



WASTE MANAGEMENT SUSTAINABLY

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BIO-ENERGY COUNCIL OF INDIA
704-Shitiratna, Panchwati, Ellisbridge
Ahmedabad - 380006, India.
Tel : +91 79 66309332 Fax : +91 79 6630 9334
W : www.bioenergyindia.org
E : info@bioenergyindia.org

Supported by

Abellon CleanEnergy

W : www.abelloncleanenergy.com
E : abellon@abelloncleanenergy.com



Dear Readers,

By the time, this issue of Bio-Energy Times reaches your desk, world attention will be focused on the upcoming United Nations Climate Change Conference Cancun - COP 16 & CMP 6. This is an event (29 November - 10th December 2010) that will once again bring together world leaders in a mission to address the pressing environmental issues facing us today, and to achieve progress in developing a framework that will succeed the Kyoto Protocol.

The host country, Mexico, is keen to set an example by hosting this global gathering in such a way as to leave minimal carbon footprint. Some steps it has taken in this direction is to ensure that

- *A large amount of energy used during the Conference comes from RE sources.*
- *Hybrid vehicles to be used for transfer of delegates.*
- *Eco-efficiency projects reduce the use of raw materials, energy and water during catering and accommodation.*

Through these initiatives, Mexico expects to avoid the consumption of approximately 200,000 m³ of water and the release of 4,000 tons of CO₂ into the atmosphere. GHG emissions derived from energy use during the entire event will also be neutralized. The Government is also encouraging individual delegates to neutralize their own GHG emissions through various projects globally.

The next issue of Bio-Energy Times would bring you the key highlights and updates of this event.

At BECI, we sincerely appreciate your support and feedback, which help us evolve on a continued basis. Keep reading, and letting us know what you think of us.

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Policy Initiatives

India

AEDB to set up biopower plants

www.tradingmarkets.com/news/stck-alert/eydvf_aedb-issues-loi-for-setting-up-11-mw-12-mw-biomass-power-plants-1220085.html;
www.tradingmarkets.com/news/stock-alert/aegc_loi-issued-for-23mw-biomass-power-plants-1220262.html

The LoI has been issued to Lumen Energia Private Ltd and SSJD Group to set up 11MW (Punjab) and 12MW (Sindh) biopower plants, using 90-100 thousands of tons of agricultural waste annually.

State Government plans to adopt PPP model for SWM in Bangalore

www.expressbuzz.com/cities/bangalore/a-plan-to-increase-the-countrys-green-cover/214803.html

By 2015, Punjab will generate 10% of its total energy from RE sources

www.bioenergy-news.com/index.php?Industry-News?item_id=2781

Punjab Energy Development Agency has commissioned 318MW of RE projects including 250MW of biomass co-generation plants, 28MW of biopower plants and a 1MW biomethanation facility in Ludhiana.

India largest CO₂ emitter by 2015: International Energy Commission

www.expressbuzz.com/cities/bangalore/india-to-be-largest-co2-emitter-by-2015/216218.html

Puducherry Government to launch SWM scheme

www.ibnlive.in.com/generalnewsfeed/news/pondy-govt-to-launch-solid-waste-management-scheme-soon/430048.html

Government planning for Green Bank to power RE projects

www.economictimes.indiatimes.com/news/economy/finance/Green-Bank-in-works-to-power-renewable-energy-projects/articleshow/6806672.cms

The bank will set up a 50bn national clean energy fund, expected annually through a cess on domestic and imported coal. It will fund projects to generate electricity from RE sources, which currently contribute about 6,000MW in India's power capacity of about 150,000MW. Proposed by the MNRE, the bank will be linked with the Indian Renewable Energy Development Agency. The fund is expected to raise about Rs 4,500-5,000 crore this fiscal year.

Kanpur Municipality adopts SWM

www.business-standard.com/india/news/municipality-adopts-solid-waste-mgmt-in-kanpur/412773/

A2Z Infrastructure Ltd has inked a pact with Kanpur Municipality, under which it will collect and transport the Municipal Solid Waste from the city.

North America

California Energy Commission grants \$1mn to biodiesel plant

www.biodieselmagazine.com/article.jsp?article_id=4460

The plant would process 10,000 gallons/day of trap waste, recovering 300 to 500 gallons a day of brown grease and converting it to biodiesel in San Francisco.

Helius Energy receives consent for 100MW biopower plant

www.biomassmagazine.com/articles/3715/helius-energy-gains-consent-for-100-mw-biomass-plant/

ClearFuels receives \$19.7mn for demo-scale biomass gasifier

www.newenergyworldnetwork.com/renewable-energy-news/by-technology/biofuel-biomass/clearfuels-secures-remaining-federal-grant.html

Policy Initiatives

DoE approves Port Townsend Paper Corp to upgrade boiler to biomass

www.biomassmagazine.com/articles/5094/port-townsend-paper-upgrades-boiler-to-biomass

PTPC and Sterling Energy Assets have also proposed a \$55mn cogeneration project to extract steam from the upgraded boiler which would also generate 25MW of power for the grid.

Duke University and Duke Energy to team up for AD pilot project in NC

www.biomassmagazine.com/articles/5055/dukes-team-up-for-ad-pilot-project-in-nc

The system will come up at Loyd Ray Farms, a 9,000-head hog finishing facility in Boonville, NC. It will generate 512-639MWh/year of energy, to be used at the hog farm. USDA and the NC Department of Environmental and Natural Resources Lagoon Conversion Program has provided up to \$500,000.

Boeing-NREL to develop RE technology to enhance energy security

www.newenergyworldnetwork.com/renewable-energy-news/by-technology/energy-efficiency-by-technology-renewable-energy-news/boeing-and-nrel-collaborate-on-renewable-energy-technology-energy-security.html

Europe

Germany approves to raise bio-ethanol blending level at 10%

www.newenergyworldnetwork.com/renewable-energy-news/germany-to-raise-bioethanol-content-in-gasoline.html

Spain: Biofuel blend to rise to 6.1% by 2013

www.automotiveworld.com/news/environment/84375-spain-biofuel-blend-to-rise-to-6-1-by-2013

Lithuania request EU Structural Funds of €132mn for waste recycling at EU level

www.recyclingportal.eu/artikel/25261.html

UK Council approves energy facility at Bristol waste treatment plant

www.newenergyworldnetwork.com/renewable-energy-news/by-technology/biofuel-biomass/uk-council-approves-energy-facility-at-bristol-waste-treatment-plant.html

Bristol Council permits New Earth Energy for a 7.5MW low-carbon RE facility which will convert landfill fuel into gas to power electricity-generating engines.

Avantium begins construction on pilot facility

www.biorefiningmagazine.com/article/1021101026

The Dutch Ministry of Agriculture has granted \$1mn to a bio-based chemical plant having a capacity of 40 tons/year. Avantium is also raising about \$15mn by the end of 2010.

Mayor Boris Johnson sets new standards for waste management

www.egovmonitor.com/node/39026

The Mayor wants to shave £90bn off London's £4.4bn electricity bill and £24mn off the city's £2.5 bn gas bill by 2015. He also wants London to be recycling at least 45% of its municipal waste rising to 60% by 2031, sending zero municipal waste to landfills by 2025.

PM David Cameron launches a £200bn National Infrastructure Plan to focus on AD, CHP and biomass to provide the UK with heat and energy

www.mrw.co.uk/news/government-focuses-on-ad-as-it-launches-national-infrastructure-plan/8607397.article

Policy Initiatives

UK Government grants £1mn to Clean Power Technologies for waste recovery technology

www.newenergyworldnetwork.com/renewable-energy-news/by-technology/energy-efficiency-by-technology-renewable-energy-news/clean-power-technologies-awarded-grant-for-waste-recovery-technology.html

Northern Ireland sets out roadmap to achieve 40% renewables target

www.newenergyworldnetwork.com/renewable-energy-news/by-technology/energy-efficiency-by-technology-renewable-energy-news/northern-ireland-sets-out-roadmap-to-achieve-40-per-cent-renewables-target.html

Germany gives \$207mn to Uganda to develop its RE sector

www.ae-africa.com/read_article.php?NID=2469

UK grants \$62mn to launch a climate change programme

www.news.in.msn.com/international/article.aspx?cp-documentid=4435007

UN has approved CO₂ reduction joint implementation project

www.bloomberg.com/news/2010-10-18/un-approves-russian-joint-implementation-co2-reduction-project-by-e-on.html

The project is located at the Shaturskaya thermal power plant near Moscow which will build an additional electricity generation plant with an energy-efficient 400MW combined cycle gas turbine, saving more than 1mn tons of CO₂ by 2012.

Africa

Jinja receives sh700mn from World Bank to turn waste into manure

www.newvision.co.ug/D/8/17/734106

The National Environment Management Authority is also building the capacity of Municipal Councils to manage solid waste as a way of reducing GHG emissions into the atmosphere.

Ghana gets ready for new RE legislation

www.ae-africa.com/read_article.php?NID=2468

Other Countries

VND1.2tn, 40-MW biopower plant uncoming in Vietnam

www.english.vovnews.vn/Home/Biomass-power-plant-to-be-built-in-Phu-Tho/201010/120574.vov

Malaysia mulls cutting diesel subsidy to boost biofuel

www.google.com/hostednews/afp/article/ALeqM5gx34dM8YQz3bKvJ_EASaamQk4yWA?docId=CNG.00d3a788da59b4d2dfdc54a9f9881671.3e1

James Cook University to open biofuel research centre

www.cairns.com.au/article/2010/10/23/131851_local-news.html

The Federal Government has guaranteed \$20mn to James Cook University to establish a biofuel research center. The university also received \$1mn from the State Government to produce carbon-eating algae, which will be used at the Tarong power station near Kingaroy.

Brumby Labor Government will provide \$33.5mn to Victoria to increase waste management efficiency

www.thegovmonitor.com/economy/victoria-invests-33-5-million-to-boost-recycling-and-waste-management-40519.html

India

Lanxess India to set up €7mn biomass co-gen plant in Madhya Pradesh

www.ibnlive.in.com/generalnewsfeed/news/mp-plant-to-help-reduce-co2-emissions-lanxess/438239.html

The plant will generate 4MW of power and 45,000-tonnes of steam. This will help to reduce about 95,000-tonnes of CO₂ emissions per year.

Tata looks at investing in South African biofuel market

www.timeslive.co.za/business/article686165.ece/Tata-looks-at-solar-and-mining

Loro Group to start solid-waste-to-electricity and bio-products project in India

www.khaleejtimes.com/DisplayArticle.asp?xfile=data/business/2010/October/business_October261.xml§ion=business&col=

India to add 35GW of clean energy by 2015 through investing \$55bn: IREDA

www.newenergyworldnetwork.com/renewable-energy-news/news-type/policy-news/india-to-add-35gw-of-clean-energy-by-2015.html

North America

Pinnacle Pellet to build pellet plant

www.biomagazine.com/articles/4109/pinnacle-pellet-to-build-sixth-plant/

Pinnacle Pellet plans to build a 400,000 metric ton pellet plant near Burns Lake, its sixth location in the province, which will bring its total capacity to 1.1mn metric tons.

Solazyme-Ecopetrol extend partnership to develop biodiesel in Columbia

www.newenergyworldnetwork.com/renewable-energy-news/by-technology/biofuel-biomass/solazyme-ecopetrol-extend-partnership-to-develop-biodiesel-in-columbia.html

Abengoa Bioenergy opens \$275mn ethanol plant in Madison

www.bnd.com/2010/10/22/1447162/abengoa-bioenergy-marks-grand.html

Abengoa has made a \$1bn investment in the US to produce 850mn gallons of ethanol annually in the USA, Europe and Brazil.

BlueFire Renewables and Wanzek Construction Inc. to build cellulosic ethanol facility

www.ocmetro.com/t-bluefire_masteck_fulton_10052010.aspx

The facility will be built with the cost of \$296mn and also includes a \$100mn biopower plant.

Helios Scientific proposes cellulosic biomass demo plant

www.biorefiningmagazine.com/article/1019100438

Coming up in Curwensville, the plant will focus on demonstrating the economic and technical feasibility of pretreating cellulosic biomass, such as wood waste, switchgrass and/or corn husks, before it considers producing ethanol. The pretreatment technology, expected to be running by April or May next year, will pretreat a single ton of cellulosic biomass per day in a closed-loop system with no toxic discharge. Helios has received approval for a grant from the Commonwealth of Pennsylvania to use towards the project.

Business & Markets

Boldt Company to help switch UW coal-fired plant to biomass fuel

www.greenbaypressgazette.com/article/20101027/GPG03/10270650/Boldt-Co-to-help-plant-switch-to-biomass-fuel

Boldt Company will partner with an international engineering firm on a \$250mn project converting a coal-fired heating plant at UW-Madison campus into one using biomass for fuel. Once converted, it will burn upto 250,000 tons of biomass/year.

Maverick announces plans to build pilot-scale biorefinery

www.biorefiningmagazine.com/article/1014100858

biofuelsdigest.com/bdigest/2010/10/18/maverick-to-build-mixed-alcohol-fuels-project-using-cellulosic-biomass-msw/

The biorefinery will convert biomass and MSW into a mixed-alcohol biofuel. The plant is expected to have an annual production capacity of between 200,000 and 300,000 gallons.

Waste Management begins operating landfill gas-to-energy facility in Ontario

wasteage.com/news/waste-management-lfgte-ontario-20101020/

The facility will generate approximately 3.2MW of electricity to power about 2,500 homes.

Hybrid energy systems emerging in utility-scale plants and on-site generation applications

<http://www.renewableenergyworld.com/rea/news/article/2010/10/mixnmatch-hybrids-boost-renewable-load-factorshttp://biofuelsdigest.com/bdigest/2010/10/18/maverick-to-build-mixed-alcohol-fuels-project-using-cellulosic-biomass-msw/>

Europe

Enviva-Electrabel: Contract to supply 480,000 tonnes of pellets annually

www.euwid-wood-products.com/news_single.html?&tx_ttnews%5Btt_news%5D=1464&tx_ttnews%5BbackPid%5D=13&cHash=6bc1ed2d71

Stora Enso invests €10mn to produce pellets

www.ihb.de/wood/news/StoraEnso_pellets_biofuel_sawmill_24263.html

The 100000 TPA plant will utilise by-products from Imavere Sawmill in Estonia.

Dong Energy to build 300MW biomass plant for Hull, England

www.universityfive.info/world/3090/dong-energy-plans-300-megawatt-biomass-plant-for-hull-port-an-industrial-info-news-alert/

RES to construct \$478mn, 100-150MW biopower plant

www.azocleantech.com/details.asp?newsID=12718

The plant at Alexandra Dock can meet power demands of upto 250,000 houses in the region and will reduce CO₂ by about 450,000 tons/year. The operation is expected to begin by 2015.

Peel Energy to construct £70mn biopower plant

www.azocleantech.com/Details.asp?newsID=12378

Construction of 15MW, €40mn biopower plant in Co Offaly, Ireland

www.midlandsradio.fm/news_detail.aspx?footer=1&news_id=11777

The facility will generate RE from willow grown and supplied to the site by Irish farmers. It will generate enough energy to meet the requirements of 5,000 homes.

RWE Innogy to build €61mn, 18.7MW biopower plant in Sicily

www.powergenworldwide.com/index/display/articledisplay/6166288992/articles/powergenworldwide/distributed-generation/cogeneration-chp/2010/10/rwe-innogy_to_build.html

Business & Markets

Stobart Biomass sees strong demand for feedstock

www.letsrecycle.com/do/ecco.py/view_item?listid=37&listcatid=217&listitemid=56435§ion=wood

Stobart Biomass predicts -

- The demand for biomass material is increasing fast and is aiming to match the increasing demand for biomass within the UK and the rest of Europe through sourcing and supplying "sustainable biomass". This primarily consists of low grade waste limber, forest products and softwood logs as well as a no. of other materials.
- Some 40-50mn tonnes of material could be required for biomass plants annually in UK within the next few years, and 15mn tonnes of this is targeted at UK sources, with the rest imported.

Petrobras-Tereos sign an agreement

www.newenergyworldnetwork.com/renewable-energy-news/by-technology/biofuel-biomass/petrobras-targets-uk-market-with-1-22bn-bioethanol-deal.html

Brazil-based biofuel major Petrobras buys up to 2.2 bn gallons of ethanol from Brazilian producer Guarani, a subsidiary of Tereos, for R\$2.1bn (\$1.22bn). The two companies have signed an agreement that calls for Guarani to provide the product for sale in the UK for four years.

BDI wins €4.6mn contract to upgrade Spanish-based biodiesel plant

www.biodieselmagazine.com/article.jsp?article_id=4461

The upgrade will allow the plant to utilize multiple feedstock such as cooking oil and animal fats for the production of high quality biodiesel meeting the European Standard EN 14214.

Denmark starts offering biofuel at gas stations

news.xinhuanet.com/english2010/sci/2010-10/28/c_13579860.htm

Denmark-based Statoil has introduced 5% blended wheat straw-based biofuel made for cars, making Denmark the first country in the world to offer biofuel at gas stations. Novozymes has provided enzymes technology for the biofuel's production. Its performance is the same as 100% gasoline.

According to a recent study by Bloomberg New Energy Finance, the next-generation biofuel could create up to 1mn jobs in the 27 EU nations over the next decade. Next-generation biofuel could reduce CO₂ emissions in road transport by 50% in 2020.

ReVenture's Plan B for biomass fuel

www.bizjournals.com/charlotte/blog/going_green/2010/10/reventures-plan-b-for-biomass-fuel.html

Forsite Development Inc. will team with FCR Recycling to set up a \$30mn plant at a 667-acre industrial park planned for a Superfund site along the Catawba River. The plant will convert solid waste to fuel for the proposed biomass plant. FCR will remove recyclable waste and toxic materials from the proposed \$30mn plant. The leftover trash would be turned into fuel pellets.

The ReVenture team expects to divert 340,000 tons of trash from landfills. That garbage would convert to about 265,000 tons of fuel.

Finance & Investment

India

India's Auro Mira Energy Company Pvt Ltd (AME) receives venture capital

www.smartmeters.com/the-news/1223-indias-auro-mira-receives-venture-capital.html

E-Planet Ventures II, LP is investing \$4.8mn in AME as part of a \$21mn second round of funding. A consortium of PE investors including Aureos South Asia Fund and International Finance Corp (IFC) had participated in the round.

North America

39.6MW biomass project sold for \$77mn to Atlantic Power Corporation

www.powergenworldwide.com/index/display/articledisplay/9556224844/articles/powergenworldwide/renewables/biomass/2010/10/biomass-project-sold.html

Green projects to get \$50mn boost

www.calgaryherald.com/technology/Green+projects+boost/3606990/story.html

Climate Change and Emissions Management Corp. has given \$50mn funding for RE projects in Alberta. From this investment, individual projects would receive a maximum \$10mn. Corp has also provided \$40mn for energy efficiency projects and more than \$71mn for clean technology projects.

Europe

Mountgrange invests £16.75mn in UK's 79MW waste-to-energy project

www.newenergyworldnetwork.com/renewable-energy-news/by-technology/biofuel-biomass/mountgrange-invests-in-uk-waste-to-energy-project.html

Africa

Overseas Pvt Investment Corporation finances \$37.8mn to Contour-Global CHP projects in West Africa

www.newenergyworldnetwork.com/renewable-energy-news/by-technology/energy-efficiency-by-technology-renewable-energy-news/overseas-private-investment-corporation-finances-contourglobal-chp-projects-in-west-africa.html

The company's subsidiary ContourGlobal Solutions is responsible for the construction of a trio of CHP generation plants for the Nigeria Bottling Company.

Eskom to receive up to \$1bn from World Bank's Clean Technology Fund for RE projects

www.ae-africa.com/read_article.php?NID=2461

Africa Enterprise Challenge Fund launches \$15mn for RE projects across East Africa

www.coastweek.com/xin_291010_05.htm

R & D - Technology

North America

Study: Hemp produces viable biodiesel

www.physorg.com/news205599757.html

Researchers at UConn have found that the fiber crop *Cannabis sativa*, known as industrial hemp, has properties that make it viable raw material, or feedstock, for producing biodiesel.

Sustainable Development Technology Canada to turn microalgae into jet fuel

www.biorefiningmagazine.com/article/0929101208

New research facilities that may help break down biomass into jet fuel

www.purdueexponent.com/?module=article&story_id=22812

Researchers at Purdue University have plans to construct a reactor which can gasify biomass & coal without CO₂ production by using a hydrogen/oxygen steam generator.

Ford joins to research algae for vehicle fuel

www.content.usatoday.com/communities/driveon/post/2010/10/ford-joins-in-researching-algae-for-vehicle-fuel/1

Latin America

Fishing company begins cultivating algae for biofuel

www.fis.com/fis/worldnews/worldnews.asp?monthyear=&day=4&id=38419&l=e&special=&ndb=1%20target=

Pesquera San José plans to produce biofuels from brown algae, Huiro. The company is now co-developing the InnovaChile project BAL Biofuels, a consortium of biotechnology research, development and innovation. The consortium, formed by Bal Chile, ENAP, the University of Los Lagos and Architecture Lab, aims to develop programs based on macroalgae, using fermentation technology developed by Bio Architecture Lab Inc. (BAL). Investors of the project will put forward US\$5mn, which will include the construction of a pilot plant in the Region of Los Lagos, where the seaweed will be used to produce ethanol.

Europe

Teijin Aramid, Avantium partner to develop biofuel polymers to be used as green materials and fuels

www.newenergyworldnetwork.com/renewable-energy-news/by-technology/biofuel-biomass/teijin-aramid-avantium-partner-to-develop-biofuel-polymers.html

Sweden's Strategic Vehicle Research & Innovation Initiative grants €3.3mn to Scania to develop a biofuel engine for heavy commercial vehicles

www.auto-mobi.info/index.php?option=com_content&task=view&id=72248&Itemid=50

Climate Change & Environment

Forum to discuss on climate, development

www.ibnlive.in.com/generalnewsfeed/news/japan-pacific-island-forum-discuss-on-climate-development/420149.html

Ministers from Japan and the 16 members of the Pacific Island Forum have gathered to discuss cooperation in tackling climate change and economic development.

Intergovernment Panel on Climate Change to focus on Asian monsoon issues

www.news.oneindia.in/2010/10/16/newipcc-report-to-focus-on-asian-monsoonissues.html

15 Mediterranean nations would work together to combat climate change

www.google.com/hostednews/afp/article/ALeqM5hyPqf50upJpLhEH4xZVku094r2Rg?docId=CNG.0507ccd047ad4a459bbdbcd14be4acc.351

NASA to help Ethiopia prevent climate change through an integrated program approach

www.waltainfo.com/index.php?option=com_content&task=view&id=23972&Itemid=48

NASA awards \$614K climate change education grant to UMass Lowell

www.lowell.com/umass-lowell-awarded-a-614k-climate-change-education-grant-from-nasa-8282/

Fast Facts

1 According to Washington State Recycling Association,

- Recycling a ton of plastic saves equivalent of 3.85 barrels of oil
- Recycling one ton of glass saves 10 gallons of oil
- Every ton of paper made from recycled materials saves about 7,000 gallons of water
(http://your.kingcounty.gov/solidwaste/greenschools/documents/Fast_Facts.pdf)

2 According to EPA, making paper from recycled materials results in 74% less air pollution and 35% less water pollution, meaning that every ton of recycled paper keeps almost 60 pounds of pollutants out of the atmosphere as compared to manufacturing papers from the virgin resources.

http://www.miamidade.gov/dswm/library/recycling_quick_facts.pdf

mn - Million | bn - Billion | RE - Renewable Energy | BTL - Biomass-To-Liquid | CDM - Clean Development Mechanism | CCS - Carbon Capture & Storage | BCAP - Biomass Crop Assistance Program | MSW - Municipal Solid Waste | AD - Anaerobic Digestion | WTE - Waste-to-Energy

Abellon Agrisciences

Realizing Green Future...



"To contribute to sustainable growth and development of the rural economy by using cutting edge research, technological expertise, and other forms of intervention supporting the growth and progress of the agricultural sector."

KEY AREAS OF FOCUS

- Contract Farming
- Wasteland Development
- Saline Land Agriculture
- Agri-Extension Services
- Research & Development
- Harvesting & Trading of Specialty Energy Crops
- Social Forestry
- Supply Chain Management

KEY MILESTONES

- **Cultivation of energy crops**
 - 40,000 Bamboo plants, covering the land area of 90 acres
 - Other crops including Casuarina (3300 plants), Eucalyptus (1200 plants) and Drumstick (500 plants)
 - Trial sowing of sweet sorghum seed
- **Inter-cropping for better space utilization and higher yield**
- **On-site supportive initiatives**
 - Drip irrigation system to conserve water
 - Conversion of manure into vermi-compost for use in plantation
 - Nursery for Seedling production (15000 thorn-less prosopis plants prepared till date)