



## The SAHYOG project: Strengthening Networking on Biomass Research and Bio-waste Conversion – Biotechnology for Europe India Integration

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The main aim of the project SAHYOG is to bring together leading organisations in the field of **biomass production and bio-waste conversion research** carried out within EU research programmes and related programmes by Indian national institutions.

**Inventories of biomass and bio-waste potentials and research projects/programs** elaborated and analysed within SAHYOG are the basis for the joint **Strategic Research Agenda (SRA)** finally leading to a **Roadmap for policymakers and researchers**. SAHYOG ensures wide-range networking of relevant industries and scientific communities and establishes linkages between on-going research and innovation projects from EU and India.

Please see [www.sahyog-europa-india.eu](http://www.sahyog-europa-india.eu) for more information.

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### Project News

In this fifth newsletter issue, we would like to inform our readers about the final SAHYOG Conference and Brokerage Event on Bio-economy in New Delhi, India on 3-4 February 2014, a SAHYOG workshop in Pune, India on 22-23 May 2014, the 2nd Summer School in Tezpur, India on 20-26 July 2014, activities performed within the India-EU Short-Term Exchange Program, as well as the up-coming final SAHYOG meeting in Brussels on 18-19 November 2014.

# Final SAHYOG Conference and Brokerage Event on Bio-economy, New Delhi, India, 3-4 February 2014

ENEA & TERI under the aegis of ongoing Indo-EU networking initiative organized the two days brokerage and stakeholders event on Bio-economy, sponsored by European Commission and Department of Biotechnology, Government of India. This event was the first comprehensive deliberation on Bio-economy that aimed at strengthening EU-India collaboration in the field of bio-based economy by facilitating linkages between existing projects and triggering new collaborations particularly with the industries.

The event was inaugurated by Dr. Philippe de Taxis du Poet from DG Research and Innovation, European Commission, Dr. Shailja Gupta and Dr. Renu Swarup from DBT. It also witnessed participation from senior management of industry, active researchers from national and international institutes, representatives from embassies, stakeholders from small and medium enterprises, NGO's, financing institutions, business schools, and most importantly farmer organizations, both from EU member states and India.

The deliberations were focused on understanding the importance of transition towards the bio-based economy with the perspective from both EU and India. The highlight of the event was the overwhelmed response from the industry through

participation of their senior management and dialogue on opportunities as well as technology and policy gaps in this emerging field.

Another major highlight of the event was the presentations on the Strategic Research Agenda that is being developed under the project SAHYOG to facilitate concerted planning of future joint EU-India research initiatives. The discussion lead to a clear road map of activities leading to identifying pathways in promoting technologies and policies that might drive Europe and India to an increased exploration of biotechnology for biomass production and biowaste conversion.



Participants of the Final SAHYOG Conference  
and Brokerage Event on Bio-economy in New Delhi

## SAHYOG Workshop on Biomass Production, Conversion and Utilization, Pune, India, 22-23 May 2014

The workshop on Biomass Production, Conversion and Utilization was organized at the Appropriate Rural Technology Institute (ARTI), Pune, in the framework of SAHYOG, on 22-23 May 2014 at Vaikuntha Mehta National Institute of Co-operative Management (VAMNICOM), Pune (Maharashtra, India).

About 41 participants, including stakeholders from academia, industry, NGOs and senior level research students, actively participated in the two day workshop program organized in seven sessions on the three main topics:

- Biomass Research and Development in Academic Context
- Biomass Conversion: Industrial Context
- Biomass for Sustainable Development and Environment

In total 20 speakers presented their work and the research results related to the different topics.

The design and fabrication of Appropriate Technologies for Rural India taking into consideration the environment and societal benefits were also highlighted at the event.

The main objective of the workshop was to bring together stakeholders from the leading organisations, in particular, the stakeholders from Maharashtra, Rajasthan, Odisha, Andhra Pradesh, Uttar Pradesh, New Delhi and Italy to deeply discuss biomass based technologies that might be an excellent support for the future India-Europe-Maharashtra Collaborative Program.



Participants of the  
SAHYOG Workshop  
in Pune



## Second SAHYOG Summer School

20-26 July 2014, at Tezpur University, Assam, India

The 2nd SAHYOG Summer School was held during 20-26 July 2014 at Tezpur University, Assam, India.

Professor MK Chaudhuri, Vice-Chancellor of Tezpur University, inaugurated the event. During his speech, Prof. Chaudhuri focused on the growing need of sustainable, affordable and quality source of power and heat from biomass and other renewables for 21st century. Further presentations were made by Dr. Rupam Kataki, Professor D Deka, Professor YS Yadav, and Dr. PM Sarma during the inaugural session.



### 2nd SAHYOG Summer School in Tezpur

The key-note lecture was delivered by Professor Ashok Pandey, Head of the DBT Centre for Biofuel and Biotechnology Division, CSIR-National Institute of Interdisciplinary Science & Technology, on "Advances in Biomass and Bioenergy research and vision for future". During his lecture, he reviewed the international and national energy scenario and presented an in-depth analysis of all possible options for a biobased energy supply scenario in India.

In the following four technical sessions, participants were deeply introduced in the various biomass, bioenergy and biotechnology fields:

- Biomass Assessment, Characterization, Production and Improvement
- Biomass Conversion: Science, Technology and Biotechnology
- Sustainability and LCA of biomass;
- Biomass, Society and Rural Development

The presentations were given by eighteen speakers from Europe and India. Furthermore, field visits to renewable energy installations, to a tea garden and to local sight-seeing destinations were included. Participants also worked on biofuel based problems in groups and presented case studies.

21 young Indian researchers, mostly undergoing doctoral training representing Indian Institute of Technology (IIT), National Institute of Technology (NIT), Central and State University and CSIR Laboratories, participated in the summer school.

In the summer school closure participants mentioned that it was a significant learning and sharing experience for them. The 2nd SAHYOG summer school was concluded with vote of thanks offered by the coordinator, Dr. Rupam Kataki to all the participants and speakers for making the event a vibrant one through their interaction during presentations by various speakers. He also thanked all those who helped in organization of the 2nd SAHYOG summer at Tezpur University.

## SAHYOG Short Term Exchange Programme - Indian researchers visiting Europe

The objective of the project SAHYOG (Strengthening Networking on Biomass Research and Biowaste Conversion – Biotechnology for Europe India Integration) is to actively link research activities implemented within EU research programmes and related programmes by Indian national institutions.

One effective element is to enhance the networking and exchange of young talents and by this to pave the way for a sustainable cooperation between Europe and India. Therefore focus of the Short Term Exchange Programme was to create conditions for mutual learning as well as to involve young scientist in the decisions about future EU-India science and technology cooperation (STC). Furthermore the awardees had the chance to present their ideas (e.g. in context of discussion sessions within the hosting institutions) and the possibility to strengthen their networks.

The tour from India to Europe comprised eight participants and took place from 30 March 2014 to 10 April 2014. The researchers could gain deep insights into different research institutions in the regions they visited. Linkages among the institutes, thematic foci, available infrastructures and current research topics were addressed, thus laying a solid foundation for possible mid- or long-term collaboration. Due to the small size of the groups each participant was given the opportunity to present his or her home institution and their personal research on several occasions during the trip. Furthermore, the tour provided ample opportunities for individual conversations among the researchers as well as extensive Q&A sessions after the presentations from the hosting institutions.



Young Indian researchers participating in the SAHYOG Short Term Exchange Programme

For most of the participants, the STE tour was their first chance to visit Europe, thus getting a first impression of the regional customs, culture and research landscape. With the participants being at an early stage in their research career, this first experiences abroad will make it easier to seize similar chances in the future.

## SAHYOG Participation at the 22nd Biomass Conference in Hamburg

SAHYOG team members participated at the 22nd European Biomass Conference and Exhibition (EU B&E) in Hamburg. The following activities conducted under the SAHYOG project were presented at the conference:

- Presentations of the evaluation of the 1st SAHYOG Summer School in Athens by E.G. Koukios
- Stimulating research cooperation between Europe and India on recent developments on biomass and biowaste conversion, Session on Biomass and Bioenergy Strategies and Policies by E.G. Koukios, L. Karaoglanoglou, S.Paopadaki, D.P. Koullas, P. Sarma, N. Sharma, 1st SAHYOG Summer School
- Strategic Advice on Biobased Research in Europe and India, Session: Biomass and Bioenergy Strategies and Policies, by Kees W. Kwant, Neeta Sharma and Priyangshu M. Sarma.

## SAHYOG Reports published

In the framework of the SAHYOG project, two important reports were elaborated aiming at facilitating the cooperation between Europe and India and at identifying research cooperation opportunities:

- State of the art technology: Biomass availability and potential and ongoing research in Europe and India
- Strategic Research Agenda supporting the Roadmap

Both reports will soon be available on the SAHYOG website.

## Final SAHYOG Meeting

The final SAHYOG meeting will take place on 18-19 November 2014 at ENEA-EU Liaison office, Rue de Namur 72, in Brussels. The detailed program and more information will be available soon at the SAHYOG website.

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## News from the SWEETFUEL Project

The SWEETFUEL project was supported by the European Commission in the 7th Framework Programme and has terminated in June 2014. The objective of SWEETFUEL was to develop sweet sorghum genotypes that provide maximal quantities of high-quality substrate for the production of bio-ethanol, for temperate, tropical semi-arid and tropical acid-soil environments.

A regional workshop on sweet sorghum was organised on 26 June 2014 at the 22nd European Biomass Conference & Exhibition in Hamburg, Germany. Presentations are available for download at: [http://www.sweetfuel-project.eu/sweetfuel\\_events/sweetfuel\\_at\\_the\\_22nd\\_european\\_biomass\\_conference\\_exhibition](http://www.sweetfuel-project.eu/sweetfuel_events/sweetfuel_at_the_22nd_european_biomass_conference_exhibition)

Furthermore, in the framework of the project, an Energy Sorghum Handbook was elaborated that is available for free at

[http://www.wip-munich.de/images/stories/6\\_publications/books/SweetfuelHandbook2014-06-07-new.pdf](http://www.wip-munich.de/images/stories/6_publications/books/SweetfuelHandbook2014-06-07-new.pdf).

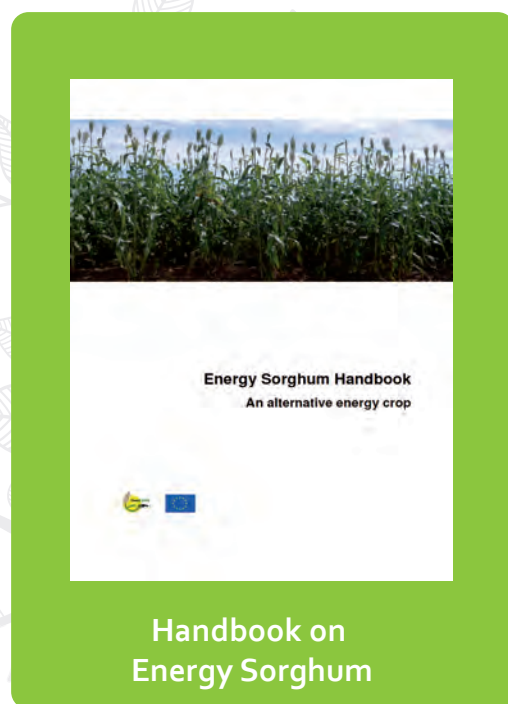
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