

# **Indo-EU research cooperation in FP7 projects: A Success story**

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# Why did required EU project

- **Exchange of innovation and research ideas**
- **For bio-based economy**
- **No dedicated programme of cooperation and exchange in the field of biomass production and biowaste conversion through biotechnological approaches**
- **Identifying gaps and barriers in the biomass and bio-waste RTD activities**
- **Inventories necessary to serve the current and future needs**

# **Project Theme**

**EU–India Partnering Initiative on biomass production and bio-waste conversion through biotechnological approaches**

# Grant agreement for:

## Coordination and Support action

<http://www.sahyog-europa-india.eu/>



# Common Strategy: Indo-EU

- **Create new markets and employment: new plants, new food additives, new chemicals (including drugs etc)**
- **Secure food supply**
- **Strengthen the European and Indian competitiveness and leadership**
- **Making a move towards a zero waste society**
- **Integrate upstream (biomass production) and downstream (biomass processing) processes Exchange knowledge between EU and India**
- **Select the right approach based on Life Cycle Analysis**
- **Integrate international cooperation (treaties) linked to bio-economy e.g. the Convention on Biological Diversity and trade treaties**

# Project Title - “SAHYOG”

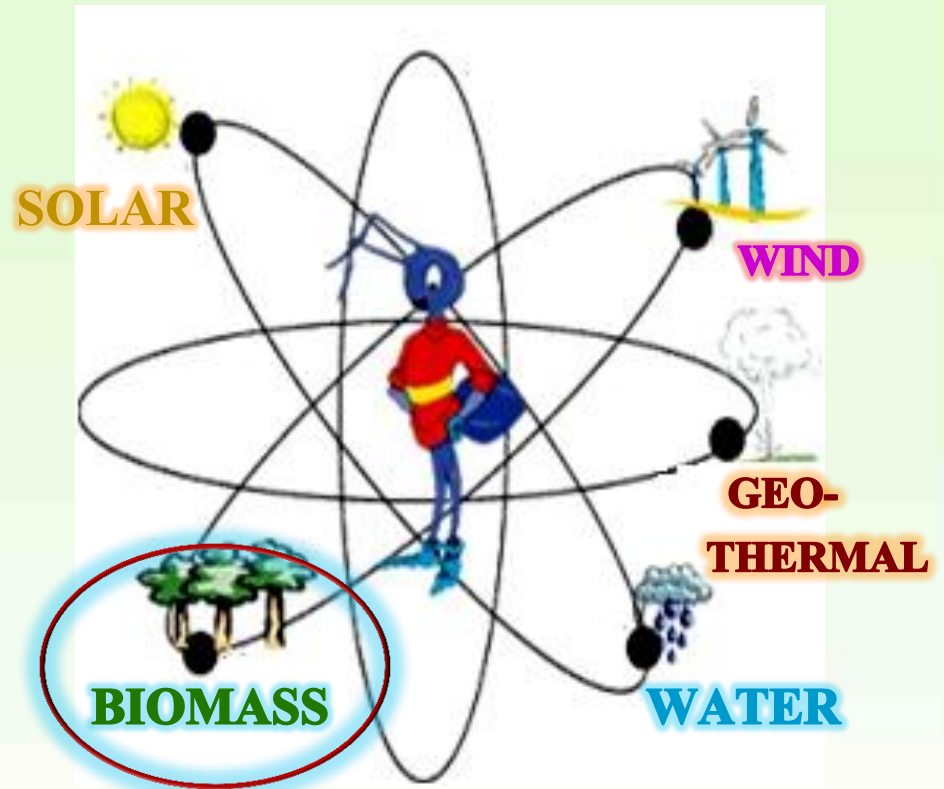
**Strengthening Networking on BiomAss Research and Biowaste Conversion - BiotechnologY for EurOpe - India InteGration**



Department of Biotechnology  
Ministry of Science & Technology  
Govt. of India

# SELECTION CRITERIA

✓ **Non-conventional**



# EU Project Partners

Coordinator: Dr Neeta Sharma

No.	Name	Short Name	Country
1.	National Agency for Atomic Energy	ENEA	Italy
2.	Ministeriy of Economic Affairs, Agriculture and Innovation	Agency NL	Netherlands
3.	DEUTSCHES ZENTRUM FUER LUFT - UND RAUMFAHRT EV	DLR	Germany
4.	STICHTING DIENST LANDBOUWKUNDIG ONDERZOEK	DLO	Netherlands
5.	Vision on Technology	VITO	Belgium
6.	WIRTSCHAFT UND INFRASTRUKTUR GMBH & CO PLANUNGS KG	WIP	Germany
7.	National Technical University of Athens	NTUA	Greece



# Indian Project Partners

Coordinator: Dr Priyangshu Manab Sarma

No.	Name	Short Name	Contact Person
1.	The Energy Research Institute		Dr. Priyangshu M Sarma
2.	Jawaharlal Nehru University		Dr. Neera Sarin
3.	GB Pant University of Agriculture & Technology Pantnagar		Dr. Reeta Goel
4.	ARTI - Appropriate Rural Technology Institute		Dr. Anand Karve
5.	CSIR - Council for Scientific & Industrial Research - Indian Institute of Chemical Technology (IICT)		Dr. S. Venkata Mohan
6.	Tezpur University		Dr. Rupam Kataki

# Conceptualization and Consortium Development

- **For collection of pan India databases**
- **To cover all the states considering the diversity in crops and nature of materials identified**
- **Considering the need of biowaste based economy for EU and India**
- **Mutual understanding of both the coordinators and funding agency**

# The Energy Research Institute



**Indian Coordinator : Dr. Priyangshu M Sarma**



- **Formally established in 1974 as Tata Energy Research Institute in New Delhi**
- **On account of the gradual depletion of the earth's finite energy resources which are largely non-renewable**
- **On account of the existing methods of their use which are polluting**
- **Created an environment that is enabling, dynamic and inspiring for the development of solutions to global problems in the fields of energy, environment and current patterns of development**
- **TERI has now established the World Sustainable Development Forum (WSDF)**



# Jawaharlal Nehru University



**PI: Dr. Neera Sarin**



- **Established in 1969 in New Delhi**
- **Central University and also has a rank amongst the top Universities of the world**
- **Excellent cutting edge research is being done in areas spanning from microbes to man, molecular Biology, Plant and animal biotechnology**
- **Collaboration with various countries of the world**
- **National Contact Point for European Commission, Dr. Rajendra Prasad is from JNU**



# G. B. Pant University of Ag. & Tech. Pantnagar Uttarakhand, INDIA



**PI: Dr. Reeta Goel**



Monday, February 11, 2013

- **First agricultural university of India**
- **Established in 1960 as the Uttar Pradesh Agricultural University (UPAU)**
- **The University campus at Pantnagar, Uttarakhand, is spread in an area of 10,016.29-acre (40.5345 km<sup>2</sup>) which makes it the second largest university in the world, in terms of contiguous area**
- **Main focus of research is on agriculture and engineering**
- **So far, the university has released 211 varieties, many of which played important role in Green Revolution**
- **As Uttarakhand has been declared an 'Organic state', the present thrust of research is on Organic farming and Biological pest control**



# UTTARAKHAND- “DEVBHUMI”

- **Situated in the northern part of India**
- **Nourishes a diverse & rich culture and monuments of historical importance**
- **Geographical area lies between:**
  - **Latitude 28° 43' and 31° 28' N**
  - **Longitude 77° 34' and 81° 03' E**
- **Area: 53,566 km<sup>2</sup>**
  - **93% mountainous**
  - **64% covered by forest**
- **Population: 10.116 millions**
- **Depend on fuelwood energy for households**
- **Presence of a multitude of Hindu pilgrimage spots**
- **Annual production of agro residues and agro industrial/ processing waste :20 million Metric Tons**



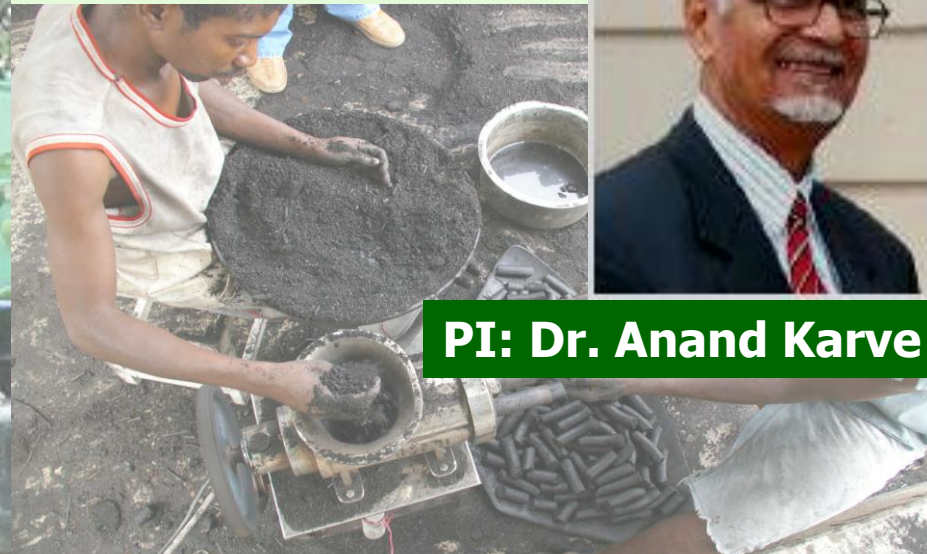


# Appropriate Rural Technology Institute

<http://www.arti-india.org/>



**PI: Dr. Anand Karve**



- **NGO in Maharashtra, founded by a group of scientists and social workers in 1996**
- **The mission of the organization is to serve as an instrument for sustainable rural development through the application of scientific and technological knowledge**
- **The primary objective of ARTI is to develop, standardise, popularise & commercialise innovative rural technologies aimed at improving the quality of life and standard of living of the rural inhabitants of India**
- **Developed 25 standardised and field-tested technologies to offer to rural entrepreneurs through Rural Entrepreneurship Development Centre (REDC)**
- **Emerged as one of the internationally acclaimed R & D institutions working in the field of rural development through innovative appropriate technologies**



# CSIR - Council for Scientific & Industrial Research - Indian Institute of Chemical Technology (IICT)

<http://www.iictindia.org/>



**PI: Dr. S. Venkata Mohan**



Monday, February 11, 2013

- **Established in 1944 by Government of Hyderabad**
- **Premier R&D Institute in India**
- **Recognising multidisciplinary activities and expertise developed by the Institute in the field of chemical technology**
- **Major Related research areas are:**
  - 1. Agrochemicals,**
  - 2. Speciality and Fine Chemicals,**
  - 3. Coal, Gas & Energy,**
  - 4. Chemical Engineering**

# Tezpur University



**PI: Dr. Rupam Kataki**





- **A Central university in Assam**
- **Established in 1994**
- **Represents all the north eastern states**
- **Major Related research areas are:**

- 1. Solar Energy**
- 2. Energy Conservation**
- 3. Energy-Environment Interaction**
- 4. Bio-diesel**
- 5. Wood Energy**
- 6. Biomass Gasification**
- 7. Solar Energy**
- 8. Waste to Energy**
- 9. Energy Modelling & Planning**

# Consortium Development



**TERI** - Punjab, Municipal waste (India), Forest residue (India)

**GBPUAT** - Gujarat, Uttarakhand, Uttar Pradesh

**JNU** - Rajasthan, Haryana, Himachal Pradesh

**ARTI** - Maharashtra, Chhattisgarh, Madhya Pradesh, Goa

**TU** - North Eastern states

**IICT** - Andhra Pradesh, Karnataka, Tamilnadu, Kerala



# Objectives of SAHYOG

- 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 biowaste potentials and research projects** are planned to be elaborated and analysed within SAHYOG
- These inventories will be the basis for the joint **Strategic Research Agenda (SRA)** finally leading to a **Roadmap for policymakers and researchers**
- SAHYOG will ensure wide-range networking of relevant industries and scientific communities and establish **linkages between on-going research and innovation projects from EU and India**

# Work Package: SAHYOG



## WP1. Project Management



## WP2. Inventories

**WP2.1 Biomass-biowaste**

**WP2.2 Research Project**



## WP3. Networking

**WP3.1 Twining of project**

**WP3.2 Short term exchange**

**WP3.3 Stakeholders workshop**



## WP4. Strategic Research Agenda

**WP4.1 Stakeholders workshop**

**WP4.2 SRA**

**WP4.3 Road map**









## WP5. Communication-training

**WP5.1 Conference**

**WP5.2 Summer School**

# Work Package: SAHYOG

WP number	WP Title	Type of activity	Start Months	End month	Partner Responsible
WP1 	Project management	MGT	1	36	ENEA/TERI
WP2 	Inventories	COORD	1	12	NL gency/TERI
WP3 	Networking & Exchange	COORD	1	31	WUR/IICT
WP4 	Strategic Research Agenda	COORD	13	30	VITO/GBPUAT
WP5 	Communication & Training	COORD	1	36	WIP/ENEA/Tezpur

 Ongoing (2012-2014)

 Completing (2012)

 Ongoing (2013)

 Ongoing (2014)

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Ongoing (2013)

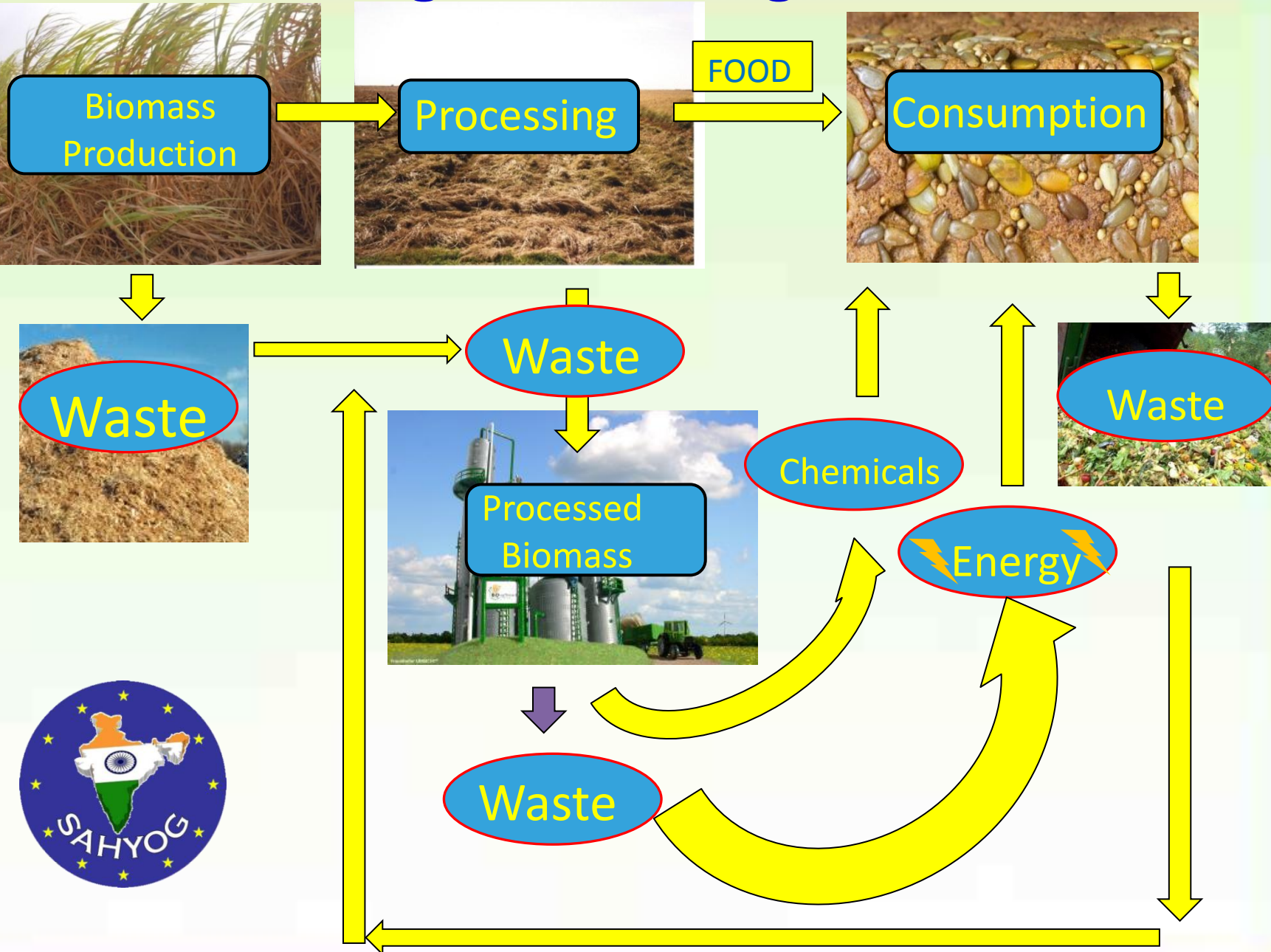
# Methodology: WP2

**Merging existing information on biomass and biowaste sources into a new free accessible database**

## **Steps:**

- 1. Analysis of the information sources**
- 2. Determination of the database structure**
- 3. Filling of the data in the database**

## Strategic Research Agenda



# **SAHYOG Activities till now**

- ✓ **Kick Off meeting held at Brussels, Belgium on 12-13<sup>th</sup> January 2012**
- ✓ **Expert Meeting held at Bruges 10<sup>th</sup> May, 2012**
- ✓ **1<sup>st</sup> Interim Meeting at TERI, New Delhi 5-7 Nov., 2012**

# Expected Outcomes

- **A full inventory of biomass production and biowaste availability and future potentials and limitations (in Europe and India)**
- **A strategy toward new trends in agriculture in the EU and India towards high biomass yields and qualities in a multipurpose approach (Agriculture policy)**
- **An inventory of research projects (upstream and downstream) with a strategy for optimal use of the ongoing research**
- **A strong interaction with all kinds of stakeholders in EU and India (twinning)**

- **A road map that describes the way of an integrated biomass management towards 2050 SAHYOG FP7-*KBBE-2011.4-05***
- **A Strategic Research Agenda that will indicate the needs and the gaps in research that must be solved in order to implement the road map**
- **A strong communication (including training) to improve the societal, political, scientific and industrial vision toward the new sustainable strategy**



Bio-based economy



# Thank You