



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 for more information.

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Project News

In this fourth newsletter issue, we would like to inform our readers about up-coming SAHYOG activities such as the up-coming final SAHYOG Conference and Brokerage Event on Bio-economy, New Delhi, India, 3-4 February 2014, the India-EU Short-Term Exchange Program, and the 2nd Summer Summer School in Tezpur, India. Brief overviews are given on the Strategic Research Agenda as well as on the Biomass Inventories.

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

The bio-economy is considered as a thematic area of priority interest for scientific and industrial collaboration between Europe and India. In order to enhance this initiative, the European Commission, Department of Biotechnology, Government of India and SAHYOG are jointly organising an EU-India Brokerage Event on Bio-economy and SAHYOG Stakeholder Conference on 3-4 February 2014 in New Delhi. This would be the first comprehensive deliberation on Bio-economy and the event aims at strengthening EU-India collaboration in the field of bio-based economy by facilitating linkages between existing projects and triggering new collaborations particularly with industries. The organisers have put up an ambitious agenda where more than 150 attendees from academia, policy makers, funding agencies, industries, and financial institutions will deliberate. The flyer of the event is available at the SAHYOG web site.

The event will take place on the occasion of the Delhi Sustainable Development Summit (DSDS) on 6-8 February 2014. The DSDS, convened annually by the Energy and Resources Institute (TERI), is an international gathering that facilitates a vital exchange of ideas, knowledge, lessons and awareness needed for the sustainable development of India and the world.

Details on the conference, including the agenda and registration form are available at:
<http://www.sahyog-europa-india.eu/stakeholder-workshops> and
<http://eu-india-bio-economy.teamwork.fr/>.
For further information please contact:

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

In conjunction with the SAHYOG project meeting on 25-26 October 2013, a SAHYOG Mini-Symposium on EU-India research cooperation in the fields of biomass and bio-waste and Twinning Workshop was organised in Utrecht, Netherlands on 28-29 October 2013.

The main aim of the Mini-Symposium was to present SAHYOG achievements to a wider audience, to discuss progress on the development of a bio-based economy in India & Europe, and to present and discuss the first draft of the SAHYOG Strategic Research Agenda.

Specific recommendations and suggestions for EU-India cooperation in the bioenergy field were made on the following research topics:

- Bioethanol production from lignocellulosic biomass
- Thermochemical conversion technologies (pyrolysis, gasification)
- Anaerobic digestion technologies (biogas, biomethane, hydrogen)

- Algae production and conversion systems
- Biomass to chemicals – the biorefinery approach
- Feedstock production and genetic improvement of plants
- Sustainability and life cycle assessment

Although in all research topics many recommendations were defined, it was suggested by the European Commission to come up with only very few recommendations and priority areas for joint research in order to be included in future funding programmes. The outcome of the workshop and the research recommendations are currently being integrated in the Strategic Research Agenda (SRA) of the SAHYOG project. An update on the SRA is also available in this newsletter.

The presentations and a summary of the workshop are available under:
<http://www.sahyog-europa-india.eu/news-a-events/events> and <http://www.b2match.eu/sahyog>.



Participants of the SAHYOG Mini-Symposium and Twinning Workshop

An update on the Strategic Research Agenda (SRA) of the SAHYOG project

One of the major targets of SAHYOG is to define a joint EU-India VISION on the bioeconomy, and to develop a Strategic Research Agenda (SRA) specifying the common R&D needs that are essential to fuel the bioeconomy. The SRA covers all domains relevant to the bioeconomy. It considers the availability and efficient/sustainable production of the feedstocks, the biorefineries needed to allow to transform these feedstocks to products (fuel, feed, materials) in an economically viable way, as well as policy oriented issues. The state-of-the-art in these different domains has been elaborated by the different partners of the project, both at the EU as well as the Indian side. The points of joint interest have been defined. For these, first short, mid and long term recommendations for the EU-India collaboration have been defined.

In the development of the SRA, and especially its recommendations, close interaction and feedback from stakeholders (industrial, policy, experts) is of utmost importance. For this, already three stakeholder workshops have been organized, providing inputs on the industrial needs, as well as experts views. Further feedback on the SRA and the recommendations will be obtained at the final SAHYOG Conference and the Bio-economy Brokerage Event, that will take place in New Delhi on 3-5 February 2014, and through personal consultation of stakeholders. The final goal will be to select a limited number of important recommendations for the EU-India collaboration in the field of the bioeconomy, that is broadly supported by stakeholders of the bio-economy. To provide further suggestions on the SRA and its recommendations, please contact:

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SAHYOG 2nd Summer School at Tezpur University in Tezpur, Assam, India

The 2nd Summer School in the framework of SAHYOG project is scheduled to be held during 20-27 July 2014 at Tezpur University, Assam, India. The call for the Summer School will be available at the SAHYOG website from February 2014.

Tezpur University is one of the six Indian partners of the SAHYOG project and is located in the north-eastern part of India. The University is newly established and equipped with all modern facilities in terms of research, teaching and other academic activities.

Following are the broad areas identified for lectures to be delivered by a host of academicians, researchers and industry experts from both India and Europe. Further, Bioenergy site visits will also be organised during the School.

- Biomass assessment, characterization and improvement
- Biomass conversion: Science, Technology and Biotechnology
- Sustainability and LCA of biomass energy
- Biomass, society and rural development

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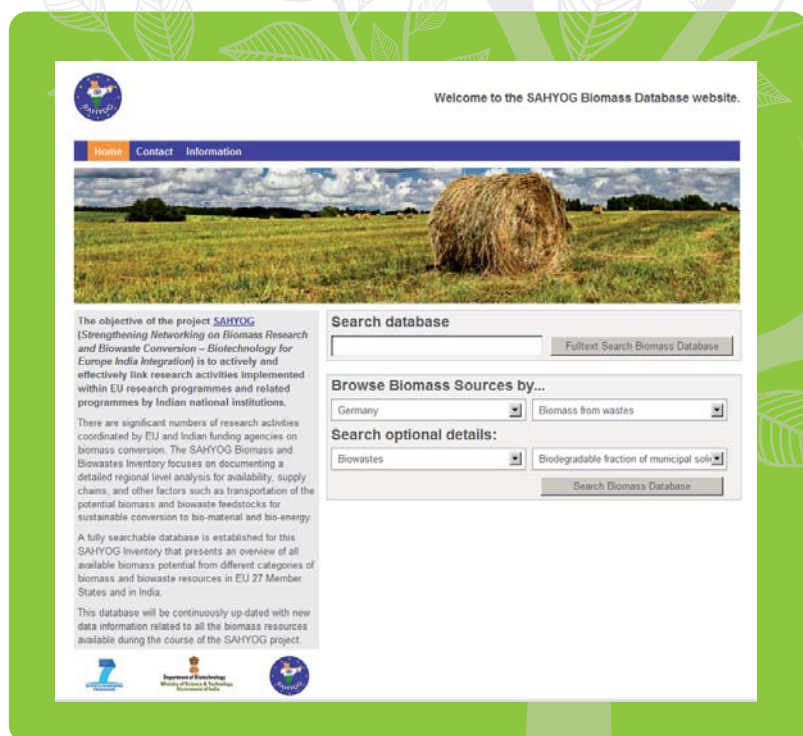
SAHYOG Inventory on the Biomass Potential in Europe and India

The SAHYOG inventories presents an overview of available biomass potential from different categories of biomass and biowaste resources and existing Biobased Research Projects and Programs in EU 27 Member States and in India. The on-line searchable database of both inventories, with proper guidelines for its use and searchable with respect to the categories, are available at the following two web-sites: <http://www.sahyog-europa-india.eu/> and <http://www.sahyog-biomass-database.eu>.

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SAHYOG Short Term Exchange Programmes

After having gone through a competitive evaluation procedure of their applications, six European young scientists from Europe were invited to join the SAHYOG Short Term Exchange through India. From 18 – 27 November 2013, the up-and-coming biomass and biowaste conversion experts from Germany, Hungary, Italy, Portugal and the UK had the unique chance to visit a number of Indian research institutions with a relevant research focus for them and present their work to an interested audience. The stations of the tour included top research institutions such as the Energy and Resources Institute (TERI) in Delhi, the CSIR Institute of Chemical Technology, Hyderabad (CSIR-IICT), the International Crop Research Institute (ICRISAT) at Patancheru, the Govind Ballabh Pant University of Agriculture and Technology at Pantnagar, and the Jawaharlal Nehru University (JNU) at Delhi.



Participants of the
SAHYOG Short Term Exchange through India



SAHYOG STE visit at ICRISAT in Patancheru

None of the participants had been to India before, meaning that each day brought a number of new impressions and experiences. The group was deeply impressed by the research which was presented to them, the interest by the Indian researchers for their presentations, and above all, the great hospitality and cultural richness they experienced throughout their whole trip. The SAHYOG STE Programme targets young scientists since triggering collaborative activities already at an early stage of a scientist's career is expected to lead to long-lasting and sustainable cooperation. Without doubt, the tour was able to support sowing the seed for researchers' careers which included Indo-European collaborations.

A visit of Indian young scientists to Europe is planned for the first half of 2014.



SAHYOG STE visit at IICT in Hyderabad

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