

# **IKU Innovation Research Centre**

**(Budapest University of Economic Sciences and Public Administration)**

## **Report on the 2<sup>nd</sup> CIPRE Mid-career Training Seminar**

### ***Policy Analysis and Implementation***

***17-26 November 2002, Budapest, Art'otel Hungary***

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*Main contributor:*  
*NATO Science and Technology Policy and Organization*

*Additional contributors:*  
*UNESCO Science Analysis and Policies (participants from other CEECs  
and developing world)*  
*IMFA - Foundation for the Technological Progress of the Industry  
(additional Hungarian participants)*



## 1. *Previous activities*

The seminar was organized in connection with previous mentor and mid-career training seminars:

- ◆ **June 2000** – Representatives of governmental agencies, universities, and academies of sciences from Central and Eastern European (CEE) nations attended CIPRE Planning Seminar supported by the NATO Program on Science and Technology Policy and Organization (STPO). Its role was to assess the CEE nations' interest to cooperate on preparation and implementation of science, technology, and innovation (STI) policies and to cultivate policy leadership through educational programs for early and mid-career professionals.
- ◆ **March 2001** - CEE experts met to discuss topics of the future training seminars proposed by the CIPRE Advisory Board Members.
- ◆ **November 2001** – Policy makers and administrators attended the 1<sup>st</sup> Mentor seminar. High-ranking government officials from CEE countries agreed to serve as mentors to CIPRE mid-career participants from his or her country. The mentor system will reinforce the diffusion of knowledge and the development of skills among the participants.
- ◆ **January 2002** – The 1<sup>st</sup> Mid-career seminar topic was "The Changing Role of National Governments in STI Policy-making in the Age of Globalization and Regionalization". In addition to lectures, the program included group projects, roundtable exercises, and simulation games. Informal atmosphere of the seminar led to fruitful discussions where all participants and lecturers could explain their national S&T policies and problems with their implementation. The participants had very different professional backgrounds - present and former S&T policy advisors to strategic decision-makers, middle-ranking state administrators, managers of foundations and high-tech SMEs supporting organizations, and university and research institute representatives. They came from variety CEE countries: Albania, Bulgaria, Croatia, Czech Republic, Estonia, Former Yugoslav Republic of Montenegro, Hungary, Lithuania, Poland, Romania, Ukraine, and Yugoslavia, and from Egypt, North Africa. Lectures were given by Jacques de Bandt (IDEFI/LATAPSES, France), Annamaria Inzelt (IKU Innovation Research Centre, Hungary), John Jankowski (Division of Science Resources Statistics, National Science Foundation, USA), Steve Nelson (American Association for the Advancement of Science, U.S.), Keith Pavitt (SPRU Science and Technology Policy Research, UK), Albert H. Teich (American Association for the Advancement of Science, U.S.) and Attila Varga (University of Pécs, Hungary).

## 2. The Seminar

CIPRE (Centre for Innovation Policy Research and Education for Central and Eastern Europe) held its Second Mid-career Seminar on “Policy Analysis and Implementation” on 17-26 November 2002 in Art’otel, Budapest, Hungary. The participants came from many Central and Eastern European countries (Albania, Croatia, Czech Republic, Estonia, FYR Montenegro, Hungary, Latvia, Moldova, Poland, Romania, Ukraine, Yugoslavia) and from Russia and South Africa. Some of them were able to participate on this event with the support of the UNESCO contribution. (For detailed list of participants see Annex 1.) The conveyors of the seminar were Annamária Inzelt (full-time) and Albert Teich (part-time).

The key words of the seminar were *mutual learning*, *networking* and *information dissemination*. The seminar was organized as a series of lectures and exercises with active participation of specialists from Western and CEE countries. All lectures were accompanied with discussions, where participants could raise different questions related to R&D policy issues. The seminar also included work in groups, roundtable exercises, and situation games to help the participants to perceive the lectures. The lectures (listed below) were grouped in clusters on different interrelated topics. (See also Annex 2.)

- I. Challenges of our time. New trends in S&T and innovation policy-making
  - *Trends in science policy: government priority setting* by K. Siune
  - *Science policy instruments in the priority setting processes* by K. Siune
  - *The evolution of University-Industry-Government relationships* by A. Inzelt
  - *Technology assessment in Europe* by R. Coenen
  - *Measuring the returns on public investments in R&D* by I. Feller
  - *Relationship between S&T and innovation policy and other policies* by I. Feller
- II. Challenges of internationalization (global sources and local performance)
  - *Building research capacity in less developed countries* by A. Teich
  - *R&D policy in support of sustainable development* by R. Coenen
  - *Central and Eastern European countries in the European research area* by Ch.-M. Geurts
  - *National versus European research programs – A grassroots approach* by N. Konstantopoulos
  - *Policy measures* by N. Konstantopoulos
  - *Nature and patterns of technology and industry upgrading in Central and Eastern European countries* by S. Radosevic
  - *Innovation policy in CEE candidate countries* by S. Radosevic
- III. Mutual learning
  - *Overview of national practices by participants: STI Policy in Albania: Problems afforded during the transition* (by T. Dishnica, A. Kopliku), *National R&D Policy of the Czech Republic* (K. Ferjentsik, S. Lauerova), *R&D Policy in Latvia* (L. Elina, E. Vasermane), *Innovation in Malopolska Region* (L. Mamica), *Restructuring of Romanian S&T system and new challenges in the priority settings* (R. Negrut, A. Vass)
  - *Roundtables and situation games*

The seminar started with warm welcome and the introduction of CIPRE activities by the co-directors **Annamária Inzelt** (IKU, Hungary) and **Al Teich** (AAAS, USA). They emphasized that the main task of the seminar was to bring together S&T policy experts

from the USA and EU on one side and people from CEE that would participate on R&D management in their countries on the other. The organizers also noted that information gained from lectures, situation games, and discussions and their comparison with so different CEE national practices might help to restructure R&D system in CEE countries to have it more effective and open. A. Inzelt and A. Teich stressed main goals of the seminar: mutual information exchange, sharing of best experience, new trends in STI policymaking, networking and challenges of internationalization in order to sufficient integration of CEECs into the international scientific community.

The importance of the seminar was also expressed in a welcome letter from **Dr. Bálint Magyar, Hungarian Minister of Education**.

On behalf of the key supporting organization **Mr. L. Nyiri**, Chairman of the NATO STOP Panel welcomed the seminar and provided an overview on NATO STPO program, its panel structure, and action plan. NATO's goal in CEE countries is to enhance human potential development in S&T by means of different programs (started in 2001) such as internships, scholarships, advanced training courses, and forums with a support of 400 000 USD per year. Some participants mentioned that in their countries there was very little information about NATO activities. L. Nyiri asked the participants to help their national NATO contact points to disseminate information about mentioned programs. In connection to this, participants recommended to put a list of national contacts on CIPRE web site. The list of national representatives was distributed during the seminar.

## 2.1. Overview of Lectures and Discussions

### *Trends in science policy: governments priority setting*

The first presentation of Karen Siune summarized the European science policy as a part of its political agenda, such as Lisbon declaration (2000) created a European Research Area (ERA) and Barcelona declaration (2002) decided on 3 % R&D to GDP within the EU countries before the end of 2010). She noted that priority setting, on both national and international levels, is mainly a political decision and that improvement can be achieved only with the help not only of scientific community but also of entire society. K. Siune used Finland and Denmark as examples to illustrate an effective utilization of knowledge and innovations that can improve the life of people and bring an economic growth. In case of Finland the growth depends very much on NOKIA that is a main promoter, financier and consumer of R&D. A. Teich noted that such a big dependence on only one biggest company in a country might cause problems when the company dramatically reduces its production or even closes down. In discussion, K. Siune paid attention to different trends of priority setting such as 1) all countries use the same European priorities; 2) national specifics dominate European policy; or 3) domination of regional specific patterns.

### *Science policy instruments in the priority setting processes*

The second presentation of K. Siune was devoted to science policy instruments in the priority setting processes. She explained that besides the main policy making means like budget, and statistical indicators, governments should take advantage of policy advice structure, expert reviews, foresight process, and strategic planning to set up priorities. Benchmarking, publication-measures, and account of patents as evaluation tools play a very important part in this process. K. Siune also discussed instruments in the implementation of priorities: public (free or programmatic), specific funding (foundations) and contracts; and frame-condition instruments: management principles at different levels,

wages, position-structures, taxation models, and ownership-model of institutions. She pointed out that efficiency of short-term management at both national and institutional levels is now a big issue.

Both presentations were listened to with great attention and many questions and comments among the audience were provoked. The participants discussed problems in their countries. The Ministry of Science does not exist in most CEECs and STI agenda is under the responsibilities of different ministries. In many countries, science is a part of Ministry of Education, quite often it is under the Ministries of Technology and sometimes with Ministries of Business and Economic development. K. Siune mentioned a case of Denmark where they have Ministry of Science, Technology, and Innovation. *K. Ferjentsik, Czech Republic* asked how technology foresight results are accepted by politicians and used in a priority setting process. K. Siune replied that it is a complicated process (professional groups, lobbies, etc.) and at the end, it is on politician to accept the recommendations or not. All countries face problems with low S&T support, low salaries of scientists and technicians, brain drain, problematic evaluation of research institutions, and lack of information for preparing indicators (*P. Nevhutalu, South Africa; A. Vass, Romania; I. Bulkin, Ukraine*, and others).

### ***The evolution of University-Industry-Government (I-U-G) relationships***

A. Inzelt presentation provided the participants with a complex view of problematic I-U-G relationship and possibilities of cooperation in S&T. Her lecture included a detailed description of types, functions, levels, and patterns of interaction; measures used; governmental role as a facilitator in S&T; and national innovation system. *S. Lauerova, Czech Republic* asked what role has the Academy of Science in this model. A. Inzelt explained that the original Triple Helix model based on U.S. model, which does not include academies. CEE academies can be included into the university sector as basic research organizations. Further discussed a complicated division of funds between research institutions and a number of centers of excellence in countries. Questions and comments from the participants were related to the involvement of Hungarian universities in industry-research if companies were privatized by foreigners, intellectual property rights and psychological barriers of cooperation (*K. Ferjentsik, Czech Republic*), support of SMEs (*L. Elina, Latvia*), student training in industry (*T. Doubnitchcheva, Russia*), and trends of cooperation (*T. Dishnica, Albania, A. Vass, Romania, L. Elina, Latvia*). During the discussion A. Teich mentioned also a negative side of U-I cooperation in the USA reflected in conflicts of interests. P. Nevhutalu explained the government of South Africa invests USD 2 for every USD 1 given by industry to university with a condition that program includes training of women and black students, other wise it invests only USD 1:1; they have special programs to facilitate mobility of students and researchers to industry and vice versa.

### ***Technology assessment (TA) in Europe***

Second lecture of R. Coenen was devoted to the technology assessment. In the 60's and 70's of the last century, people increasingly became aware of negative impacts of technology, especially environmentally detrimental impacts. The U.S. Congress established the Office of Technology Assessment in 1972 and within a short time, the TA concept spread across Europe. R Coenen pointed out that TA should provide decision-makers with comprehensive and neutral information on the likely impacts of new technologies. Within the last 25 years, there were different TA concepts but the majority of the TA community now shares some common features:

- 1) early warning of potential negative impacts and possible chances for economic and societal development;
- 2) analysis of factors which promote the development as well as measures and instruments which support beneficial development and avoid negative impacts;
- 3) shift from technology-oriented TA to a problem- or need-oriented TA, which explores and evaluates options for solving societal problems;
- 4) actors of the innovation system, stakeholders, and societal actors have to be involved in a TA process;
- 5) TA studies are value-sensitive and results highly depend on a subjective judgment of the TA analysts.

R. Coenen stated that the only area of policymaking where TA had succeeded in establishing itself as an institutionalized activity is the parliamentary field. European Parliamentary Technology Assessment (EPTA) network has currently 13 full and 4 associated members. Besides that, universities, research institutes, private non-profit institutions, and consultancies carry out TA activities throughout Europe. It raised a question from *I. Bulkin, Ukraine*, what qualifies the organization to be a TA institution. R. Coenen answered that any institution which does Foresight studies, evaluation of research programs, R&D policy and other mentioned activities can be consider as TA organization. *E. Metsar, Estonia*, used an example of its country that prepares technology policy based on analysis of sectors and noted that TA is extremely important for small countries in a process of policymaking. Farther in his presentation R. Coenen described the Technology Foresight (TF), a booming procedure serving as an advice tool to politicians in nearly all countries and its secondary benefits as “5 Cs” (communication, concentration of longer-terms, coordination, consensus, and commitment). According to studies, Technology foresight predictability is about 50%. *P. Nevhutalu, South Africa* mentioned the ‘responsibility of industry’ in being the biggest producer of new technologies but its decisions (and realization of the results) being affected by the market.

### ***Measuring the returns on public investments in R&D***

I. Feller in his lecture paid attention to a growing importance of measuring not only inputs but also outputs. He mentioned national indicators that depend on different cultural and historical backgrounds or system structure of countries and concrete S&T metrics. Among general policy issues, which may or may not be used in different countries, he talked of accountability, relevance to national priorities and calls, performance, quality, aggregate level of R&D investment and allocation of R&D funds. His presentation awoke an extensive discussion on subject. *T. Doubnitchcheva* said that in Russia they introduced special courses for humanities on natural sciences and technology. Courses should help future policy-makers to understand not only economic and legal issues but also fundamental material laws in mathematics, physics, and chemistry. Hungary has recently made a study on internal mobility of scientists among types of organizations (research institutions, industry or service sector) and IKU is also involved in an EU project on brain drain. All CEE countries are facing the same problems of scientists leaving research and entering business sector. Many questions were devoted to difficulties with measuring outcomes for basic science and long-term e.g. agriculture research, scientific “frod”, R&D budget structure, quality of publications and citation index, or lack of law and regulation in ethically problematic fields (*I. Bulkin, Ukraine, T. Doubnitchcheva, Russia, S. Lauerova, Czech Republic*, and others)

### ***Relationship between S&T and innovation policy and other policies***

Second presentation of I. Feller addressed different state policies and their relationship to S&T policy. The lecturer named four main policies: industrial, education, regional and regulatory; and gave a short description of each. Then he asked the participants to characterize these policies in their own countries. *S. Lauerova, Czech Republic* raised a problem of reputation of technician within a society. It showed up that all countries including EU and the USA face the same issue. Another problematic sphere is involvement of women and minorities in science (*P. Nevhutalu, South Africa*). To make technical disciplines attractive to people we should start from the level of primarily schools. Open science days at research institutions and technical universities together with universities enrolment might also help to improve the situation. Participants also discussed ethical problems and borders of research especially in medical and agricultural fields.

### ***Building research capacity in less developed countries***

Lecture of A. Teich was based on U.S. experience and used as a case study. Distribution of Federal R&D in the U.S. is very uneven - while the top 5 states get almost 50% of federal funds, the bottom 10 states receive only 1,6%. National Science Foundation started the Experimental Program to Stimulate Competitive Research (EPSCoR) in 1979. All technical agencies in the USA nowadays have their own EPSCoR projects. A. Teich explained the main reasons to build research capacities in less developed areas (brain drain, economic development, politics, etc.), program advantages and shortcomings, the role of the AAAS in the program, and strategies for building competitiveness. The presentation raised a lot of questions on utilization of program idea in CEECs - problems with sunrise and sunset conditions (*A. Vass, Romania*), economic mechanisms (*I. Bulkin, Ukraine*), expert teams to find the strength of the institutions (*L. Mamica, Poland*), evaluation of competitiveness (*E. Metsar, Estonia*), institutions management (*P. Nevhutalu, South Africa*), price of the Research Competitiveness Service (*K. Ferjentsik, Czech Republic*), percentage of R&D federal expenditures to the bottom 10 states in the beginning of the program (*S. Lauerova, Czech Republic*).

### ***R&D policy in support of sustainable development***

R. Coenen in his first presentation explained role of Sustainable Development (SD) and ways to support it by R&D policy. The general SD definition is “SD is development that meets the needs of the present generation without compromising the ability of future generations to meet their own needs”. Following the adoption of SD as an overall goal for societal development on the Rio conference on Environment and Development in 1992, many countries have implemented national sustainability strategies with the aim to promote SD at the national and global level. Most of these strategies consider SD not merely as a new embracing goal for environmental protection but as a vision for societal development in general. It is now widely accepted that policies in support of SD have not only to consider environmental concerns but equally economic and social concerns of development. This interpretation of SD is often called the three-pillar model of SD (Scandinavians use multi-pillar model, which includes also cultural issues). R. Coenen noted the main challenges of SD, with specific rules for each goal to succeed: 1) sustaining human existence (protection of human health, security, using of natural resources, reducing extreme differences in income and wealth); 2) maintaining society’s productive potential (use of renewable resources, to avoid unacceptable risks, SD of real capital, use of human and knowledge capital); 3) preserving the development and action opportunities of society (access to education, information, and occupation, participation in

societal decision-making process, conservation of cultural heritage and cultural diversity, conservation of nature's cultural functions). In a second part of a lecture, R. Coenen was describing the challenges in SD policy and different types of innovations.

*I. Bulkin, Ukraine* and *A. Vass, Romania* asked how is the idea of sustainable development relevant for less developed countries. R. Coenen answered that the SD is relevant for all countries, even poor and less developed nations can apply its practices on both national and international levels, but they should avoid unacceptable risks. Countries with different level of development should fulfill SD short and long-term goals step by step and create directive limits and concepts for their implementation.

### ***Central and Eastern European countries in the European Research Area***

Ch.-M. Geurts presentation was addressing the European Union R&D programs and possibilities of CEE countries participations. He provided general information on the European Research Area (ERA) and the 6<sup>th</sup> Framework Programme (FP6).

His presentation provoked a number of questions. *I. Bulkin, Ukraine* and *A. Koplaku, Albania* asked how post soviet and Balkan countries could participate in the programs. Ch.-M. Geurts replied that other than member or candidate countries can also enter EU programs based on bilateral agreements but only to a limited extend and that they should improve economy and human rights in their countries. R. Coenen raised a question about funds distribution in main categories and the answer was that the percentage was determined only for SMEs and other categories follow given criteria and priorities. *A. Inzelt* stressed the importance to open CEECs' national programs to foreigners. Ch.-M. Geurts responded to *V. Jozsa, Hungary* that much high number of proposals than EU expected caused postponement of the final decision on Centers of Excellence. He also explained that PHARE funds are not intended for specific projects and are distributed only on a national level. *K. Ferjentsik, Czech Republic* embraced simplification of financial management, paper procedures. Ch.-M. Geurts and R. Coenen pointed out that EU shifts to practice where the same person is responsible for taking a decision and for financial aspects of a project. *P. Nevhutalu, South Africa* was interested in methods to increase women involvement (raise of awareness, inventory of factors to encourage women, etc.) and in participation of South Africa in the programs.

### ***National versus European research programs – A grassroots approach***

N. Konstantopoulos devoted the first part of his lecture to conflicts and competitions between national and European programs caused by different thinking of national and EU governments. Many national programs have to fulfill national requirements that are not always consistent with EU priorities and it is reflected in their differences in budgets and R&D expenditures. On the other hand, if countries want to participate on EU programs and receive EU funding they have to meet EU priorities. He noted that in frame of quality vs. quantity of European R&D we have to be clear what we want, what is feasible and who are our internal and external competitors. N. Konstantopoulos was also explaining main elements of effective utilization of means such as structure of the R&D budget, infrastructure of investments, private sources (BERD) which have bigger flexibility than public funding, networking, and opening of national programs to foreigners (e.g. Greece would like to open its programs for inter-Balkan cooperation). He mentioned that Greek and Portugal research is supported by EU to a high extend to fill gaps in fields for which they do not have sufficient national sources. Second part of the presentation was dealing with control mechanisms of EU R&D programs – auditing and reporting, evaluation, impact assessment, and governance rules. In a world of

globalization, benchmarking and excellence mapping become also important tools. To complete EU research landscape N. Konstantopoulos informed about new grassroots approach to get researchers together and to a convention. The approach includes establishment of the Parliament of Academies of Sciences instead of national academies, confederation of R&D agencies, and research tax.

*P. Nevhutalu, South Africa* asked what concrete effects EU program funding brings. N. Konstantopoulos replied that EU program support produces progressive unification and harmonization of programs, gives possibility to network, and mobility programs help to keep good scientists in Europe instead of moving to the USA or Canada. *K. Ferjentsik, Czech Republic* agreed that even countries with limited funds should open their national programs but also was complaining about complicated application procedures within the EU programs. To answer a question of *A. Vass, Romania* on low number of scientists per inhabitant in Greece he explained that new infrastructure of S&T after 1992 helps to decrease or stop brain drain that started after the 2<sup>nd</sup> World War.

### ***Policy measures***

Second presentation of N. Konstantopoulos dealt with definition and description of policy measures including role of private R&D sector, mechanisms of funding, autonomy of management.

None of the participants had a personal experience with proposing a project to EU. *E. Metsar, Estonia* was interested if it is possible to have one common ERA with one R&D policy when national policies are so different and impossible to apply to another country. To answer the question the lecturer used the EURATOM program as a successful example of one common policy and project that enables to cut the expenses. He also pointed out a necessity to find and exploit national advantages in each country. *A. Inzelt* comment was related to EU-USA competition and cooperation - EU tries to track US experience with having federal and state policies, and they all function well together. N. Konstantopoulos was also presenting Greek structural funds used for infrastructure needs, and helping to stop brain drain or to establish university departments in less developed areas. These funds are very limited and even now it is clear that not all countries will reach level of 3% GDP for R&D.

*P. Nevhutalu, South Africa* expressed his opinion that short-term projects are better for new researcher, because they allowed funding agencies to monitor them more often. N. Konstantopoulos replied that it should be a balance between proposed research and budget to fulfill the requirements of a project. He also recommended establishing of programs for new researchers on proposal writing and project management. *T. Dishnica* said that in *Albania* they would like to join all agricultural institutes and create one national agency. N. Konstantopoulos replied that they should be careful doing it, because afterwards they will have to cover 100% of every agricultural project and problem in whole country. Better idea might be to establish clusters of research institutes in regions. In a response on *K. Ferjentsik, Czech Republic* question how to smoothen problems of cooperation between universities and the Academy of Sciences the lecturer mentioned a common dilemma of competition for cooperation or cooperation for competition; it is on government to create general criteria for all scientists. Further discussion raised questions on necessity of managerial posts to administer project funding (*E. Metsar, Estonia*), centers of excellence (there are 6 in CEEC; 4 in Hungary, 1 in Czech Republic and one 1 in Estonia), peer review process (*S. Lauerova, Czech Republic, A. Vass, Romania, and others*).

### ***Nature and patterns of technology and industry upgrading in Central and Eastern European countries***

In his first presentation, S. Radosevic noted that to understand the context in which transformation of S&T systems in CEE takes place we have to consider institutional and technological transformations. Only few Central European economies (Poland, Czech Republic, Slovenia, and Baltic states) have integrated relatively quickly with the EU. Bulgaria and Romania become part of the accession group with good prospects for further integration while Albania and ex-Yugoslavia states have fallen behind in this process. Russia, Belarus, Ukraine, and Moldova have only started to recover their economies. The important role in a process of upgrading plays a countries' industry specialization. As Hungary, Poland, Czech Republic, Baltic's, and Slovenia have mainly sophisticated engineering industry; Romania and Bulgaria are oriented to a labor industry. S. Radosevic stated that one of the crucial things is that productivity development is not balanced with innovation processes in CEE. He provided a lot of statistical material on a subject that raised number of questions from the side of audience. Discussion was centered on a role of national political leadership, sectoral, national, and international studies, awareness of innovations on business level, absence of a correlation between R&D expenditures and GDP growth. (*E. Metsar, Estonia, I. Bulkin, Ukraine, P. Nevhutalu, South Africa, and others*).

### ***Innovation policy in CEE candidate countries***

Lecture of S. Radosevic was concentrating on activities and problems in applying innovation policy in CEE countries. Pre-accession steps of candidate countries have highlighted the issues of competitiveness and their capacity to withstand pressures of EU market. He stated that accomplished technological upgrading had not been linked to R&D system but rather to the acquisition of knowledge in the production process. Candidate countries are facing the European paradox – they have good science but are not successful in applications. S. Radosevic described the National Innovation Capacity framework and four groups of indicators (absorptive capacity, R&D supply, diffusion, and demand) used in his study. He used statistical data to explain the situation in CEE countries. Questions and comments dealt with a not very good suitability of OECD and Eurostat indicators for transition economies, the impact of the different rate of GDP growth in CEE countries, reasons for different situation in candidate countries, the possible impact of geographical embeddedness, lack of indicators for benchmarking, and the importance (and weight) given to each indicator in aggregation. (*A. Vass, Romania, K. Ferjentsik, Czech Republic, E. Metsar, Estonia, I. Bulkin, Ukraine, and others*)

## 2.2. Roundtables and situation game

During the seminar 3 group work was organized.

- 1) Role of S&T indicators in policy deliberation and indicator demand of CEE policy-makers. This exercise put on the agenda the UNESCO debate on S&T policy priorities and discussed the topics in three groups: (1) General S&T policy issues, (2) Detailed S&T policy issues, (3) Policy information needs. After intensive discussion on subjects – benchmarking countries, indicator development, and actors involved each group had to report to the others. Presentations themselves and final general discussion proved that participants could effectively utilize new information obtained.

All participants also served as a resource for UNESCO Institute of Statistics by filling out the Questionnaire on Science and Technology Policy Priorities, which was developed common with UNESCO Division of Science Analysis and Policies (SC/AP) and the Regional Office for Science and Technology in Latin America and the Caribbean.

- 2) The topic of the situation game was “EU entrance negotiation on R&D issues”. Participants formed two groups 1) EU Committee and 2) Representatives of accession country. The task of an accessing country was to introduce its S&T policy, financing mechanisms and research field structure in order to persuade the members of the committee that the country is prepared to fulfill all requirements of EU. In spite of a confusion and postponement of the country access for further negotiations, the discussion was very intensive and fruitful.
- 3) Participants were invited to serve as the member of the *International Technology Indicators Panel*. With this survey the Georgia Institute of Technology (GeorgiaTech) in particular seek to anticipate the extent to which various countries will advance their capabilities to export technology-intensive products and services over the next 15 years. The questionnaire on the High-tech Indicators from GeorgiaTech was also distributed as homework.

Lecturers served as moderators in each cases.

## 3. Main lessons of the seminar

During the closing session of the seminar the participants discussed the main lessons learned during the seminar that can be summarized as follows:

- ❖ The *priority setting* process in S&T is based on political and rational scientific decision and has to face with psychological barriers
- ❖ Each country has to find its own policies and priorities for development (no all round remedies)
- ❖ *S&T indicators* are strong in measuring the input, but weak in measuring the outcome of R&D&I (need to develop indicators for innovative processes benchmarking)
- ❖ Further steps has to be made to strengthen the *university-industry cooperation*
- ❖ Good national programs for *undeveloped R&D regions* – a way to increase a nation’s overall innovativeness
- ❖ Great variety of *EU R&D Programs* are open for all CEECs in cooperation with their national programs, other countries can participate on bilateral basis

- ❖ *Sources of growth* are not directly linked to R&D but to the acquisition of knowledge and learning
- ❖ Better policy to increase *attraction of science and status of technical and scientific community within society*

Some participants expressed an opinion that the seminar should avoid general approach by e.g. picking one CEE country as an example and using it throughout all discussed issues and that lectures were too diverse but nevertheless provided useful information. Focus on R&D was not necessary, one or two topics should have been discussed. Some admonitions were devoted to a duration of the seminar (too long – 5-6 day will be sufficient) and to situation game (should be more organized). The participants also reminded that it was not necessary to be in 100% accordance with the schedule when interesting topics were discussed. Presentation of South Africa representative was welcome with a great concern. It was very interesting and made it possible to look at variety of R&D problems from a different perspective.

Participants suggested several topics for future training seminars and scientific workshops:

- ❖ **Brain drain** – challenges and solutions
- ❖ Facilitation of the **University- Industry-Government links** and cooperation
- ❖ Relevance of the **Sustainable Development** concept to less developed countries
- ❖ Role and position of **Technology Assessment** in CEE
- ❖ **European paradox** - good in science but lagging application
- ❖ Appropriate **set of indicators** for CEE countries and equilibrium between international comparability of data and suitable indicators for transition economies

All participants expressed their gratefulness to the organizers for the opportunity to attend the seminar that provided very useful information. They especially complimented and enjoyed its informal character, which enabled them to express their ideas and thoughts without restraints. The participants embraced the opportunities to visit cultural events and The Hungarian Parliament. This gave them an opportunity to take part in a discussion on Hungarian economic situation and R&D policy with one of the Member of Parliament, György Podolák, vice-president of the Economic Committee and Márton Tardos, former president of the Committee.

The 2<sup>nd</sup> Mid-Career CIPRE Seminar was a very useful occasion to share and compare information on R&D policies and juridical environment in the USA, EU, and different CEE countries. The lecturers selected from top experts and professors have updated the participants with most recent development in a field of Science and Technology, which gave the participants a chance to estimate the future advancement in rapidly changing surroundings. All this together entitles us to consider the seminar as a very beneficial to all parties.

#### **4. Future activities**

Every second CIPRE mid-career seminar will be organized outside Budapest. Next one will take place in Romania, near **Bucharest** in **2003**. CIPRE is also planning to organize two short-term events on brain drain in Chisinau, Moldova and S&T indicators in Kiev, Ukraine.

***Future relationships among the participants of the seminar***

Contacts established during the seminar should in the future include:

- ❖ Enhancing collegial interchange, workshops, conferences
- ❖ Joint research and actions – multilateral, trilateral, and bilateral co-operations
- ❖ Exchange programs, working papers and publications about national activities in R&D
- ❖ Facilitating the dissemination of knowledge and information between our organizations
- ❖ Developing linkages between the participants by periodical meetings (2 times/year) in different locations (each participant was encouraged to attend two CIPRE mid-career seminars)
- ❖ Establishing of the society for advancement in science, technology and innovation
- ❖ National R&D materials translated to English available on internet
- ❖ Emphasize and increase cooperation between CEE countries

***Alumni group***

All participants became members of an alumni group and in the future they should help to identify good candidates to seminars research programs and raise fund to support their country-fellow involvement. They were asked to send a letter to a CIPRE secretariat 6 months after the seminar on their experiences relating to seminar participation.

Prague, January 9, 2003.

Simona Lauerova  
Chief Rapporteur

Andreea Vass  
Friend of Rapporteur

With the contribution of Laszlo Csonka

**Annexes**

- 1) List of participants
- 2) Detailed program of the seminar
- 3) Letters from UNESCO Institute for Statistics (International S&T consultation)

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“POLICY ANALYSIS AND IMPLEMENTATION”**

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## PROGRAM OF THE 2<sup>ND</sup> MID-CAREER TRAINING SEMINAR “POLICY ANALYSIS AND IMPLEMENTATION”

### Sunday, 17<sup>th</sup> November

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17:30 – 18:30 Arrival and Seminar registration  
18:30 - Welcome Buffet

### Monday, 18<sup>th</sup> November

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9:30 – 10:50 Welcome and introduction to the seminar  
by co-directors A. Inzelt & A. Teich  
10:50 - 11:10 Welcome by **Chairman of the NATO STPO Panel** L. Nyiri  
11:10-11:30 Coffee break  
11:30 – 13:00 *Trends in science policy: governments priority setting* by K. Siune  
13:00 – 14:30 Lunch break  
**Chairperson: A. Teich**  
14:30 – 16:45 *Short overview of national practices* by Participants  
16:45 – 17:00 Coffee break  
17:00 – 18:00 *Science policy instruments in the priority setting processes* by K. Siune

### Tuesday, 19<sup>th</sup> November

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**Chairperson: R. Coenen**  
9:30 – 11:00 *The Evolution of University-Industry-Government relationships* by A. Inzelt  
11:00 – 11:20 Coffee break  
11:20 – 12:30 Discussion on *The Evolution of University-Industry-Government relationships*, other national experiences: **Latvia:** “*Short overview of national R&D policy in Latvia*” by E. Vasermane & L. Elina; **Romania:** “*The restructuring process of Romanian S&T system*” by R. Negrut and **others**  
12:30 – 14:30 Lunch break  
**Chairperson: A. Inzelt**  
14:30 – 16:00 *R&D policy in support of sustainable development* by R. Coenen  
16:00 – 16:20 Coffee break  
16:20 – 17:30 Seminar discussions

### Wednesday, 20<sup>th</sup> November

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9:30 – 12:30 Visit to the Hungarian Parliament, hosted by **G. Podolak, MP**, Vice-President of the Economic Committee of the Hungarian Parliament (Special program for registered participants)  
12:30 – 14:30 Lunch break  
**Chairperson: A. Inzelt**  
14:30 - 16:00 *Building research capacity in less developed regions* by A. Teich  
16:00 – 16:20 Coffee break  
16:20 – 17:30 *Technology assessment in Europe* by R. Coenen

**Thursday, 21st November**

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- Chairperson: R. Radosevic**
- 9:50 – 12:00 *Central and Eastern European countries in the European Research Area* by **Charle-Michel Geurts, Embassy of the European Commission**
- 11:00 - 11:20 Coffee break
- 12:00 – 12:30 Analysis of S&T policy in selected CEE countries based on the participants' presentation: **Czech Republic:** “*R&D System of the Czech Republic*” by S. Lauerova & K. Ferjentsik; **Romania:** “*New Challenges for the Romanian R&D System Priority Settings*” by A. Vass
- 12:30 – 14:30 Lunch break
- Chairperson: A. Inzelt**
- 14:30 – 16:00 *Nature and patterns of technology and industry upgrading in Central and Eastern European countries* by S. Radosevic
- 16:00 – 16:20 Coffee break
- 16:20 – 17:30 Roundtable exercises

**Friday, 22<sup>nd</sup> November**

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- Chairperson: A. Teich**
- 9:30 – 11:00 *Innovation policy in Central and East European candidate countries* by S. Radosevic
- 11:00 – 11:20 Coffee break
- 11:20 – 12:30 *Cont. Innovation policy in CEE candidate countries*
- 12:30 – 14:30 Lunch break
- 14:30 – 16:00 *Cont. Analysis of S&T policy in selected CEE countries based on the participants' presentation: Albania:* “*STI Policy in Albania, problems afforded during the transition*” by A. Kopliku; **Poland:** “*Innovation Problem in Malopolska Region*” by L. Mamica and others
- 16:00 – 16:20 Coffee break
- 16:20 – 17:00 Seminar discussions

**Saturday, 23<sup>rd</sup> November**

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- Chairperson: S. Radosevic**
- 9:30 – 11:00 *National vs. EU research programs – A grassroots approach* by N. Konstantopoulos
- 11:00 – 11:20 Coffee break
- 11:20 – 12:30 *Cont. National vs. EU research programs – A grassroots approach*
- 12:30 – 14:30 Lunch break
- 14:30 – 16:30 Situation games

**Sunday, 24<sup>th</sup> November**

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Free programs (sightseeing and cultural activities)

**Monday, 25<sup>th</sup> November**

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- Chairperson: I. Feller**  
9:30 – 11:00 *Policy measures* by N. Konstantopoulos  
11:00 – 11:20 Coffee break  
11:20 – 12:30 *Cont. Policy measures*  
12:30 – 14:30 Lunch break  
**Chairperson: N. Konstantopoulos**  
14:30 – 16:00 *Measuring the returns on public investment in R&D* by I. Feller  
16:00 – 16:20 Coffee break  
16:20 – 17:30 Work in groups

**Tuesday, 26<sup>th</sup> November**

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- Chairperson: A. Inzelt**  
9:30 – 11:00 *Relationship between S&T and innovation policy and other policies*  
by I. Feller  
11:00 – 11:20 Coffee break  
11:20 – 12:30 Seminar discussions  
12:30 – 14:30 Lunch break  
14:30 – 16:00 Conclusions of the seminar, future tasks  
End of the Seminar at 4 p.m.

**LETTERS FROM UNESCO INSTITUTE FOR STATISTICS**

Date sent: Wed, 27 Nov 2002 12:41:03 -0500  
From: Bertrand Tchatchoua <b.tchatchoua@unesco.org>  
**Subject: RE: UNESCO questionnaire**  
To: annamaria.inzelt@bkae.hu  
Send reply to: b.tchatchoua@unesco.org

Dear Dr. Annamaria Inzelt,

We have very much appreciated your contribution as well as those from the participants of your CIPRE seminar; I will directly contact all of them.

Looking forward to cooperating with you

Bertrand  
Kind regards

Date sent: Wed, 27 Nov 2002 13:24:57 -0500  
From: Bertrand Tchatchoua <b.tchatchoua@unesco.org>  
**Subject: International S&T consultation**  
To: tana@kc-al.org  
Copies to: 'Annamária Inzelt' <annamaria.inzelt@bkae.hu>  
Send reply to: b.tchatchoua@unesco.org

Dear colleague,

We acknowledge receipt of the questionnaire from Dr. Annamaria Inzelt, Director, IKU Innovation Research Centre. We thank you for having taken the time to fill it out for us. You will be receiving the results of our consultation once we process and analyse the responses received from countries. We hope that our collaboration will continue in the future. Thank you once again for your contribution.

Best regards,

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