



EUROPEAN
COMMISSION

European
Research Area

International
cooperation



11-12 November 2010

Delhi, India

CONFERENCE

India-EU and Member States
Partnership for a Strategic Roadmap
in Research and Innovation

PROGRAMME



Organisers

This conference is organised jointly by:

- the European Commission (DG Research and DG Enterprise and Industry) and Member States of the European Union within the context of the ongoing activities of the Strategic Forum for International S&T Cooperation (SFIC), and with the support from the Delegation of the European Union to India and Embassies of the EU Member States to India.
- the Indian Ministry for Science and Technology
Coordinator: Department of Science and Technology. Other Partnering Ministries/Departments: Ministry of Water Resources (MoWR), Ministry of Urban Development (MoUD), Ministry of Rural Development (Dept. of Drinking Water and Sanitation DDWS), Ministry of Health & Family Welfare (MoH&FW), Ministry of Agriculture, Department of Biotechnology (DBT), Department of Scientific & Industrial Research (DSIR), Ministry of New and Renewable Energy Sources (MNRE) and Ministry of Earth Sciences (MoEs)



India-EU and Member States Partnership for a Strategic Roadmap in Research and Innovation

The conference will mobilise research and innovation stakeholders and policy makers to examine how India and the EU and Member States can work together more effectively on international research and innovation cooperation. It will take stock of good practices in bilateral and multilateral cooperation between India and the EU/ Member States, identify what needs to be done to build on the best schemes, join forces to tackle major societal challenges and reduce inefficiencies due to fragmentation, duplication and lack of information on priorities and on-going cooperation activities.

The conference will examine ideas and recommendations (a blueprint) for a strategic India-EU/ Member States science, technology and innovation roadmap for:

- Joint solutions to major societal challenges, such as the provision of drinkable and affordable water.
- More efficient use of existing and future available funds, resources and instruments for India-EU and Member States coordinated priority setting and action.
- More effective and coordinated India-EU and Member States research and innovation activities.

In the longer term this strategic roadmap should contribute to establishing a comprehensive and coherent India-EU and Member States dialogue to implement coordinated and joint actions based on complementarity and synergy.

Political context

The need to promote a clear and strong European dimension across various S&T cooperative actions with India and establishment of a critical number of joint EU-India nodes for networking innovation systems in different regions of India and Europe was already stressed at the first India-EU Ministerial Science Conference in February 2007, and in "The New Delhi Communiqué" which was issued on that occasion. The EU-India Summits in Marseille in September 2008 and in New Delhi in November 2009 made further progress in EU-India cooperation by expressing the need to focus on major global challenges and sustainable development.

The new European Partnership for International Science and Technology Cooperation launched in 2008 aims to develop greater coherence in terms of cooperation between the EU and Member States on the one hand and major strategic partner countries worldwide. A Strategic Forum for International S&T Cooperation (SFIC), composed of high level representatives of the European Commission and the Member States, has been set up to steer the implementation of this new EU and its Member States partnership. It has chosen India as strategic partner country with which to start implementing its first pilot initiative, focusing on water-related challenges.

Europe and India working together

The European Union and many of its Member States have long-standing bilateral science and technology cooperation with India¹. From 2000 onwards many bilateral agreements have been signed or renewed by several EU Member

¹ Reports of the CREST OMC Working Group are available at <http://ec.europa.eu/research/iscp/index.cfm?lg=en&pg=initiatives>



States and the EU with India, with newly established joint steering committees, councils or similar bodies. These well established bilateral and multilateral frameworks provided the basis for SFIC to propose India as a strategic partner country and to design a pilot initiative with the objective of implementing mutually beneficial coordinated and joint cooperation activities.

Research cooperation is embedded in a broad spectrum of activities ranging from basic and applied research to innovation, combining public and private efforts to establish a relationship between science and technology (S&T) and industrial clusters in India and Europe. India cooperates with the EU and many Member States individually on the same research areas: food/agriculture/biotechnology, health research, water research, marine science and technology, environment/energy/climate change, and ICT. This orientation has recently put an increased emphasis on the dynamics of S&T cooperation on both sides.

Where a collective response to major societal challenges promises the best results a more coordinated approach will benefit European and Indian partners by agreeing common interests and mutual benefit, identifying excellent human S&T resources and capacity and avoiding duplication of activity.

Both in Europe and in India we are confronted with water-related challenges. The growing scarcity of water resources is considered a major impediment to sustainable development, wealth creation, global human health and the eradication of poverty.

The European Commission and the EU Member States together with the Indian Government have identified *water-related challenges* as the initial overarching theme offering real potential for mutually beneficial cooperation. It reflects the experience of the EU in focusing on a few major societal challenges and in underpinning the EU's overall political objective of sustainable development. India has a specific technology mission launched in April 2009: 'Winning, Augmentation and Renovation (WAR) for Water' with 26 activities in 7 research packages to identify viable solutions to solve the problem of water scarcity in the country at affordable cost². In 2000 the EU issued a directive establishing a framework for action in the field of water policy, with particular regard to the protection of inland surface waters, transitional waters, coastal waters and groundwater.

As an overarching theme *water related challenges*, combines a broad spectrum of science, technology and innovation streams. As such it encompasses, in addition to water research, technology and applications, a broad range of research areas such as environment, health, food, agriculture, biotechnology, energy, etc. Climate change, for example, has a major impact on water resources, water systems, and water availability. Effective food security depends to a large extent on the sustainable management of water, and water is essential for health reasons. At the same time the demand for clean water is growing rapidly through urbanisation, population increase, rising income and economic growth.

The conference will address some of these aspects and give participants the possibility to identify ongoing research and/or future research needs, illustrate strengths of existing centres of excellence, research teams and/or deployment solutions, and discuss the tools, applications and resources needed to provide a coherent collective response.

In addition to the more topical focus on water-related challenges, the conference will address other areas of current and potential cooperation between Europe and India.

Concurrent sessions will be dealing with biomasses, biowastes, agricultural production and bioenergy. The aim of the sessions is to discuss the state-of-the-art on biotechnological approaches for biobased materials production, biorefineries, and sustainable conversion of biowastes. Key actors will identify the main S&T trends and explore potential opportunities to develop international collaboration between India and Europe. These sessions will also contribute to building an EU-India Partnering Initiative in biomasses/bio-waste/bio-energy, as a pilot model for broad and systematic collaboration between European and India R&D programmes in these areas. Links with the European Technology Platforms and to relevant international initiatives will be discussed. Conference participants will be informed of the opportunities offered by this new initiative and will be able to discuss how it can be implemented and developed in the future.

The conference will also be the occasion for showcasing best practices of bilateral, multilateral, EU institutional entities and schemes supporting Europe-India research and innovation cooperation, including the ERA-Net schemes. Several

² <http://www.dst.gov.in/scientific-programme/tm-index.htm>



Member States have established bi-national research promoting entities, laboratories or similar institutional settings with India based on bilateral agreements at the level of Government or research organisations. Opening such bilateral arrangements for researchers of other EU Member States would bring a real European dimension into the bilateral cooperation. India could serve as a model region to implant and develop this approach. Innovation aspects will not only be mainstreamed throughout the conference, they will also be addressed in specific sessions.

Strengthening Europe as a knowledge and innovation based economy is a priority on the European Union's policy agenda - 'Europe2020'. The launch of the Europe 2020 Flagship Initiative Innovation Union, in October 2010 will contribute to its achievement. As competition for knowledge and markets is becoming ever more global, the international dimension of research and innovation will play an important part in implementing this priority. The research-innovation nexus is therefore strategically important when designing future international cooperation strategies with key partner countries. Innovation is also a key priority on India's political agenda. India has recently proclaimed 2010-2020 as the decade for innovation. Europe and India need to take advantages of these developments, and find means and ways to better connect and interface their respective objectives and strengths. The active participation of different innovation drivers of the EU and the Member States in the design and implementation is essential. In particular by providing input on their priority areas linked to innovation and their current instruments applied to stimulate the research-innovation axis, and by making proposals for concrete cooperation activities.

Conference outline

The conference structure will include plenary and concurrent sessions where participants can interact, discuss and learn about new developments (research challenges, strategic directions, core development as well as deployment of existing products and services) in individual countries, in research programmes/projects, and in companies. It will allow for European and Indian actors to participate and reflect upon each others' priorities and interests in a perspective of a more coordinated approach.

Concurrent sessions will showcase important ongoing initiatives in the field of water-related challenges and beyond, both in Europe and in India, including the European Technology Platforms. The Europe-India innovation nexus and relevant socio-economic aspects will be mainstreamed.

Participants will identify common S, T & I challenges and needs, illustrate the state of play of current India-EU and Member States S&T cooperation and innovation activities. They will present existing competence and/or deployment solutions (strengths and/or centres of excellence, research teams, innovation hot spots, etc.).

All sessions will use multi-disciplinary contributions to consider how science, technology, innovation, socio-economic impact, as well as existing successful bilateral and multilateral activities combine to create the most favourable conditions for tackling our major societal challenges together.

Thematic focus of the concurrent sessions:

- Sessions on water quality and health challenges (A1, A2 and A3) will cover topics related to the supply of drinkable water, water related diseases, water and living conditions.
- Sessions on water supply, re-use and environment challenges (B1, B2 and B3) will focus on resource management, climate change, water and agriculture.
- The new Partnering Initiative on biomasses/biowastes, agricultural production and bio-energy will be covered in sessions C1, C2 and C3.
- Sessions D1, D2 and D3 will not have a thematic focus but explore how to add a European dimension to established bilateral, multilateral institutional entities and schemes supporting Europe-India research and innovation cooperation, including the ERA-Net scheme.



Expected deliverables:

- Examine what India and the EU and Member States could do better together to find the most efficient, sustainable and affordable solutions to major societal challenges and the type of collaborative or institutional instruments best suited for this purpose. Results will be included in the India-EU/Member States partnership matrix.
- Proposing concrete India-EU and Member States coordinated cooperation opportunities/mechanisms (policies, strategies, actions and resources) to be included in the strategic India -EU and Member States Roadmap for research and innovation.
- A joint statement on the outcomes of the India-EU/Member States conference will be issued and co-signed during the closing session.

Participants

The conference will bring together policy makers, programme owners from research and innovation agencies, managers of joint centres, representatives from academia and industry, knowledge transfer organisations, innovation clusters, technology platforms and researchers to provide a multi-disciplinary perspective which spans research, technology, innovation, and economics relevant to both India and Europe.

An exhibition space will be arranged at the conference venue where participating organisations can showcase their programmes and initiatives.

Background documents

- Strategic European Framework for International Science and Technology Cooperation
http://ec.europa.eu/research/era/areas/cooperation/international_cooperation_en.htm
- India Pilot Initiative Concept Paper
<http://ec.europa.eu/research/era/docs/en/india-pilot-initiative-concept-note.pdf>
- Technology Mission: War For Water
<http://www.dst.gov.in/scientific-programme/tm-index.htm>
- War for Water Plan Document
<http://www.dst.gov.in/scientific-programme/plan-document.pdf>
- Europe 2020 Flagship Initiative: Innovation Union
http://ec.europa.eu/research/innovation-union/index_en.cfm

Conference Venue

Hotel The Claridges, Surajkund, Delhi, NCR
Shooting Range Road
Faridabad - 121 001
India

Ph: +91 129 4190 000
Fax: +91 129 4190 001
www.claridges.com



Wednesday, 10 November 2010

- **19:30** Welcome reception for all participants , informal networking

Thursday, 11 November 2010

- **9:00 - 10:00** Registration
- **10:00 - 11:30** **OPENING PLENARY SESSION**

Welcome speech:

- **Mrs. D. Smadja**, *Ambassador of the European Union to India*

Keynote Speeches:

- **Mr. G. Mohan Kumar**, *Additional Secretary, Ministry of Water Resources, Government of India*
- **Sh. R. C. Jha**, *Member (WP&P, RM), Central Water Commission, India*
- **Mrs A. Pauli**, *Deputy Director -General for Research, European Commission*
- **Mr. V. Rieke**, *Chair Strategic Forum for International Cooperation (SFIC)*
- **Mr. D. Gupta**, *Secretary Ministry of New & Renewable Energy / alternatively*

- **11:30 - 11:45** Break

- **11:45 - 13:00** **PLENARY SESSION** Setting the scene
 - **Mrs Céline Herve-Bazin**, *Liaison officer for the Water Supply and Sanitation Technology Platform (WssTP)*
 - **Mr. T. Vereijken**, *Chairman European Water Partnership*
 - **Mr. E. Playan Jubillar**, *Coordinator of the "Water Challenges for a Changing World" Joint Programming Initiative*

Feedback from the Indo-EU workshop on water technology research and innovation collaboration on 9-10 November in Bangalore

- **Mr. A. Tilche**, *European Commission, Directorate General for Research*
- **Mr S.Bajpai**, *India Department Science and Technology*

- **13:15 - 14:15** Buffet networking lunch

CONCURRENT SESSION:

	Focal theme: Water quality and health challenges	Focal theme: Water supply, reuse and environment	Focal theme: The EU-India Partnering Initiative	Focal theme: India-EU/MS collaboration initiatives and frameworks
● 14:30 - 16:30	A1 Supply of drinkable water	B1 Resource management	C1 Agricultural production	D1 Fostering the Europe-India innovation nexus



● 16:30 - 16:45

Break

Focal theme: Water quality and health challenges	Focal theme: Water supply, reuse and environment	Focal theme: The EU-India Partnering Initiative	Focal theme: India-EU/MS collaboration initiatives and frameworks
A2 Water related diseases	B2 Water and Climate Change	C2 Biomasses/ biowastes	D2 Multilateral EU-India research and innovation initiatives

● 16:45 - 18:45

● 20:00

Dinner Reception for all participants hosted by Dr. T. Ramasami, Secretary, Department of Science and Technology, Government of India
Venue: Hotel The Claridges Surajkund

Friday, 12 November

● 10:00 - 12:00

Focal theme: Water quality and health challenges	Focal theme: Water supply, reuse and environment	Focal theme: The EU-India Partnering Initiative	Focal theme: India-EU/MS collaboration initiatives and frameworks
A3 Water and living conditions	B3 Water and agriculture	C3 Bio-energy	D3 Bilateral institutional entities and schemes

● 12:00 - 13:00

Buffet networking lunch

● 13:00 - 15:00

Concluding plenary session: the way forward

Steered by:

- **Mr. T. Ramasami**, Secretary Department of Science and Technology, Government of India
- **Mrs. A. Pauli**, Deputy Director General for Research, European Commission
- **Mr. V. Rieke**, Chair Strategic Forum for International Cooperation (SFIC)

Report back/recommendations from the concurrent sessions by India-European Co-Rapporteurs

Panelists from India:

- **Mr. A.K. Ganju**, Member (Design and Research), Central Water Commission
- **Mr M.E. Haque**, Commissioner PP, Ministry of Water Resources
- **Mr T.M. Vijay Bhaskar**, Joint secretary Department of Drinking Water and Sanitation



Panelists from Europe:

Representatives of Member States:

- **Ms. Jacqueline Cramer**, *Former Minister of Housing, Spatial Planning and the Environment (The Netherlands)*
- **Ms Ana Neves**, *Head International Affairs, Knowledge Society Agency, Ministry of Science, Technology and Higher Education (Portugal)*
- **Mr. Are Straume**, *Head of Section, Ministry of Science, Technology and Innovation (Denmark)*

- **15:00** **Chairpersons' signature of statement on conference outcomes for a:**
India-EU and Member States Partnership for a Strategic Roadmap in Research and Innovation
- **15:15 - 16:00** **Flow of people – flow of knowledge:**
Launching the network of European researchers working in and commuting to India (Euraxess Links India)
- **16:00** **Closing reception**



Outline of concurrent sessions

11-12 November 2010 — Hotel The Claridges, Surajkund, Delhi, NCR

Focal Theme: Water quality and Health challenges

Session A1: Supply of drinkable water	12
Session A2: Water related diseases	13
Session A3: Water and living conditions	14

Focal Theme: Water supply, re-reuse and environment

Session B1: Water supply/resource management	15
Session B2: Water and Climate Change	16
Session B3: Water and agriculture	17

Focal Theme: Biomasses/biowastes/bioenergy - EU-India Partnering Initiative

Session C1: Partnering Initiative and agricultural production	18
Session C2: Partnering Initiative and bio-masses/bio-wastes	19
Session C3: Partnering Initiative and bio-energy	20

Focal Theme: India-EU/MS collaboration initiatives and frameworks

Session D1: Fostering the Europe-India innovation nexus	21
Session D2: Multilateral EU-India research and innovation initiatives	23
Session D3: Bilateral institutional entities and schemes	24



Focal Theme: Water quality and Health challenges

Sessions A1, A2 and A3

Discussions will cover topics related to supply of drinkable water, water related diseases, water and living conditions.

Session A1: Supply of drinkable water - Thursday 11 November, 14:30 - 16:30

The issue:

Access to safe water is essential for public health. In this context, the safety of the supplied water mainly depends on i) the quality of the water supply source, ii) the water treatment processes and iii) the performance of the transmission, distribution and plumbing systems – including household storage wherever it is used – in preserving water safety. Concurrently, good governance, policy and regulations are key drivers for the spread of safe water. Capabilities are needed for monitoring water safety from source to tap, both for the production and supply processes' design, operation and control. Design, technological, operational and managerial means, tools and competencies are required to assure systems' adequacy, operation, maintenance/updating/adaptation, economy and proper overall functioning.

Co-chairs:

India: **Pushpito Ghosh**, CSMCRI Bhavnagar

Europe: **José Menaia**, Head of the Water and Wastewater Engineering Laboratory of the Urban Water Division of the National Civil Engineering Laboratory (LNEC – Lisbon, Portugal), PT

Speakers and Discussants:

Name	Position	Country	Role
Anubha Mazumdar	Jadavpur University	India	Speaker/ Discussant
Dr. S. Prabhakar	BARC Mumbai	India	Speaker/ Discussant
Ulla Chowdhury	Co-Founder and director of Predect AB, Sweden	SE	Speaker
Christoph Donner	IWW - RWE	DE	Discussant
Rein Munter	Tallinn University of Technology, Department of Chemical Engineering	EE	Discussant
Hans Kuypers	Manager innovation programme on water in NL Innovation agency	NL	Discussant
Aleid Diepeveen	Director innovation bureau of the Netherland Water Partnership	NL	Discussant



Session A2: Water related diseases - Thursday 11 November, 16:45 -18:45

The issue:

Both, the quality and the supply of water have consequences for a sustainable life. Thus - worldwide - one in four deaths of children below the age of five is due to water-related diseases. Water scarcity – i.e. the low per capita availability of drinkable water - is an immediate and growing threat to all living organisms. One in six of the world's population does not have access to safe drinking water. Water contamination may be due to toxicity or diseases that are brought by water. Contaminants come from the erosion of natural rock formations, from substances discharged from factories, applied to farmlands, or used by consumers in their homes and yards. Sources of contaminants might be in the neighborhood or might be many miles away. Water-related diseases include those due to micro-organisms and chemicals in the water people drink; diseases like schistosomiasis which have part of their lifecycle in water; diseases like malaria with water-related vectors; drowning and some injuries; and others such as legionellosis carried by aerosols containing certain micro-organisms.

Co-chairs:

India: **Dr (Ms) Mahtab Bamji**, *VP INSA Delhi (affiliated formerly to NIN Hyderabad)*

Europe: **Prof. Mogens Hørder**, *Syddansk University / The Danish Strategic Research Council, University of Southern Denmark*

Speakers and Discussants:

Name	Position	Country	Role
Manfred Hoefle	Helmholtz Center for Infectious Diseases Dep. Vaccinology and Applied Microbiology	DE	Speaker
Dr Samiran Mahapatra	Hindustan Lever Mumbai	India	Speaker
Antti Hautaniemi	Science Adviser, Health Research Unit, Academy of Finland	FI	Discussant
Dr. Krishna Gopal	ITRC Lucknow	India	Speaker/ Discussant
Dr. K.Vijaylakshmi	Development Alternatives Delhi	India	Speaker/ Discussant
Erik Dahlquist	Mälardalen University, School of Sustainable Development of Society and Technology	SE	Discussant



Session A3: Water and living conditions - Friday 12 November, 10:00 - 12:00

The issue:

The world's most precious resource has to be managed more efficiently, requiring significant infrastructure investment. Water, climate and energy issues are increasingly bound together. Cities of the future need to provide sustainable water and wastewater systems to meet the needs of megacities, but consider water scarcity and climate issues as well. Also the risks and implications of flooding need to be taken into account. Good management, as well as dialogue between decision makers and scientists, is needed to bring water management, its technologies and decision making into the digital age.

How to mix societal understanding of city planning with more technology-oriented water management? Decisions of planning and investment today will determine the water efficiency, the economic productivity, the social quality of life and the ecological capacity of the expanding megacities for many years. Most of the city/urban city plans are of a sectoral nature.

A holistic approach is needed which takes account of societal challenges, including those related to climate issues and crosses the sectoral borders for more comprehensive, integrated water - energy urban development planning and management systems and proposes research and technological solutions which combine its multidisciplinary nature.

Co-chairs:

India: **Dr. S. P. Gautam**, *Chairman Central Pollution Control Board, New Delhi*

Europe: **Ms Ulla-Maija Mroueh**, *Center of Water Efficiency Excellence (SWEET), VTT Technical Research Centre of Finland*

Speakers and Discussants:

Name	Position	Country	Role
Marie-Hélène Zerah	Research Center for Social Sciences (Centre de sciences humaines), Delhi	FR	Speaker
Dr. M.S. Mohan Kumar	IISc Bangalore	India	Speaker/ Discussant
Srinivas Chari	ASCI Hyderabad	India	Speaker/ Discussant
Pawan Labhateswarr	NEERI Nagpur	India	Speaker/ Discussant
Ilse Stubauer	BOKU Wien - University of Natural Resources and Applied Life Sciences Dept. Water-Atmosphere-Environment	AT	Discussant
Martina Scheer	Coordinator INDO-GERMAN WATER Network	DE	Discussant
Hannele Lahtinen	Science Adviser Biosciences and Environment Research Unit, Academy of Finland	FI	Discussant

Focal Theme: Water supply, re-reuse and environment

Sessions B1, B2 and B3

More specifically discussions will cover resource management, climate change, water and agriculture.

Session B1: Water supply/resource management - Thursday 11 November, 14:30 - 16:30

The issue:

Sustainable water supply requires the efficient management of water resources that includes rational utilization, protection and conservation of existing sources coupled with development of new and alternative solutions for freshwater supply. The integrated approach should be based on community needs and priorities and consider technical aspects, legal framework and financial mechanisms to ensure that implementation of water policy will provide sustainable social progress without negative environmental impact.

Co-chairs:

India: **Shri A. D. Bhardwaj**, *General Director National Water Development Agency* or
Devender K Chadha, *(former Chairman Central Ground Water Board) New Delhi*

Europe: **Prof Peter Werner**, *TU Dresden, Fakultät für Forst- Geo- und Hydrowissenschaften*

Speakers and Discussants:

Name	Position	Country	Role
Dr. R.R. Sonde	Thermax India Ltd Pune	India	Speaker
Carlos Póvoa	Advisor to the Board of Directors of AdP-Águas de Portugal Serviços Ambientais SA	PT	Speaker
Alfred Pitterle	BOKU-Representative for Technology Transfer, University of Natural Resources and Applied Life Sciences Vienna	AT	Discussant
Thomas Grischek	Hochschule für Technik und Wirtschaft Dresden, Fakultät Bauingenieurwesen/ Architektur	DE	Discussant
Alejandro Fernandez Sastre/ Marta Erika Tietz Laranjinha.	Water and Irrigation Manufacturers	ES	Speaker/ Discussant
M.E. Haque	Commissioner (PP), Ministry of Water Resources	India	Discussant
Gian Maria Zuppi	Direttore Istituto di Geologia Ambientale e Geingegneria, CNR	IT	Discussant

Background documents and references:

Water: the invisible problem, (Source: EMBO Reports)

<http://www.salmone.org/wp-content/uploads/2009/07/chiarachris.pdf>



Session B2: Water and Climate Change - Thursday 11 November, 16:45 - 18:45

The issue:

The rain, glacier and snow-fed rivers originating from the mountain ranges surrounding the Tibetan Plateau comprise the largest river run-off from any single region in the world. They provide water for around 40 per cent of the world's population, many living in low-lying coastal regions. Climate change, including temperature increase, is expected to influence monsoon variability and affect water availability and cause sea level increase by changes in the timing and quantity of snow, glacial and ice sheet melt, rain and evaporation. Current climate models are insufficient for forecast and planning.

Co-chairs:

India : **R. Jayaseelan**, *Chairman Central Water Commission*

Europe: **Ms. Jacqueline Cramer**, *Head of the Utrecht Center for Earth Sciences and Sustainability - Utrecht University, Former Minister for the Ministry of Housing Planing and the Environmen*

Speakers and Discussants:

Name	Position	Country	Role
Pradeep Mujumdar	IISc (Atmospheric & Ocean Sc.)	India	Speaker
Jon Ove Hagen	University of Oslo	NO	Speaker
Dr. Akhilesh Gupta	DST	India	Discussant
Eddy Moors	Coordinator of HighNoon project	NL	Discussant

Background documents and references:

Adapting water management to climate change (Source: Swedish Water House):

http://www.watergovernance.org/documents/Resources/Policy_Briefs/SWHWaterClimate.pdf

Water scarcity and climate change: Growing risks for businesses and investors (Source: Pacific Institute and Ceres):

<http://www.ceres.org/Document.Doc?id=406>

Climate change and water resources (Source: WaterAid):

http://www.wateraid.org/documents/climate_change_and_water_resources_1.pdf



Session B3: Water and agriculture - Friday 12 November, 10:00 - 12:00

The issue:

92% of India's fresh water is used for agriculture. The increasing internal demand for feed and food requires the intensification of agricultural production and the subsequent expansion of irrigated areas. This has placed greater pressure on Indian surface and groundwater resources. Moreover, global changes, including climate and socio-economic evolutions, are increasingly impacting on water resources and their uses. A multidisciplinary approach is required to enhance water use efficiency in irrigated agriculture. Tackling this critical issue relies on research and technological developments and on their application at farm level, as well as on geographic and socio-economic assessment to provide guidelines for policy makers to take adapted measures and support them with suitable incentives.

Co-chairs:

India: **Dr. A.K. Sikka**, *Technical Expert, Watershed Development, National Rainfed Area Authority (ICAR Complex) Pusa*,

Europe: **Shakeel Ahmed**, *Head of the Indo-French Centre for Groundwater Research, National Geophysical Research Institute*

Speakers and Discussants:

Name	Position	Country	Role
Damiá Barceló Culleres	Director, Catalan Institute for Water Research	ES	Speaker
Pramod Agarwal	IARI (Agronomy)	India	Speaker
L.S. Rathor	IMD (Head Agro-Advisory Services)	India	Speaker
Dr. T.B.S. Rajput	Director Water Technology Centre IARI	India	Speaker
Busso von Alvensleben	Kreditanstalt für Wiederaufbau	DE	Discussant
Ülo Mander	University of Tartu, Faculty of Science and Technology, professor of Physical Geography and Landscape Ecology	EE	Discussant
Jérôme Perrin	BRGM, CEFIRES-NGRI, Hyderabad, IFCGR Team Leader, NGRI/IFCGR	FR	Discussant
Busso von Alvensleben Kreditanstalt	Für wiederanfbam	DE	Discussant
Chiara Tonelli	Chiara TONELLI, University of Milan, Plants European Technology Platforms	IT	Discussant
Östen Ekengren	Executive Vice President, Business Development & Marketing, IVL - Swedish Environmental Research Institute	SE	Discussant



Focal Theme: Biomasses/biowastes/bioenergy

EU-India Partnering Initiative

Sessions C1, C2 and C3

The aim of these three sessions is to discuss the state of the art for biomass production, sustainable conversion of bio wastes and bioenergy with a view to second generation biofuels through biotechnological approaches. Key players will identify main S&T trends and explore potential opportunities to develop international collaborations between EU and India. This session will contribute to building an EU-India Partnering Initiative in biomass/biowastes/bioenergy, as a pilot model for broad range and systematic collaboration between the EU and Member States and India R&D Programmes in these areas.

Session C1: Partnering Initiative and agricultural production - **Thursday 11 November, 14:30 - 16:30**

The issue:

New species and varieties of plants are needed to address the challenge of climate change. At present only 10% of the 400,000 higher plants species have been characterized chemically. This means that there is room for new species with high potential for commercial exploitation. Novel varieties will modify production systems (for example, early emergence varieties), and new options must be studied while technical bottlenecks must be tackled. The possible introduction of species and/or varieties of plants that increase productivity with existing inputs and stable productivity with reduced inputs should be debated. Emphasis will be put on the use of marginal land, and on the impact in areas used for food production. Technical bottlenecks, such as the use of pesticides, longer sowing periods and the reduction of losses will be discussed. Environmental and economic sustainability of production chains will be taken into account.

Co-chairs:

India: **Professor Akhilesh Kumar Tyagi**, *Director, National Institute of Plant Genome Research*

Europe: **Alfredo Aguilar Romanillos**, *Head of Unit, European Commission, DG Research*

Speakers and Discussants:

Name	Position	Country	Role
Christine Bunthof	Christine Bunthof, Eranet – Plant Genomics and/or speaker from ETP plant for the future	NL	Speaker/Discussant
Neeta Sharma	National Agency for New Technologies, Energy and Sustainable Economic Development, Italy	IT	Speaker/Discussant
Piero Venturi	European Commission	EC/DG RTD	Speaker/Discussant
Prof. H.E. Shashidharan	University of Agricultural Sciences, Bangalore	India	Speaker/Discussant
K. Vijayaraghavan	Director, Sathguru Management Consultants	India	Speaker/Discussant
Karin Metzloff	Executive Director European Plant Science Organisation, EPSO	India	Speaker



Session C2: Partnering Initiative and bio-masses/bio-wastes - Thursday 11 November, 16:45 - 18:45

The issue:

Agro-industrial and municipal biowaste pose environmental hazards whilst at the same time providing an important potential resource for producing a wide range of bioproducts. The potential to exploit biowastes as raw materials for bioproducts requires the application of new technologies to arrive at novel and economically viable solutions. Conversion of biodegradable biowastes into valuable bioproducts and cascade concept will be highlighted in the discussion. The production of the selected chemical(s) and downstream processes employing innovative separation and purification technologies in an integrated approach will be discussed. Economic viability and eco-efficiency will be evaluated and assessed on a quantitative basis. Specific attention will be also allocated to forestry production that represents in Europe and India a relevant source of biomass. As the EU Forest Action Plan highlights, using forest biomass as an energy source can help to mitigate climate change by substituting fossil fuel, improving energy self-sufficiency, enhancing security of supply and providing job opportunities and additional income in rural areas.

Co-chairs:

India: [Dr Rakesh Tuli](#), *Executive Director, National Agri-Food Biotechnology Institute*

Europe: [Alfredo Aguilar Romanillos](#), *Head of Unit, European Commission, DG Research*

Speakers and Discussants:

Name	Position	Country	Role
Ludo Diels	VITO - Flemish Institute for Technological Research - ETP Suschem	BE	Speaker/Discussant
Johan Elvnert	ETP Forest-based sector		Speaker/Discussant
Mait Kriipsalu	Estonian University of Life Sciences, Institute of Forestry and Rural Engineering	EE	Discussant
Dr. Rakesh Tuli	Executive Director, National Agri-Food Biotechnology Institute	India	Speaker/Discussant
Dr. Alok Adholeya	Director, Biotechnology and Management of Bioresources Division, The Energy and Resources Institute	India	Speaker/Discussant
Dr. P. K. Goswami	Scientist , Chemical Engineering Division, North East Institute of Science & Technology	India	Discussant
Dr. S. Nagini	Professor, Department of Biochemistry and Biotechnology Faculty of Science, Annamalai University	India	Discussant



Session C3: Partnering Initiative and bio-energy - Friday 12 November, 10:00 - 12:00

The issue:

Potential for second generation biofuels production will be analyzed and compared in the EU and India. Options for cellulosic ethanol production chains will be highlighted, as well as emerging crops as feedstock (*Jatropha curcas*). Technical bottlenecks and possible solutions will be discussed. Value chains leveraging on industrial synergies with existing facilities deserve priority attention as they might offer the best economic and industrial framework to manage the high risk/high cost of deploying promising new technologies, thereby helping the transition from conventional to advanced biofuels. It is expected that the global impact of political decisions (for example: EU directives on biofuels) will be examined. Environmental and economic sustainability, ethical aspects and trade will be also taken into account. Since the potential benefits of biofuels are global, international collaboration on research and development (R&D) is essential. With abundant biomass resources in India and state-of-the-art biomass-to-biofuel conversion technologies from the EU, this session should strive to foster partnerships between India and the EU/Member States in the sustainable development of 2nd generation biofuels.

Co-chairs:

India: **Mr. Shrikumar Suryanarayan**, *Association of Biotechnology led Enterprises of India (ABLE)*

Europe: **Alfredo Aguilar Romanillos**, *Head of Unit, European Commission, DG Research*

Speakers and Discussants:

Name	Position	Country	Role
Luciano Salvatore Cosentino	ETP Biofuels, Università of Catania	IT	Speaker/Discussant
Stefan Dahlgren	Programme Manager, SWECO AB	SE	Discussant
Arvind Lali	Professor of Chemical Engineering and Coordinator, DBT-ICT Centre of Energy Biosciences Institute of Chemical technology Matunga, Mumbai	India	Speaker/Discussant
Shrikumar Suryanarayan	Association of Biotechnology Led Enterprises of India (ABLE)	India	Speaker/Discussant



Focal Theme: India-EU/MS collaboration initiatives and frameworks

Sessions D1, D2 and D3

These sessions will not have any specific thematic focus but explore how to add a European dimension into established bilateral, multilateral institutional entities and schemes supporting Europe-India research and innovation cooperation, including through the ERA-Net schemes.

Session D1: Fostering the Europe-india Innovation nexus - **Thursday 11 November, 14:30 - 16:30**

The issue:

Innovation is a key driver for economic and social development and closely connected with research. It plays an increasing role in addressing global challenges, ranging from climate change, depletion of natural resources, to ageing populations. The EU and India need more and better innovation to face structural challenges. The EU launched in October the EU Innovation Union, the EU Research and Innovation strategy until 2020. The European innovation policy is a key pillar of the EU 2020 strategy which aims to enable the EU to make a full recovery from the current crisis, and help speed up the move towards a greener, more sustainable economy. All available tools are to be mobilised (both 'demand' and 'supply' side) to speed up getting innovations to the market, such as funding for research and innovation, improving market conditions by stimulating public procurement of innovation, by making standardisation processes and standards more conducive to rapid developments, and by developing a regulatory framework that rewards innovation. The European Lead Market Initiative has provided a lot of experience in developing demand-side innovation tool; such as international standards for bio-based products, and supporting pilot plants for the production of high-added value bio-plastics. India faces the dual challenge of both "inclusive innovation" as well as "sustainable innovation", and has a number of ambitious innovation policies and actions in preparation. India has announced its 'Decade for Innovation' to achieve these ambitious goals. The main aim of this "Decade for Innovation" is to develop an innovative eco-system to stimulate innovations and to produce solutions for societal needs in terms of healthcare, energy, urban infrastructure, water and transportation. Both the European innovation and Indian innovation strategies provide huge opportunities for businesses and researchers.

Co-chairs:

India: **Dr. Amit Mitra**, *Emeritus Secretary General FICCI*

Europe: **Peter Dröll**, *Head of Unit, Industrial Innovation, EC DG Enterprise and Industry*

Speakers and Discussants:

Name	Position	Country	Role
Peter Schintlmeister	Peter Schintlmeister, Lead Market Initiative Bio-based products	AT	Speaker
Ashok Jhunjunwala	IIT B (Head of SINE)	India	Speaker
Michael Sarvan	German Water Partnership	DE	Discussant
Poul V. Jensen	Director EBTC	DK	Discussant
Rene Tönisson	Baltic Innovation Agency	EE	Discussant
H.K. Mittal	DST	India	Discussant

**Background documents and references:**

This conference session builds on the outcomes of the December 2009 visit of Ms Le Bail, Deputy-Director General of EC DG Enterprise and Industry. It will also look at and discuss examples of bilateral innovation activities between the Member States and India.

Innovation Union:

http://ec.europa.eu/research/innovation-union/index_en.cfm

Lead Market initiative:

<http://ec.europa.eu/enterprise/policies/innovation/policy/lead-market-initiative/>

Taking Bio-based from promise to market:

http://ec.europa.eu/enterprise/sectors/biotechnology/files/docs/bio_based_from_promise_to_market_en.pdf



Session D2: Multilateral EU-India research and innovation initiatives - Thursday 11 November, 16:45-18:45

The issue:

International cooperation in research and innovation often requires the participation of actors from several countries sharing similar interests and priorities. The New Indigo project - an ERA-NET scheme - supported by the European Commission is an example of partnership between several EU Member States and India for the purpose of sharing information, identifying common priorities and implementing joint actions. Multilateral cooperation is also pursued in Europe through thematic ERA-Net schemes or similar mechanisms focusing on the coordination and cooperation of national and regional programmes. This session will illustrate examples of good practice of multilateral cooperation initiatives and schemes, that are effectively contributing to more and better S&T&I cooperation between Europe and India, as well as to finding efficient, sustainable and affordable solutions to global societal challenges.

Co-chairs:

India: **S.V. Raghavan**, *Scientific Secretary, Office of Principal Scientific Adviser to Government of India*

Europe: **Ms. Mary Minch**, *Director, European Commission, DG Research*

Speakers and Discussants :

Name	Position	Country	Role
Aurélie Pachkoff	NEW INDIGO Managing Coordinator, CNRS	FR	Speaker
A. R. Upadhyay	NAL Bangalore	India	Speaker / Discussant
Amaresh Chakrabarti	IISc (Innovation Knowledge Portal) Bangalore	India	Speaker / Discussant
B.K. Gairola	NIC Delhi	India	Speaker / Discussant
Peter Dröll	Head of Unit, Policy Development for Industrial Innovation, European Commission, DG Enterprise	EC/DG ENTR	Discussant
Jaana Roos	Senior Science Adviser, Academy of Finland (Asia NoriaNet - a Nordic platform for Asia cooperation)	FI	Discussant
Suryanarayan Madhav Lal	ABLE Bangalore	India	Discussant
Kerstin Krüger	ERA-NET scheme 'SPLASH'	DE	Speaker / Discussant

Background documents and references:

<http://www.newindigo.eu/>
<http://www.euindiacoop.org/>
<http://www.ebtc.eu/>



Session D3: Bilateral institutional entities and schemes - Friday 12 November, 10:00 - 12:00

The issue:

Several Member States have established joint research institutes, joint laboratories or joint centres facilitating S&T with Indian partners. These facilities provide an excellent basis for promoting collaborative long term research cooperation on a bilateral basis. However, as global challenges require global responses, experience of best practices could be beneficial to other stakeholders in Europe and India. Thus, opening such bilateral institutes and arrangements for participation of researchers from other EU Member States could enhance knowledge production and dissemination. It would also bring a European dimension into the bilateral cooperation, offer European and Indian researchers more opportunities to cooperate, and contribute to more effective collaborative research. The Commission has supported initiatives such as the EUINEC and India Gate aimed at promoting research cooperation opportunities for Indian and European researchers and stakeholders. Selected examples of bilateral India - EU and India - Member State cooperation initiatives will be addressed in this session, such as bi-national research institutes, joint laboratories or joint funding mechanisms (like CEFIPRA, etc).

Co-chairs:

India: **N. Sathyamurthy**, *Vice President (IR) Indian National Science Academy*

Europe: **Klaus Schuch**, *Business Manager and Senior Researcher, ZSI*

Speakers and Discussants:

Name	Position	Country	Role
Véronique Briquet-Laugier	Science Counsellor, French Embassy in India	FR	Speaker
Pushpito Ghosh	CSMCRI	India	Speaker
Felix Kahle	India-Germany Max Planck initiative	DE	Speaker
Rasmus Linnemann Krogh-Meyer	Head of Section, Centre for Research Policy The Danish Council for Strategic Research	DK	Discussant
Mr Harri Ojansuu	Senior Technology Adviser Services and Wellbeing Industries Bio- and Health Technologies Tekes	FI	Discussant
Dr. A. Chakraborty	CSIR	India	Discussant
Dr. Shailja V. Gupta	DBT	India	Discussant
Bert van der Zwaan	Rector elect Utrecht University, Indo-Dutch water research initiative	NL	Discussant
Ola M Johannessen	Director, The Nansen Environment Research Centre (NERSC)	NO	Discussant

**Background documents and references:**

European Commission, DG RTD, Capacities work programme 2011:
ftp://ftp.cordis.europa.eu/pub/fp7/docs/wp/capacities/inco/u-wp-201101_en.pdf
Indo-French

Initiative:

<http://www.cefipra.org/home.htm>

Indo-German initiative

<http://www.internationales-buero.de/en/3299.php>

Portal on EU-India Science and Technology support actions:

<http://www.euindiacoop.org/index.php>

