cooperation with two other EU funded projects – SCORE (dedicated to ICT research) and BAFN (aimed at the Agro Food Theme), under the umbrella of which the consultation process for the mentioned topics had already been carried out for four of the countries (Albania, Bosnia and Herzegovina, FYR of Macedonia and Serbia), the process was completed providing background material for Croatia and Montenegro.

In accordance with that, respective consultation sessions took place, the one on ICT in Belgrade (December 10, 2008) and the one on Agro Food in Podgorica (January 15-16, 2009). They both resulted in recommendations for joint priorities and generic activities. Representatives of the SCORE and BAFN project took active part in both of the events. The consultation session on ICT was held back-to-back with the Conference: Towards an Information Society for the Western Balkans (December 11-12, 2008 in Belgrade), which was co-organized by WBC-INCO.NET and SCORE.

In the field of ICT, the following priorities were identified:

- ICTs for enterprises and e-Business
- ICTs for Government and e-Government
- Network technologies (internet and broadband technologies, mobile technologies)
- ICTs for learning and e- Learning
- ICTs for Health and e-Health

However, even though it is planned through the project to identify no more than 5 priorities per theme, in the ICT field two more priorities were chosen by at least half of the participating countries:

- ICTs for environment and energy
- Software engineering

In the field of Agro Food, the selected priorities were:

- **Food / feed safety and quality, food biotechnology**
  - Preservation of indigenous species and traditional food products (in SEE/WBC)
  - Combined exposure of food and feed to environmental pollutants
- **Biodiversity**
  - Investigation of regional genetic resources in the WBC (plants, animals and microorganisms)
  - Interdisciplinary field: Land use impact in agriculture on biodiversity (Topic: Renewable energy production in the agricultural sector and biodiversity conservation)

2 Consultation session on ICT: Key Issues and Discussion

The agenda and the list of participants are given in Annex 1

2.1 Welcome

A welcome to the participants as well as a brief introduction to the discussion was given by Prof Djuro **KUTLACA** from Mihailo Pupin Institute**.**

On behalf of the Serbian Chamber of Commerce, the participants were welcomed by Ms Jelena **JOVANOVIC**.

After that, Ms Tanja **KNEZEVIC** introduced the discussion on joint priorities, giving a brief overview of WP2 priority setting activities and main aims of the exercise. She also thanked the SCORE project consortium, for their willingness to share the results of their project.

The **aim of the workshop** was to define 3-5 joint topics which will be used as input to FP7 work programmes, the SEE-ERA.NET PLUS[1] call for project proposals, and as background material for development of a regional strategy, etc.

2.2 Presentation and discussion of national reports for Croatia and Montenegro

The SCORE[2] project provided a comprehensive overview of the ICT research landscape for four of the Western Balkan Countries, namely Albania, Bosnia and Herzegovina, the

[1] More information available at: www.see-era.net

FYR of Macedonia and Serbia. In close cooperation with the SCORE project consortium and adopting its methodology, the WBC-INCO.NET project provided input for the remaining two countries, Croatia and Montenegro. In that way, the basis was provided for determining research areas of joint interest in the field of ICT.

Since this event was organized jointly with the SCORE project, and back-to-back with the ICT Conference, the results for the four SCORE countries were not presented during this session; however, abundant material of the SCORE project was distributed beforehand. The final findings of both projects were presented at the Conference, on December 11.

Therefore, at this session, the results of Croatian and Montenegrin report development processes were presented in more detail, whereas a table with results from both projects combined for all 6 Western Balkan countries was used as an input for the discussion.

Ms Dijana **SIMIC**, chair of the eSEE-Initiative and expert appointed for development of the national report for ICT research in Croatia gave a presentation on the **ICT research environment in Croatia**.

First she introduced the policy framework in the field of ICT research in Croatia. A series of important strategic documents had been adopted over the last six years, starting with the Strategy "ICT – Croatia in the 21st Century" (2002). This Strategy was developed on the basis of a wide consultation process, and resulted in 17 recommendations encompassing research and ICT applications. After that, the E-Croatia Programme was prepared (2004), as well as the "One Stop Shop (HITRO.hr) Strategy" (2004) and the National Programme on Information Security (2005).

The Science and Technology Policy of the Republic of Croatia 2006-2010 was adopted in 2006. The policy identifies two areas of intervention – science and higher education, as well as technology and innovation.

In the area of science and higher education, there are four main objectives:

- Increasing investments into research and development, and their efficiency
- Restructuring Croatia's science system
- Strengthening cooperation between science, government and industry in the creation of new knowledge and goods
- Increasing participation of Croatian scientists and other bodies in EU Framework Programmes.

In the area of technology and innovation, some of the main objectives are: promotion of creation and growth of knowledge-based enterprises, stimulating demand for R&D from business, managing intellectual property, etc.

Other policy and strategic document adopted in this period are: Open Source Policy, the Broadband Development Strategy, the National Programme for the Digitalisation of Archival, Library and Museum Holdings (2006), the Strategy for the Development of eBusiness (2007) and the Strategy for Digital TV Switchover (2008).

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[2] SCORE (Strengthening the Strategic Cooperation between the EU and Western Balkan Region in the field of ICT Research)

Next, an insight into the **institutional framework** was provided. The Ministry of Science, Education and Sports is a central governmental body responsible for science and technology. Besides it, the National Foundation for Science, Higher Education and Technological Development, the Agency for Science and Higher Education, Business Innovation Centre of Croatia - BICRO Ltd. and Croatian Institute of Technology Ltd. – HIT, as independent specialised institutions are also part of the institutional framework for research.

Projects in the field of ICT research had been funded under different funding schemes during the last years. At national level, the Ministry of Education, Science and Sports funded more than 100 projects in ICT in 2008.

Croatia took part in 23 projects under the FP6 IST Theme. In 2007 calls of FP7 ICT, 5 projects were granted to Croatian research teams. Main performers of research in the field (70% of total number of activities) are from 8 main institutions and from 4 towns (Zagreb, Split, Varazdin, Rijeka).

Research fields that are covered by the granted projects are many and diverse (ICTs for Enterprises & e-Business, Knowledge Technologies, Network technology, Semantic technologies, Bioinformatics, Wireless & mobile technologies are only some of them). But, no matter how broad coverage of theme is, there is, at the moment, little or no cooperation between the performers and commercial enterprises. Priorities are not clearly set, which leaves wide freedom of choice to researchers. However, since no real connections with the industry exist, such research rarely achieves industry and business-relevant objectives.

In the area of **research infrastructures,** Croatia has a well developed communication network. As for the services available, researchers have at their disposal an authorisation and authentication infrastructure (AAI), which is part of European eduroam system (EDUcation ROAMing). CRO-NGI, a national grid infrastructure is also established. The Ministry of Education, Science and Sports finances access to digital books, journals and indices. Despite this, when it comes to the ICT research, it is still not as developed as it should be (no testing labs, infrastructure for testing new technologies).

Speaking of **key drivers** of ICT research in the country, the first point to be mentioned is that there has been a steady growth over the last years. Telecom market has opened. There is a steady growth of both, private and business users. 30.6% of households have broadband access and 98% of businesses are connected to Internet.

In 2002, the Government founded the National Competitiveness Council. Continuous promotion and stimulation of growth of the competitiveness and productivity of the Croatian economy is its main aim. In 2007, it published the Recommendations for increasing the Information and Communications Technology Competitiveness of Croatia:

Science and education serving to develop a knowledge-based society (increase in human capacities and in RTD investment)

- Technology available to all
- Fully developed electronic public administration
- More decisively apply electronic commerce
- Stimulate more rapid development of ICT
- Enhance the effectiveness of administration and the judiciary.

Ms Simic also provided the SWOT analysis of the ICT research landscape in Croatia:

STRENGTHS	**WEAKNESSES**
• ICT recognized among national priorities • Institutional support for research and technological development • Technology Foresight initiated • Policy of R&D funding growth • Number of both public and private institutions participating in ICT research • Presence in the FP6 and other EU programmes	• lack of specific ICT research priorities • mechanisms for implementation of policies and strategies • lack of communication on new institutions and funding opportunities • lack of communication on ICT research policy • little to no joint research between universities and research institutes and private companies • lack of communication on EU policies • lack of project management skills
OPPORTUNITIES	**THREATS**
• Ministry of Science, Education and Sports has recently approved opening of new positions in all Universities and Institutes for development • Strategy for Development of e-Business • Croatia is an affiliated country for FP7 • Public administration reform underway, drafting of a Strategy on e-Administration • Programme of digitalization of cultural heritage • EU accession process in advanced stage • Health system reform • Advanced communication network and a growing number of internet users • Global financial crisis	• ICT research infrastructure is still not sufficiently developed • Brain drain • Global financial crisis

Following the SCORE methodology, the **priorities** were presented in terms of country readiness (the appropriate human resources and research infrastructures exist in order to pursue research and development) and future potential (priorities that are considered attractive for the country and have future potential, but the level of readiness and capacity to pursue research and development is currently low).

Readiness:

- ICT for Enterprises and e-Business
- ICTs for Government and e-Government
- Software Engineering
- ICTs for Learning and eLearning
- Speech & Language Processing

Potential:

- ICTs for Health and e-Health
- Security Technologies
- Internet & Broadband Technologies
- Digital Content & Digital Libraries
- Grid Technologies

After the conclusion of the Croatian report, Ms Milica **DAKOVIC**, Institute for Strategic Studies and Prognoses (ISSP), presented the ICT research landscape of **Montenegro**. She started her presentation describing the institutional and regulatory framework in the field of ICT in Montenegro. According to her, what characterises both is transition and innovation.

So far, the main institution in charge of ICT development and policy in the country was the Republic Secretariat of Development, the role of which, at that moment, will be taken over by the Ministry for Information Society (institution that was to be introduced shortly). The legislation had also been undergoing important changes at that time. Namely, up until then, the Telecommunication Law from 2001 was in force, and it was replaced during 2008 by Electronic Communications Law. The new Strategy for Information Society Development was to be adopted in 2008 and thus replace the previous one, that had been in force since 2004.

The new strategy will have the following main priorities:

- ICT infrastructure
- Institutional and regulatory framework
- European goals and standards
- E-education
- E-business and E-banking
- E-government
- E-health
- Registers of the population

The overall legal framework for research is provided under the Law on Scientific and Research Activities, from 2005.

As for the main trends in ICT sector and research, liberalization in telecommunication is the main characteristic. What is interesting for Montenegro is that it is a country with the highest mobile phone penetration in the region (168.6% in 2007). Internet penetration increased to 31.5% in 2007.

Speaking of research environment in the country, an overview of **institutional framework** was given first. The Ministry of Education and Science is the main national authority in charge of research. It also started an initiative named MREN (Montenegrin Research and Education Network), the name given to the collection of all networking services and facilities, which support the communication and information requirements of the education and research community in Montenegro. Its activities are focused on management of the national research and educational network, planning, design and implementation of technological and developmental projects with emphasis on research networking and grid areas, representation of Montenegro in the field of European and World-wide research networks, and provision services for academic network in Montenegro.

The Agency for the International Scientific, Educational, Cultural and Technical Cooperation – **ZAMTES** was founded by the Government. It was for a long time the only institution appointed by the government to deal with matters of international cooperation, and is known and acknowledged as such by foreign partners.

The main research performer is the University of Montenegro - UoM, involved in main activities concerning ICT research in the country. Also, through its Center for Information Systems (CIS), it is in charge of connecting and managing of information systems as well as designing and realizing computer networks and software solutions for the University. CIS and UoM are participating in national and international research projects on ICT.

The Institute for Strategic Studies and Prognoses – **ISSP** is an independent research institute which is following information society development through internationally recognized ICT indicators. It takes part in national research projects and conducted ICT surveys in 2005, 2006 and 2007.

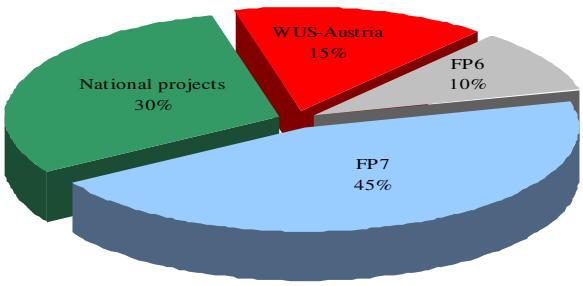

Fig 1: financing sources for ICT research projects in Montenegro

The research projects in the field of ICT are funded under different schemes and programmes. There are about 20 projects related. The ratio of the schemes is presented in Fig. 1.

Same as in the case of Croatia, the research **priorities** were given in accordance with the SCORE project. The following two groups were mentioned:

Readiness:

- ICT for Government and E-Government
- ICT for Enterprises and E-business
- Internet and Broadband Technologies
- Mobile technologies
- Network Technologies

Potential:

- Software engineering
- ICT for learning and E-learning
- ICT for health and E-health
- ICT for Agriculture
- Digital content and Digital libraries
- Distributed Systems
- Embedded and Pervasive systems
- Knowledge Technologies

A SWOT analysis was also provided:

STRENGTHS	**WEAKNESSES**
• Education and learning in the ICT field • Progressively growing ICT sector • Government commitment towards modernizing and developing ICT sector • ICT infrastructure • ICTs for E-government and E-business • Stability in financing of ICT research projects (such as migrating from .YU to .ME Domain) • Long-term sustainability	• Lack of regulation and inefficient existing legislation • Small number of realized research projects • Research infrastructure • Lack of information literacy • Digital divide between the regions • Low ICT investment per capita
OPPORTUNITIES	**THREATS**
• Highly skilled existing ICT workforce • Open market and liberalisation • IT market diversification • Regional competition • The advantage based on the small number of population	• Lack of IT specialists • Monopolies that still exist in certain services in the ICT area (land-line telephony, etc.)

2.3 Discussion and definition of joint research priorities

After the presentation of the two country reports, Ms Ulrike **KUNZE** provided input for the discussion on research priorities. The following was expected to be achieved by the discussion:

- definition of regional research priorities
    - as an input for the SEE-ERA.NET PLUS call to be launched in September 2009 (as defined also in the Description of Work of the SEE-ERA.NET PLUS project)
    - as an input for the FP7 work programme
    - as an input for the regional research strategy of the WBC
- definition of major generic activities to be implemented at regional level, which will also feed into a regional research strategy

The proposed structure of the discussion was:

- Step 1: Confirmation of the 5 priorities identified by SCORE; just use priorities with "Readiness" for most or at least half of the 6 countries (= appropriate human resources and research infrastructures available)
- Step 2: Decision on priority 6 (Mobile technologies) and 7 (Environmental sustainability, Energy efficiency)
- Step 3: Agreement on common procedure to identify the most important ICT research objectives: Each Western Balkan country has 8 votes for the most important objectives out of 15
- Step 4: Within each selected priority objective, each WBC can select as many research areas as desired
- Step 5: Establish a ranking list of the priority research objectives

The table of defined priorities was presented for further discussion. It was a merged list of priorities: the results for 4 countries (Albania, Bosnia and Herzegovina, the FYR of Macedonia and Serbia) were provided by SCORE, and for the 2 remaining countries (Croatia, Montenegro), the results were provided by the WBC-INCO.NET project.

Some members of the country delegations, mainly those from SCORE, stated that some changes in the priorities had taken place since the reports had been finished. Namely, due to the fast developments in the field of ICT research caused by the societal and economic development, in most of the countries some of the priorities that had been marked as POTENTIAL under the SCORE survey, had changed into READINESS (the appropriate human resources and research infrastructures exist in order to pursue research and development; POTENTIAL priorities are considered attractive for the country and have future potential, but the level of readiness and capacity to pursue research and development is currently low).

After a round of consultations among country delegations, the amended list was finalized. The priorities are given below:

	ALBANIA		BOSNIA-HERZEGOVINA		FYROM		SERBIA		CROATIA		MONTENEGRO		All WBC
ICT Research Priorities	Ready now	Future Potential	Ready now	Future Potential	Ready now	Future Potential	Ready now	Future Potential	Ready now	Future Potential	Ready now	Future Potential	**Readiness**
ICTs for Enterprises & eBusiness	✓		✓		✓		✓		✓		✓		6
ICTs for Government & eGovernment	✓		✓		✓		✓		✓			✓	5
Network technologies (Internet & Broadband Technologies, Mobile Technologies)	✓			✓	✓		✓		✓		✓		5
ICTs for Learning & eLearning	✓		✓		✓			✓	✓		✓		5
ICTs for Health & eHealth	✓		✓			✓	✓		✓		✓		5
Environment and energy…		✓	✓				✓		✓		✓		4
Software Engineering		✓		✓	✓		✓		✓			✓	3
~~Mobile Technologies~~					✓			✓				✓	1
ICTs for Agriculture						✓		✓				✓	
Digital Content & Digital Libraries		✓				✓			✓			✓	1
Distributed Systems	✓										✓		2
Embedded & Pervasive Systems							✓	✓				✓	1
~~Network Technologies~~		✓									✓		1
Knowledge Technologies						✓						✓	

Table 1: list of priorities defined during the consultation session on December 10

(N.B. In the table, the priorities `mobile technologies` and `network technologies` are crossed out, since it was unanimously agreed that they are both covered by the priority `Network technologies (Internet & Broadband Technologies, Mobile Technologies) which is also given in the table)

Ms Tanja KNEZEVIC provided a brief overview on the proposal for a regional research strategy. The need to strengthen cooperation in the field of research and to address it in a systematic and strategic way caused that it was endorsed by all WBC Science Ministries. Since it became obvious that the possibilities within FP7 did not always fit the actual needs and possibilities to cooperate within the region, it was concluded that other existing funding mechanisms need to be identified and better used (IPA, NATO SPS, etc.). As background material for this strategy, the White Paper developed within the SEE-ERA.NET project was mentioned[3]. The results of the consultation sessions (recommendations, etc.) will be used as an input to the strategy. The ideas that should be gathered are: what could be done in the field of networking, further infrastructure development, etc. A dissemination campaign is planned after the process, since it is very

[3] `White Paper on Gaps, Overlaps, and Opportunities in View of the Extension of Bilateral RTD Programmes and Initiatives towards Multilateral Approaches`, authors E. Rost, J. Sonnenburg, R. Hanatschek, K. Heinz,P. Barré, R. Fuchs, A. Gjonaj, F. Gruber, S. Koprivica, S. Krušic, P. Mayr, I. Mihail, H. Panjeta, N. Sidiropoulos, V. Stefov, A. Stoklaska, S. Szigeti, J.-L. Teffo, I. Videnovic, A. Vutsova, D. Simon, H. Matthies

important that research communities are aware of different cooperation possibilities which exist.
Concrete proposals for the field of ICT research in that respect were:

- Connections should be made with the eSEE initiative, and the eSEE+ agenda should be taken into consideration
- A regional living lab should be developed, or the region should at least consider to join the existing ones
- Networking of researchers and research institutions should be further enhanced
- Foresight analysis should be taken up by all WBC.

Another suggestion was to involve the Regional Cooperation Council in the process of strategy development. It was explained that they had already been actively participating in the process of preparation and promotion of the idea.

3 ICT Conference: joint efforts of the WBC-INCO.NET and SCORE projects

The agenda can be found in Annex 2

The aim of the ICT Conference was to address Information and Communication Technologies stakeholders, such as leading researchers and experts from academia and industry, and representatives of Ministries from the WBC. The conference aimed at formulating a coherent strategy and actions for the development of the ICT research environment in the WBC and for the region's integration in the wider European effort to achieve the Information Society. During the Conference, the regional ICT research needs, capacities and priorities were discussed, the future challenges of the Western Balkan ICT research environment explored and concrete recommendations/actions for enhanced regional ICT research collaboration put forward.

The Conference was co-organized by the two European projects SCORE and WBC-INCO.NET with the support of the European Commission, and hosted by the Serbian Chamber of Commerce. It took place on **December 11 and 12, 2008.**
The SCORE project is an FP6 project aimed at strengthening the strategic cooperation between the EU and Western Balkan region in the field of ICT research. As the key outcomes of the project, the ICT Strategic Research Agendas for the Western Balkan countries was developed, as well as the Policy Paper with 'Recommendations for shaping EU scientific co-operation with the Western Balkan Region in the field of ICT research: 2007-2013"[4].

There were about 110 participants in total. Apart from the consultation session participants, representatives of SCORE project partners were present, then the EC

[4] More information on the project can be found at *www.score-project.eu*

representative from DG INFSO as well as representatives from numerous research institutions and enterprises.

After welcome addresses by Mr Milorad **BJELETIC** from the Belgrade Open School and Ms Jelena **JOVANOVIC** from the Serbian Chamber of Commerce, Prof Radoslav **CEROVIC**, Assistant Minister of Science and Technological Development of Serbia gave an inaugural speech.

On behalf of the two projects, Mr Raphael **KOUMERI** and Ms Ulrike **KUNZE** gave brief introductory remarks.

Mr Vlassios **VENNER** from DG INFSO presented the FP7 ICT Theme. He pointed out that this event was an example of good joint activities, and that the aim of two projects was to bring the WBC closer to the European Union and ERA. He described 7 challenges of the ICT programme as well as statistics on participation of the Western Balkans in the previous call. He pointed out that EC needed feedback from the region, if they are to assist the region in bringing it closer to EU research.

As a reaction to his presentation, one of the Albanian representatives asked if there were any possibilities for WBC targeted calls within FP7. There used to be targeted calls for the WBC, but currently there is no call for the WBC.

Mr Venner answered that for the time being, no plans are made for launching another targeted call. Currently, two projects from previous targeted calls are ongoing, therefore, the EC will wait for their results and evaluation to decide. Maybe another targeted action can be expected in 2011 Work Programme.

Mr Djuro KUTLACA presented the ICT environment in the Western Balkans, focusing on R&D investment in the ICT sector (survey done by IPTS), on the WBC in the Global Competitiveness Report (World Economic Forum, 2008), the WBC in the Global Information Technology Report (World Economic Forum), and on the ICT research environment in WBC (results of the SCORE and WBC-INCO.NET projects).

The first part of the presentation showed the *expenditure on ICT in EU* and the USA, compared through several indicators (e.g. contribution of ICT and non-ICT sectors to total BERD intensity GDP% 2004, key figures for ICT sub-sectors, business R&D profile of the ICT sub-sectors, etc).

The second part of the presentation was dedicated to results of *WBC in the Global Competitiveness Report* (2008). Again, several indicators were presented and breakdown per country shown – GDP per capita, Global Competitiveness Index (further shown through 12 pillars: institutions, infrastructure, macroeconomic stability, health and primary education, higher education and training, goods market efficiency, labour market efficiency, financial market sophistication, technological readiness, market size, business sophistication, innovation). Among these 12, Technological readiness and Innovation were marked as the most important ones. The results, which cover in total 134 countries, showed that in most of the cases Croatia is the best positioned country in the region. Also, among non-EU European and Central Asian Economies, Croatia is ranking first,

followed by Montenegro, the FYR of Macedonia (rank 9) , Serbia (11), Albania (15) and Bosnia and Herzegovina (16).

In the next part, an overview was given on the results for the *WBC in the Global Information Technology Report.* Indexes were given for Network readiness, environment component, market environment, political and regulatory environment, infrastructure environment, etc. Again, the results showed that Croatia is the leader in the region.

The final part gave an insight into the results of the two projects as regards the *ICT research environment in WBC,* described country by country, covering institutional and strategic framework, ICT research projects, key drivers of ICT research, etc.

In Albania, even though the strategic framework exists, an official organisational structure for the implementation of the ICT strategy is still lacking.

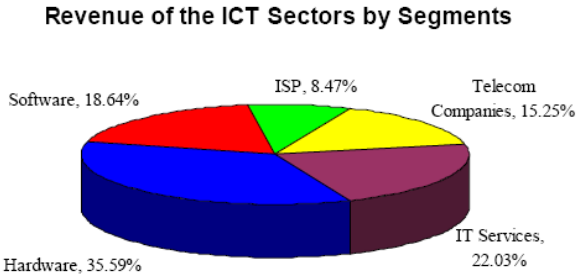

Fig. 2: Revenue of ICT sector by segments: Albania.

In Bosnia and Herzegovina, the Strategy and Action Plan for Information Society Development has been adopted for the period of 2004-2010, but not much of it was implemented.

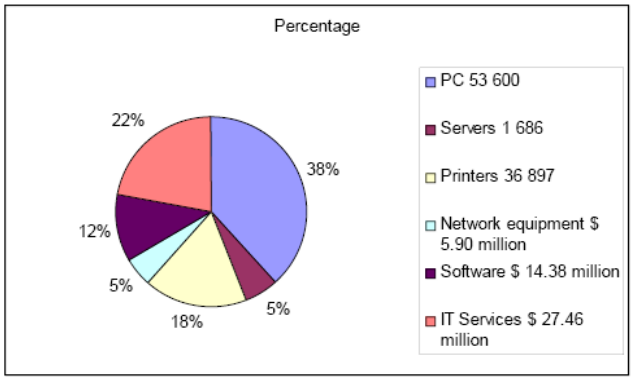

Figure 2 - ICT sales in 2005

Fig. 3 Key drivers of ICT research in Bosnia and Herzegovina

As for the FYR of Macedonia, three main documents are supporting ICT research: the e-Declaration, the National Strategy for Information Society and the National strategy for development of electronic communications with the information technologies.

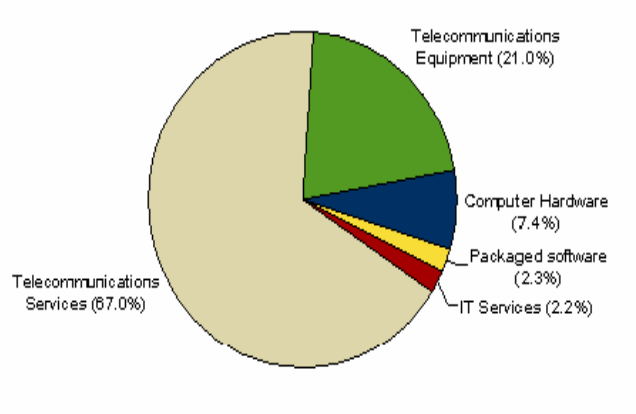

Fig 4: Key drivers of ICT research in FYR of Macedonia

Key (technological) initiatives of the ICT sector are: the *Center of Excellence* – CoE, foreseen as a tool for promoting and implementing the transfer of knowledge and technologies generated by individuals, Universities and also by existing enterprises to the business sector, by establishing innovative and high-tech Small and Medium Enterprises (SMEs) and *Vardar Silicone Valley* (initiative of the Government for the creation of a place where incentives for investments will be raised, all connected and devoted to ICT development).

In Serbia, the key strategic document is the Strategy for Development of an Information Society of Serbia. It is a framework document which gives developmental directions and identifies key areas and activities in the Information Society domain.

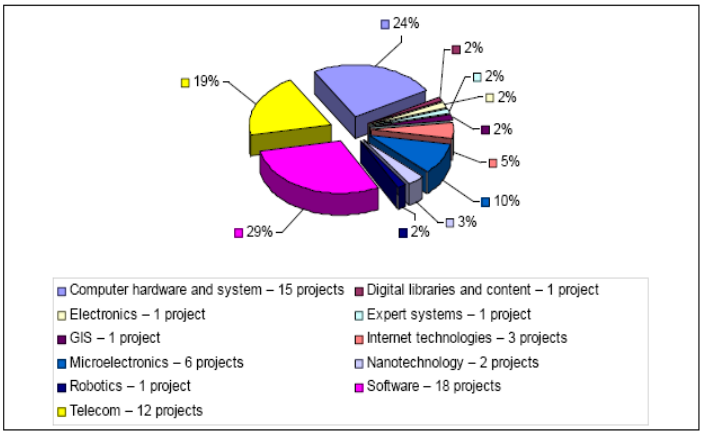

Figure 5 – Key research fields of national ICT research projects

Fig. 5: Key drivers of ICT research in Serbia

The main strategic documents for Croatia were already mentioned earlier in this report.

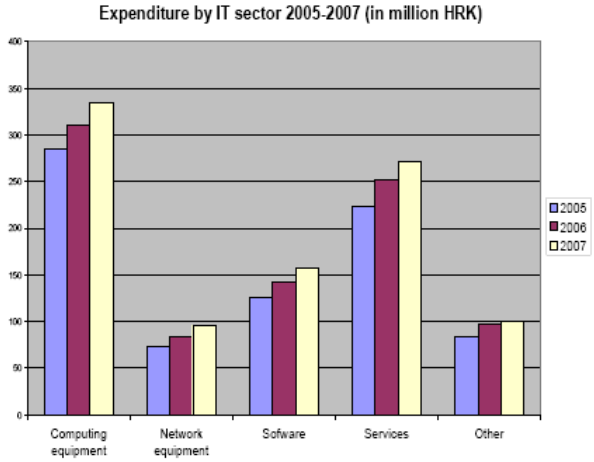

Figure 1. Overall expenditure by IT sector in Croatia 2005-2007.

Fig 6: Key drivers of ICT research in Croatia

As for Montenegro, a set of laws had been adopted from 2001 on, in line with EU directives: the Telecommunications Law, the E-commerce Law; the Intellectual protection Law; the Central Register Law as well as the Electronic documents Law. The Strategy for information society development in Montenegro was adopted in 2004, with a new one well underway *(details were already given earlier in this report)*

The comments on this presentation were mostly related to the statistics used in the countries, i.e. methodology of collecting data. In Croatia, data from business sector investment are also collected, which is something that does not apply for the rest of the countries.

Ms Snezana PANTELIC and Mr Djuro KUTLACA commented on the current situation in Serbia. For example, there are no data on use of ICT, or how are enterprises carrying out research. There are even 3000 researchers active in ICT development projects that are not officially taken into consideration when data are collected for statistical purposes. The problem lies in the definition of research entities.

Mr Miroslav **RADINKOVIC** from the Ministry of Science of the Republic of Srpska pointed out that administrations in the region are suffering from lack of human capacities, and that no improvements, including those in statistical systems are to be expected until the situation in that respect improves.

Ms Milica DAKOVIC, ISSP Montenegro said that, to her knowledge, all statistical offices are collecting data on IT research in accordance with EUROSTAT methodology, and that the reform has been ongoing in Serbia for already 2 years. As for Montenegro, the current reform of statistical system does not include RTD indicators, but that ISSP is conducting their research in line with EUROSTAT.

However, WBC expected more support when compared to New Member States; so there are f. ex. specific capacity building activities dedicated to new Member States, whereas the WB participates in the FP on an equal basis as Member States.

Ms. Ulrike KUNZE mentioned that certain support activities exist in each country, e.g. NCP support. She also mentioned the SEE-ERA.NET PLUS project and the RePSEE programme developed by SEE-ERA.NET consortium as other support possibilities.

Through the RePSEE programme, it is planned to base the activities on four pillars: Joint research projects, accompanying measures, innovation, young researchers).

After Prof KUTLACA`s presentation, Ms Jelena PANTELIC from Information Society of Serbia and Montenegro presented the Regional ICT Research and Development Priorities, based on the results of SCORE and WBC-INCO.NET. First, she explained the methodology of the consultation process used by SCORE project, which was carried out in two phases: Phase I – expert consultation (in total 68 experts from 4 countries participated; the results of this phase were Initial Strategic Research Agendas/SRAs) and Phase II – open consultation (181 respondent from 4 countries were asked a set of questions on the Initial SRAs; the results were the final papers). In Croatia and Montenegro a similar model was used, however, without open consultation.

As a result, a list of common priorities was set:

Entire list of regional priorities (13)

	ALBANIA		BiH		FYROM		SERBIA		CROATIA		MONTENEGRO	
ICT R&D	**R**	**P**	**R**	**P**	**R**	**P**	**R**	**P**	**R**	**P**	**R**	**P**
ICTs for Government & eGovernment	✓		✓		✓		✓		✓		✓	
ICTs for Enterprises & eBusiness	✓		✓		✓		✓		✓		✓	
Internet & Broadband Technologies	✓			✓	✓		✓			✓	✓	
Software Engineering		✓		✓	✓		✓		✓			✓
ICTs for Learning & eLearning		✓	✓		✓			✓	✓			✓
ICTs for Health & eHealth		✓	✓			✓		✓		✓		✓
Mobile Technologies					✓		✓				✓	
ICTs for Agriculture						✓		✓				✓
Digital Content & Digital Libraries		✓				✓				✓		✓
Distributed Systems		✓										✓
Embedded & Pervasive Systems								✓				✓
Network Technologies		✓									✓	
Knowledge Technologies						✓						✓

Table 2: List of priorities, as defined by the two projects

(N.B.: this list was slightly modified during the Consultation Session on December 10, *see page 14*).

During the discussion, the comments focused on the necessity to switch from supply driven to demand driven priorities. E.g. the priority “ICT for agriculture” was not included since there was no readiness from the countries. The case in FP6 was that e-health and e-government were supply driven, and that is why they are on the priority list.

Mr RADINKOVIC commented that agriculture should still be among the priorities.

Prof Radovan **STOJANOVIC** from Montenegro said that during the consultation session, discussions were ongoing about adding priorities to the list, also those related to environment and energy.

Ms Soumi **PAPADOPOLOU** from PLANET said that within SCORE, fields of ICT for environment and energy were initially mentioned, but were later dropped in the study.

Ms Pantelic commented that there is a potential for these two fields and that it has to be taken into consideration.

Mr KOUMERI responded that it is difficult to distinguish all topics. Some of them are included under other Themes, such as agriculture. The information collected within the projects can also be taken up by other available programmes, not only by FP.

Mr BJELETIC said that in the future, the policy dialogue has to be conducted at national level.

Mr. KUTLACA commented on this that at national level, the lack of horizontal connections between the stakeholders is evident. Partnerships of all players must be considered already at the strategy development stage, foresight has also be used.

Ms Diana SIMIC proposed to the EC that they should consider developing special programmes for WBC researchers that would enable them to spend 2 or 3 months working with consortiums of the ongoing FP7 projects.

Mr VENNER answered that the proposal is interesting, and that it is feasible under ongoing NoE. They should be addressed, and encouraged to invite researchers from the region to participate in their work.

Ms Soumi PAPADOPOLOU from PLANET and Mr Rene **WINTJES** from UNU-MERIT presented **Key Barriers & Challenges in ICT Research – Regional and EU context.**

The presentation covered three main perspectives of the barriers and challenges: perspective of WBC region, EU context, and FP7 context (barriers to cooperation between EU and WBC).

Research capabilities in the **Western Balkan region** have been affected by the rapid political changes and transformation from state run to market economies. Barriers are met at the institutional and financial level, education related barriers, human resource barriers, ICT business sector related barriers, infrastructural, cultural and other barriers.

In the **EU context**, the main challenges lie in research policy, i.e.: increase of ICT research in Europe in view of the gap vis-à-vis other parts of the world, reduction of fragmentation of public funded research and promotion of co-operation and coordination in order to increase focus and critical mass, development of the ERA; promote mobility of researchers, more excellence in universities, grants for research co-operation, improvement of the linkages between Science and Industry, development of more effective systems for technology transfer, research exploitation and valorisation, systemic policy making.

The main **challenges to EU-WB cooperation** are the following**:** although a number of support actions have been completed in the region, there is still a need for support to organisations with regard to understanding the FP Programme and procedures. Further challenges: need for stricter evaluation and review procedures with regard to the sustainability and impact of ICT R&D projects (both at the proposal and project implementation phases); need for targeted FP calls in the region (in previous FP6 calls, targeted objectives for the region enabled Western Balkan organisations to participate more successfully; the same approach should be retained in future FP calls); need for research & development in ICT application areas such as eGovernment, eBusiness and eLearning which are key common priorities for the region.

However, Mr VENNER commented that there are no plans for targeted calls for the next couple of years, since all WBCs are now associated to FP7.

In the afternoon session, a panel discussion on the topic took place: **What is needed for regional cooperation – role of the WB countries.**

Representatives of governments, research community and business sector took part as panelists *(a complete list of panelists can be found in the agenda – Annex 2)*.

Prof Dragan **DOMAZET** from the Faculty of Information Technology (Belgrade) gave a presentation on how to improve the IT education in SEE. Currently, only few faculties in this region offer academic programmes for IT professionals. IT programmes in primary and secondary education are not appropriate, and in general, computer literacy is low. The region could play a more significant role in software development business and IT service industry, if there were not the following problems:

- Lack of engineers to develop its software industry in the fields of Information technologies, Information Systems and Software engineering
- Lack of students in the fields of: Computer Science, Information Technologies, Information Systems or Software Engineering
- No special support from the Government for Computer Science, Information Technologies, Information Systems or Software Engineering students, no incentives, special scholarships.

Possible solutions to the situation could be:

- A special fund to provide scholarships to IT students
- A general PR campaign for IT studies
- Grants to universities to improve their IT programmes.

He also noted that there is a lack of policies and cooperation between industry and academia.

One of the problems is also the definition of `research entity`, what was already highlighted by Prof KUTLACA.

All other participants in the panel presented some of the ongoing activities of their institutions as well.

Interesting **ideas** and recommendations were heard, such as establishing networks of universities, paying closer attention to development of capacities based on the principle: „you have to be good at home if you want to be good out of home“, provision of incentives to participation in FP7 – travel grants, support to proposals that have not passed financing threshold, etc.

Needs and lacks were identified, such as capacity building, concrete assistance for FP7 proposal writing, training programmes, etc.

Existing **opportunities and initiatives** were mentioned, such as:

- Conference on calls 5 and 6 of FP7 ICT Work Programme on May 28 and 29, 2009 in Belgrade
- eSEE agenda PLUS: objective to build data base on researchers and companies

- RePSEE programme and its funding opportunities (SEE-ERA.NET PLUS call)
- Joint research strategy for the WBC.

Day 2 (December 12) started with a summary of the previous day, done by Ms Ulrike KUNZE. She gave a structured overview of the activities starting with **FP7 and ICT** – lack of targeted calls, no specific measures foreseen for 2009-10, possibilities for capacity building under Networks of Excellence (NoE).

Then she went on about **priorities**, how the discussion on them is an ongoing process, reasons for setting them are different, so are the ways of implementing them. The need for horizontal connections was underlined.

There were many **important issues raised** during Day 1. There is an ongoing need for support of young researchers, networking and mobility activities, demand driven ICT research has to be created, and ICT education should be improved.

There are positive examples of activities, such as the RePSEE Programme, the eSEE agenda + and the creation of data base on ICT researchers and companies, the Conference on calls 5 and 6 of FP7 ICT Work Programme, etc.

Discussion on **ongoing and future activities** stated that regional cooperation among research Ministries is strong and ongoing, and that some important measures and activities are taken up by them (RePSEE, Research Strategy).

It was mentioned that there should be more forums similar to the Conference.

To give an introduction for discussion, three presentations were made.

Ms Svetlana BOGDANOVIC, FP7 ICT NCP from Serbia, introduced the ICT Work Programme and the planned 4th call. Briefly, she gave basic statistics of the previous 3 calls – around 500 projects were approved in total (2.1 bill euros). In 2009-10, the WP envisages new calls for proposals. Also, under Joint Technology Initiatives new resources are to be committed, as well as under the Ambient Assisted Living Joint Programme.

801 mill EUR is to be allocated to the 4th call (published on November 19, 2008 and open until April 1, 2009). Research challenges should encourage firms to explore more innovative options than they would otherwise pursue. Focus will be put on higher-risk ICT collaborative research in a medium to long-term agenda. Activities within all 7 challenges were introduced.

FET – Future and Emerging Technologies were mentioned. It has two complementary inter-linked schemes: FET Proactive (top-down, 110 mill euros) and FET Open (bottom-up, 61 mill euros).

Activities of INTERNATIONAL COOPERATION will focus on reinforcing cooperation between researchers across the enlarged Europe in a specific ICT field, with support provided for secondment of PhD or post-graduate students and researchers and the organisation of targeted research workshop and events in view of improving cooperation.

Ms Gordana DZAMIC from Customs Administration of Serbia presented a FP6 project RACWeB that started on January 1, 2007, with duration of 30 months. The consortium has 4 scientific and technology partners, as well as 4 central customs administrations (Serbia, Montenegro, Albania, FYR of Macedonia) and 3 IT consulting companies from

the region. One of the expected results is detecting frauds in unexplored field of inward processing of data, development of compatible system used in all countries, and faster but safer trade.

Mr Blaz **GOLOB** from the Centre for e-Governance Development in SEE presented the contribution of EU or neighbouring countries to development of IT society in WB/SEE. Its vision is to achieve a successful development of Information Society in SEE that will contribute to a better future development of Europe.

The mission of CeGD in eGovernance development is the coordination of activities, transfer of knowledge and education, training and research.

Its objectives are, among others, improvement of democratic and economic processes, support to eSEE and bSEE (Broadband South Eastern Europe taskforce) initiatives, network of programmes and training nodes, support to institutional links in SEE, etc.

CeGD stakeholders and recognised partners are: the Regional Cooperation Council, the Government of Slovenia, the UNDP eLead programme, the INA Academy from Greece, the European Foundation (Spain), SRC.SI, Microsoft, Siemens, and as new members Cisco, ICT SMEs/Governments

Activities are grouped in development and maintaining of web-portal *www.cegd.eu* , education, training and research (e-Governance Academy) and different projects.

Before the final panel discussion, Ms Ulrike KUNZE reported on the consultation session of December 10, 2009 under WBC-INCO.NET: the results should be used as input (to the planned SEE-ERA.NETPLUS call, to the FP7 ICT WP and to the Regional Research Strategy), and recommendations of generic activities should be developed for the Ministerial conference, aimed at launching the regional strategy for research.

Next, she described the concept of the consultation session, and gave an overview on the priorities defined *(see Table 1, page 13).* She also described the concept of the SEE-ERA.NET PLUS call. Then she listed some of the recommendations that were heard during the previous two days.

The panel discussion followed with the title: **What is needed for regional cooperation: the EU and the regional dimension**

The list of panelists is to be found in the conference agenda – Annex 2. They described their activities and experiences and gave their opinion on the topic.

` We are in the front yard of Europe, which is a beautiful house` can be considered as a summary of the present situation in the region.

Difficulties defined were: to regional SMEs is still a problem to allocate funds for research. It is difficult and takes time to introduce changes. Many agencies have been founded, which proves that authorities are aware of the existence of different problems and necessity to address them institutionally, however, their activities are still insufficient. The region is at the point where no waste of time is allowed, if the WBC wants to join European research.

Several **needs** were identified, which can also been considered as proposals for activities, either national or regional. First, we lack lists of successful participants and individuals from the region in FP that can be addressed on several issues for assistance, possible partnerships, advisory services, etc. Again, need for assistance in preparation

of proposals was underlined. Also, support to students has to be increased. Next, number of activities such as brokerage events should be increased.

Among examples for cooperation, two possible approaches were mentioned: **top-down** and **bottom-up**. As an example of top-down activity, it was mentioned that we are newcomers to the FP and our network is still not well developed. What could help is the registration of researchers in the EU FP evaluators' database, who then would be able to get better insight into the system of Framework Programme. Concerning the bottom-up approach, there is a need for new and adaptable products, which should be explored.

There was also a comment to the mentioned eSEE **data base**. The suggestion was that it should not be just a data base, but that development of a search engine would be more appropriate and fit to the needs. It has been often proven that we usually use Google or ask direct questions to people when we need information on researchers and research teams and their work.

Other **suggestions** were that we should all follow what had been prescribed by laws. We all adopted numerous laws, but their implementation is still at the low level. Also, synergies with public institutions should be strengthened.

Networking and infrastructure investment were underlined again, as important suggestions.

There was also a suggestion to start a regional **forum** that would be used for exchange of information.

Marie Curie funding schemes should be better utilised, since the current level of participation is very low throughout the region.

After the discussion, Mr Viktor **NEDOVIC**, Assistant Minister of Science in Serbia addressed the participants, reinforcing and underlying the importance of the regional cooperation, and expressing his certainty that we are on the right track. He stressed that there is a strong network of research Ministries with clearly defined activity lines that will provide a basis for the way forward.

Mr KOUMERI gave closing remarks and thanked all participants and hosts, considering the Conference to be a success.

4 Final list of priorities

- ICTs for enterprises and e-Business
- ICTs for Government and e-Government
- Network technologies (internet and broadband technologies, mobile technologies)
- ICTs for learning and e-Learning
- ICTs for Health and e-Health

However, even though it is planned through the project to identify no more than 5 priorities per theme, in the ICT field two more priorities were chosen by at least half of the participating countries:

- ICTs for environment and energy
- Software engineering

5 Consultation Session on Agro Food - Key Issues and Discussion

The agenda and list of participants are given in Annex 3

5.1 Welcome

Ms. Tanja **KNEZEVIC** welcomed the participants and introduced the discussion on joint priorities.

The Minister of Education and Science of Montenegro, Prof. Sreten **SKULETIC,** welcomed the participants, explaining that strengthening the links within the region is a priority to Montenegro. He underlined the support of the European Commission through different programmes and instruments. The WBC-INCO.NET project was described as one of the existing opportunities to strengthen the cooperation. He also highlighted the importance of the thematic field of Agriculture and the expected results of the workshop.

Mr. Velibor **SPALEVIC** from the EC Delegation to Montenegro introduced shortly actions of the European Union and its investments in the last decades – highlighting investments in infrastructure, institution building (e.g. in adapting the *acquis communautaire*), etc.

Ms. Elke **DALL**, coordinator of the WBC-INCO.NET project, introduced the project context and its objectives. She gave a presentation outlining also the priority setting activities. The outlook to use the defined priorities in the SEE-ERA.NET PLUS joint call was also highlighted.

Ms. Tanja **KNEZEVIC** highlighted in more detail the Work package 2 activities and also thanked Prof Minkov, who would present the results of the Balkan Agro Food Network (BAFN). The delegations including researchers, government and industry representatives from the whole region were welcomed.

The **aim of the workshop** was to define 3 to 5 joint themes which will be used as input to the FP7 Work Programme, the SEE-ERA.NET PLUS Joint Call for project proposals, and as background material for development of a regional research strategy for the WBC.

During a tour de table all participants were introduced.

5.2 Presentation of the results of the BAFN project

Prof. Ivan **MINKOV** from the University of Plovdiv, Bulgaria, introduced the priority setting activities carried out within the **Balkan Agro Food Network** (BAFN)[5]. He also

[5] More information on the project can be found at http://www.europartnersearch.net/bafn/

invited participants to cooperate with his Department of Plant Physiology and Molecular Biology, which is active in FP6 and FP7, NATO, Swiss NSF, IAEA, COST as well as in the activities of the National Science Foundation.

The idea of the BAFN project was to elaborate topics of regional priority, and it started with a mapping of the scientific potential (EU Agri Mapping, Mapping of Animal Science). Expert panel meetings were organised (country specific meetings with approx. 15-20 experienced scientists), national reports were prepared and common topics established. European significance of the topics was another criterion addressed by the project.

He pointed out that it is of practical importance also to define topics for the FP7 work programme. The one for 2010 is already being discussed.

Mr. **MINKOV** outlined the answers to several questions on important areas (areas developed before 1990, those developed since 1990, what are the prospects for the future, developed and undeveloped areas to be supported by the EU, areas to be used in Western Balkan cooperation, most important projects for the countries to be presented to the work programmes).

(The slides summarizing the topics can be found in Annex 4)

To support the agro-food research community, the topics of infrastructure, human potential, support to organization of research, and most important projects for the countries, resulted in answers on horizontal issues. The development of national programmes was highlighted in several countries, as national funds are more important than FP7.

(The slides summarizing the suggested measures can be found in Annex 4)

5.3 Research priorities defined in the BAFN project

5.3.1 Food technology and plant science appear as major research areas

Based on the number of researchers active in the field, the following areas seem to be important (more than 50% of the researchers work in the following scientific fields):

- "plant production and protection", "management of natural and biological resources" and "animal health" for Albania
- "economic, social and political aspects", "food technology" and "plant production and protection" for Bosnia and Herzegovina
- "economic, social and political aspects", "management of natural and biological resources" and "plant production and protection" for the FYR of Macedonia
- "economic, social and political aspects", "plant production and protection" and "food technology" for Serbia
- animal science (animal breeding, animal husbandry and animal nutrition) for all countries
- research in food safety for all countries

5.3.2 Answering future needs: areas recommended by WBC researchers

The following areas have been retained as important challenges for the future:

- Research on typical national food products, biodiversity conservation
- Research on zoonoses which have an influence on human health and on animal production
- Quality systems on food technology
- Sources of food allergens
- Food safety: chemical contaminants in food, food allergens and toxins in food
- Dietary supplements

5.3.3 The point of view of EU representatives

The consultation of NCP and members of the Programme Committee helped to identify the following areas which are of interest for cooperation between WBC and the EU:

- Biodiversity conservation & environmental protection
- Preserving national biological and genetic resources
- Animal husbandry, animal feed technology
- Food biotechnology, nutrition and dietetics
- Food biochemistry, microbiology, toxicology & biotechnology
- Sources of food allergens

5.3.4 Summary: Scientific fields recommended in the BAFN project

1) Biodiversity: conservation of genetic resources & indigenous species

2) Food safety: chemical contaminants in food, food allergens and toxins in food

3) Animal science: animal husbandry and zoonose

4) Food biotechnology: nutrition and dietetics

A topic to be suggested for the upcoming Work Programme was introduced (The Programme Committee meeting will take place on January 22, 2009. Mr. Minkov is a member of the Programme Committee and he seeks support to this initiative.):

Activity 2.1, Area 2.1.2

Title: Exploring Adaptive Mechanisms and Genetic Resources of European Resurrection Plants (WBC, Bulgaria, Greece, Portugal, Spain)

Mr. **MINKOV** also described the details of the idea, focused on resurrection plants that exist on the Balkan Peninsula and which are very resistant to stress and drought. They are important in the light of climate change.

The topic was submitted to EC on behalf of BAFN project and Bulgaria.

Ms. Ulrike **KUNZE** also highlighted the importance of initiatives that result in the submission of research topics to the programme committee.

Suggesting topics is considered as the most important approach. Not being too broad is important; the details need to be elaborated already at the proposing stage.

It was also recommended to use the help of European Technology Platforms, as they are an important source: Food for Life, Plants for the Future, Farm Animal Breeding and Reproduction, Global Animal Health (the last one is currently in the stage of building up national mirror groups). The Standing Committee on Agricultural Research (SCAR) is another possibility, especially since the WBC are represented in this committee. National experts can also give input to the work programmes. Another recommendation was the creation of national technology platforms, based on the European ones, that could then lead to the creation **of common Regional Technology Platforms. Two European** TP's should be considered: Food for Life (already in the 3rd stage), and Plants for the Future. Mr. Minkov also has connections to these platforms.

In order to develop a platform, an organisation needs to be assigned (possibly a Ministry) to carry out the task. The example of a Romanian Institute for Bio-Resources and their case was used for illustration. They used funds raised from the Ministry (approx. 50.000 euros). The creation of the platform should be started by the industry, at least to be created in fields where the industry needs them. Also, the involvement of bigger companies are considered as important (e.g. Unilever in Romania), or, where this is not possible, at least public-private partnerships (not on the basis of science only). A common document for the country needs to be created and then the EU technology platform can be invited to initiate it.

The EU Technology Platform on Animal Health could be a good starting point, as a similar exercise is currently carried out, with the aim to prepare national mirror groups.

ERA-NETs are another important source for cooperation and important for the integration of the WBC to the European Research Area. E.g. at the moment, discussion is about the further support for the ERA-NET in plant genomics.

5.4 Presentation of the background reports by the WBC-INCO.NET project

Complementary to the BAFN reports, the WBC-INCO.NET project prepared reports focusing on Croatia and Montenegro, as the BAFN covered only Albania, Bosnia and Herzegovina, the FYR of Macedonia and Serbia.

Ms. Zeljka **MESIC** from the Faculty of Agriculture in Zagreb, presented the national report for **Croatia** prepared in the frame of the WBC-INCO.NET project. The report includes secondary analysis and SWOT analysis, and it is also based on interviews and previous research. She highlighted that Croatia is a net importer of food and outlined the national agricultural policy with its legal background and support schemes. The economic data she presented indicated that production in the agriculture sector had been increasing but share of GDP had been decreasing. She described important destinations for export and supplying countries. The main sub-sectors in Croatia are cereals (mainly maize, wheat), oil crops (soybean, sunflower, oilseed rape), fruit (grapes, apples, plum), and vegetables (potatoes, cabbage, tomatoes). Life-stock production is also of importance, with small production units prevailing. Cattle and beef as well as poultry (the only product that self-sufficiency is secured) production are significant. In the dairy sector, production is insufficient and expensive and does not meet the needs of the country.

She outlined that research expenditure had constantly been growing but the private sector invested insufficiently. The funding models are institutional and project funding. There are 7 active universities in Croatia. At the University of Zagreb several faculties

deal with Agro-Food issues, also universities in Osijek and Split are active. The Faculty of Agriculture in Zagreb is involved in projects within the programmes of FP6, FP7, TEMPUS, Interreg and COST.

Regarding R&D priorities, she outlined the importance of an investment increase. In addition, she emphasized that efficiency needs to be increased, networks and cooperation need to be strengthened, European and international research projects need to be included, and infrastructure and human potential need to be strengthened. Furthermore, she outlined the importance of rural development, environmental protection and climate change, modernisation of production, organic agriculture, food safety and quality and the role of social sciences.

Main funding bodies in Croatia are the Ministry of Science, Education and Sports, the Ministry of Agriculture, Fisheries and Rural Development, funding projects through the Council for Research in Agriculture (ARC). The Ministry of Economy, Labour and Entrepreneurship supports research through the HITRA Programme and the "development of knowledge-based enterprises". ARC supports the Fund for Applied Research Development in Agriculture, within four annual priorities:

- Development of income and employment diversification on family farms in the function of rural development
- Increase family farms' competitiveness through innovation and new technologies
- Influence of agro-ecology, economy and social conditions on the expansion of agriculture
- Organic agriculture.

In the period 1998-2004 ARC projects have encompassed the following biotechnology fields: crop production, horticulture, family farms, and organic production. Other fields like livestock production, genetics, food technology, etc. are of less importance in the national Programme.

The funding is complemented by international funds: PHARE, ISPA, SAPARD; CARDS; IPA - IPA replaced SAPARD under its fifth component, which is then called IPARD.

Bilateral projects are ongoing with Germany, the Netherlands, Italy and Sweden. In parallel, there are ongoing projects with the World Bank.

Ms. Mesic also presented a SWOT analysis for the Croatian Agriculture Research for science and industry sectors.

Strengths (S)	**Weaknesses (W)**
SCIENCE 1. high number of education institutions and centres 2. highly qualified staff (scientists) 3. R&D programs and strategies 4. Involvement in international projects 5. Existing support centres for the development oft he sector INDUSTRY 1. favourable production conditions (climate) 2. production technology in some areas 3. modern small scale food industries 4. highly developed tourist market	SCIENCE 1. inadequate programs of agro-food education 2. underdeveloped sector of adult education 3. low investment in educational infrastructure 4. low number of available experts 5. low networking of institutions INDUSTRY 1. low competitiveness of small scale producers 2. low compliance with EU safety and quality standards 3. insufficient organisation of production? 4. negative trade balance in the sector 5. undeveloped distribution channels
Opportunities (O)	**Threats (T)**
SCIENCE 1. improvement of agro-food education 2. better cooperation of science and industry 3. higher involvement in European research area INDUSTRY 1. better organisation of producers 2. modernisation of SMEs 3. adopting EU food safety standards 4. agro-tourism 5. accession to EU – availability of EU funds 6. establishment of private consultancy services 7. improvement of networking between producers, industries, research centres	SCIENCE 1. low priority of the sector in scientific community 2. limited financial resources for research 3. slow process of changes in the scientific research INDUSTRY 1. increased competition resulting from EU accession 2. low investments in modernisation and infrastructure 3. limited sources of financing

Further details to the aspects she raised in her presentation are available from the detailed country background report that was prepared as a part of preparatory activities for the session (*National Report on Agro-Food Sector – Croatia*).

Mr. Miomir **JOVANOVIC** from the Biotechnical Faculty in Podgorica presented the report for **Montenegro** which he prepared together with Ms. Aleksandra **DESPOTOVIC**.

The positive trend in macroeconomic terms was the starting point of his presentation (GDP raise). Agriculture and food production are still very important sectors. However, Montenegro is also a net importer of agro-food products. The major products are wine and tobacco. The active agricultural population has been heavily reduced since the 1960s. Current structure of Montenegrin agriculture can be divided to: 65% life stock production, 35% crop production. Montenegro does not fully use its production potential.

There are 321 agro-industrial enterprises, where HACCP standards have been introduced in the last few years.

Agro-food research is focused on the university (almost ¾). The institutional stakeholders include: Ministry of Education and Science (active in implementing a new law and strategy) which is responsible for the research in Biotechnical faculty. Montenegro has increased the number of bilateral cooperation agreements and participants in international programmes (FP, NATO, etc.). Furthermore, Ministry of Agriculture, Forestry and Water Management is responsible for the overall agro-policy in Montenegro. The National Strategy on food production and rural development was adopted in 2006. The policy objectives include sustainable resource management, food safety, adequate standard of living and rural development, increase in competitiveness. The national programme in this regard supports the activities.

The University of Montenegro is the main scientific actor, but there are also 2 private universities active.

Mr. Jovanovic also presented different aspects of the annual expenditure for R&D in Montenegro and highlighted the financing of R&D by government and industry. The expenditure is expected to be increased in the next years (as percentage of GDP).

Institutional support is also provided by the Biotechnical Faculty, as the mission of the faculty is a backbone for the whole sector. It carries out research, services and higher education.

The budget allocations for agriculture and rural development increased, and, in line with that, the share of the Biotechnological Faculty and the Institute for marine biology increased as well. Consequently the total number of scientists/researchers increased (although number of assistant researchers with a higher education degree decreased). In January 2009, 10 agro-food research organisation units belonged to the Biotechnical Faculty.

More than 2/3 of the research personnel work on vineyard growing, wine making, orchard growing and sub tropical cultures and continental fruit growing. On the other hand, animal sciences seem to have a low share compared to the importance and potential of animal husbandry in the country. This also applies to economic, social and political sciences of agro-food, as well as to forestry, veterinary etc.

There is a significant opportunity for further development. The European Agency for Reconstruction supported both, the laboratories and capacity building through several projects that had been carried out over the last several years.

70% national projects, FP7, SEE-ERA.NET, Tempus, SEEDnet and IPA are further project funding sources.

The Multiannual Programming Document for IPA contains also agriculture and food safety. Agriculture is a very important sector for European integration.

According to the number of researchers, the following research areas seem important:

- Plant production and protection
- Management of natural and biological resources
- Animal science
- Economic, social and political aspects of agrofood sector

As possible areas for cooperation within the region, the following are mentioned:

- Food safety
- Biodiversity
- Animal science
- Organic farming.

Mr. Jovanovic also presented a SWOT analysis for agriculture research in Montenegro. Mainly, he highlighted the lack of finances, but also the strengths and sustainability of the current structure.

STRENGTHS	WEAKNESSES
High level of development Fast growing rate after 2000 Education and learning in agro-food field Stability in financing of agro-food research projects Current structure of institutional set-up Long term sustainability Relations between main stakeholders Existence of law and national bodies concerning the R&D or S&T framework	Limited public expenditure for S&T and R&D purposes and education Limits in human resources Lack of financial resources in order to renew technologies High imbalance on the external accounts (especially for agro-food) Recognition of the role of science in the overall process of economic development Lack of national standards in the evaluation of research activities and accreditation of R&D organizations Lack of motivation of young scientists Small number of realized research projects Insufficient research infrastructure
OPPORTUNITIES	THREATS
Increasing economic activity International Funding Opportunities Increasing research funding Increased scientific support to policy making activity Increasing networking opportunities Interaction of the education institutions with the business sector Linkages with the research systems of other countries	Lack of agro-food researchers Ratio between applied versus basic research, i.e. basic research is still prevailing

He concluded by suggesting that the sector is important but with low levels of investment. There are approximately 80 researchers in Montenegro most of them employed at the Biotechnical Faculty, which is a state-owned institution. For a small country with certain limitations such as Montenegro, it is extremely important to use its institutional resources in an effective and efficient way. Making agro-food research more market-oriented and competitive remains a challenge for a longer period of time.

5.5 First round of questions and answers

The general question on how science is being funded and the ratio between institutional financing and project financing was raised.

Albania: the project financing is dominating and funds are low. The National Programme for R&D provided only 300.000 euros for agriculture, food and biotechnology projects. Fundamental research is now part of the Agricultural University activities. 5 centers for transfer of technology are established (part of applied research). The Ministry of Agriculture gives approx. 3 mill. US-$ to these centers.

Croatia: most of the projects are financed by the Ministry of Science, and 19 mill. euros was distributed to several scientific fields (not only the field of agriculture). Further funding was also made available.

FYR of Macedonia: The Ministry of Education and Science opens calls for different fields, and the Ministry of Agriculture also offers opportunities to apply for projects (agriculture and food safety). New university and new faculties were opened with special opportunities given. The possibilities have increased in the last years.

Montenegro: two main sources: 1. institutional support is provided by the Ministry of Education and Science which allocates salaries for the university units, funding for equipment as well as material costs; 2. an overall sum of 1.1 mill. is provided for projects by the Ministry of Science, for all scientific fields. The Ministry of Agriculture also finances activities in this field; international funds are also available.

Serbia: university salaries are provided by the government, project calls are open for fundamental and applied research. There is additional funding by the Ministry of Environment, but at a very low level. Several international projects are being funded.

Kosovo under UNSCR 1244 (1999): the situation is similar to the one in Montenegro. A certain budget is allocated for research in general, not only for agriculture, and for the time being other areas of research are given priority.

Bulgaria: 90% of research funding so far was based on institutional financing. Funding for projects is very low, only 2009 the ratio was increased to 10% (The National Science Fund was strengthened). In the next years it is envisaged to “put scientists on the market”. The excellence of the scientific work needs to be more valued and competition needs to be introduced.

The Romanian example was cited, since 80% of the Romanian institutes in agricultural research are financed by research grants.

On the other hand, in Bulgaria, fixed costs and infrastructure are covered by the national budgets and the low percentages for project funding are resulting in less competitive scientific research.

The question was raised on how WBC institutions can be competitive to European research institutions. It was highlighted that there is still a long way to go. The intention to be competitive is needed. The national funds need to be used through competitiveness on national funds. The scientific groups can be developed, but it takes about 10 years of activities to establish them as competitive. Based on the Bulgarian example, it is shown that after 20 years a research center can be absolutely competitive.

Other aspects were: Young people need to be supported, the process needs to be started and the policy basis needs to be properly defined. Financing needs to be distributed, topics decided, human resources supported. Currently, it often happens that qualifications are obtained abroad.

Implementation of projects with “new” (young) researchers is important; currently, for the implementation of projects, new researchers are not employed. The decrease in the

number of researchers is worrying. Another problem is the average payment of only 400 euro/month. The researchers should be paid at least 1000-2000 euro/month. Very few researchers in the centres are paid by grants.

When competing for funds, age should not matter. Highest quality for money available needs to be the main criterion. Therefore, the bar should be higher.

Marie Curie grants are paying very well (e.g. reintegration grants) – it often happens that a PhD student is paid more than his professors.

Salaries at the universities are compensations for education and university administration – that reduces focus on research. The market is national and international. FP7 is an opportunity to be involved in the market.

Then the question was raised: how many of the researchers do actually want to be involved in the market? As the NCP in the FYR of Macedonia pointed out, when information is distributed, the response is low. The European Commission offers opportunities to researchers from the region to become a part of the international market. These opportunities need to be exploited. In the FYR of Macedonia the national budget is very low. The international projects and SEE-ERA.NET PLUS opportunities need to be used.

It was also highlighted that in the BAFN project, a list of researchers has been published and they are invited to provide their data in order to be included in this data base.

5.6 Expert inputs and information on other projects

Mr. Darko **ZNAOR**, who was invited as an expert, as he also consults Worldbank, UN organisations and several governments, talked about the environmental aspects related to organic farming and regional cooperation opportunities.

He covered the features of agriculture in the region of the Western Balkan countries, then he highlighted the state of art of organic farming and finally focused on opportunities at regional level and shared some first hand experiences.

The first aspect he highlighted was the context of the fundamental processes: firstly related to wars and struggle for independence, secondly, the shift towards the market economy was introduced and thirdly the struggle to join the EU.

Rural areas were severely hit by the war (in Bosnia-Herzegovina, half of the cattle disappeared, mine fields are still there, etc.; in Croatia more than 200.000 farmers were displaced), small scale farming prevails (2 ha divided in 9 plots), human capital is limited (farmers are on average more than 65 years old, less than 1 % of the farmers have formal agricultural education, skills are limited, as well as financial means).

The shift from high-input to low-input has taken place in the 1990s. The process of transition to market economy was forced, but was not a result of the agriculture policy or environmental awareness. Low input farming does not mean that it is ecological or economic – so it is not sustainable.

Governments now have support programmes for organic farming in place, and also indirect pressure is being made by the EC, as it is part of the common agricultural policy (CAP). Also, the export market had pressed towards this development. There is also certain domestic pressure. International donors had also an important role (Netherlands, Italy, Switzerland, and Germany). FAO and other international organizations led to a number of projects in the region. The achievements had been realized through the

investment of the international donors. The development had been carried on by local NGOs (not by government, not by research institutions).

Next, he gave comparable data on land area under organic farming management: in the EU, it is approximately 5% (Bulgaria 3.1%, Slovenia 6%, Austria 16%). Countries from the Western Balkan region are lagging behind (around 1%). In Croatia, a dynamic development took place, with a high jump in 2003 – when the government introduced subsidies for organic farming (242% increase at annual level). However, organic farming in Croatia is not in the focus of huge companies, but is largely carried by private farmers (currently 600). Even though it is a niche market, organic farming is still not well developed.

As for export, there are ongoing cooperation activities, but it is not well developed; e.g. in the cooperation between Sweden and Bosnia-Herzegovina, several fruits are being exported, mostly wild fruits and medical plants. Organic farming is still considered by most of the people to be `for the rich, for the fool and for the sick` and policy makers have mixed feelings about its importance. But times are changing and policy makers are now open for organic farming and organic products. On the other hand, policies often subsidise fertilizers and fertilizer production.

There are only few scientists in organic farming; the scientific pool is rather limited.

NGOs are being used as framework for the institutional setting. A certain number of scientific projects has been carried out, and applied field trials have been enabled. Evidence shows that organic farming has a serious potential, but the region is lagging behind.

Agriculture is also a source of pollution, having environmental impact on water, soil, bio-diversity. In some countries the impact is substantial. As data shows, fertilizer consumption is very high. The lack of earth worms due to pollution for example can be shown in research.

Agriculture in its multifunctional role is neglected. Not only in terms of production and food but in terms of environmental services, importance for rural development, interrelationship between agriculture and climate change, etc.

There is an important question that was raised, and not only at regional level: `What would happen if the entire country converted to organic farming`? In Croatia a FAO study was conducted with the aim to provide an answer to that question. It tackled the farming, energy, transport, industry and trade sectors. Different models were designed, in order to check if income would be lower, etc. Different links and external costs (pollution, health effects, lost wildlife, and lost jobs) of agriculture had been taken into account. It was emphasized that `green accounting` in agriculture needs to be promoted. GDP loss in some upstream sectors is being compensated through GDP gain in the agriculture sector.

The impact of agriculture on bio-diversity is another important topic. The depopulation of rural areas is followed by the reduction of livestock – it results in the loss of grassland, forests are less valuable.

The EU is running an Agri-Environment Programme, but the countries in the region do not have national Agri-Environment Programmes. In 2004, the Dutch government was willing to support an initiative, but the Croatian government did not take it up. IPA has been used to fund certain activities.

Agro-Environment is a compulsory element of the European policies.

Obstacles preventing cooperation with EU partners in the field of organic farming:

- (lack of?) scientific excellence, content-wise input
- limited research references and publications on OF (lack of credibility and cases of plagiarism)
- limited international project experience
- management and administrative capacities demonstrated by the partners (careful financial management)
- logistics, e.g. in terms of travel barriers
- cooperation with the region is not as attractive as in the early 90s (it was more "exotic" and attractive)

Obstacles to the regional cooperation:

- regional diversity (e.g. olive oil not relevant for Serbia, etc.)
- different expectations (sometimes unrealistic)
- research topics and priorities (different priorities, no common denominator)
- fight for leadership (can turn to splitting up relationships, claiming also historic rights)
- travel barriers within the region
- national funding and researcher fees (e.g. huge sums in national funds is allocated for this purpose, in some countries the fees are higher than in others – for example in Croatia, compared with the rest of the region)
- mixed feelings about the Balkan image (e.g. some Croatians may not fully participate in Balkan networks)

Opportunities for cooperation in the field of organic farming:

- a large country mix in the project consortium is important (EU projects and other funding sources)
- the region can give a different perspective – it is important for European policy makers (e.g. solving over-grassing vs. under-grassing)
- research is badly needed, limited information is available, as to what is the actual potential
- it has not been investigated yet, the niche market for science is open
- a benefit to consortia can also be the gender balance contribution (in the region it is much better than in most old EU member states)
- cheaper manpower (if qualification is ok with the adequate performance then the costs are lower and attractive for the consortium)

After lunch break, Ms. Tamara **Tovjanin** introduced the **EU-Balkan FABNET** project which ended in December 2008. The four main areas of action in this project were:

- mapping of research capacities and research funding environment
- tailored training for NCPs and staff exchange
- training of researchers, capacity building and awareness raising
- networking and promotional activities to raise the profile of WBC researchers in EU Member States and stimulate participation

Under the project, workshops for NCPs and multipliers were organized in each of the countries; staff exchange to Greece, Italy and Belgium took place. In total, 12 one-day workshops for researchers were organized locally in the WBC. The FP7 handbook for the research and industrial communities was prepared and translated into all WB languages. It is available on the project website. A periodical newsletter was developed. As to direct support to researchers, individual support was provided to researchers (proposal matchmaking). Next, the participation of researchers in the following events was enabled: Information and Brokerage Event TrainNet Future in November 2007 in Brussels. On this occasion, bilateral meetings were organised to discuss inclusion into consortia; during the TRUEFOOD conference (October 2008) in Paris, networking was enabled.

Two mapping documents for research capacities and funding opportunities are now available (Euroquality France, coordinator of BAFN, was responsible partner). The map of potential participants and multipliers was drawn up (list of research institutions, enterprises, industrial and consumer associations, development agencies, professional bodies, public authorities), as well as a map of funding possibilities (available for WBC researchers). Mapping documents and training material are also available on the website *www.balkan-fabnet.eu*.

Ms. Birgit **DITGENS** gave an introduction to the ERA-NET project **CORE ORGANICS**. She started with an introduction to the ERA-NET scheme, which is mainly the coordination of national funding bodies, and is funded by the European Commission. The final aim is to join forces to fund transnational projects by launching common calls.

Different steps include: analysis of the research programmes (mapping), identification of common research foci, finding a common modus for support of projects (administrative issues), a common financial pot, publishing common calls, organizing a common evaluation and common selection of projects. Finally, common financing and monitoring of ongoing research projects needs to be ensured.

CORE ORGANICS: the project is currently in a new start-up phase. It ended in September 2007. Eleven European countries participated in the initiatives coordinated by Denmark. 1.2 mill. euros were given by the EC to cover networking costs (travel, mapping, etc.).

The precondition to participate in an ERA-NET: EU member state or associated country. Another precondition is an existing or planned research programme in the field of organic food and farming. The member needs to be a programme owner or a programme manager (i.e. ministry, funding body).

CORE ORGANICS also established a web-based archive (for literature) *www.orgprints.org* – organic e-prints.

A database with national programmes and facilities is also published on the webpage. Different resources for research, open for common use were identified. National project evaluation processes were analyzed.

Topics for the common transnational call were identified, and a pilot call was published in September 2006. Basic conditions were that a proposal had to have at least 3 partners from 3 different countries, application procedure was one-step, and carried out online. A virtual common pot was established. Funded research projects are still running.

Thanks to the project activities, it was concluded that plant production and animal production are very important. Other topics are not that well covered by national programmes.

Published topics:

- Animal disease and parasite management, mainly focusing on preventive health and improving therapies to reduce reliance and antibiotics
- Quality of organic food – health and safety
- Innovative marketing strategies – identification of successful marketing methods, local markets.

Further calls should have more precisely described topics.

The common pot included about 8.1 mill. euros of which Denmark contributed with 1.8 mill. euros.

The option of a real common pot was not selected, a virtual common pot means that the national funds are being spent in the country of origin.

The first funding period of the EU ended in 2007. The EC gave positive signals to continue the cooperation, and the partners are now submitting a follow-up proposal. Other countries are interested in participating in this project, too.

There were three possibilities for continuation: to continue cooperation without EU support, to apply for a second ERA-NET or to apply for an ERA-NET PLUS. The decision was made to deepen and broaden the cooperation by applying for a new ERA-NET. A strategy paper has been published on its continuation. The deadline for submitting the proposal is April 21, 2009, so, opportunities to participate are still open. There is a possibility for partners to join at a later stage (e.g. as observers). 20 countries (22 partners) are currently interested in participating.

Ms. Ditgens also explained the use of an ERA-NET for research in the EU and when this scheme makes sense to handle a topic transnationally. There are barriers also at national level (e.g. the Ministry for Agriculture needs to be persuaded to spend money on research).

She highlighted the information available on organic e-prints and the CORE organic website.

For the WBC, she invited the programme owners/programme managers to contact her, in order to receive further information and to explore the possibilities to join the network.

As for the pilot call, 38 large cooperation projects were submitted, the expert panel evaluated them, and about 16 proposals were left with highest level of scientific excellence. After political decisions, 8 projects were funded.

It was added by Prof. Minkov that Bulgaria also has 6 mill € per year funding on organic farming.

In her second presentation, Ms. Ditgens presented the **European Technology Platform "TP Organics – Organic Knowledge for the Future".** The Technology Platform provides stakeholder input, mainly industry driven. At European level, there are currently 35 TPs in the EU. There is a big influence of the TPs on the definition of the topics in the Work Programmes. However, none of the platforms is dealing with agriculture itself; there is no lobby in the industry.

Showing figures on the EU spending in the Framework Programmes on organic farming, she highlighted that between FP4 and FP5 there was a big jump. In addition, there is also the European Organic action plan demanding more research.

The first application for this platform failed (2006). After this IFOAM and ISOF AR started the new proposal. First, a vision for organic farming was developed (which is a first step to develop a TP). The official launch in Brussels was carried out in December 2008.

It is possible to join the TP, especially for national organisations of organic farming. Industry is very welcome to join the initiative.

TP Organics is currently at step one – defining a common research vision with strategic priorities. The second step is to define a strategic research agenda, i.e. more precise research activities, with attractive and ambitious research themes. It is planned that in 2010, step 3 (a common action plan) will be reached.

The research vision for organic food and farming was created through workshops, a vision camp, public consultation, etc., with several drafts published and discussed.

The content of the vision encompasses the empowerment of rural economies in a regional and global context; securing food and ecosystems by eco-functional intensification; and high-quality foods – a basis for healthy foods and health diets and a key to improve the quality of life and health.

The strategic research agenda will be developed in 2009. Several workshops are to be conducted, involving industry, civil society and related stakeholders (first workshop at Biofach on February 21, 2009, further workshops at Bioacademy, IFOAM seminar, Nordic organic conference, organic market forum, etc.). After that, online public discussion and stakeholder forum will be organised in order to finalise it by the end of 2009.

www.tporganics.eu is the website where one can find exact dates of the workshops, contact persons for the TP etc.

5.7 Introduction to the further steps of the consultation process

The aim to define common priorities needs to be put forward, and the handout on the BAFN project was referred to. A table is suggested by Ms. Ulrike Kunze. She presented the table which included biodiversity, food safety, animal science, food bio-technology, organic farming, etc.

It was proposed that more scientific fields could be added, so that national delegations tick the ones which they are interested in.

The second task is to define more specific research areas and topics. Similar to Mr. Minkov's proposal on a specific topic, we need further more detailed proposals. Within specific FP7 areas, specific topics need to be defined.

During the discussion on Day 2, the priorities will be put together and the regional research priorities defined. They will serve as input to the FP7 Work Programme, and the call of the SEE-ERA.NET PLUS project (call to be published in September 2009).

Then, the participants were asked to give input for further priorities:

- Joint calls between different themes, namely - **interdisciplinary calls** (e.g. environment, health, climate change and food) are needed.
- **Socio-economic aspects and rural development**
- **Animal science** can be made more specific **divided in animal husbandry and animal disease**.
- **Land-use consequences on bio-diversity** (impact of bio-mass production on bio-diversity) which is different in the Balkans
- **Indigenous food products** as a specific topic for biodiversity

Start Day 2:

5.8 Summary of Day 1:

Ms. Ulrike **KUNZE** started with a summary of the first day of the consultation session. She reminded the participants of the project homepage *www.wbc-inco.net*, where all the reports and presentations would be uploaded. She repeated also briefly the main points of the BAFN project presentation and mainly the discussion which reflected how to influence the work programme – through programme committee members, the SCAR committee, European Technology Platforms and ERA-NETs. The suggestion to create regional technology platform based on an existing one at European level was repeated, as well as the discussion about different ways of funding (fundamental vs. applied; institutional vs. project funding; competition for projects, etc.). Ms. Kunze also reminded the issue of the national reports on the AgroFood sector in Croatia and Montenegro, and the issue of presentations on opportunities and obstacles to cooperation (in the field of organic farming). The projects which were presented during Day 1 also were EU-Balkan-FAB-NET, ERA-NET CORE ORGANICS, TP Organics, and that there are possibilities for the WBC to join the initiatives.

5.9 Input to a joint research strategy

Ms. Tanja **KNEZEVIC** highlighted aspects of the idea to develop a joint research strategy for the WBC. The endorsement of the idea by all WBC Ministries and the need to strengthen cooperation and to address it in systematic and strategic way was stressed. Since the possibilities within FP7 are not perfectly fitting the needs and possibilities to cooperate within the region, the other funding mechanisms need to be identified and better used (IPA, NATO SPS, etc.). The background material for this strategy is a white paper developed within SEE-ERA.NET. The results of the consultation sessions (recommendations, etc.) will be used as an input to the strategy. The ideas that should be gathered are: what could be done in the field of networking, further infrastructure

development, creation of joint technology platforms, etc. A dissemination campaign is planned after the process. The research community should be made aware on further possibilities which exist.

5.10 Introduction to FP7–KBBE and work programme development

Ms. Zeljka **DUKIC**, NCP in Serbia, introduced the Work Programme 2009 of Food, Agriculture and Fisheries and Biotechnology (KBBE programme) in the Seventh Framework Programme (Theme 2). After a brief information on the 4 programmes of FP7 (Cooperation, Ideas, People, Capacities) and the more specific information on the Cooperation programme which includes the Theme 2 dealing with Agro-Food, she highlighted the objectives: building a European Knowledge-based Bio-Economy, responding to social, economic and environmental challenges, support to other policies, respond quickly to emerging research needs, support the coordination of national research programmes, and ERA-NETs.

She proceeded with explanation of how work programmes are developed. Inputs to the work programmes are mainly given by: the Advisory Group (members are from MS), the Programme Committee (WBC are invited to nominate a delegate and an expert), SCAR (WBC are invited to nominate 2 experts, EC reimburses travel expenses for one expert), the Advisory Committee for Fisheries and Aquaculture ACFA, ETP, ERA-NETs, other DGs, and the European food safety authority. Also, the following inputs are taken into consideration: outcome of foresight conferences, outcomes of projects (IPs, NoEs, COST experts, ERA-NETs, etc.), and consultation with industry and other big stakeholders. The preparation of the Work Programme includes consultations based on several reflection papers, followed by the preparation of a draft Work Programme (which involves other DGs, internal staff, etc.). The draft is finally commented by the Programme Committee and adopted by the EC. After that, it is published on CORDIS.

The Work Programme KBBE is divided into 3 main activities which will not change:

2.1. Sustainable production and management of biological resources from land, forest and aquatic environments

2.2. Fork to farm – food (including sea-food), health and well-being

2.3. Life sciences, biotechnology and biochemistry for sustainable non-food products and processes

However, the areas within these main activity lines can change from call to call.The main call in work programme 2009 already had its deadline (January 15).

As for the Work Programme 2010, it is currently in the consultation process. PC meetings take place in January 22 and March 2009 (which will be the final meeting to influence the WP). Then, the preparation of the draft is foreseen for April 2009, after the internal discussion in the European Commission. The new Work Programme is expected to be published in **July 2009** when also the **next call** is to be published.

Ms. Dukic also presented several websites which are relevant to obtain information on FP7: *www.cordis.europa.eu/fp7/home.html*

www.ec.europa.eu/research/index.pg=enquiries

www.europa.eu.int/comm/research/index_en.html

www.europa.eu.int/comm/research/rtdinfo/

Then she gave some personal impressions of her first PC and SCAR meeting, where mostly the same people were present. Also, it is her opinion that consultations between the members of the committees are of relevance.

5.11 Discussion on priorities

The discussion among the participants showed that not all of them are fully aware of the Programme Committees in their country.

In order to provide examples of possible research topics for cooperation, the following themes from the Work Programme were provided:

Area 2.2.2 Renewable energy production in the agricultural sector and biodiversity conservation:

(also in area 2.1.2 or area 2.1.4 is in connection to the topic, weakly also Area 2.3.1 and 2.3.4) and the connection to Theme 6 Environment including climate change – biodiversity.

So, in order to carry out `*Bridging the genes and gels and ecosystems`,* and influence calls, researchers from the region can either try to combine or fit in already proposed areas, or try to propose new, interdisciplinary areas, such as:

Renewable energy production in the agricultural sector and biodiversity conservation

A short discussion followed:

The Theme of Energy should also be regarded in order to cover this call.

Ms. Kunze then suggested how to structure the further discussion reminding of the aims of the consultation session and the expected outcome which she summarised as follows:

- definition of regional research priorities
    - as an input for the SEE-ERA.NET PLUS call to be launched in September 2009 (as defined also in the Description of Work of the SEE-ERA.NET PLUS project)
    - as an input for the FP7 Work Programme
    - as an input for the regional research strategy of the WBC
- definition of major generic activities to be implemented at regional level, which will also feed into the regional research strategy

The next suggested steps:

- confirmation and adaptation of the priorities identified by the BAFN project (four countries)
- make a synthesis with the other 2 sets of priorities (Croatia and Montenegro)
- Agree on inclusion of other fields
- Establish a ranking list of the research priorities

- Refinement (specification) of the priorities to sub-themes/activities

Result: list of common / regional research priorities (including areas) confirmed by the Western Balkan countries.

Scientific fields/ Priorities	Albania	Bosnia - Herzegovina	Croatia	FYR of Macedonia	Montenegro	Serbia	All WBC
Food and feed safety	✓		✓	✓	✓	✓	5
Biodiversity	✓		✓			✓	3
Interdisciplinary fields (environment, climate change, health, food, biomass production/biodiversity)	✓				✓	✓	3
Animal science				✓	✓		2
Social economics and rural development			✓	✓			2
Food bio-technology							
Organic farming							

Table 3: List of priorities as defined by the two projects

Representatives from **Kosovo under UNSCR 1244 (1999)** took part in the workshop. Since they were not included in the process of development of background reports, they provided their list of priorities after the workshop:

- organic farming and biodiversity
- food/feed safety
- socio-economic and rural development

The countries confirmed that practically all priorities are important. Therefore, it would be better to identify the most important ones. To meet that request, the participants were asked to reduce the priorities to 3.

The table was then slightly modified again, e.g. “Food and feed safety”, the combination of organic farming and rural development; initially divided `animal disease` and `animal husbandry` was merged again, and the more general topic of `animal science` was left in the table.

The most important priorities were selected by each country. The ranking list resulted in

1. Food and feed safety and quality
2. Biodiversity
3. Animal Science
   Interdisciplinary fields
   Socio economic science

As a next step, a refinement to get more specific areas was performed. The examples given for FP7 topics of 2009 were used to start the discussion, in order to give a level of specification. The BAFN topics were then also consulted to come up with new

suggestions in order to avoid suggesting something that has already been mentioned in the Work Programme 2009.

Results of the brainstorming on topic proposed:

- Risk assessment of sea-food products and diary products
- Cumulative Risk Assessment of Pesticides, Micro toxins, Veterinary Drugs
- Food safety of plant products and allergens
- Combined exposure to physical and chemical environmental pollutants
- Risk and benefit assessment of traditional food products
- Land-use impact in agriculture on biodiversity
- Renewable energy production in the agricultural sector and biodiversity conservation
- Preservation of indigenous species and traditional functional food products
- Investigation of regional genetic resources in the WBC (plants, animals and microorganisms)

It was stated that researchers need to be familiar with the topics that were already financed in previous calls. To that aim, the reflection paper distributed by the EC can be used, since it shows what topics had already been financed.

There was an observation that it may bias the results as the experts represent mainly their own research fields. That is the reason why the consultation with policy makers is of extreme importance.

The seriousness of the approach to the priority-setting was doubted by the Bulgarian expert. Optimally, it takes approximately one month to achieve this goal.

Ms. Kunze explained that policy makers should be present at the meeting.

The priorities for the SEE-ERA.NET PLUS call to be set are not strongly related to FP7 and therefore can be financed even if mentioned in the Work Programme.

Mr. Edmond **AGOLLI** from the Ministry of Education and Science of Albania reinforced again the importance to define fields for the SEE-ERA.NET PLUS call. The projects funded under SEE-ERA.NET PLUS will have a duration of approximately 1 year.

The BAFN handout was consulted again by the participants while discussions in the country delegations were going on.

The conclusion summary of the BAFN project can be used and left like it was, only slightly modified, e.g., chemical pollutants should be included.

Suggestions for biodiversity were copied from the BAFN presentation.

Then Mr. Andreas **KAHLE** suggested to get back to the initial priorities and proposed a process to find a third priority. But finally it became under discussion if anyway a third priority is necessary. Several options to come up with the third priority were discussed.

Every country had one vote for each of the 3 priorities that were ranked in the third place in first round. Interdisciplinary fields were therefore chosen as the third priority.

A further refinement was planned after the result was refined to the 3 topics with 1 or 2 subareas.

5.12 Discussion on generic activities

The second part of the discussion was dedicated to defining **major generic activities** to be implemented at regional level.

Also here the BAFN project gave some starting point:

- incentives to purchase research equipment and consumables (through co-financing, exemption of VAT)
- stimulate research mobility and training through organization of staff exchange
- facilitate the exchange of scientific data

Some of the proposals were:

- Creation of new infrastructures; mapping financing possibilities for research infrastructure, providing structured application e.g. on genomic centers; (conclusion: the Capacities Programme could be address to this end)
- Creation of a regional technology platform
- Regional mapping of the existing infrastructures and a common decision on how to share and upgrade them; a plan of sharing the existing equipment could be made – (conclusion: regional IPA can be used. First step would be to develop an abstract, then send it to IPA unit in respective research ministries or national IPA offices, since they are to conduct further steps)
- The Creation of clusters was also proposed; (conclusion: Regions of Knowledge calls for proposals is also an option)
- The Regional dialogue of the WBC-INCO.NET could be used to launch ideas for the cooperation of clusters.

In the end, it was concluded that the workshop had produced a basis for the way forward in strengthening the cooperation in different ways, i.e. providing possibility for making personal contacts and therefore creating basis for continuation of joint work in more concrete way, and, more concretely, providing concrete results in terms of joint regional priorities (thematic and functional) and research topics in the field of agro-food research.

6 Final List of Priorities

- **Food / feed safety and quality, food biotechnology**
  - Preservation of indigenous species and traditional food products (in SEE/WBC)
  - Combined exposure of food and feed to environmental pollutants
- **Biodiversity**
  - Investigation of regional genetic resources in the WBC (plants, animals and microorganisms)

- Interdisciplinary field: Land use impact in agriculture on biodiversity (Topic: Renewable energy production in the agricultural sector and biodiversity conservation)

7 ANNEX 1: Agenda and List of participants of the Consultation session on ICT

Preparatory Meeting for the ICT Conference "Towards an Information Society for the Western Balkans"

December 10, 2008 *15:00 – 18:30; Venue:* ***Chamber of Commerce****, Resavska 15, room 2, 11000 Belgrade, Serbia*

Agenda	
15:00 – 15:15	***Welcome and introduction*** Chair: Djuro Kutlaca (MPI) Rapporteur: René Wintjes, UNU-MERIT ***Scope of the consultation session*** by Tanja Knezevic MPIN
15:15 – 16:15	***Presentation and discussion of national reports for Croatia and Montenegro*** by Dijana Simic, Croatia (*Chair eSEE Initiative, RCC)* and Bozo Krstajic, Montenegro (Center of Information System)
16:15 – 16:30	***Coffee-break***
16:30 – 17:30	***Discussion*** ***Input presentation: template for results of the consultation session*** by Ulrike Kunze, PT-DLR ***Definition of* S&T priorities fields out of which:** • specific areas/activities/sub-activities as input for the SEE-ERA.Net PLUS call • 1-3 specific topics of common EU-WBC interest as input for FP7 Work Programmes
17:30 - 18:30	**Recommendations for national and regional strategy development** • State of preparation of Ministerial Conference under IPA – Regional Strategy on Research - Input needed *by Tanja Knezevic, MPIN* • **Discussion:** input to further development of regional strategies, incl. recommendations for a **major generic activity at regional level** (e.g. research infrastructure, capacity building, networking activity like setting up of a regional technology platform, etc.) • Further needs in development of national and regional strategies and how to implement them
18:30	***Cocktail***

List of Participants

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8 ANNEX 2: Agenda of the Conference

AGENDA	Thursday, 11 December 2008
08:30-09:00	*Registration*
	OPENING SESSION
09:10-09:20	Introductory remarks *(Raphael Koumeri, PLANET S.A., SCORE) and Ulrike Kunze (PT-DLR, WBC-INCO.NET)*
09:20-09:30	Welcome note *(Mrs. Jelena Jovanovic, Secretary of IT Association, Serbian Chamber of Commerce)*
9:40-09:50	Inaugural speech *(Dr. Radosav Cerovic, Assistant Minister of Science of Serbia - (Department For Technological Development, Transfer Of Technologies And Innovation System))*
	KEYNOTE SPEECHES
09:50-10:10	The EU FP7 ICT Theme *(Vlassios Venner – DGINFSO, European Commission)*
10:10-11:10	The ICT environment in the Western Balkans *(Djuro Kutlaca, MPI, WBC INCO.NET)* – Needs vs. capacities, common elements and particularities – Discussion
11:10-11:30	*Coffee Break*
11:30-12:30	Regional ICT Research & Development Priorities *(Jelena Pantelic, Information Society SCG)* – Methodological remarks; Common R&D priorities – Discussion
12:30-14:00	*Lunch*
14:00-15:00	Key barriers and challenges in ICT Research: the Regional & EU context *(Soumi Papadopoulou, PLANET S.A. and René Wintjes, UNU-MERIT)* – Key findings from SCORE and WBC-INCO.NET – Discussion
15:00 - 15:30	*Coffee Break*
	PANEL DISCUSSION
15:30 - 17:30	THE NEXT STEPS: what is needed for regional cooperation (the countries' own role) *Panel moderator: Raphael Koumeri, PLANET S.A.* – Barriers to cooperation and recommendations for Western Balkan decision-makers – The role of higher education – The role of ICT industry – The role of policy-makers *Panel members:* • *Jelena Surculija, Assistant Minister of Telecommunications (Serbia)* • *Tatjana Knezevic, Ministry of Education & Science (Montenegro)* • *Miroslav Radinkovic, Ministry of Science and Technology, (Republika Srpska, BiH)* • *Diana Simic, chair eSEE initiative, CeGD (Croatia)* • *Betim Cico, Polytechnic University of Tirana; (Albania)* • *Neki Frasheri, Polytechnic University of Tirana; (Albania)* • *Zlatan Sabic, University of Sarajevo; (Bosnia-Herzegovina)* • *Dragan Domazet, Dean of Faculty of Information Technology (Serbia)* • *Kiril Minoski, USAID (FYR of Macedonia)* • *Ljubomir Trajkovski, Trajkovski & Partners (FYR of Macedonia)*
18:00 - 20:00	*Cocktail*

	Friday, 12 December 2008
09:00 - 09:20	*Morning coffee*
09:20 - 09:30	Summary from Day 1 *(Ulrike Kunze, PT-DLR, WBC-INCO.NET)*
	WHAT IS NEEDED FOR REGIONAL COOPERATION: THE EU & REGIONAL DIMENSION
09:30 - 10:00	Opportunities for EU-Western Balkan research collaboration: – the 4th ICT Call *(Svetlana Bogdanovic, ICT/INCP for FP7, Ministry of Science, Serbia)* – FP6 project example: RACWeB *(Gordana Dzamic, Ministry of Finance, Serbia)*
10:00 - 10:30	Development of Information Society in WBC / SEE: Contribution of neighboring & EU countries *(Blaz Golob, CeGD, Slovenia)*
10:30 - 11:00	*Coffee break*
	PANEL DISCUSSION
11:00 - 12:40	**THE NEXT STEPS: Concrete actions & recommendations for regional cooperation (EU & regional dimension)** *Panel moderator: (Ulrike Kunze, PT-DLR, WBC-INCO.NET)* – **Briefing on outcomes of WBC-INCO.NET consultation session** – **Inputs for calls in the context of South East European ERA.Net PLUS and FP7** – **Proposal for major generic activities (etc. networking, infrastructure etc.); other** *Panel members:* • *Natasa Radovic, Ministry of Telecommunications and Information Society (Serbia)* • *Miroslav Radinkovic, Ministry of Science and Technology, (Republika Srpska, Bosnia-Herzegovina)* • *Jozef Bushati, University of Shkodra (Albania)* • *Leid Zejnilovic, Dzemal Bijedic University (Bosnia-Herzegovina)* • *Vladimir Trajkovik, Faculty of Electrical Engineering & IT (FYR of Macedonia)* • *Sokol Haxhiu, UNDP (Albania)* • *Brano Vujicic, Association for Information Technologies in BiH (Bosnia-Herzegovina)* • *Radovan Stojanovic, State University of Montenegro (Montenegro)*
	CLOSING SESSION
12:40-12:50	**Closing note** *(Dr. Viktor Nedovic, Assistant Minister of Science of Serbia, Department For International Scientific And Technological Cooperation)*
12:50–13:00	**Presentation of the main conclusions and the way forward** *(Raphael Koumeri, PLANET S.A., SCORE)*
13:00–14:00	*Lunch*

9 ANNEX 3: Agenda and List of participants of the Consultation session on Agro Food

Day 1, January 15, 2009

09:00-09:45	*Chair: MPIN* • WELCOME Prof. *Sreten SKULETIC, Minister of Science and Education, Montenegro* Mr velibor SPALEVIC, EC Delegation in Podgorica Elke Dall, WBC-INCO.NET *coordinator (Center for Social Innovation, Austria)* SCOPE OF THE WORKSHOP *Tatjana KNEZEVIC, Ministry of Science and Education,Montenegro/MPIN*
09:45-10:45	• Priority setting within the Balkan Agro Food Network (BAFN) - findings for 4 participating countries (Albania, *Bosnia-Herzegovina, FYRofMacedonia, Serbia)* *Prof Ivan MINCEV, University of Plovdiv, Bulgaria*
10:45 – 11:00	Coffee Break
11:00 – 12:00	• Croatian and Montenegrin reports on AgroFood *Dr Miomir JOVANOVIC, Biotechnical Faculty, Montenegro* *MSc Zeljka MESIC, Faculty of Agriculture, Croatia*
12:00 -13:00	• Discussion on defined priorities
13:00-14:30	*Lunch*
14:30-15:00	• EU-Balkan FABNET project *Ms Tamara TOVJANIN, ZAMTES, Montenegro*
15:00 – 15:45	• Environmental aspects related to organic farming – regional cooperation within FP7 *Mr Darko ZNAOR, expert, Croatia*
15:45 – 16:15	Coffee Break
16:15 -17:00	• The European Technology Platform TP Organics • ERA-NET CORE ORGANICS *Ms Birgit DITGENS, German Federal Agency for Agriculture and Food*
19:00	*Dinner*

Day 2, January 16, 2009

09:00-09:30	*Chair: PT-DLR* • Summary of Day 1 *Ms Ulrike KUNZE, WP leader (International Bureau of the Federal Min. of Education and Research (IB of the BMBF), Germany* • Joint research strategy (state of play) *Tatjana KNEZEVIC, MPIN*
09:30-10:00	• Presentation of the FP Work Programme for Agriculture/Food/Biotechnology *Ms Zeljka DUKIC, Ministry of Science and technological Development (Serbia)*
10:00-11:00	• Input presentation for the Discussion: Defining regional research priorities as input for FP 7 and SEE-ERA.NET PLUS *Ulrike Kunze, IB of the BMBF, Germany*
11:00-11:30	*Coffee break*
11:30-13:00	• Discussion continued: recommendations for strategy development in the WBC • Defining recommendations for a major generic activity • Defining input for the regional research strategy (common aims of the region)
13:00-13:30	• Conclusions and final remarks *Tatjana Knezevic,MPIN*
13:30-14:30	*Lunch*
	Departure

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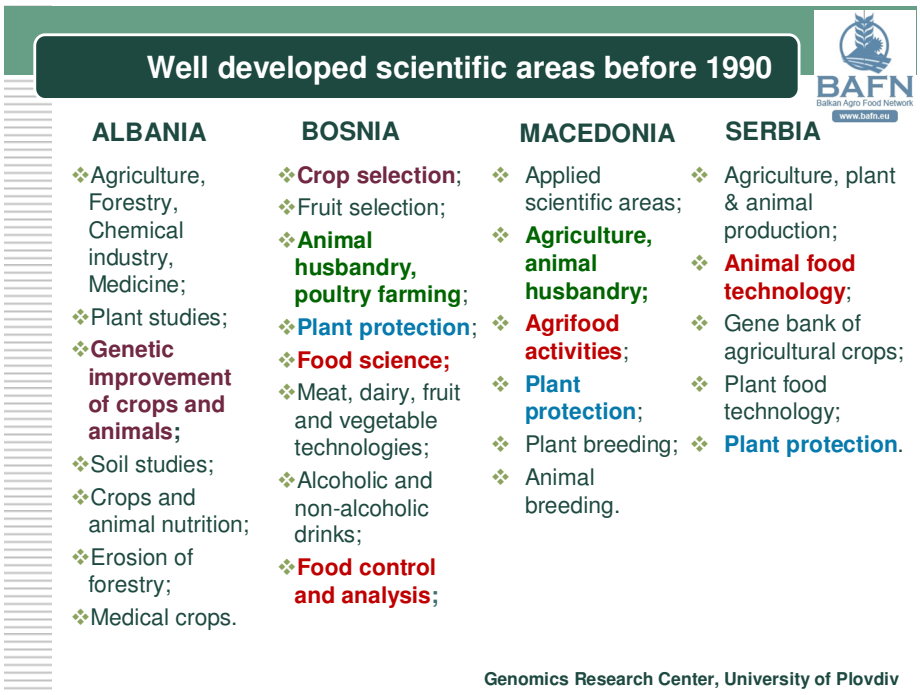
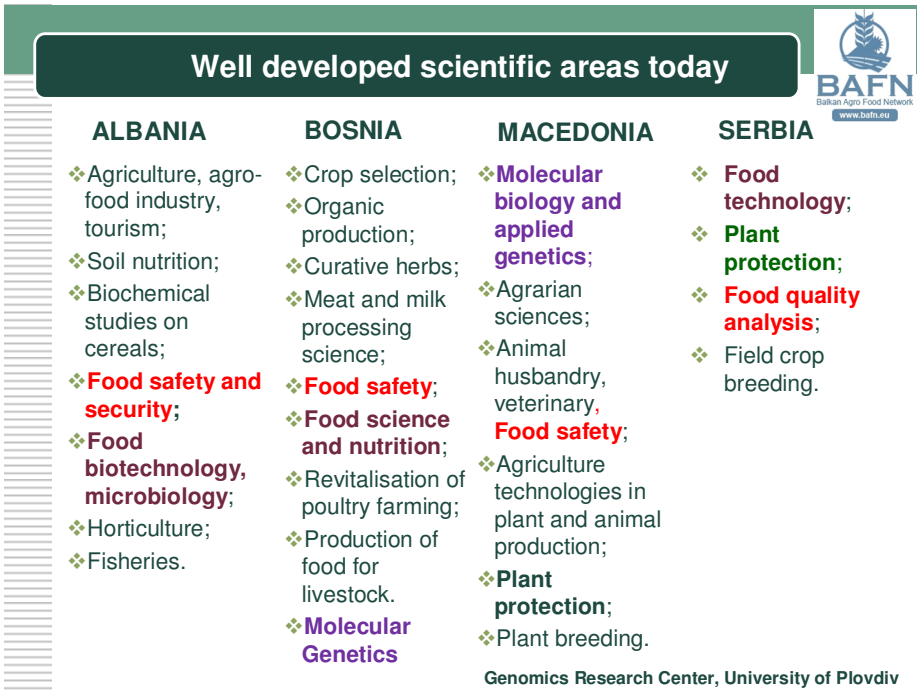
10 ANNEX 4 – BAFN presentation by Prof. Minkov

Slides summarizing currently and prospectively developed research topics for the 4 BAFN countries:





Most important scientific areas in the future

ALBANIA

- Agro-food industry;
- **Food quality, safety;**
- Agriculture;
- Aquaculture;
- Livestock;
- Veterinary medicine;
- Agro-tourism;
- Packaging;
- Biochemistry, toxicology;
- **Organic foods**
- Nutrition;
- **Environment** agriculture.

BOSNIA

- **Food safety**;
- Food allergens;
- **Organic food**;
- Food contaminants;
- Food supplements;
- **Functional food;**
- GMO monitoring;
- Nutrition and health promotion;
- **Protection of products geographical origin**;
- Automation in production;
- Bioactive food substances.

MACEDONIA

- **Food safety**, food security,
- **Functional food**;
- Protection of **environment**;
- GMO;
- Technology transfer;
- Geographic Information systems for agricultural management;
- Agricultural statistics & data analysis.

SERBIA

- Biotechnology (genomics);
- **Food safety**
- **Protection of indigenous species**;
- Control of nursery stock;
- Viruses in products of plant and animal origin;
- Developing and executing priorities of the **national strategy in the agrifood sector.**

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Well developed areas to be supported by EU

ALBANIA

- Food Industry;
- Agriculture;
- Tourism;
- Food policy and safety;
- **European standards** for agriculture, food and environment;
- Packaging ;
- **Food quality**;
- **Food** biochemistry, microbiology, toxicology and biotechnology.

BOSNIA

- Fishery;
- **Food safety** – production of animal and vegetative foodstuff;
- Strategic planning standards;
- Nutrition at national level;
- DNA markers in Food industry;
- **Preserving of national food reserve.**

MACEDONIA

- Modern accredited laboratory;
- Biotechnology (GMO);
- Veterinary and animal husbandry;
- Nutrition and dietetic;
- **Biodiversity, conservation;**
- Land management;
- Protection of environment.

SERBIA

- Agricultural production (excluding the processing industry);
- Seed stock;
- **Preservation of indigenous species and traditional food products**;
- Development of **organic production** (e.g. regarding wine production.

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Underdeveloped areas to be supported by EU

ALBANIA

- Quality and safety;
- Typical Albanian products;
- **Zoonoses** influencing human health and in animal production;
- Quality systems on food technology and biosafety.

BOSNIA

- Protection of food geographical origin;
- Sources of **food allergens**

MACEDONIA

- Biodiversity conservation;
- **Environmental protection**;
- Food quality & safety.

SERBIA

- Food safety;
- Chemical contaminants in food;
- Dietary supplements;
- **Food allergens;**
- Toxins in food;

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WB Cooperation to be supported by EU

ALBANIA

- Food industry and legislation;
- Tourism and forestry;
- Environment;
- **New technology in food products**;
- Food safety and quality management systems;
- Food technology;
- Food quality - HACCP, GMP.

BOSNIA

- Food safety;
- Food product development;
- Food quality protection.

MACEDONIA

- Biotechnical Science (Food Engineering, Food Safety);
- Agriculture, animal husbandry (GMO, Biological Good Feed/Health Food)
- Veterinary.

SERBIA

- Conservation/ preservation of biodiversity;
- Improvement of ecological awareness;
- **Waste management**;
- Germplasm resources.

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Slides summarizing proposed measures for the 4 BAFN countries:

Measures to develop the infrastructure

BAFN Balkan Agro Food Network www.bafn.eu

ALBANIA

- **National projects**;
- CEE supported projects;
- NATO supported projects;
- Bilateral scientific projects;
- Setting up and functioning of scientists groups;
- **New laws** on education and research;
- Improvements of food legislations standards.

BOSNIA

- **Change of legislation;**
- Law science;
- Co-operation with multinational corporations in field of food production;
- Co-financing in purchasing of equipment.

SERBIA

- International projects;
- Rationalization of the existing infrastructure;
- **National programs**;
- Stimulating models encouraging the industry to participate in equipment purchase;
- Developing models to encourage knowledge and training program exchange of both researchers and personnel.

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Measures to develop the infrastructure (Macedonia)

BAFN Balkan Agro Food Network www.bafn.eu

- Opening of thematic debate (Forum), meetings with science and economy,
- Science and government, science and education, science and public;
- Measurement for support and engagement financial fund for modernization; equipment and training of staff;
- Effectual information about aging of equipment;
- Creation of technological centre;
- Tax relief for technical improvements and scientific equipment;
- Government support & investment in contemporary and advanced technologies and equipment;
- Private public partnerships focused on research;
- Performance oriented financial support.

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Measures to help the human potential

ALBANIA

- Training courses;
- Participation on summer school;
- Participation on **international projects;**
- Including the new scientists within the scientific groups;
- Supporting by the governments R&D programs;
- To hire scientists;
- To include them in projects.

BOSNIA

- Education of young scientists abroad;
- Motivation.

SERBIA

- Offering different kinds and modules of grants and **training** for different levels/ages of , e.g. the so-called "**sandwich" PhD** (which implies student mobility);
- Improvement of motivation of researchers by offering them **higher wages**;
- Publication of scientific papers in **journals of high scientific impact**;
- Improvement of **international cooperation;**
- Scholarships and grants, both national and international.

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Measures to help human potential (Macedonia)

- Employment young scientific staff and their training;
- Accessible to principal multi European network computer (data processing) for research and education-GEANT;
- Accessible to scientific review and electronic data-base and electronic review (Science Direct, Web of Science, ISI databases and etc.);
- Removal of travel barriers (visas, long-expensive procedures etc.);
- Local – regional training facilities and capacities building;
- Increased effort on improvement of usage of ICT amongst scientific & research staff;
- Better facilitation and improvement of regional co-operation.

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Measures to develop the organization of research

ALBANIA

- Increasing the **budget** for scientific research;
- **Improving the infrastructure of scientific laboratories;**
- Corporation with national business;
- **National R&D programs and cooperation within the WB.**

BOSNIA

- Legislation;
- Financing;
- **Reform of University education;**
- CTT centres.

SERBIA

- Joint Cooperation between institutions;
- Return of trained individuals/researchers from abroad;
- **Education and training of young talented individuals abroad;**
- Training courses for researchers;
- Workshops.

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Measures for organization of research (Macedonia)

- Make changes in higher education, rigor in measure to selection profession (with international review and with criterion for publishing in international review);
- Allocation grant/scholarship to best and talented students;
- Building mechanism from the part of Ministry of Education and Science for stopping going away of young researcher;
- Visible, up-to-date database of capacities and competencies;
- Open, regional structure for publication and exchange of scientific data;
- Advancement of the mechanisms for improvement of the researchers mobility;
- Clear and substantial regional/national policies & support for research;
- Protection of "intellectual property";
- Promotion of results, partnerships & co-operation with the business sector & farmers;
- National strategy.

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11 ANNEX 5 – Links

www.see-era.net

www.score-project.eu

www.europartnersearch.net/bafn/

www.stabilitypact.org/e-see/

www.cegd.eu

www.balkan-fabnet.eu

www.tporganics.eu

www.coreorganic.org/

www.orgprints.org