

SAHYOG Twinning Workshop Objectives



SAHYOG – Mini-Symposium and Twinning Workshop Utrecht, 28-29 October 2013

> Dominik Rutz, Rainer Janssen WIP – Renewable Energies, Munich

www.wip-munich.de

WIP



- Policy background for cooperation
- The SAHYOG project
- Twinning concept and activities
- Workshop objectives





Europe's 2020 Strategy

- Promotes growth that is smarter, more sustainable and more inclusive
- Climate and energy package (20-20-20 Targets)
- http://ec.europa.eu/europe2020/index_en.htm
- http://ec.europa.eu/clima/policies/package/







Europe's Research and Innovation

- General Framework: European Partnership for International Cooperation
- Strategic Forum for International Science and Technology Cooperation (SFIC)
- "India Pilot Initiative"
- "Joint declaration on research and innovation"
- http://ec.europa.eu/research/iscp/index.cfm?pg=sfic-india

European Union - India Joint Declaration on Research and Innovation Cooperation New Delhi, 10 February 2012 Moving up a gear in our cooperation towards building an "Indo-European Research and Innovation Partnership" with (i) larger scale, scope and impact, (ii) focus on common societal challenges, and (iii) enhanced synergies between India, the EU an its Member States Considering: The vibrant and strong cooperation in science and technology between India, the EU an many of its Member States through a rich diversity of ongoing bilateral initiativ programmes and schemes; The EU's "Innovation Union" and the Indian "Decade of Innovation" strategies I achieving inclusive, sustainable and affordable innovation, towards finding solutions growing societal challenges such as climate change, increasingly scarce energy, wat affordable food; The scale and complexity of these challenges which call for increased Indo-Europe cooperation, pooling and making more effective use of financial and human resources; The Agreement on scientific and technological cooperation between the Europe Community and the Government of the Republic of India concluded in 2001 and renew in 2007, and the annual meetings of the Joint Steering Committee which have sustained it momentum of the cooperation and enabled signing of letters of intent for dedicate partnerships in biotechnology and health research;	****	
New Delhi, 10 February 2012 Moving up a gear in our cooperation towards building an "Indo-European Researd and Innovation Partmership" with (i) larger scale, scope and impact, (ii) focus on common societal challenges, and (iii) enhanced synergies between India, the EU an its Member States Considering: The vibrant and strong cooperation in science and technology between India, the EU an achieving inclusive, sustainable and rich diversity of ongoing bilateral initiativ programmes and schemes; The EU's "Innovation Union" and the Indian "Decade of Innovation" strategies I achieving inclusive, sustainable and affordable innovation, towards finding solutions growing societal challenges such as climate change, increasingly scarce energy, wat resources, raw materials, demography, security, natural disaster management, sustainal transport and mobility, health and combating diseases and supplying high-quality a affordable food; The scale and complexity of these challenges which call for increased Indo-Europec cooperation, pooling and making more effective use of financial and human resources; The Agreement on scientific and technological cooperation between the Europec Community and the Government of the Republic of India concluded in 2001 and renew in 2007, and the annual meetings of the Joint Steering Committee which have sustained if momentum of the cooperation and enabled signing of letters of intent for dedicate partnerships in biotechnology and health research;		European Union - India
Moving up a gear in our cooperation towards building an "Indo-European Researce and Innovation Partnership" with (i) larger scale, scope and impact, (ii) focus on common societal challenges, and (iii) enhanced synargies between India, the EU an its Member States Considering: The vibrant and strong cooperation in science and technology between India, the EU an anayo of its Member States through a rich diversity of ongoing bilateral initiativ programmes and schemes; The EU's "Innovation Union" and the Indian "Decade of Innovation" strategies to achieving inclusive, sustainable and affordable innovation, towards finding solutions growing societal challenges such as climate change, increasingly scarce energy, wat resources, raw materials, demography, security, natural disaster management, sustainable and affordable indostater management, sustainable affordable food; The scale and complexity of these challenges which call for increased Indo-Europec cooperation, pooling and making more effective use of financial and human resources; The Agreement on scientific and technological cooperation between the Europec Community and the Government of the Republic of India concluded in 2001 and renew in 2007, and the annual meetings of the Joint Steering Committee which have sustained it momentum of the cooperation and enabled signing of letters of intent for dedicate partnerships in biotechnology and health research;	Joint Declarat	
 and movation Partnership" with (i) larger scale, scope and impact, (ii) focus on common societal challenges, and (iii) enhanced synergies between India, the EU an its Member States Considering: The vibrant and strong cooperation in science and technology between India, the EU an anany of its Member States through a rich diversity of ongoing bilateral initiativ programmes and schemes; The EU's "Innovation Union" and the Indian "Decade of Innovation" strategies for achieving inclusive, sustainable and affordable innovation, towards finding solutions growing societal challenges such as climate change, increasingly scarce energy, wat resources, raw materials, demography, security, natural disaster management, sustainable transport and mobility, health and combating diseases and supplying high-quality a affordable food; The scale and complexity of these challenges which call for increased Indo-Europe: cooperation, pooling and making more effective use of financial and human resources; The Agreement on scientific and technological cooperation between the Europer Community and the Government of the Republic of India concluded in 2001 and renew in 2007, and the annual meetings of the Joint Steering Committee which have sustained it momentum of the cooperation and enabled signing of letters of intent for dedicate partnerships in biotechnology and health research; 		
The vibrant and strong cooperation in science and technology between India, the EU a many of its Member States through a rich diversity of ongoing bilateral initiativ programmes and schemes; The EU's "Innovation Union" and the Indian "Decade of Innovation" strategies I achieving inclusive, sustainable and affordable innovation, towards finding solutions growing societal challenges such as climate change, increasingly scarce energy, wat resources, raw materials, demography, security, natural disaster management, sustainal transport and mobility, health and combating diseases and supplying high-quality a affordable food; The scale and complexity of these challenges which call for increased Indo-Europe cooperation, pooling and making more effective use of financial and human resources; The Agreement on scientific and technological cooperation between the Europei Community and the Government of the Republic of India concluded in 2001 and renew in 2007, and the annual meetings of the Joint Steering Committee which have sustained it momentum of the cooperation and enabled signing of letters of intent for dedicate partnerships in biotechnology and health research;	and innovation rarine	rship" with (i) larger scale, scope and impact, (ii) focus on ges, and (iii) enhanced synergies between India, the EU and
Inany of its Memoer States through a rich diversity of ongoing bilateral initiativ programmes and schemes; The EU's "Innovation Union" and the Indian "Decade of Innovation" strategies I achieving inclusive, sustainable and affordable innovation, towards finding solutions growing societal challenges such as climate change, increasingly scarce energy, wat resources, raw materials, demography, security, natural disaster management, sustainal transport and mobility, health and combating diseases and supplying high-quality a affordable food; The scale and complexity of these challenges which call for increased Indo-Europe cooperation, pooling and making more effective use of financial and human resources; The Agreement on scientific and technological cooperation between the Europee Community and the Government of the Republic of India concluded in 2001 and renew in 2007, and the annual meetings of the Joint Steering Committee which have sustained it momentum of the cooperation and enabled signing of letters of intent for dedicate partnerships in biotechnology and health research;	Considering:	
Entering inclusive, sustainable and atfordable innovation, towards finding solutions prowing societal challenges such as climate change, increasingly scarce energy, wat esources, raw materials, demography, security, natural disaster management, sustainal ransport and mobility, health and combating diseases and supplying high-quality a ffordable food; The scale and complexity of these challenges which call for increased Indo-Europe, ooperation, pooling and making more effective use of financial and human resources; the Agreement on scientific and technological cooperation between the Europee formunity and the Government of the Republic of India concluded in 2001 and renew a 2007, and the annual meetings of the Joint Steering Committee which have sustained th artnerships in biotechnology and health research;	many of its Member Sta	operation in science and technology between India, the EU an tes through a rich diversity of ongoing bilateral initiatives
The Agreement on scientific and technological cooperation between the Europee Community and the Government of the Republic of India concluded in 2001 and renew momentum of the annual meetings of the Joint Steering Committee which have sustained th momentum of the cooperation and enabled signing of letters of intent for dedicate partnerships in biotechnology and health research;	growing societal challenge resources, raw materials, d transport and mobility, he	nable and affordable innovation, towards finding solutions to s such as climate change, increasingly scarce energy, water emography security natural disaster processories in the
Community and the Government of the Republic of India concluded in 2001 and renew in 2007, and the annual meetings of the Joint Steering Committee which have sustained th momentum of the cooperation and enabled signing of letters of intent for dedicate partnerships in biotechnology and health research;	The scale and complexity cooperation, pooling and ma	of these challenges which call for increased Indo-Europear aking more effective use of financial and human resources;
The FILLIndia Joint Action Plan - Josef 1' 2007	n 2007, and the annual mee nomentum of the coopera	tings of the Republic of India concluded in 2001 and renewed tings of the Joint Steering Committee which have sustained the tion and enabled signing of Letters of intent for dedications.
innovation dimension;	The EU-India Joint Action I innovation dimension;	Plan adopted in 2005 which includes a significant research and





National Action Plan on Climate Change - India

- National Mission for a "Green India"
- National Mission for Sustainable Agriculture
- National Mission on Strategic Knowledge for Climate Change
- http://pmindia.nic.in/climate_change.php







- Policy background for cooperation
- The SAHYOG project
- Twinning concept and activities
- Workshop objectives





SAHYOG Project

- Partnering initiative between EU and India
- Coordinate research in EU and India
- Biomass, biowaste, conversion, biotechnologies
- → One tool are **"Twinning Activities**"











- Policy background for cooperation
- The SAHYOG project
- Twinning concept and activities
- Workshop objectives





SAHYOG Twinning - Objectives

- facilitate and coordinate project cooperation
- bring together participants of past and on-going projects, initiatives, and international networks
- consolidate R&D results
- exploit synergies
- build up a critical mass for future EU-India collaboration







Twinning activities

- Research cooperation, exchange of researchers
- Organisation of joint workshops/meetings
- Development of common trainings
- Common literature reviews
- Exchange of tools, analytical methods and databases
- Exchange of data, information, knowledge and material





Research themes for Twinning

- **Bioethanol** production from lignocellulosic biomass •
- **Thermochemical** conversion technologies (pyrolysis, gasification)
- Anaerobic digestion technologies (biogas, • biomethane, hydrogen)
- **Algae** production and conversion systems ۲
- Biomass to **chemicals** the biorefinery approach
- **Feedstock** production and genetic improvement of plants
- **Sustainability** and life cycle assessment

Anaerobic Digestion Technologies

Through facilitating and coordinating project twinning, SAHYOG brings together project coordinators and other lead partners and on-going projects as well as international ate R&D results exploit synergie critical mass for future EU-India rese

rious types of anaerobic microorganisms (bacteria) dec lex organic matter (hiomass) into smaller compounds in the waste (animal and plant waste), dedicated crops an waste, sewage sludge) is anaerobically digested in order to ose it into biogas and digestate. The latter is a valuable whereas biogas is often used in stationary CHP plants o ty be up-graded to bio-methane for injection into the natural gas rid or application as transport fuel

India-EU SAHYOG Twinning

Activities

following research themes in the field of anaerobic digestio

NEA, Italy

RI, India

- relopment of cost and environmentally efficient pre treatment processes Improvement of microbiological processes for a variety of
- feedstock types · Process integration (e.g. optimisation of sizes and layouts
- Development of suitable purification and upgrading
- chnologies for biomethane Bio-hydrogen production by acidogenic microbial electrolysis

HYOG Twinning – How to get involved?

vill be addressed under SAHYOG twinning. · Optimisation of feedstock collection and logistic

ith respect to EU-India twinning, the following activities and cedures are foreseen within SAHYOG

- Get in contact with SAHYOG partners respon twinning (Robert Bakker, Rainer Janssen, Dominik Rutz)
- · Sign Letter of Interest on India-EU SAHYOG twinning
- · Define your areas of interest for research cooperation · Cooperation contacts from India/Europe are identified by
- SAHYOG · Assistance for twinning activities is provided by SAHYOG
- · Participation in SAHYOG twinning workshop is facilitat



site: www.sahyog-europa-india.ei





Project Database

- The databse facilitates the identification of suitable twinning projects
- http://www.sahyog-projectsdatabase.eu/

Neuer Tab X dict.cc consolid	ate Wörterbuch × 🗍 Welcome to the SAHYOG pr	iect × C	SAYHOG Project Inventories	× 🗍 E
			☆ ▼ C 8 - Goog	
rgeschlagene Sites [] Web Slice-Katalog				
Served and a served and a served as a serv	Welcome to the \$	AHYOG	Project Inventories	website.
			Litta	
	Search database			
Strengthening Networking on Biomass Research nd Biowaste Conversion – Biotechnology for	Search database		submit	
The objective of the project <u>SAHYOG</u> Strengthening Networking on Biomass Research and Biowaste Conversion – Biotechnology for Europe India Integration) is to actively and Iffectively link research activities implemented within EU research programmes and related	Search database Browse topics		submit	
Strengthening Networking on Biomass Research nd Biowaste Conversion – Biotechnology for urope India Integration) is to actively and ffectively link research activities implemented ithin EU research programmes and related		Type Of	submit Biomass	
trengthening Networking on Biomass Research d Biowasto Conversion – Biotechnology for urope India Integration) is to actively and fectively link research activities implemented thin EU research programmes and related ogrammes by Indian national institutions. his SAHYOG Inventory on Research Programs	Browse topics	1		
itrengthening Networking on Biomass Research nd Biowasto Convorsion – Biotechnology for urope India Integration) is to actively and ffectively link research activities implemented thin EU research programmes and related rogrammes by Indian national institutions. Its SAHYOG Inventory on Research Programs nd Projects presents an overview of existing ograms and research projects in Europe and India,	Browse topics	Biomass	Biomass	
trengthening Networking on Biomass Research rd Biowaste Conversion – Biotechnology for urope India Integration) is to actively and ftectively link research activities implemented tithin EU research programmes and related rogrammes by Indian national institutions. Nis SAHYOG Inventory on Research Programs d Projects presents an overview of existing ograms and research projects in Europe and India, earchable with respect to the categories Stream/Downstream, Type of Biomass, Production	Browse topics Upstream/Downstream/Whole Chain Agricultural Activity	Biomass	Biomass conversion technology	
trengthening Networking on Biomass Research d Biowaste Conversion – Biotechnology for urope India Integration) is to actively and ffectively link research activities implemented tithin EU research programmes and related rogrammes by Indian national institutions. It SAHYOG Inventory on Research Programs d Projects presents an overview of existing ograms and research projects in Europe and India, archable with respect to the categories schemzDownstream. Type of Biomass, Production ad pre-treatment, Biomass conversion technology, oduct, Type of research, Organisation type, Drivers,	Browse topics Upstream/Downstream/Whole Chain Agricultural Activity Product	Biomass Type of	Biomass : conversion technology Research	
Strengthening Networking on Biomass Research nd Biowaste Conversion – Biotechnology for urope India Integration) is to actively and	Browse topics Upstream/Downstream/Whole Chain Agricultural Activity Product Organisation type	Biomass Type of Drivers	Biomass : conversion technology Research	





Contact for Twinning

Wageningen UR, The Netherlands

Dr. Robert Bakker robert.bakker@wur.nl

WIP – Renewable Energies, Germany

Dr. Rainer Janssen Dominik Rutz rainer.janssen@wip-munich.de dominik.rutz@wip-munich.de





http://www.sahyog-europa-india.eu/project-twinning





- Policy background for cooperation
- The SAHYOG project
- Twinning concept and activities
- Workshop objectives





Workshop Objectives

 Identify and discuss major cooperation areas
 Suggest concrete twinning actions (common training, data exchange, material exchange, etc.)

Networking





THANK YOU VERY MUCH FOR YOUR ATTENTION!!





Contact

Dominik Rutz, Rainer Janssen WIP – Renewable Energies Sylvensteinstrasse 2 81369 Munich, Germany www.wip-munich.de



Dominik.Rutz@wip-munich.de Rainer.Janssen@wip-munich.de

