



United Nations
Educational, Scientific and
Cultural Organization

UNESCO Forum on Higher Education Research and Knowledge

The Special Initiative

Mapping and Comparing National Research Systems

Purpose and context

The purpose of this initiative is to learn more about national research systems, with a special focus on developing countries, in order to gain more systematic knowledge about research systems in middle and low income countries. National and local research systems are vital to provide the knowledge base needed for sustainable development policies at country level. While the components of these systems are well known in industrialized countries, many lacunae are evident in the developing world, especially in countries where donor action is focused. The clear mapping of these research and knowledge systems and their analysis is considered a basic pre-condition for any process aimed at reinforcing their systemic strength.

A systematic approach focuses on several areas notably *national policies, infrastructure, human capacities and investment*. It is vital to study where the Higher Education Institutions (HEIs), especially universities are placed in this process, and the specific challenges faced by these bodies. Moreover, given the role of science, engineering, technology and innovation as a motor for development, capacities in these fields require special scrutiny, along with the particular socio-economic and cultural contexts in which national research systems are operating, thus covering factors which support or impede their effectiveness.

This content base constitutes a mega-platform, operating at international, regional and national levels, to monitor where and how research is generated, transmitted, received and used, in the context of today's knowledge society. Mapping and analysing the national system permits a country to compare its knowledge system with others in a wider context and so to identify areas necessitating reinforcement.

Background to the Special Initiative

The main starting point for the initiative was the *Expert Workshop on the Comparative Analysis of National Research Systems*, which was held in Paris, April 2006. Following discussions amongst members of the Forum's Global Scientific Committee, terms of reference for that workshop were prepared by Professor Hans Weiler of Stanford University. These TOR highlighted the need to map and study policies, infrastructure, human capacities and investment in relation to research. The 2006 workshop, attended by some 70 international experts (inter alia, academics, policy makers and development agencies) aimed to provide the base for the fairly comprehensive "conceptual mapping" of national research systems and to provide a specific set of questions for their systematic study. The workshop concluded that knowledge about the present status of national research systems in the developing countries needed deeper examination so that a detailed template could be finalised.

Following the workshop, a mapping exercise of 52 developing countries focusing on middle and low income profiles was launched, led by Professor Johann Mouton, CREST (Centre for Research on Science and Technology, University of Stellenbosch, South Africa) and Professor Ronald Waast, IRD, (Institute for Research on Development, Paris France). The preliminary results of the studies were presented at the UNESCO Forum's Global Colloquium (Paris, December 2006) on the theme of *Universities as centres of research and knowledge creation: an endangered species?*

This first results contributed to the Colloquium's overall findings with regard to the challenges faced by universities as key elements of research systems worldwide.

By December 2007, this exercise will yield specific results: 52 country studies, a full bibliography of the reference material used, an overall synthesis report listing the main trends and conclusions, regional analyses, and a draft template intended to help countries analyse their research systems.

Symposium on the Results of the Special Initiative

Aim and Expected Outcomes

The purpose of the meeting is to present the results of the mapping exercise with a view to launching the template so that interested countries may undertake a series of pilot applications.

It is intended that this template may be a guide for use by UNESCO's member states which are seeking to map their research and knowledge systems and to compare these on a wider scale, thus ascertaining their priority needs for strengthening capacities in this area.

Within UNESCO's domains of competence and taking account the UNESCO Forum's specific orientation, applications could focus primarily on the sciences (notably the SETI fields), the social and

human sciences, and higher education systems. However, applications in other relevant areas are also possible. It is expected that the indicators proposed in the template will contain sufficient flexibility so as to be adapted to particular contexts or to interacting sectors (e.g. linkages between health and education systems).

Should the UNESCO Forum continue into a second phase, action is foreseen to apply the template and study its results through a few strategic studies covering middle and low income countries in all regions. These may tackle either overall systems or specific sectors of these (e.g. investment in research), thus enriching the body of knowledge in this area at national, regional and global levels .