

Strengthening Networking on Biomass Research and Biowaste Conversion – Biotechnology for Europe - India Integration



**Expert Meeting Bruges
May 10, 2012**



Work Package 2

Work Package 2 Documentation and preparation of inventories

Task 2.1
Biomass and bio-wastes
inventories

Task 2.1
Research programs and research
projects inventories

Task 2.1

Documenting a detailed regional level analysis of availability, supply chain and other factors like transportation of potential biomass and bio-waste feedstock for conversion to bio-material and bio-energy

To be implemented through....

- Search of online data, literature search, data from existing projects
- Physical visits to national institutes, agricultural universities, NGOs, SMEs and industries research groups.

Work Package 2

➤ Which Biomass and bio-wastes to be considered.....

As per the discussion during Kick off meeting all possible bio-wastes and bio mass with a potential to be converted to energy, feed, speciality chemical can be considered.

➤ Discrepancy in the actual and the 'virtual' data available

To be taken up after the inventory is structured and during the stakeholders meetings under the subsequent work packages

Work Package 2

(Approach)

Responsibility will be divided based on the geographical location of the institutes

Each participating Institute will be responsible for a particular region and the compilation will be done once every two months.

As only secondary data needs to be collected, references, manuscripts, publications, books, journals etc from online or any offline data source needs to be saved and stored carefully

Work Package 2

Data collection templates

- **Template for data collection : Simple excel based template indicating**
 - **quantity and volume generated**
 - **area from the quantity is generated**
 - **other application of the waste in that region**
- **Different for biomass based wastes and industrial/municipal waste**

Snapshot of biomass inventories

Biomass Availability Inventory (1st Draft 26th March, 2012)

[illegible]

Appropriate Rural Technology Institute (ARTI)

SAHYOG Project

Proforma for Data Collection of Biomass & Biowaste

Date					Source of Information			
Region					State			
S.No.	Item	Area covered Acre / Hec.	Production in Kgs / tons	Waste Available (Kgs /tons/percent age)	Utilization / processin g	Source of information	Other relevant information (If any)	
1	Agricultural waste :							
	Food Grain							
	Oil Seeds							
	Pules							
	Orchids							
	Leaf litter & Light biomass							
	Fruit Crop							
	Vegetables							
	Animals							
2	Floricultural waste							
3	Forest Waste							
	Light Biomass							
	Wood waste							
	Minor Forest Produce							
4	Ayurved Medicinal							
5	Slaughter House							
6	Industrial waste							
	Piggery							
	Poultry							
	Dairy							
	Sugar factories							
	Textile							
	Paper mills							
	Food processing							
	Fruit							
	Fish Waste							
	Plywood waste							
	Furniture							
7	Municipal waste							
	Domestic Garbage							
	Light biomass							
	Sewage							
	Water hyacinth							
	Hair cutting saloon							

Cropwise Biomass Residue Production and Consumption: Haryana (2007-08)										
S. No.	Crop	Crop Production	Unit	Type of residue	Amount of Residue	Unit	Crop Residue Ratio	Amount used for commercial Purpose	Amount of residue consumed by self and others	Unit
1	Rice	3.4	MMT	straw	4	MMT			1.6	MMT
				husk	0.8	MMT			0.1	MMT
2	Wheat	10.1	MMT	straw	14.6	MMT			13.1	MMT
3	Sugarcane	9.6	MMT	top	2.6	MMT			0.5	MMT
				bagasse	2.7	MMT			0	MMT
4	Cotton	0.3	MMT	Stalk+Leaves	1.1	MMT			0.4	MMT
5	Jowar	0.03	MMT	Stalk	0.07	MMT			0.1	MMT
6	Bajra	1.2	MMT	Stalk	1.5	MMT			1.3	MMT
7	Pulses	0.1	MMT	Stalk	0.2	MMT			0.1	MMT
8	Oilseeds	1	MMT	Oilseed Biomass	2	MMT			1.4	MMT
9	Maize	2643	Kha	Stalk	9.1	Kt/y				
				Cob	47.1	Kt/y				

Snapshot of project inventories

INSTITUTIONAL/R&D

S.N	Project Title	Funding Agency	Budget (Rs. Lakhs)	Duration	Project Coordinator /Institute
1.	Installing, commissioning & demonstration of integrated biodiesel plants in state of Uttarakhand	DST/UCOST	35.896	2006-07	Dr. Pradeepta kumar Sahoo, University of Petroleum & Energy Studies , Dehradun, UK
2.	Biomass based project, electric power project for Bhitri village, Uttarkashi	Ministry Of Non-conventional Energy Sources, Uttaranchal Renewable Energy Development Agency	87.257	2005 onwards	Sri Arun Kumar, Head, Alternate Hydro Energy Centre, IIT, Roorkee, UK
3.	Catalytic conversion of CO ₂ to methanol: Search for improved catalysts for chemical recycling of CO ₂ via a fuel path, towards mitigation of green-house effect caused by ever increasing anthropogenic CO ₂ in the atmosphere	DST	95	Feb 2012 onwards	University of Petroleum and energy studies

S.N.	Project Title	Funding Agency	Budget (Rs. Lakhs)	Duration	Project Coordinator /Institute
4.	Bioconversion of forest waste lignocellulosic biomass into ethanol	UCOST	8.90	2006-2007	Dr. Sanjay Naithani, Cellulose and Paper Division, FRI, Dehradun
5.	Utilization of glass waste for the degradation of waste plastic	UCOST	7.09	2007-2008	Dr. Deepak Pant Deptt. of Pharmaceutical Chemistry, Dolphin (PG) Institute of Bio-medical & Natural Sciences, Dehradun
6.	Urbanization vis-à-vis Solid Waste Management and Air Pollution in Sprawling Urban Cities of Himachal & Uttarakhand Himalaya	Ministry of Environment & Forests			Dr. P.P. Dhyani & Dr. J.C. Kuniyal, G.B. Pant Institute of Himalayan Environment & Development, kosi-katarmal, Almora, UK
7.	CSTR Technology for Biogas from Jatropha whole plant	MNRE, GOI	49.00	Aug 2011 till date	University of Petroleum and energy studies

S.N.	Project Title	Funding Agency	Budget (Rs. Lakhs)	Duration	Project Coordinator /Institute
8.	Installation of novel biomass pyrolysis pilot plant and its performance evaluation for bio-oil production using different biomass feed-stocks	DST			University of Petroleum and energy studies
9.	Integrated solid waste management in Dehradun	Jawaharlal Nehru National Urban Renewal Mission (JNNURM)	2460.0	2008 - 2012	Nagar Nigam Dehradun
10.	Establishment of jatropha de-oiled cake based biogas plant	UCOST			University of Petroleum and energy studies
11.	Study on status of agro-forestry system existing in Punjab, Haryana & north – west region of UP	Indian Council of Forestry Research and Education	17.10	2011-2014	Smt. Jayshree Ardey Chauhan, FRI, Dehradun

S.N.	Project Title	Funding Agency	Budget (Rs. Lakhs)	Duration	Project Coordinator /Institute
12.	Renewable Energy From Biogas Technology Development	Ministry Of Science & Tech.		2012 onwards	IIP, Dehradun
13.	Application Of Biofuels For Aviation : Green Jet Fuel From Jetropa Oil - (Biojet) And Bioethanol	DST		2012 onwards	IIP, Dehradun
14.	Production Of Second And Third Generation Biofuels (Biomass-To-Liquid)	DST		2012 onwards	IIP, Dehradun
15.	Hydropyrolysis of lignocellulosic biomass to value added hydrocarbons	MNRE			IIP, Dehradun
16.	Production of biodiesel from low cost feed stocks using heterogeneous catalyst	DST			IIP, Dehradun
17.	Screening of algae oil for biodiesel production			2012 onwards	Dr. Savita Kaul , IIP, Dehradun

S.N.	Project Title	Funding Agency	Budget (Rs. Lakhs)	Duration	Project Coordinator /Institute
18.	To develop know-how and technology for environmental friendly conversion and utilization of biomass to fuels, lubricants and additives			2012 onwards	Dr. H. B. Goyal, Head PEACBD IIP, Dehradun hbgoyal@iip.res.in
19.	Research of new process of motor fuel production from waste, Hydrogen & synthesis, gas generation from solid biomass & domestic waste . Conversion of biomass derived gases to 2 nd & 3 rd generation liquid biofuel using nanocatalyst			Nov. 2011 onwards	Dr. Anil Kumar Sinha, Hydroprocessing Lab, IIP, Dehradun and Dr. Oleksii M. Dudnyk Coal Energy Tech. Institute, The National Academy of Science of Ukraine
20.	Biomass and bioenergy production through tree based short rotation coppice culture	ICAR	221.0	2010-2015	Dr. Rajesh Kaushal G.B. Pant University of Agriculture & Technology, Pantnagar kaushalrajesh1@rediffmail.com