

WBC-INCO.NET

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Report on ERA indicators workshop

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Executive Summary

This deliverable presents organization, main outcomes and lessons learned as from the workshop on ERA indicators, held in Belgrade on October 2 and 3, 2008.

In this training workshop two different aspects are promoted: first, policy makers are trained in the use of statistical indicators for policy-making while the second part is oriented towards the application and production of indicators geared towards statisticians.

The targets for the learning group are the national statistical offices dealing with Science and Technology statistics in Western Balkan Countries (WBC), and the representatives of the relevant ministries, responsible for the S&T policy.

This workshop is also meant to facilitate networking among statisticians. Idea was to be attended by approximately one policy maker and one statistician from each respective science ministry and two statisticians from the relevant statistical office of each WBC. In addition, experts from EUROSTAT, UNESCO and OECD as well as from the WBC-INCO.NET partners' UNU-MERIT, ZSI, GSRT and were invited to attend the workshop.

Objective of the ERA indicators training workshop was:

- 1) to make all participants familiar with the ERA indicators.

Specific objectives of the ERA indicators training workshop are:

- 1) to train policy makers on how to use of statistical indicators for policy making,
- 2) to train statisticians on how to apply and produce of ERA indicators.

This deliverable contains the main findings of the workshop – apart from presentations of methodological bases as well as best practice from OECD, UNESCO and EUROSTAT, concerning R&D statistics, main needs and obstacles in WBC are summarized and guide is developed in order to help statisticians, researchers and other interested practitioners from WBC in their work with collection, handling and analysis of data and information concerning R&D statistics. Guide is consisting of two main parts:

- A collection of links toward useful web-sites; and
- A list of potential opportunities for technical assistance.

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1 Introduction

1.1 Presentations of methodologies and best practices

Three main international organizations, responsible for creation of methodological bases as well as for collection, analysis and interpretations of statistics in the field of science, technology and innovation are presented during the workshop.

First, Martin Schaaper from OECD, has presented the following:

- OECD: Science and Technology and Innovation Indicators – Methodologies and Manuals; and
- OECD: Using S&T&I Indicators for S&T and Innovation Policy.

Secondly, Reni Petkova, from Science, Technology and Innovation Statistics – Eurostat (ESTAT), unit F4, has presented the following:

- EUROSTAT methodologies and practice – R&D indicators for monitoring and evaluation of creation of European Research Area; and
- EUROSTAT methodologies and practice – Innovation statistics and indicators for monitoring and evaluation of European Innovation System.

Thirdly, Lena Tsipouri, Associate Professor at the University of Athens, Department of Economic Sciences, has presented the following:

- UNESCO: Organization of R&D and Innovation statistics; UNESCO families of R&D indicators, relevant for R&D and Innovation policies.

All participants are supplied with power point presentations, prepared by the above mentioned experts. The presentations are available at

<http://www.wbc-inco.net/object/news/21737.html>

1.2 Presentations of production and use of S&T&I statistics and indicators in WBC

Participants from WBC are asked to present situation, incentives for restructuring, needs and obstacles in their respective countries in the field of production and use of S&T&I statistics and indicators. This was done by the participants from Albania, Bosnia and Herzegovina, Croatia, Former Yugoslav Republic of Macedonia, Montenegro, and Serbia.

Available power point presentations, prepared by the above mentioned participants, are distributed to all participants of the workshop.

2 Lessons learned

This section is consisting of main needs and obstacles in WBC which are summarized by the actors, countries and institutions / international organizations to be addressed. Additionally, a guide is developed in order to help statisticians, researchers and other interested practitioners from WBC in their work with collection, handling and analysis of data and information concerning R&D statistics. Guide is consisting of two main parts:

- A collection of links toward useful web-sites; and
- A list of potential opportunities for technical assistance.

2.1 Building Capacities – Needs and Obstacles

The main needs and obstacles in WBC are summarized by the actors, countries and institutions / international organizations to be addressed.

2.1.1 WBC and ERA Indicators – Needs and Obstacles clustered by the actors

Responsible ministries:

- Appropriate funds are missing
- Limited competences and insufficient supporting infrastructure
- Lack of information on the respective communities in other countries
- Very low international integration

Statistical offices:

- Lack of trained statisticians generally and in the field (quality of provided data)
- Administrative capacities (lack of staff with skills in statistics)
- Lack of public understanding about role of ST&I statistics
- Indicators on S&T are not based on OECD Frascati Manual
- Survey instruments such as questionnaires, manuals, etc., are missing
- Methodologies for collection of data and analysis are missing
- Funds are missed
- Qualified people are missing
- Old equipment and lack of the basic infrastructure
- There is no production of S&T&I statistics and indicators
- Lack of training (S&T statistics, even foreign languages)

R&D community:

- Low R&D activity
- Lack of standards of quality

- Low collaboration and co-operation between different units within statistical office
- Brain drain
- No database of researchers
- S&T&I have very poor influence in economy and society
- There has not been enough public funding of research institutes, technology development and innovation.
- International research collaboration very poor
- Science and technology are still a low priority in national system

2.1.2 WBC and ERA Indicators – Needs and Obstacles clustered by the countries

Albania – MAIN PROBLEMS:

- CSPTD was unable to play its role, because of its composition. Is replaced by CHES (Council of Higher Education and Science)
- Limited competences and insufficient supporting infrastructure
- Very dispersed R&D system with small units
- Inability of research institutes to adopt their development according to the new reality
- Low R&D activity in Universities
- Lack of standards of quality
- Low collaboration and co-operation between different units within R&D system
- Brain drain
- Old equipment and lack of the basic infrastructure
- Lack of information on the respective R&D communities in other countries
- Very low international integration
- High and unnecessary number of Universities and Institutes
- Collecting S&T statistics – Until now Albania has not used any national classification and in this reality is very difficult to transform the existing indicators on R&D into the internationally accepted Frascati classification; In this situation the government expenditures on R&D in Albania evaluated as a part of 85% of the total R&D expenses by the research institutions
- Official statistics for human resources in science and technology in Albania for R&D employees and researchers do not equate to Full Time Equivalent (FTE) as defined in the OECD's Frascati manual - The only one national statistical institution (INSTAT) in Albania has not provided the statistics for the R&D
- So, in conclusion, why data on R&D are not currently being collected, are:
 - Infrastructure is in a stabilization process
 - Indicators on S&T are not based on OECD, Frascati Manual
 - Survey instruments such as questionnaires, manuals, etc., are missed
 - Methodologies for collection of data and analysis are missed
 - Funds are missing
 - Qualified people are missing

Bosnia and Herzegovina – information provided only for Republic of Srpska:

- Production of S&T&I statistics and indicators – Republic of Srpska Institute of Statistics:
 - There is no production of S&T&I statistics and indicators
 - No organization part for S&T&I activity
 - No common database of researchers
 - No defined S&T&I statistics and indicators (role of indicators, sources, main topics).
- S&T&I statistics and indicators – Troubles:
 - S&T&I have very poor influence in economy and society in Republic of Srpska.
 - There has not been enough public funding of research institutes, technology development and innovation.
 - Funding of S&T&I has been low and research infrastructure conditions are inadequate.
 - The brain drain problem has been very high.
 - International research collaboration very poor

Croatia:

- Lack of trained statisticians generally and in the field (quality of provided data)
- Administrative capacities (lack of staff with skills for work in statistics)
- Lack of public understanding about the role of ST&I statistics

FYR of Macedonia – Obstacles:

- Science and technology are still a low priority in the national system
- Our academic and scientific community do not pay enough attention for these indicators although there are several public institutes funded by the state to conduct such analyses
- Even at the governmental level there is not enough awareness for the importance of these indicators
- In general there is a lack of interest for S&T&I Statistics and Indicators
- In the sphere of production of statistics:
 - Statistical office is understaffed in this area, only one person is responsible for the survey
 - Missing of data for some key institutions, that reflects to the quality of the data (especially in Business Sector and Natural Sciences)
- Needs:
 - Increasing the awareness for the importance of S&T&I Indicators, especially at Government level
 - More intensive collaboration between the stakeholders (Government, ministry of science, statistical office and responding units, especially cooperation with R&D unit in Business sector)
 - Improvement of internal capabilities for production of S&T&I statistics, the quality of the R&D data, increase of coverage of the survey, training of staff – in SSO for analyzing the data and in MES for using of the bibliometrics data

Montenegro – Needs and obstacles:

- Lack of staff in statistical offices
- Lack of understanding on governmental level
- Training (S&T statistics, even languages)
- Improvement of methodology
- New legislation adopted/harmonized with EU

Serbia – Needs and obstacles:

- The general politics is: reduction of government administration (at the moment: one statistician and one project engineer)
- Expansion of the number of experts in this area (at least 4 statisticians and project engineers)
- Support in providing technical instruments: methodological recommendation, questionnaire, tabulation schemes and so on.
- Permanency of education and training for personnel: participation on international workshops
- Suggestion for improvement of coverage in R&D with the aim to include business sector and non-profit sector
- Statistical units - overcrowded by requests from state statistics and other government institutions

2.1.3 WBC and ERA Indicators – Needs and Obstacles clustered by the institutions / international organizations to be addressed

EUROSTAT, OECD:

- Indicators on S&T are not based on OECD, Frascati Manual
- Survey instruments such as questionnaires, manuals, etc., are missing
- Methodologies for collection of data and analysis are missing
- Lack of training (S&T statistics, even foreign languages)
- Improvement of internal capabilities for production of S&T&I statistics, the quality of the R&D data, increase of coverage of the survey, training of staff – in SSO for analyzing the data and in MES for using of the bibliometrics data
- Support in providing technical instruments: methodological recommendation, questionnaire, tabulation schemes etc.
- Permanency of education and training for personnel: participation on international workshops
- Suggestion for improvement of coverage in R&D with the aim to include business sector and non-profit sector

EU institutions and EU funding schemes:

- International integration
- Support for building infrastructure
- Support in order to increase the awareness for the importance of S&T&I Indicators, especially at Government level
- Support in order to increase collaboration between the stakeholders (Government, MES, SSO and responding units, especially cooperation with R&D unit in Business sector)

2.2 Building Capacities – Guide for WBC

This guide is developed in order to help statisticians, researchers and other interested practitioners from WBC in their work with collection, handling and analysis

of data and information concerning R&D statistics. Guide is consisting of two main parts:

- A collection of links toward useful web-sites; and
- A list of potential opportunities for technical assistance.

2.2.1 A collection of web-sites

A collection of web-sites where the statisticians, researchers and other interested practitioners from WBC could find manuals, documents, data etc. is provided in this chapter.

2.2.1.1 Source: OECD

Contact person: Martin Schaaper: martin.schaaper@oecd.org

Useful links:

- www.oecd.org/sti/statistical-analysis
- www.oecd.org/sti/scoreboard www.sourceoecd.org/scoreboard
- www.oecd.org/sti/cdh
- www.oecd.org/sti/ipr-statistics
- www.oecd.org/sti/measuring-infoeconomy
- www.oecd.org/sti/measuring-globalisation
- Frascati Manual: <http://213.253.134.43/oecd/pdfs/browseit/9202081E.PDF>
- Oslo Manual: <http://213.253.134.43/oecd/pdfs/browseit/9205111E.PDF>
- Canberra Manual: <http://www.oecd.org/dataoecd/34/0/2096025.pdf>
- Patent Manual: (forthcoming)
http://www.oecd.org/document/10/0,3343,en_2649_34451_1901066_1_1_1_1,00.html
- OECD Guide to Measuring the Information Society:
www.oecd.org/sti/measuring-infoeconomy/guide
- Biotechnology framework: <http://www.oecd.org/dataoecd/5/48/34935605.pdf>
- Technology Balance of Payments Manual:
<http://www.oecd.org/dataoecd/35/13/2347115.pdf>
- Handbook on Economic Globalisation Indicators: (for sale)
http://www.oecd.org/document/44/0,3343,en_2649_34443_34957420_1_1_1_1,00.html

2.2.1.2 Source: EUROSTAT

Contact person: Petkova, Reni Dimitrova: Reni.Petkova@ec.europa.eu

Usefull links:

- Standard classifications to be used (the latest versions of NACE, NUTS, FOS, NABS, ISCED etc.) – all classifications are available on Eurostat's Metadata Server RAMON:
http://ec.europa.eu/eurostat/ramon/index.cfm?TargetUrl=DSP_PUB_WELC
- EUROSTAT PUBLICATIONS (News release; Statistics in Focus; Pocket books; Statistical books) – all R&D data and publications can be downloaded in electronic form without charges, through the Eurostat homepage:
<http://epp.eurostat.ec.europa.eu>
- Framework legal act: Decision № 1608/2003/EC of the EP and of the Council concerning the production and development of Community Statistics on science and technology
- Legal implementation measure: Commission Regulation № 1450/2004 implementing Decision № 1608/2003/EC of the EP and of the Council concerning the production and development of Community statistics on innovation
- Innovation Data Dissemination and Publications:
http://epp.eurostat.cec.eu.int/portal/page?_pageid=1090,30070682,1090_30298591&_dad=portal&_schema=PORTAL
- http://epp.eurostat.ec.europa.eu/portal/page?_pageid=1913,47567825,191357936852&_dad=portal&_schema=PORTAL

2.2.1.3 Source: UNESCO Institute for Statistics

UNESCO Institute for Statistics

C.P. 6128 Succursale Centre-Ville
Montreal, Quebec, H3C 3J7,
Canada

Telephone: (1-514) 343-6880

Fax: (1 514) 343-6872

Contact person; Lena J. TSIPOURI: tsipouri@ath.forthnet.gr

Usefull links: UNESCO – UIS:

- UIS Publications (S&T Bulletin 1 – Investment in R&D; S&T Bulletin 2 – Bibliometric Indicators; S&T Bulletin 3 – Women in Science; Fact sheet: R&D statistics; UNESCO Science Report 2005; International Report on Science, Technology and Gender 2007; UNESCO World Report; History of Science Statistics at UNESCO; Paper on 'current status of International Science statistics for Africa' in African Statistical Journal): <http://www.uis.unesco.org>
- The 2004 and 2006 S&T statistics surveys have been completed – the latest resulting data were released on the UIS website June 2008:
<http://stats.uis.unesco.org/unesco/tableviewer/document.aspx?FileId=76>
- Careers of Doctoral Holders – CDH survey – common 'toolkit' available to countries: <http://www.oecd.org/dataoecd/6/25/39811574.pdf>

2.2.2 A list of potential opportunities

A list of potential opportunities for technical assistance including contact persons, contact details etc. – this part of the guide should be filled by knowledgeable partners who are involved in funding schemes. Therefore, chapter is open for contribution from interested partners during project realization.

Conclusions

This deliverable presents organization, main outcomes and lessons learned as from the on ERA indicators workshop, held in Belgrade on October 2 and 3, 2008.

In this training workshop are promoted two different aspects: first, policy makers are trained in the use of statistical indicators for policy-making while the second part is oriented towards the application and production of indicators geared towards statisticians.

The targets for the learning group are the national statistical offices dealing with Science and Technology statistics in Western Balkan Countries (WBC), and the representatives of the relevant ministries, responsible for the S&T policy.

This deliverable contains main findings of the workshop:

1. Presentations of methodological bases as well as best practice from OECD, UNESCO and EUROSTAT, concerning R&D statistics,
2. Main needs and obstacles in WBC in the field of S&T&I statistics. and
3. Guide is developed in order to help statisticians, researchers and other interested practitioners from WBC in their work with collection, handling and analysis of data and information concerning R&D statistics.

Appendix B: Agenda

Date: October 2 and 3, 2008

Organization: "Mihajlo Pupin" Institute, Volgina 15, Belgrade, SERBIA
under the auspices of the Ministry of Science and Technological
Development of the Republic of Serbia, Nemanjina 22-26, Belgrade,
SERBIA

Venue: Hotel "PALACE", Topličin venac 23, 11000 Belgrade, Phone: + 381 11
2185589
Meeting room "Panorama" – 6th floor

Contact: Sanja Popovic-Pantic, "Mihajlo Pupin" Institute, Phone: +381 11
2774452

Logistics: Miross Travel Agency, IATA No: 95-2 2167 4; Svetogorska 4, 11000
Beograd
Ruska Shaletic, Phone:+381 11 3344510;+381 11 3344529;Fax + 381
11 30 33 225

01 October 2008

Arrival of the participants.

19.00 Registration of participants & Get-together, hotel "PALACE", Meeting
room "Panorama" – 6th floor

02 October 2008

Opening Session

Venue: Hotel "PALACE", Topličin venac 23, Belgrade, Meeting room
"Panorama" – 6th floor

Chair: Djuro Kutlaca, "Mihajlo Pupin" Institute, Belgrade, Serbia

09.00 - 09.30 Registration of participants

09.30 - 10.00 **Welcome address**

Ministry of Science and Development, Republic of Serbia

Statistical Office, Republic of Serbia

GSRT, Hellenic Ministry of Development – Work Package Leader

Introduction

Djuro Kutlaca, "Mihajlo Pupin" Institute, Belgrade, Serbia

10.00 Tour de table**10.30 - 11.30 OECD: Science and Technology and Innovation Indicators – Methodologies and Manuals**

Speaker: Martin Schaaper, OECD

Discussions

11.30 - 11.45 Coffee-break

Chair: Nikos Sidiropoulos, GSRT

11.45 - 12.45 OECD: Using S&T&I Indicators for S&T and Innovation Policy

Speaker: Martin Schaaper, OECD

Discussions

12.45 - 13.45 Production and use of S&T&I statistics and indicators in WBC: Present situation, Incentives for Restructuring, Needs and Obstacles – part I

Speakers: Albania, Bosnia and Herzegovina, Croatia

Discussions

13.45 - 15.00 Lunch

Chair: Klaus Schuch, ZSI

15.00 - 16.00 EUROSTAT methodologies and practice – R&D indicators for monitoring and evaluation of creation of European Research Area

Speaker: Reni Petkova, Science, Technology and Innovation Statistics –

Eurostat (ESTAT), unit F4

Discussions

16.00 - 16.15 Coffee-break**16.15 - 17.15 EUROSTAT methodologies and practice – Innovation statistics and indicators for monitoring and evaluation of European Innovation System**

Speaker: Reni Petkova, Science, Technology and Innovation Statistics – Eurostat (ESTAT), unit F4

Discussions

20.00 Dinner

03 October 2008

Chair: Aleksandar Sedmak, Vice-Rector, University of Belgrade

09.30 - 10.30 **UNESCO: Organization of R&D and Innovation statistics; UNESCO families of R&D indicators, relevant for R&D and Innovation policies**

Speaker: Lena Tsipouri, UNESCO

Discussions

Chair: René Wintjes, UNU-MERIT

10.30 - 11.30 **Production and use of S&T&I statistics and indicators in WBC: Present situation, Incentives for Restructuring, Needs and Obstacles – part II**

Speakers: Former Yugoslav Republic of Macedonia, Montenegro, Serbia, Kosovo-UNMIK

Discussions

11.30 - 11.45 *Coffee-break*

Co-Chairs: Sunčica Stefanović-Šestić, Statistical Office, Republic of Serbia and Djuro Kutlaca, “Mihajlo Pupin” Institute, Belgrade

11.45 - 13.00 **WBC: Cooperation in S&T&I statistics – How EUROSTAT/OECD/UNESCO could help us?**

Speaker: Open Panel

13.00 - 13.30 **Lessons Learned: Conclusions and Follow-up – Are we ready for transformation?**

Djuro Kutlaca, “Mihajlo Pupin” Institute, Belgrade, Serbia

Nikos Sidiropoulos, GSRT – Work Package Leader

13.30 *Lunch*

Departure

Martin Schaaper, a Dutch national, works for the OECD, in the Economic Analysis and Statistics Division of the Directorate for Science, Technology and Industry, where he is responsible for the co-operation with non-OECD countries in the field of science and technology indicators. This entails the diffusion of OECD-developed standards for collecting internationally comparable data on science and technology, as laid down in the various methodological Manuals and Guides, such as the *Frascati Manual*, the *Oslo Manual*, the *Canberra Manual* and the *Guide to Measuring the Information Society*. It further consists of collecting data from important non-OECD countries, which are published and/or analysed in OECD publications, such

as the bi-annual *Main Science and Technology Indicators* and the biennial *OECD Science, Technology and Industry Scoreboard*. A third part of his work consists of analysing the collected data and contributing papers to Committee meetings. Before joining the OECD, Martin Schaaper was working as a consultant for Eurostat, working first on science and technology statistics and later on business statistics.

Contact details:

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Phone: +33 – (0)1 45 24 14 22

Mailing address:

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2, rue André-Pascal
75775 Paris Cedex 16
France

Petkova, Reni Dimitrova, works for Science, Technology and Innovation Statistics - Eurostat (ESTAT), unit F4. Master degree in Statistics (University of National and World Economy, Sofia, Bulgaria). Principal subjects/occupational skills covered: Macroeconomics; Statistical methods; Economic statistics; Demographic statistics; Accounting; Foreign languages.

Main activities and responsibilities: Elaboration of methodology, designing of statistical questionnaires and carrying out statistical surveys on: Research and Development and Innovation activities (R&D&I); Structural Business Statistics (SBS); Foreign Affiliates Statistics (Inward FATS); Adaptation and implementation of EU legal base and international methodological standards in Bulgarian statistical practice in the field of R&D&I statistics, SBS and FATS; Validation and evaluation of data quality, establishment of quality reports on R&D&I, SBS and Inward FATS; Preparation of publications, analysis and dissemination of statistics on R&D&I, SBS and Inward FATS; Project leader of national PHARE projects on R&D&I statistics, SBS and FATS; Member of EUROSTAT Working Groups on R&D&I statistics, SBS and FATS.

Contact details:

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Petkova, Reni Dimitrova
Science, Technology and Innovation Statistics - EUROSTAT (ESTAT), unit F4
5, rue Alphonse Weicker; L -2721
Luxembourg

Lena J. TSIPOURI is Associate Professor at the University of Athens, Department of Economic Sciences. She studied Economic Sciences at the Universities of Athens and Vienna, completed her doctoral studies at the University of Paris II and post doctoral research with a Fulbright grant at MIT, Cambridge, Massachusetts.

Prof. Tsipouri's scientific research focuses in technological change, the role of infrastructure and public policy, regional development, information society as well as issues on corporate governance and corporate social responsibility.

She is professionally involved in consulting work for the EU, the OECD and the UN in the same topics as her scientific research. Previous jobs were at the International Institute for Applied Systems Analysis, the Ministry of National Economy and international organizations.

Prof. Tsipouri has been managing research programmes since 1990; in particular in the last three years she was involved as Research Director in the European programmes "European Trend Chart on Innovation", as coordinator for the project "Flexibility and Competitiveness: Labor Market Flexibility, Innovation and Organizational Performance" of the European Commission and as a coordinator for innovation curricula in the Medibtikar project.

Contact details:

E-mail: tsipouri@ath.forthnet.gr

Appendix C: List of participants

No	Name and surname	Organization	Street	Post code/City	Country	Phone	Fax	e-mail
1	René Wintjes	UNU MERIT	Keizer Karelplein 19	6211 TC Maastricht	The Netherlands	+31 43 388 44 74	+ 31 43 – 3884474	R.Wintjes@MERIT.unimaas.nl
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3	Tatjana Knezevic	Ministry of Education and Science of Montenegro	Rimski trg bb	81000 Podgorica	Montenegro	+382 20 265 014	+382 20 265 014	tatjanak@cg.ac.yu tatjanak@ac.me
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11	Camur Biljana	Ministarstvo Civilnih Odnosa	Trg BiH 3	71000 Sarajevo	Bosnia and Herzegovina	+387 33 49 25 52	387659265 73	biljana.camur@mcp.gov.ba
12	Vukelić Gordan	Ministarstvo Nauke i Tehnologije RS	Kralja Petra I Karadjordjevića bb	78000 Banja Luka	Bosnia and Herzegovina	+387 51 338 715	fax: +387 51 338 856	g.vukelic@mnk.vladars.net
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