

Annex B – Template for report-based deliverables



S&T International Cooperation Network for Eastern European and Central Asian Countries

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Abstract	The expert meeting on S&T indicators was held in Vienna on 7 November 2008. Its aim was to (a) verify the results from the questionnaire-inquiry about the status of use of S&T indicators in the Eastern European and Central Asian Countries and their compliance with EU standards and (b) to identify the main cornerstones for a future common proposal on the introduction of EU S&T statistics’ standards in the countries under scrutiny.
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Versioning and Contribution History

Version	Date	Modification reason	Modified by
v.01	10.11.2008	initial minutes drafted by	Florian Gruber, Desiree Pecarz and Manfred Spiesberger
v.02	22.11.2008	amendment of data	Elena Dybtsyna
v.03	7.1.2009	final version	Klaus Schuch

Table of Contents

EXECUTIVE SUMMARY.....	4
1 INTRODUCTION TO THE AIMS OF THE WORKSHOP	5
2 MAIN PROBLEMS AND NEEDS FOR IMPROVEMENT OF S&T STATISTICS IN EECA COUNTRIES – RESULTS FROM THE ANALYSES CONDUCTED BY HSE AND ZSI.....	7
2.1 RATIONALE AND APPROACH OF THE STUDY	7
2.2 MAJOR FINDINGS OF THE STUDY	8
3 MAIN PROBLEMS AND NEEDS FOR IMPROVEMENT OF S&T STATISTICS IN EECA COUNTRIES – FEEDBACK FROM THE EECA COUNTRIES	11
3.1 ARMENIA.....	11
3.2 AZERBAIJAN	13
3.3 BELARUS.....	16
3.4 GEORGIA	17
3.5 KAZAKHSTAN	21
3.6 MOLDOVA	22
3.7 UKRAINE.....	26
3.8 UZBEKISTAN.....	28
4 WRAP-UP AND CONCLUSIONS	29

EXECUTIVE SUMMARY

The workshop on “Improving S&T Indicators” held in Vienna on 7 November 2008 had two basic aims:

- firstly, it aimed to verify the findings of the draft “Assessment report on the current status of S&T statistics in EECA countries” and
- secondly, it aimed to pave the ground for a joined proposal to modernise S&T statistics in the countries under scrutiny which – after its finalisation of the content – should in a next step presented to potential donors to receive funding for its implementation.

14 experts from 8 countries were participating in this workshop. In addition, presentations from non-participating countries (Belarus, Georgia and Uzbekistan) have been received and presented by the staff from the host organisation.

After an introduction given by Klaus Schuch (ZSI) on the INCO-NET-EECA project in general and the purpose of the present workshop in particular, Elena Dybtsyna (HSE) presented the main findings from the “Assessment report on the current status of S&T statistics in EECA countries”. The experts from the EECA countries were then requested to respond to these findings and provide additional information. Presentations were given by Yurik Poghosyan and Tigran Arzumanyan from Armenia, Siyavush Azakov from Azerbaijan, Olzhas Abuov from Kazakhstan, Gheorghe Cuciureanu from Moldova and Viacheslav Slovyov from Ukraine. Desiree Pecarz from ZSI presented the presentation from Olga Titko from the Institute of Statistics, Ministry of Statistics and Analysis of Belarus, Manfred Spiesberger from ZSI presented the presentation from Theodore Dolidze from the Georgian National Science Foundation, and Florian Gruber from ZSI presented the presentation prepared by Rustam Saidov from the Indo-Uzbek Centre for Promotion S&T Cooperation.

Moreover, Gheorghe Cuciureanu from the Academy of Science of Moldova presented his experience with the conduct of a test survey by applying new R&D indicators stipulated by the Frascati Manual.

The presentations were all well received and the discussion was lively.

Based on the different inputs the main cornerstones of a draft proposal on “Modernising S&T Statistics in Eastern European and Central Asian Countries” were jointly elaborated. A one-pager of this first draft proposal is included in these minutes of the workshop on “Improving S&T Indicators”.

1 INTRODUCTION TO THE AIMS OF THE WORKSHOP

The expert meeting on “Improving S&T Indicators” was held in the format of a workshop in Vienna on 7 November 2008. It was organised by the ZSI, which drafted the agenda (together with HSE), prepared the invitations and organised the visa formalities, provided the meeting location and took care about the logistics and catering.

The agenda comprised the following issues:

9.15 – 9.30	Arrival and registration of participants
9.30-10.00	Welcome and Introduction on the purpose of the workshop within INCONET EECA <i>Klaus Schuch, ZSI</i>
10.00 – 11.00	Comparative Status of S&T indicator collection and use in EECA <i>Presentation by HSE</i>
11.00 – 11.30	<i>Coffee Break</i>
11.30 – 13.00	Presentation of the main problems and need for improvement of S&T statistics in EECA countries: the case of Armenia, Azerbaijan, Belarus and Georgia <i>(Presentations given by country participating representatives – approx. 20 minutes per country)</i>
13.00 – 14.00	<i>Lunch</i>
14.00 – 15.30	Presentation of the main problems and need for improvement of S&T statistics in EECA countries: the case of Kazakhstan, Moldova, Ukraine, and Uzbekistan <i>(Presentations given by country participating representatives – approx. 20 minutes per country)</i>
15.30 – 16.00	<i>Coffee Break</i>
16.00 – 17.15	Open Discussion: What should be done in order to improve S&T statistics through a joint project? <i>All participants</i>
17.15 – 17.30	Wrap-up of discussions <i>(ZSI and HSE)</i>
17.30	End of Workshop
20.00	Workshop Dinner – Restaurant Glacis Beisl

The participants came from 8 consortium members’ countries. Missing from the target region were representatives from Belarus (sickness), Georgia (immediate post-war problems), and Uzbekistan (invitation did not arrive).

List of Participants:

No.	Name and Surname	Organisation and Position	Country
1	Tigran Arzumanyan	Head of International S&T Programs Unit, National Academy of Sciences of Armenia Vice-President, Centre of Ideas and Technologies NGO	Armenia
2	Yurik Poghosyan	Member of the Statistical Council, State Statistical Service of Armenia	Armenia
3	Azakov Siyavush	Head of the office of National Information Point on European Framework Programmes in Azerbaijan	Azerbaijan
4	Ülle Must	Director of the Innovation Centre of the Estonian Archimedes Society	Estonia
5	Amina Mukanova	Deputy Director InExCB-Kz (Independent Expert Consulting Board to Promote Scientific Research Activity in Kazakhstan)	Kazakhstan
6	Olzhas Abuov	Project manager, Center of Engineering and Transfer of Technologies (CETT-Kz)	Kazakhstan
7	Cuciureanu Gheorghe	Academy of Sciences of Moldova, consultant in Science and Innovation Policies Department	Moldova
8	Tatiana Ratay	Senior Researcher of the Centre for Statistics and Monitoring of S&T and Innovation	Russia
9	Elena Dybtsyna	Senior Researcher - Institute for Statistical Studies and Economics of Knowledge - State University - Higher School of Economics	Russia
10	Solovyov Viacheslav	Deputy Director of Dobrov Centre of S&T Potential and Science History Studies of National Academy of Sciences of Ukraine	Ukraine
11	Florian Gruber	ZSI – project manager	Austria
12	Desiree Pecarz	ZSI – project manager	Austria
13	Klaus Schuch	ZSI – Executive Manager and Senior Researcher	Austria
14	Manfred Spiesberger	ZSI – project manager	Austria

Klaus Schuch gave a short introduction about INCO-NET-EECA in general and the task on S&T indicators in particular. He pointed out that S&T indicators, if rightfully applied and used, are a main source for evidence-based policy dialogue and decision-making, but that it is important to keep in mind, that if we use S&T statistics we have to know if these are comparable and we have to know where the differences are. He and Elena Dybtsyna in more

detail referred to the S&T indicators analyses conducted by HSE and ZSI (see D 5.1 – Assessment report on the current status of S&T statistics in EECA).

The main findings were that EECA countries are at different stages in terms of using an internationally comparable set of S&T indicators; that some data are missing for some categories and that methodologies used for data compilation are partially inhomogeneous or incompatible with the methodology used in the EU and OECD countries.

Klaus Schuch then summarised the workshop's objectives as follows:

- identification of joint ideas for the improvement of collection and use of S&T statistics in EECA countries
- to find an agreement on the main cornerstones of such a joint proposal (What is the overall objective? What should be the outputs to reach the objectives? What activities are necessary to produce the outputs? What input is necessary to implement the activities?)

2 MAIN PROBLEMS AND NEEDS FOR IMPROVEMENT OF S&T STATISTICS IN EECA COUNTRIES – RESULTS FROM THE ANALYSES CONDUCTED BY HSE AND ZSI

Elena Dybtsyna wrapped up the findings from the analyses made by her and Tatiana Ratay with support of the ZSI by presenting the status of S&T indicator collection and use in EECA in a comparative way.

2.1 Rationale and Approach of the Study

Her central rationale for a proper handling of S&T statistics along modern standards of science was that such a procedure would provide an opportunity

- to evaluate the current state of national science, technology and innovation systems,
- to use the same definitions as the world community,
- to create the much needed information basis for cooperation and investment,
- to stimulate full integration of EECA countries into global scientific and technological connections.

The main international statistical standards in our context are:

- The Frascati Manual, which determines basic definitions of scientific research and development terms, their structure and limits.
- In the EU context, Eurostat plays an important role too in creating new standards in science statistics and specifying old ones.

Then she referred to the questionnaire which was sent to Armenia (CIT), Azerbaijan (ANAS), Belarus (BelISA), Georgia (GNSF), Kazakhstan (InExCB-KZ), Moldova (ASM), Ukraine (NIP) and Uzbekistan (IUCP-T).

In the questionnaire survey the focus was on the definition, collection and use of the following most central S&T indicators:

1. R&D Personnel

- Researchers
- Technicians and equivalent staff
- Supporting staff

Classification of R&D personnel

- By occupation
- By level of formal qualification

Measurement of R&D Personnel

- number in headcounts
- number in full-time equivalence (persons-years)
- measuring their characteristics

2. R&D Expenditure by institutional and functional classifications

- GERD (gross domestic expenditure on R&D)
- intramural expenditures
 - Current costs
 - Capital expenditures
- Extramural expenditures

3. GBOARD (Government budget appropriations on R&D) by institutional and functional classification.

The main classifications comprise:

a) Institutional classification:

- Government sector
- Business enterprise sector
- Higher education sector
- Private non-profit sector

b) functional classification

- type of R&D
- product fields
- fields of science
- socio-economic objectives

2.2 Major Findings of the Study

The major findings regarding the current status of national S&T statistics are:

- the introduction and consequently the use of internationally comparable S&T indicators and data is rather work in progress at the EECA countries;

- there is a certain reluctance of using internationally comparable indicators and data because of
 - the usage of old statistical standards, formed in the former USSR;
 - lack of qualified personnel, who are aware of international statistical standards and capable to introduce new standards.

However, the governments of the countries under scrutiny place extremely high emphasis on S&T, maintaining control over managing and funding, and creating the majority of laws governing this field. The majority of the countries use international indicators, mostly from Eurostat and OECD and regional comparisons and comparisons on global scale are believed to be of most importance. Nevertheless, only two countries out of eight use all the classifications for the functional distribution of R&D. All the countries attribute a high or quite high importance to these classifications, whereas the two classifications least used are “Product Groups (ISIC/NACE)” and “Socio-economic Objectives (NABS)”;

Also the GBOARD related group of indicators is scarcely used, which is a major gap in national statistics, since science is still funded mostly from governmental sources (which calls for impartial statistical studies) and “R&D expenditure” related indicators are still underused (e.g. Armenia, Georgia and Azerbaijan use only 3-5 indicators out of 10). In contrast to these, the group of indicators dealing with “R&D personnel” is the most commonly used.

The “General survey” is the main collection methodology in use (especially in the case of governmental and higher education sectors). In addition, also other tools are widely used, especially “Budgetary information” and “Estimations”. The annual data collection is the main procedure (although Kazakhstan and Ukraine stand out with twice a year). All countries are able to provide data on 2006-2007.

S&T statistics about the government sector and the higher education sector are best available, while data about the-private non-profit sector are weakest. In addition, more differentiated data on the business enterprise sector are lacking in some countries. In terms of the fields of science classification, which matches international standards in its content, the countries collect and are therefore basically prepared to provide comparable data on the government sector, the higher education sector and the business sector (except for Armenia, Georgia, Kazakhstan and partly Uzbekistan). However, all countries reported that they do not provide data about the private non-profit sector in terms of fields of science.

As regards the institutional classification of S&T statistics:

- Armenia does neither collect data on the business enterprise sector nor on the private non-profit sector.
- Azerbaijan provides institutional classification across all four sectors of performance.
- Belarus provides institutional classification across all four sectors of performance.
- Georgia shows more considerable problems with regard to institutional classifications.
- Kazakhstan gives a full sectoral classification which is used in R&D studies.
- Moldova gives quite a full institutional description across all sectors of performance.
- Ukraine provides a full institutional classification across all sectors of performance.
- Also in Uzbekistan a full description of institutional classifications by sectors of performance is given.

As regards R&D expenditure by source of funds, it has to be noted that not all countries collect these kind of data across sectors. If data are collected, then the most available information is about government appropriations to the different sectors of performance. There is, however, an obvious data problem as regards business source of funds, not only to the business enterprise sector itself but also towards the other sectors of performance. A further development and improvement of more valid statistics on funding sources has to be considered as crucial.

As regards R&D expenditure by types of costs, it can be concluded that many of the countries divide costs basically into labour costs, (other) current costs and capital costs. These types of costs are not always divided into intramural (including both current and capital) expenditures on R&D, and extramural costs, which might cause invalid calculations of costs.

The differentiation of R&D expenditure by types of R&D did not cause difficulties among the participating countries, whereas statistics by socio-economic objectives hardly existed. Thus, it is recommended to put more attention on this issue. In terms of R&D expenditures by fields of science some deficits in certain sectors of performance exist (especially the private non-profit sector but also in the business enterprise sector).

As regards R&D personnel, it can be concluded that

- all countries collect serial data on R&D personnel on various functional distributions
- R&D personnel is collected in headcounts, but
- R&D personnel collection in full-time equivalents is scarce and there is an obvious need to advance such statistics in the countries under scrutiny.

As regards the differentiation of R&D personnel by occupation, some countries have blind spots as regards equivalent data for the business enterprise and the private non-profit sectors. In terms of R&D personnel by qualifications, most countries still use the former Personnel by Qualification distribution that basically differentiates between doctors of science and candidates of science. As regards R&D personnel by field of science, all EECA countries use internationally accepted standards to ensure compatibility of national R&D field of science classifications –with the UNESCO recommendations on S&T statistics. In terms of R&D personnel by gender, there are still statistical deficits in collecting and presenting these data especially in terms of the business enterprise sector and the private non-profit sector.

Elena Dybtsyna concluded her presentation with some recommendations on how to further develop S&T statistics in a comparable way with international practice:

- extraction of R&D (research and development) from the general scope of scientific organization activity, carried out by its own means;
- to cut R&D activity off profit and depreciation costs and define by these means intramural current expenditures on R&D;
- to count up capital expenditure on R&D and define gross domestic expenditures on R&D;
- to distribute of gross domestic expenditures on R&D (GERD) and number of R&D personnel employed in different sector of performance.
- to organize the National R&D survey based on the Frascati Manual with coverage of all R&D performing units;
- to use the general classifications based on

- sectors of performance;
- classification of economic activities (using ISIC/NACE); fields of science, socio economic objectives (NABS):
- regions (if applicable);
- ownership;

The scope of R&D indicators should be focused on

- R&D personnel;
- R&D expenditures.

She also stressed that there is an obvious need to develop R&D statistical studies and statistical education and retraining in EECA countries.

Based on this presentation a short discussion arose whether an additional focus for a further improvement of S&T statistics should be on measuring the productivity of R&D spending and R&D personnel. It was agreed that – outside the scope of this S&T statistics exercise – it would be worthwhile to initiate some benchmarking exercises in some of the EECA countries. Basically, however, all experts supported the recommendations of Elena Dybtsyna and agreed on a step-by-step approach focusing on R&D personnel and R&D expenditure collections along the Frascati Manual definitions.

MAIN PROBLEMS AND NEEDS FOR IMPROVEMENT OF S&T STATISTICS IN EECA COUNTRIES – FEEDBACK FROM THE EECA COUNTRIES

3.1 Armenia

The presentation about Armenia which was developed by Yurik Poghosyan and Tigran Arzumanyan was held by Tigran Arzumanyan.

He indicated the following main problems:

- National statistical practice does not apply classifications used by international organisations (sector of performance, source of funds, socio-economic objectives, etc.)
- the content of collected data on R&D indicators is not complete (11 out of 27 in the questionnaire)
- business/enterprise and private/non profit sectors of performance are not covered at all
- No major changes have been introduced in R&D and innovation data collection methodology since the collapse of the USSR
- No possibility to have objective picture of S&T potential and innovation performance of the country, make international comparisons, identify strengths and weaknesses of the system, and evaluate efficacy of adopted policy measures.

Main challenges:

- absence of reliable statistical data on S&T and innovation is one of the critical bottlenecks of entire STI system
- need for profound reformation of S&T data collection methodology especially in terms of innovation statistics
- harmonisation with international standards has to progress (Frascati and Oslo Manuals)
- problems with S&T statistics have to be seen also in front of the challenges to reform RTD sector in Armenia;
- there should be more focus on innovation and the adoption of the Oslo manual;
- training of specialists in S&T and innovation statistics is a big need;
- statistics should also be used for benchmarking R&D organisations.

In Armenia around 600 persons are working in the National Statistical Service. 200 of them are based in the central office. Two persons are responsible for analysing S&T data, but there is no explicit department for S&T.

3.2 Azerbaijan

A detailed presentation about the “Production of S&T Statistics and Indicators in Azerbaijan” was provided and presented by Siyavush Azakov.

Main problems:

- although S&T data is recorded since several years in Azerbaijan, no analysis of the statistical data is done at the moment; thus, no recommendations based on statistical evidence are available
- methodological base for the R&D surveys is not the Frascati manual
- statistical figures do not always show the reality; e.g. researchers are still in institutes, but are no longer doing R&D; they are - nevertheless - included in official reports;
- example: only those who are full-time employees are considered as researchers; part-time researchers are not included in official reports; EU statistics are reliable in this respect, while not in the EECA countries; e.g. doctors of science are counted although a lot are not doing science at all;
- no information available about the sub-allocation of S&T funding
- data about researcher’s publications are not collected
- data about patent activity are not collected
- definition of “innovation” is not widely known to the public which causes a problem for collecting respective data
- level of S&T and innovation activity is rather low in the country; only 0,2 % of GDP is spent on R&D in 2006; the private sector investments in R&D is extremely low.

Main challenges:

- To take up the challenge to improve statistical data along the “Plan of activities on Implementation of the State Program on Improvement of the Official Statistics of the Republic of Azerbaijan during 2008-2012”
- Changes to the methodology have to be endorsed by the “Methodological Endorsement Committee” of SSCRA
- Make statistical data more reliable; to more reflect the “real” situation;
- Selection of reporting units has to be newly defined;
- Methodology of indicators’ calculation;
- Difficulties to grasp the activities of the R&D institutes in necessary detail;
- Will of the authority to use international statistical standards;

- To analyse the current situation with reliable indicators in order to decide on the right strategies for reforming the R&D system.

After Siyavush Azakov's very informative presentation a discussion emerged, which centred around the following issues:

1. Is previous experience from the collaboration with OECD and EU countries as regards statistical indicators available?
2. The problem of FTE accounting to obtain a reliable assessment of the "real" research effort.
3. The resource endowment of the statistical unit responsible for the collection of S&T data.

ad 1) Previous experience from the collaboration with OECD and EU countries as regards statistical indicators available

Mr. Azakov reported about some contacts; e.g. with colleagues in Sweden; and Germany; but the projects then were specific, and issues were never discussed with the background of statistical indicators in S&T. The most intense international collaboration is with the statistical committee of commonwealth of independent states.

Azerbaijan participated in the INTAS SCRIPTS project (completed in the end of July 2008) which studied the national innovation performance based on the European Innovation Scoreboard (EIS) indicators. The EIS indicators comprise of 26 socio-economic indicators covering different aspects of RDI and draw upon statistical data gathered in the Community Innovation Survey (CIS) and Frascati Survey, as well as other sources. However, Azerbaijan lacked experience of these surveys and did not conduct them. Consequently, Azerbaijan could not gather all the data for the EIS indicators (only 17 from 26) and was unable to accurately compare national innovation performance to EU member states.

The problem of FTE accounting to obtain a reliable assessment of the "real" research effort

It was highlighted during the discussion that the lack of full-time equivalent data is a major concern as regards the reliability of data. Mr. Azakov reconfirmed that in many countries of the former USSR institutions with a lot of staff are not (at least partly) doing research and that it is difficult to identify those who really do research. An idea was brought up to count persons who are engaged in research projects, but it was also mentioned that some persons are just "formally" involved in projects.

ad 3) The resource endowment of the statistical unit responsible for the collection of S&T data

Mr. Azakov reported that only one lady in SSCAR (State Statistical Committee of Azerbaijan Republic) is working on S&T statistics and another one is working on higher education institutions' statistics. However, since S&T statistics should be upgraded in Azerbaijan, more staff will be involved in the near future, which is a promising sign. The Frascati Manual is known by the S&T statistics' expert from SSCAR, but the English language is a problem. There is need for at least a Russian translation. Elena Dybtsyna remarked that a Russian translation of (a previous edition of) the Frascati Manual is available in Russian language. There was unanimous consent that some copies should be purchased if still available. It was also prompted that Russia should act as a "mentor" for the other EECA countries, since she is most advanced in applying OECD standards. The Statistical Committee of the

Commonwealth of Independent States should be approached for this. Elena Dybtsyna promised to identify the expert from Russia in the Statistical Committee responsible for S&T statistics and to inform the other participants. Klaus Schuch promised to identify contacts and links in OECD and EUROSTAT.

List of OECD, EUROSTAT and UNESCO contacts and links:

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

EUROSTAT:

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

Useful 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=1913,47567825,1913_57936852&_dad=portal&_schema=PORTAL

In addition some links to UNESCO are given below:

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

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>

3.3 Belarus

The presentation prepared by Dr. Olga Titko from the Institute of Statistics, Ministry of Statistics and Analysis of Belarus, who could not attend the meeting in Vienna due to sick leave, was presented by Desiree Pecarz from ZSI.

Belarus advanced already a lot in the direction of compatibility with EU and OECD standards. Since 2002, the new methodologies and new forms of statistic reports in science, technologies and innovation have been introduced in statistical practice: One innovation “Report on innovative activities of an organization”, one technology “Report on creation and using

advanced production technologies” and one license “Report on technologies and technical services business with foreign partners” (since 2004) were issued.

International recommendations have been taken into account while developing them. Also the calculation of scientific and scientific & pedagogical staff has been improved according to the latest recommendations of “Frascati Manual”. Statistical accounting in this area is similar to that in Russian Federation and the data can be used for international comparisons.

In 2008 finally, the experts of the Institute of Statistics, Ministry of Statistics and Analysis of Belarus converted dynamic series of macroeconomic indices in accordance with OECD for the further complete transfer of Belarusian statistics towards OECD standards.

Also organisational changes are under way: By the Decree of the President of Belarus of 26 August 2008 № 445 the Ministry of Statistics and Analysis is transformed to the National Statistical Committee of the Republic of Belarus subordinated to the President, (<http://www.pravo.by/webnpa/text.asp?RN=p30800445>). The Institute of Statistics will be liquidated by 2009 and its functions will be transferred to the appropriate departments of the National Statistical Committee. It has to be noted, however, that there is no separate department for R&D statistics in the structure of the National Statistical Committee foreseen (<http://belstat.gov.by/homep/ru/about/contacts2.php>). There is a Department for indices of industrial production and statistics of innovations within the Central Department of Industry Statistics.

As main problem in Belarus the comparability of statistical data by circle of reporting entities and by content of statistical category has been identified. The main challenge is to change from collection of data by classification of the branches of the national economy to types of economic activities (OECD) by 2011.

3.4 Georgia

The presentation was prepared by Dr. Theodore Dolidze from the Georgian National Science Foundation, and presented by Manfred Spiesberger from ZSI, since Dr. Dolidze was not able to come to Vienna due to the post-war situation in Georgia.

He informed that the following indicators will be introduced during 2009-2011:

- R&D Expenditure
 - Personnel
 - S&T productivity
1. Gross Domestic Expenditure on R&D – GERD (million current PPP \$)
 2. GERD as a percentage of GDP
 3. GERD -- (million constant dollars – 2000 prices and PPPs)
 4. GERD per capita population (current PPP \$)
 5. Government-financed GERD as a percentage of GDP
 6. Percentage of GERD financed by government
 7. Percentage of GERD financed by other national sources
 8. Percentage of GERD financed by abroad

9. Percentage of GERD performed by the Higher Education sector
10. Percentage of GERD performed by the Government sector
11. Percentage of GERD performed by the Private Non-Profit sector
12. Higher Education Expenditure on R&D – HERD (million current PPP \$)
13. HERD as a percentage of GDP
14. Percentage of HERD financed by industry
15. Estimated Civil GERD as a percentage of GDP
16. Basic research expenditure as a percentage of GDP
17. Industry-financed GERD as a percentage of GDP
18. Percentage of GERD financed by industry
19. Percentage of GERD performed by the Business Enterprise sector
20. Government Intramural Expenditure on R&D – GOVERD (million current PPP \$)
21. Total GBAORD (million current PPP \$)
22. Defense Budget R&D as a percentage of Total GBAORD
23. Civil Budget R&D as a percentage of Total GBAORD
24. Civil GBAORD by socio-economic objective (million current PPP \$)
25. Business Enterprise Expenditure on R&D – BERD (million current PPP)
26. Percentage of BERD financed by industry
27. Percentage of BERD financed by government
28. Percentage of BERD financed by other national sources
29. Percentage of BERD financed by abroad
 1. Total researchers (FTE)
 2. Total researchers per thousand total employment
 3. Total R&D personnel (FTE)
 4. Total R&D personnel per thousand total employment
 5. Women researchers as a percentage of total researchers (based on headcount)
 6. Higher Education researchers (FTE)
 7. Higher Education researchers as a percentage of national total
 8. Higher Education Total R&D personnel (FTE)
 9. New S&T PhDs per 1000 population (aged 25-34 years)
 10. Population with tertiary education per 1000 population (aged 25-64)
 11. Participation in life-long learning per 1000 population aged 25-64Business Enterprise researchers (FTE)
 13. Business Enterprise researchers as a percentage of national total
 14. Business Enterprise researchers per thousand employment in industry
 15. Total Business Enterprise R&D personnel (FTE)
 16. Total Business Enterprise R&D personnel as a percentage of national total

17. Total Business Enterprise R&D personnel per thousand employment in industry
18. Broadband penetration rate (number of broadband lines per 1000 population)in 2009
 1. Scientific publications per million population
 2. Highly cited publications per million population
 3. European patents per million population US patents per million population
 5. Labour productivity (GDP per hour worked) in PPS

in 2010-2011

1. Labour productivity (GDP per hour worked) annual average growth %
2. Exports of high-tech products as % of world total
1. R&D personnel by occupation R&D personnel by gender R&D personnel by sector of performance R&D personnel by qualification Researchers by sector of performance
6. Researchers by gender Researchers by age Researchers by field of science GERD by socio-economic objective GERD by type of R&D GERD by economic activity
4. GERD by type of costs Current intramural expenditure on R&D by sector of performance Current intramural expenditure on R&D by field of science Current intramural expenditure on R&D by type of activity Capital expenditure on R&D Capital expenditure on R&D by sector of performance Capital expenditure on R&D by field of science R&D fixed assets GBOARD by sector of performance GBOARD by field of science GBOARD by socio-economic objectives GBOARD by type of R&D GBOARD by type of costs S&T indicators currently in use by the department of

statistics are:

Scientific organisations

- Total number of scientific organisations
- Number of higher education establishments
- Number of R&D institutions

Researchers

- Total number of researchers in scientific organisations
- Number of PhDs
- Number of Academicians of National Academy of Sciences
- Number of researchers with status of Professor
- Number of researchers by field of science (20 fields of sciences plus category "other")
- Percentage of researchers by field of science
- Number of PhDs by field of science
- Percentage of PhDs by field of science

The S&T indicators currently in use by the Ministry of Education and Science are:

1. Basic (core) funding of R&D Institutions from State budget (total sum) (Distribution among institutions)
2. Basic (core) funding of State universities from State budget (total sum) (Distribution among universities)
3. Competitive grants allocated to R&D Institutions from State budget (total sum) (Distribution among institutions)
4. Competitive grants allocated to State universities from State budget (total sum) (Distribution among universities)
5. Competitive grants allocated to R&D Institutions from international funds and programmes (total sum) (Distribution among institutions)
6. Competitive grants allocated to State universities from international funds and programmes (total sum) (Distribution among universities)

The S&T indicators currently in use by the National Science Foundation are dealing with project proposals and funded projects:

Project proposals and their submitter organisations having got through the stage of technical registration

1. Breakdown of project proposals by field of science
2. The quantitative and percentage breakdown of organisations by institutional type:
 - –R&D institutions,
 - –Universities,
 - –NGOs,
 - –Other
3. Requested budget percentage breakdown by field of science (8 fields)
4. The quantitative and percentage breakdown of project proposals by project duration (6 categories: from 6 months to 36 months)

Granted projects, their implemented organisations and main staff (grantees)

1. Breakdown of project proposals by field of science
The quantitative and percentage breakdown of organisations by institutional type: R&D institutions, Universities, NGOs, Other
3. The quantitative and percentage breakdown of allocated funds by field of science (8 fields)
The quantitative and percentage breakdown of project proposals by project duration (6 categories: from 6 months to 36 months)
Total quantitative and percentage breakdown of main staff (grantees) by age groups (6 categories: under 30 - 70 years and more)
The quantitative and percentage breakdown of main staff (grantees) by sex
7. The quantitative and percentage breakdown of main staff (grantees) by sex in different fields of science (8 fields).

Main problems:

- 30% of research funds are from abroad;

Main challenges:

- Introduction of new indicators according to OECD standards; in two rounds; standard indicators in 2009; business and enterprise data will be collected later; 2010-2011

The discussion centred about the responsibility for S&T statistics in Georgia. It was stated that the state department of statistics fall under the responsibility of two ministries. Just 2 or 3 persons are working on S&T statistics in Georgia.

3.5 Kazakhstan

The presentation was prepared and presented by Olzhas Abuov. He reported that the Agency of Statistics is in charge for S&T statistics too. 200 persons are located in the headquarter in Astana and 4000 persons are working the region. He reported that also statistics on innovation are produced. Around 20 persons are working on R&D and innovation statistics in the Agency of Statistics (10 in the headquarter and another 10 in the regions).

The basic indicators for science according to Olzhas Abuov in Kazakhstan are:

- Total amount of the executed works;
- Amount of RTD works using own forces;
- Total costs of RTD;
- Domestic costs for RTD;
- Number of employees at the RTD sector;
- Funding sources for domestic costs of RTD.

The basic indicators on innovation are:

- Level of innovation activity of the company
- Volume of innovation product
- Costs for technological innovations
- Joint projects of R&D
- Gained new technologies
- Transferred new technologies
- Created new technologies
- Number of licenses

Main problems:

- Lack of methodology on innovation statistics
- Lack of classifications for patent statistics
- Lack of international and national classifications on innovation

- No assessment of current state of technology/innovation
- Lack of comparability of R&D statistics with international statistics

Main challenges:

- Problems with data;
- International cooperation has to be intensified; experience and methodology applied in by UNESCO and the EU and OECD should be studied and – if applicable – transferred; but the Frascati manual is not available in Russian language; Mr. Abuov stressed that he would like to get the translated manual too!

3.6 Moldova

The presentation was prepared and presented by Gheorghe Cuciureanu. He provided a very comprehensive overview of the situation in Moldova and gave feedback on the pilot survey which was running with new forms with four test organisations (Government sector - Institute of Power Engineering of Academy of Sciences; Higher education sector - Tiraspol State University; Business enterprise sector - Romany Gaz Group Company; Private non-profit sector - Institute for Public Policy. The pilot survey was conducted under INCO-NET-EECA with technical support given by HSE (High School of Economics, Moscow).

He reported that in Moldova the National Bureau of Statistics is the responsible body to collect S&T data, but also the Academy of Sciences of Moldova; the State Agency on Intellectual Property and the National Council for Attestation and Accreditation contribute to it.

S&T statistical forms are used to collect data in the following three dimensions:

- Researching-development activity
- Doctoral and post-doctoral activities
- Implementation, utilization of inventions and proposal for rationalization

Researching-development activity

INPUT INDICATORS:

A) Personnel

B) Expenditure

(based on the priority characteristics of institutions which performing the R&D and which finance the R&D):

(based on the R&D character):

A. Doctoral activity

Main indicators:

The PhD students are distributed

The information about the *PhD students from abroad* (by specifying the country) contains:

B. Postdoctoral activity

Main indicators:

Postgraduate PhDs are distributed

Information regarding the *postgraduate PhDs from abroad* (by specifying the country) contains:

Implementation, utilization of inventions and proposal for rationalization

The main indicators:

Main problems:

- Since 1990ies data were collected. However, information by sectors has not been collected. As of 2006 new indicators and ways introduced, including data by sector.
- Comparability is problematic. BES and PNP data is not collected.
- Frascati: few differences in definitions in Moldova and Frascati manual, e.g. differences in personnel definition – technicians, supporting staff, etc.
- Lack of methodologies: sector of performance, FTE,
- Fragmentation of collection: different offices collect data with different methodologies
- Limited R&D capacities in statistics
- Lack of resources: only one person responsible for S&T statistics
- information from eastern part of country is not available
- Relatively new forms for data collection used, people do not know how to fill correctly
- Therefore: Low quality of collected data
- Several R&D indicators not available: FTE, R&D personnel by sex, funds from abroad by types, etc. need to be introduced
- Former soviet experience in categorizing units with R&D for business enterprise sector;

Main challenges:

There is a need for new indicators, especially:

- personnel in full-time equivalent;
- personnel by level of education according to ISCE;
- personnel by occupation according to the ISCO;
- personnel by age according to the UN – SIAC;
- personnel by sex;
- funds from abroad by types;
- current expenditure for R&D by destination of results;
- current expenditure for R&D administration and other support activities;
- expenditure for R&D by socio-economic objectives.

Main problems with the pilot survey:

Main problems with the pilot survey from the government sector:

- the most successful implementation; clear specialization of surveyed organization;
- majority of time was spent for calculating new introduced indicators;

- necessity to implement new statistical form simultaneous with modification of the internal forms within ASM.

Main problems with the pilot survey from the higher-education sector:

- until now the universities reported data only based on financing sources entered in university explicit for R&D activities;
- necessity to use coefficients and to make estimations to obtain more real data;
- estimation of the shares of R&D in total personnel and expenditure resources and broke these down into more detailed categories;
- dividing general university funds and own sources of university in R&D expenditure and other costs according to its utilization;
- calculation of FTE using coefficients based on estimations by the heads of departments;
- estimations: for research the university staff use about 30% of time, inclusively professor – 40-45%, readership – 30%, high lecturer and lecturer – 20-25%.

Main problems with the pilot survey from the business-enterprise sector:

- task to define the research-development activities from other economic activities ;
- evaluating the share of research-development activities in this industrial company (about 30%);
- calculating FTE: necessity to establish how many persons and for how much time they were involved in R&D activities;
- quality of data depend essential on human factor.

Main problems with the pilot survey from the private-non-profit sector:

- financing from abroad is significant, so new introduced indicators on financial sources from abroad are relevant;
- necessity to make estimations on ratio of research investigations in all activities (about 35-40%);
- there are 8 times more persons employed on contract basis than standing staff, so is relevant recording of the personnel in full time equivalent (physical persons - 91, the full time equivalent – 20 persons/year);
- the organization does not collect some indicators on personnel and expenditure (they do not present statistical report on R&D to BNS).

Conclusions and recommendations from the pilot survey:

- new statistical form should be simpler and shorter;
- it is necessary to create special form (simpler) for organizations from PNP and BE sectors;
- it is important to develop the methods for identifying units with R&D activities in PNP and BE sectors and to organise the collecting the data from them;
- it is necessary to include sub-classifications of the sectors;
- it is indispensable (for obtaining complete data) to carry out estimations and to use coefficients;

- it is necessary to remove some indicators from the new form so that it includes a minimum number of basic questions on the R&D activity.

General conclusions and recommendations:

- training of the staff from National Bureau of Statistics and research organizations and strengthen local capacities for the production of R-D indicators;
- sharing the task of collecting official statistics between National Bureau of Statistics and Academy of Sciences of Moldova;
- implication of international experts and specialized organizations in the process of implementing a new statistical form;
- share experiences with other countries in the field of S&T indicators for solving the problems that Moldova may have encountered in collecting S&T statistics.

The discussion was very lively and centred around the following points:

- How were data obtained?
- How can others learn from this pilot exercise?

ad 1) How were data obtained?

Gheorghe Cuciureanu reported that he went personally 3 to 4 times to each organisation under scrutiny. Each visit lasted around 2 to 3 hours. A problem was that the requested data (as stipulated by the form) were not available. Existing data had to be re-calculated with accountants. Lot of time was necessary to explain what was necessary. Data were recalculated by Gheorghe Cuciureanu as well as responsible persons in the institutions under scrutiny. Forms were sent to institution, but no response received. Some of the data was not available at all (e.g. PNP test case did not have data on researchers on sex and age. Thus, personnel files of researchers were taken and calculated case by case). Therefore personal visits were indispensable.

ad 2) How can others learn from this pilot exercise?

Elena Dybtsyna asked to make the case study experiences available to HSE. She emphasised that the sectoral performance distribution and FTE are very important and that it was a big step forward that these indicators have been implemented. Also other partners mentioned that they would learn more in practice from this Moldovian test case (e.g. Armenia). Gheorghe Cuciureanu, however, stressed, that for different countries, norms may be different. E.g. for university employees, the ratio of university lecturing vs. research is - 1500 hours lecturing – 720 for research. In Russia 25% of hours are usually earmarked for R&D.

3.7 Ukraine

Viacheslav Slovyov gave a speech about the situation in Ukraine. He reported that the State committee of statistics is responsible for S&T statistics. In addition, there is also the Ukrainian institute of S&T information. Then he gave a short overview about the research landscape in Ukraine:

1) Organisations which perform R&D:

- branch research institutes (public),
- research & development center (contracts),
- higher education establishments,
- five Academies of Sciences (national academy – 75% of R&D potential of Academy sector, Agricultural Academy of Sciences., Medical Academy of Sciences, Academy of Arts,).

State foundation for competitive distribution of research grants.

NGO/NPO – not active in innovation development.

16 technoparks in UA.

2) collection of R&D statistics

State committee of statistics produces a Statistical Yearbook of S&T

3) Users of statistics:

- Parliamentary Committee
- Science and Technology Council, advisory body to president – weak, met last time several years ago.
- Ministry of Education and Science.
- State department of Intellectual Property.
- Ministry of Industrial Policy – a lot of research institutes under the ministry, but no money of ministry to support R&D. Institutes funded by industry or foreign resources.

Main problems:

- Data not coherent with Frascati manual;
- The time series of data;
- R&D system is vast and complex. Statistics must be made more useful for policy makers.

Main challenges:

- R&D Statistics must be produced according to European standards. This necessitates first a concentration of organisations, collecting and producing data.
- Davos World Economic Forum published a paper on global competitiveness: official and expert data used. Data were then triangulated. This brings more correct data.
- IPR: very important indicator

The discussion centred on the issue whether and how to include qualitative expert assessment and on the user of S&T statistics. Siyavush Azakov stressed that experts should rely on official data in their opinions or do they have on their own more correct data? Viacheslav Slovyov believes that sometimes expert information may be more objective regarding innovation and scientific system. He argues that there are huge differences between official statistics and experts assessments. There is a 20% gap between the two measurements for the Ukraine. In comparison to other countries this is a huge difference.

As regards the users, it was stressed that more attention should be given to the needs of users and that users can come from different spheres, e.g. Multinational Enterprises use statistics for FDI decisions. On the other hand it was mentioned that statistician themselves usually does not assess and interpret data, for instance in Azerbaijan.

3.8 Uzbekistan

The presentation about Uzbekistan was prepared by Rustam Saidov from the Indo-Uzbek Centre for Promotion S&T Cooperation and presented by Florian Gruber from ZSI, because the invitation for Rustam Saidov has been lost and there was no time to organise a visa for him.

In Uzbekistan the State Committee for Statistics of the Republic of Uzbekistan is the main governmental body responsible for the main statistical data. The State Committee for Statistics cooperates with Ministry of Finances, CCSTD, Academy of Sciences, Ministry of High education, Ministry of Healthcare, Ministry of Agriculture, as well as Center for economical Researches in collecting statistical data on R&D activities.

Main problems:

- There are some difficulties in collecting R&D statistics due to the lack of definition of researchers in the higher education sector. As not all staff of universities are involved in R&D activities, their definition bases on their participation in government financed projects. This system, however, does not allow to include free scientists who do not participate in those projects.
- Some technicians in industries and universities are working both for research programmes and education ones and it is not clear if and how they should be attributed to R&D staff.

Main challenges:

- Again the introduction of full-time-equivalents seems to be a great challenge also in Uzbekistan.

4 WRAP-UP AND CONCLUSIONS

After all presentations were held a lively discussion (in Russian language) emerged. In the box below an excerpt about the main statements is provided.

KS: What are cornerstones for a joint proposal, what are overlapping problems? Objectives and output have to be defined for such a proposal to a potential donor. What are most important issues to be tackled in proposal.

SA: Only statistics on S&T or also innovation. Innovation is a huge topic, many indicators. In our countries, innovation is at very early stage, in general not very developed in NIS. Focus on R&D statistics is easier.

KS: Project is focussed on R&D statistics, improvement of current statistics.

SA: Discussion in Russian among colleagues, to figure out problems/objectives of proposal.

Problems:

- R&D Personnel
- R&D expenditure
- Productivity of Science
- BES

YP: **Statistical Database** is necessary – based on:

Methodological base - narrow definition of indicators necessary, clear and simple indicator, indicator has to be comparable; problem is narrow definition of indicator. Mechanisms of collection of data and

normative base - coherent collection of data necessary, not by different methods by different national actors – therefore central database, with data containing uniformly established indicators are necessary; problem that data users require different data

Indicators – narrow definition necessary: aggregates and mechanisms of data collection

Basic data providers – are interested to keep up size and expand own organisation, but not interested to provide information. Therefore data collectors are sent out to organisations for data collection.

SA: Data providers have to provide data by law. Problem is how to get close to EU levels of data. Concrete problems have to be tackled.

YP: How correct is information given by data providers? Statistician can only control correctness/soundness of data provided, but does not control data within organisation providing the data.

SA: how far are we from Western standards. To collect FTE in research institutes system is ok. FTE in HES is very difficult to track.

TR: work-hour sheets are available. On this base data are calculated.

GC: There is a norm, how many hours are spent on R&D.

ÜM: Where are problems, with whom to work – administrators, etc. National security issues might be a problem for data collection.

SA: Security issues should not be a problem here.

ÜM: Definition of organisation.

ED: Which organisation shall be contacted in project, which one targeted.

- 1) It is necessary to define the appropriate organisation to work with: State Committees for Statistics,
- 2) Methodological Base: Material has to be made available in a language understandable in the countries under scrutiny (translate Frascati Manual, edition 2002 into Russian). Implement methodologies of Frascati Manual in EECA countries. Provide methodological material in appropriate language.
- 3) Institutions: Training of experts/capacity building in methodology, definitions, classifications, survey implementation and analysis.
- 4) indicators to be tackled: especially as regards personnel: How to measure FTE in HES, PNP, BES, GOV?
Indicators: Sampling and indicators in BES, PNP has to be solved and introduced; GBOARD group of indicators should be used
- 5) Prioritisation of indicators! In Russia for instance it is GERD, GBOARD, ..but not all indicators need to be collected
- 6) Presentations/Distribution of national S&T statistics – comparable data in appropriate form, in analytical publications!
- 7) other: Ensure international comparability of S&T indicators. Get objective picture of S&T potential and trends.

Modernising S&T Statistics in Eastern European and Central Asian Countries

Goal:

The objective of this proposal is to improve the system of S&T statistics in the countries under scrutiny to meet the demands of emerging knowledge based market economies and societies.

The proposal is jointly prepared by experts from Armenia, Azerbaijan, Belarus, Georgia, Kazakhstan, Moldova, Ukraine and Uzbekistan with support of experts from Russia and Austria. It is a delivery of the "INCO-NET EECA" project funded by the European Commission under the 7th European Framework Programme for RTD. It is worthwhile to note, that the implementation and funding of this proposal under "INCO-NET EECA" is not foreseen.

Background:

The transition of statistical S&T systems in the countries under scrutiny towards international S&T standards is severely lacking behind, although evident differences on the country-level can be noted. Belarus and Moldova are mostly advancing, on the contrary are the Caucasian states. In order to assess the status of application of internationally comparative S&T indicators a recent analysis has been carried out by the High School of Economics (Russia) and the Centre for Social Innovation (Austria) with support of experts from the EECA countries (May 2008-November 2008). It reveals that some of the most important S&T indicators used in the OECD countries are not yet or not yet fully exploited in national S&T statistics. As a consequence, important data for evidence-based policy making is missing and some systematic statistical gaps and distortions remain (e.g. no FTE information). Some lacking data from the business enterprise sector differentiated by certain categories (e.g. product groups, source of funds, socio-economic objectives) is a good example. Also data from the private non-profit-sector is lacking. The EECA countries are aware and ready to improve their S&T statistical system along international standards and are looking for professional support.

Outputs:

- A learned network of experts
- A core set of methodological guidelines, definitions and model templates for S&T statistical surveys available in the national languages and tested in field trials
- Improved infrastructure for data collection and storage

Activities:

- The relevant experts from the responsible institutions in charge for collection, storage and analysis of S&T statistics are identified, committed, and organised in a learning network, trained and networked for continuous information exchange and learning.
- Under the guidance of international experts, the network gets self-responsible familiar with the relevant methodological base. Training seminars, accompanied by efforts to translate some relevant methodological guidelines and definitions into the national languages are employed for this. Feedback loops for quality assurance are implemented.
- Emphasis is on certain key categories and indicators which are by now scarcely applied. A focus is on the business-enterprise sector, but efforts are also devoted to improve the statistical base for the private non-profit sector and the higher education sector. Indicators on GBOARD, product fields, socio-economic objectives, full-time equivalents etc. will be improved.
- In addition, model templates for S&T statistical surveys will be developed during a series of workshops and prepared for test and reality surveys in the national languages. The necessary technical infrastructure for conducting these field exercises will be installed. Experiences from "desk" and "field" will be exchanged and good practices identified.
- Finally, good practices how data are analysed and presented for specific customers will be identified and distributed.

Klaus Schuch on behalf of the ZSI thanked all participants for the valuable inputs and for their participation in the workshop. He stressed that INCO-NET-EECA does not provide means to implement a proposal such as the one highlighted above, but that it would be worthwhile to have a follow-up meeting in Moscow to finalise the proposal. Only if the content of the proposal is more or less finished selected donor organisations should be approached for funding its implementation. The envisaged meeting in Moscow for the presentation of the results of this work, for the discussion of the options for its implementation and for fostering networking of national and European institutes in charge of S&T indicators should rather be split in a proposal finalisation workshop and a small workshop with potential donors and experts from OECD etc.