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Federal Ministry
of Education
and Research



Sustainable Solutions
Science for Sustainability



सत्यमेव जयते

Department of Science and Technology
Government of India

Science for Sustainability – Driver for a Common Future
Second German-Indian Conference on Research for Sustainability
27 & 28 April 2009, Bonn - Germany

Outcome



UNITED NATIONS
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**Internationales Büro
des BMBF**

Introduction

The 2nd German-Indian Conference in the framework of the Dialogue for Sustainability, “Science for Sustainability – Driver for a Sustainable Future”, took place on 27 and 28 April 2009 in Bonn, Germany. Sustainability is an integrated concept and a guiding principle in international politics in the time of global change, global challenges, and global responsibility. Sustainability means ensuring equity between generations, quality of life and social cohesion. Informed decisions that are sustainable in economic, environmental and social terms as well as coordinated effort are essential to the preservation of our vital natural resources. New technologies and new concepts for decision-making are indispensable to meeting present and future challenges. Germany and India – by joining their expertise in Science and Technology related to sustainability research – can be drivers for substantial contributions towards the generation of sustainable solutions.

The Federal Ministry of Education and Research (BMBF), Germany and the Department of Science and Technology (DST) of the Government of India emphasized the prominent role which science and technology play in sustainable development and have confirmed their support for the development of an internationally coordinated research agenda as part of the Heiligendamm dialogue process as requested by the G8+5 in 2007.

International Dialogue on Science and Technology for Sustainability (D4S)

Internationally coordinated research agendas are essential to finding sustainable solutions to the global challenges of our time. For this reason, the German Federal Ministry of Education and Research (BMBF) launched a series of dialogues on science and technology for sustainability policy with five key emerging economies: India, Brazil, China, Russia, and South Africa. Bilateral events under the slogan “Sustainable Solutions – Science for Sustainability” are being held to promote international cooperation in research and development and to establish the foundations for long-term, strategic partnerships in sustainability research.

The dialogue process D4S between Germany and India

Within the framework of Science and Technology cooperation between Germany and India (agreement signed in 1974), Dr. Annette Schavan, German Federal Minister of Education and Research (BMBF) and Shri Kapil Sibal, Minister for Science and Technology and Earth Sciences of the Government of India signed a Joint Declaration of Intent of “Research cooperation on Science for Sustainability” on 9 September 2008 in New Delhi. The 1st German-Indian Conference on Science for Sustainability was held in New Delhi on the same day.

Science and technology play a key role in meeting the global challenges of sustainable development and resource efficiency. Having recognized the considerable potential for collaboration in developing

cost-effective and innovative technologies between Germany and India, the Federal Ministry of Education and Research (BMBF) of Germany and the Department of Science and Technology (DST) of the Government of India have convened the second conference on Science for Sustainability in Bonn, Germany, 27 and 28 April 2009. The conference was being held in the “United Nations” City of Bonn, as a side event to the International Human Dimensions Programme (IHDP) Open Meeting 2009, and was hosted by United Nations University. Both meetings highlighted the urgency to further define “Sustainability” in its diverse dimensions: ecological, social, economic, and cultural. In his keynote address to the IHDP Open Meeting, the German State Secretary for Education and Research Prof. Dr. Frieder Meyer-Krahmer (BMBF) stressed three key issues:

1. Sustainable solutions to global challenges require the inclusion of social sciences and humanities. New technologies, albeit crucial, cannot be considered in isolation from the dynamic and complex socio-cultural context in which they are embedded.
2. New impulses for a more efficient and sustainable technology transfer are required.
3. Future research has to be organized in inter- and trans-disciplinary and international collaboration. BMBF strongly supports this approach.

These statements were taken up by the 2nd German-Indian Conference on Research for Sustainability.

Results and Recommendations

The 2nd German-Indian Conference on Research for Sustainability dealt with the question of what sustainable solutions science and research have to offer to address global challenges, especially in the fields of “land use” and “energy”. Some 60 German and Indian stakeholders from government, public and private institutions discussed this central question of how research and technological development can effectively contribute to enduring, socially equitable, and ecologically sustainable economic development. The goal of the second conference was to define strategic common areas between India and Germany in the field of “energy” and “land use” research and development, and to strengthen networks between the scientists in both countries. These are expected to contribute to the planning of bilateral and international research related to sustainability and ecological innovation and to generate research, development and innovation alliances for the better use of scientific and technological knowledge.

The key outcomes of the meeting can be summarized as follows:

- Engaging in a dialogue on key issues related to the thematic foci of the conference: Energy and Land Use research and development, as well as the identification of each country’s priorities and research funding schemes.
- The identification of specific areas for enhanced cooperation between the two countries.

- The initiation of discussion of concrete Indo-German research and development project proposals.

In the two thematic areas prioritized in this conference, Energy and Land Use, two parallel sessions were organized to enable specialized exchange of expertise, discussion and networking opportunities.

Two expert coordinators (one from India and one from Germany) have been nominated for each focus area. The coordinators supported the preparation of the conference by ensuring the scientific coherence of the content and advising on the selection of speakers. During the conference they chaired and reported on the results of their respective sessions.

Results and Recommendations in the field of Energy Research

Dr. Leena Srivastava, Executive Director, The Energy and Resources Institute (TERI), India and Prof. (em.) Dr. Karl Strauss, Technical University of Dortmund, Germany served as scientific coordinators and chairs of the Energy sessions. Dr. Srivastava replaced Prof. H. S. Mukunda, Indian Institute of Science, who cancelled his participation on short notice.

The following main thematic areas have been emphasized as priorities for joint energy research:

- a) Analysis and Design of Integrated Energy Systems to cover Energy Demand in a Sustainable Manner;
- b) Renewable Energy and Rural Energy Access;
- c) Energy Efficiency, Waste Minimization, including Waste Energy;
- d) Policy Innovations for Reducing Private Energy Consumption;
- e) Linkage between Energy Pathways and Societal Interactions; Impact of the Choice of Energy on Social Dynamics;
- f) Fuel Cell technology;

The coordinators emphasized that although successful demonstration projects have already grown in India, there is still a need to scale them up, and this is an area where cooperation with Germany could be particularly fruitful. The participants concurred that a real partnership between Germany and India could not be reduced to technology transfer. Thus, it was recommended that tools for enabling and expanding Indo-German sustainability research network connections and activities that go beyond face-to-face meetings be set up. It was proposed to link this initiative to the already existing intergovernmental “German-Indian Energy Forum”.

Results and Recommendations in the field of Land Use Research

Prof. Dr. Harald Kächele, Leibniz-Centre for Agricultural Landscape Research (ZALF), Müncheberg, Germany and Prof. P.S. Ramakrishnan, School of Environmental Sciences, Jawaharlal Nehru University, New Delhi, India, served as the scientific coordinators and chairs of the Land Use sessions. P.S. Ramakrishnan was also nominated by the Department of Science of Technology of the Government of India to officially represent its interests.

The coordinators noted the following:

- a) The research presented during the Land Use sessions is problem-oriented, interdisciplinary and/or transdisciplinary and integrates the human dimension;
- b) The scientists are interested in capacity building; several German institutions offer training and Masters courses with a focus on India;
- c) The conference provided a fairly good overview of the German Land Use research landscape but not the Indian Land Use research landscape due to the lack of adequate representation of the Indian expertise in this area during this meeting. The participants recommend
 - that the discussion on Land Use continue as this vast thematic area, characterized by a high level of fragmentation, requires more time;
 - that technology-oriented research be integrated into a systemic approach;
 - that future research be organized around thematic and regional clusters.

Under the crosscutting issues of Climate Change and Globalization of Economies, five thematic clusters were identified, for detailed and more specific considerations:

- Cluster 1: Land Use Change and Governance
- Cluster 2: Biodiversity, Sustainable Forest Management and Agriculture
- Cluster 3: Land Use and Water Interaction, Integrated Water Resource Management
- Cluster 4: Food and Livelihood Security
- Cluster 5: Soil and Land Degradation

Two regional clusters were identified:

Cluster 1: Fragile Regions (Semi Arid Areas and Mountain Regions including the north-eastern hill areas)

Cluster 2: Interface between Urban and Periurban Areas

The recommendations generated at this meeting will be provided to the Intergovernmental Joint Working Group on Science for Sustainability under the Indo-German Joint Committee for Science and Technology for directing future joint activities including funding for “Science for Sustainability”-R&D projects, e.g. under the Indo-German Science and Technology Centre (IGSTC) programme.

Outlook

Proceedings of the conference will be prepared and disseminated after the conference. A new website www.dialogue4S.de will be set up soon and maintained to enable active networking of stakeholders especially researchers in both countries (and above) in Science for Sustainability.

It has already been agreed by the Joint Working Group on “Science for Sustainability” to continue this German-Indian dialogue with the 3rd German-Indian conference on “Science for Sustainability”, focused on the topics “water” and “waste management”, possibly at the end of the year 2009.

Regarding the funding of joint R&D projects in the abovementioned fields of sustainability, BMBF and DST have just started, among others, the “Indo-German Science and Technology Centre” Programme (10 Mio. € from each side) for joint Indo-German research and development projects (the so-called “2+2” projects). Furthermore, a new BMBF funding scheme for international cooperation in the field of environmental technology research for sustainability with Brazil, China, India, Russia and South Africa is in preparation. Details need to be discussed in due course.

The German Federal Minister for Education and Research, Prof. Dr. Annette Schavan (BMBF), has signed similar agreements with Brazil, China and South Africa (Russia will follow soon). Similar topics were jointly identified as priority areas. BMBF proposes to jointly organize a conference together with all these countries in 2010 to merge the bilateral activities and discuss how to best set a global research agenda which might then become reality during the so-called Carnegie Meeting of the research ministers due to take place in Germany in 2011.