S&T Statistics and Indicators in South Eastern Europe:

Summary of a UNESCO Report

Workshop

'Science, Technology and Innovation Indicators: Trends and Challenges in South Eastern Europe

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Outline

- Objectives of the study
- Background
- Organisation of S&T Statistics and Indicators Production
- Country cases
- Conclusions and recommendations

Objectives of the study

- Overview of the state of the art of the production of S&T statistics and indicators in South-East Europe
- Identify missing information and data
- Analyse existing capacity and capacity-building needs
- Identify scope for international cooperation activities

- Pilot study

Background

- Region under a post-transition process of adaptation and of stregthening capabilities
- Research and innovation systems weakened and not strongly developed – as a consequence, S&T statistics and indicators have not been a priority
- Strong cooperation with international organisations
- ‘in the orbit’ ot the EU – just entered, under accession process, or stabilisation and association agreement
- Statistical systems have been focused, but S&T not a priority

Background

- Knowledge as an increasingly central resource in today's economy
- Strong concerns from governments on the performance of their research system
- Lisbon Agenda
- Closer linkages between science and innovation
- Wider set of actors involved in the production of knowledge
- Development of new indicators to address new policy concerns
- Different international organisations involved in the production of STI statistics and indicators

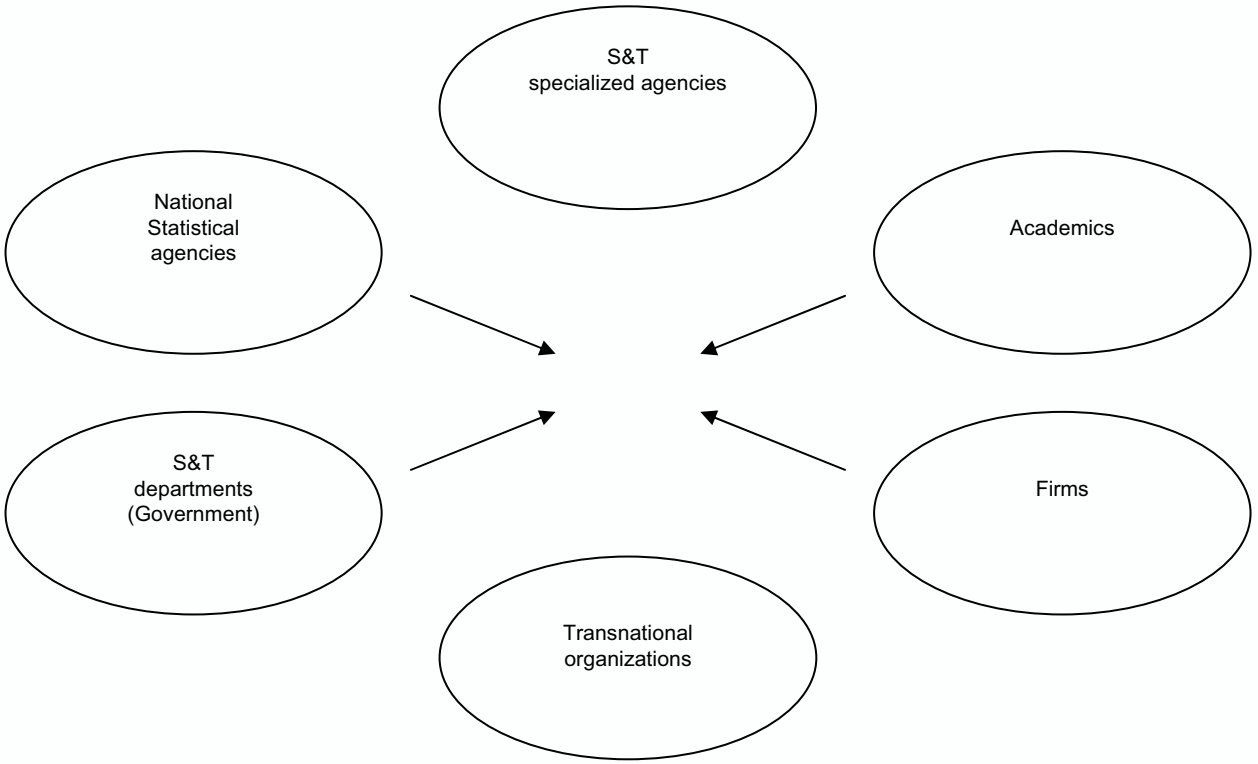
Background

- Statistics
  - primary data
  - require robustness, time series
  - few space for changes or experimentation
- Indicators
  - secondary data
  - more easily read, carry warnings of potential changes
  - more easily adapted to shorter-term needs

Development of S&T Statistics and Indicators

- Expanding set of statistics
- Initial work at national level
- Frascati Manual (1963)
- UNESCO Recommendations (1978)
- Manual STA (1984)
- TBP Manual (1990)
- Oslo Manual (1992)
- Patent Manual (1990)
- Canberra Manual (1995)
- other uses

Organisation of Statistical Systems



Concerned with:

input
surveys
raw data

Concerned with:

output
databases
statistics

Organisation of Statistical Systems

- Different models of the organistion of S&T statistical system
  - full responsibility by the statistical office
  - full delegation to agency dependent from the Ministry (of science...)
  - distribution of roles between collecting statistical data and producing indicators

Main S&T Statistics and Indicators

- Input indicators
  - Personnel, expenditures, knowledge?
- Output indicators
  - Publications, citations, patents, innovations
- Linkage indicators
  - Co-authorships, collaborations, exchanges
- Knowledge-based economy
  - High-tech vs. low-tech, KIBS, ICTs, financing, composite indicators

S&T Policy Framework

- Systems in post-transition
- Recovering from radical shrinking of R&D investment
- Central role of public sector
- ‘Brain drain’
- ‘S&T policy’ rather than ‘innovation policy’
- Focus on capacity building and evaluation procedures
- Strong role of higher education policy

Country Cases – Research Systems

- Different organisational setups
- Science typically linked with education
- Institutional framework evolving (BiH)
- Stronger roles of universities vis-a-vis research institutes and Academies of Sciences
- Implementation of advisory councils (coordinating)

Country Cases – Statistics and Indicators

- Significantly different contexts
  - some with stabilised R&D survey, others still non-existing
- Understaffed statistical offices in the area of S&T
- S&T typically within ‘social statistics’ department
  - low links with business statistics
- Expenditures data more stabilised (but few data on GBAORD); Human Resources with greater differences in methodology (e.g. FTE)
- Innovation surveys in starting phase (member/accesion countries)
- Low priority from users, and low external linkages
- Reduced awareness of emerging indicators
- Importance of international cooperation activities
- Good dissemination of results
- Low academic demand and production

Conclusions and Recommendations

- State of the art of statistics and indicators in S&T reflect the overall policy relevance attributed to this area;
- Other policy areas, and statistical departments, receive greater attention from international programmes –national efforts are needed to strengthen this area
- S&T has been an important area of integration with other European partners
- While strong short-term results may not be expected, indicators are important to guide the long-term strategy
- Improvement of quality of data and of breadth of data is important
- Greater interaction between users and producers are important to set new objectives
- International cooperation is essential – international organisations, bilateral cooperation, regional cooperation

Project Proposal

- Basis
  - the development of indicators should be closely linked to its use in policy-making;
  - improvement of the quality and robustness of statistical work should follow international developments;
  - although there is diversity between research systems, there are also some similar concerns, limitations and needs among countries in the region;
  - the improvement of statistics and indicators depends on all actors: users, producers, and data providers.

Project Proposal

- Objectives
  - improving the links between users and producers of S&T statistics and indicators, at the system level, regarding the production of data, the acquaintance with the main concepts, and the visibility of the system of data production and its results;
  - training of advanced human resources in the production of S&T statistics and indicators;
  - developing informal networks of experts, at the regional and international level;
  - strengthening the long term development of data at the local level.

Project Proposal

- Task 1 – Seminar "The Role of Statistics and Indicators in S&T Policy-Making in SEE"
- Task 2 – Training Workshop on S&T Statistics and Indicators
- Task 3 – Expert Visits
- Task 4 – Regional Cooperation on S&T Statistics and Indicators
- Task 5 – Dissemination
- Task 6 – Research Programme

Workshop

- Overview of state of the art in different areas of S&T statistics and indicators
- Training policy-makers (users) and statisticians (producers)
- Exchange information about local practice
- Informal workshop – building networks