

News from IEI's Asian Regional Initiative in Bangalore (India) – December 2013

“Value-addition to food crop processing: converting banana plant-waste to cooking fuel”

This project, just completed, has demonstrated how *increased farm output and employment* have been *integrated with renewably-sourced clean-fuel generation* for *rural development*.

The objectives of this project were to implement improvements along the food growing and preparation chain, by integrating:

- value-addition to food-crop-production and thereby poverty reduction,
- processing crop-residues for a renewable-energy source,
- delivering clean cooking fuel regularly to rural homes, and
- ensuring long-term sustainability.



Banana-plantations of tissue-cultured saplings were developed in Ramanagara district of Karnataka state (south-west India), with resource-efficient farming methods. These included drip-irrigation systems that enable conservative use of water, but also employment-generating activities such as manual weeding and application of manure. As the fruit matures, bunches are harvested for sale.



Floating-drum biogas digesters were constructed in Gundigere village, adjacent to these plantations. Construction standards were monitored and adequate precautions were taken at every step, so that problems such as leakage, misalignment, and corrosion would not occur.



Stem-waste from the banana cultivation – the main stalks that yielded harvested fruit and additional pseudo-stems from among the standing plants -- are being chopped and fed to the digesters. Through anaerobic digestion, biogas accumulates in the gas-holders. Through pipelines drawn to the village households, gas is being supplied daily for cooking.



Hence, along with food-crop-residues being converted to a renewable source of energy and clean cooking fuel providing an alternative to solid-biomass burning (and the consequent adverse impacts), additional food is being grown, and additional employment and income generated at the plantations and the biogas plants.



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