

Safe Nutrient, Water & Energy Recovery - Developing a business Case

Enterprise based solutions for reuse of domestic and agro- industrial waste.

A focus area within the CGIAR Research Program on Water, Land and Ecosystems

THE CHALLENGE

Recovering water, nutrients and energy from different waste streams is a high priority where resources for agricultural production are already limited and competition for clean water, nutrients and energy is increasing in low income countries. There is a great potential to close the nutrient and water loops and to create economically viable businesses that process waste products such as agricultural and agro-industrial waste for agricultural and energy production. However, to date, such efforts have often been limited in size and seldom go beyond a pilot scale, partly because waste is not viewed as a resource and that sanitation is viewed as a public service rather than a business. Thus, there is a need for a new approach to implement viable solutions that guarantee the viability and out-scaling of agro waste-reuse businesses in low income countries.

THE OBJECTIVE

To increase the scale and viability of businesses that productively and safely reuse water, nutrients and energy from liquid and solid waste streams to enhance food security and livelihoods. This is coupled with an emphasis on cost recovery and the mitigation of possible risks to the environment and human health.



Photo credit: Keepps via Flickr

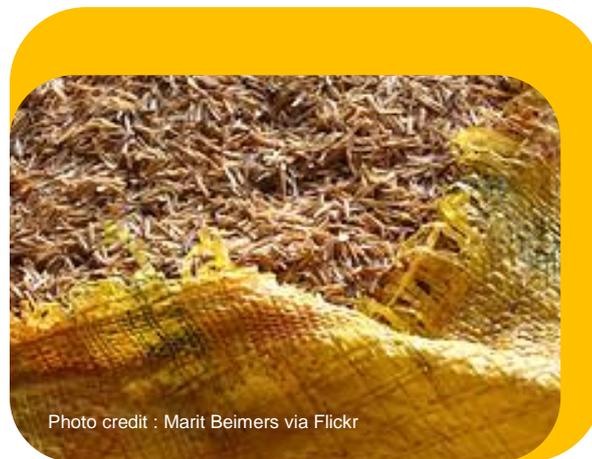


Photo credit : Marit Beimers via Flickr

RRR business cases & models

IWMI has identified more than 150 reuse business cases, covering **Africa, East Asia, South Asia** and **South America** and have developed over 20 conceptual business models that recover and recycle water, nutrients and organic matter from domestic and agro-industrial waste into value-added products such as safe water, fertilizer and energy.

KEY OUTPUT

- **A catalogue of RRR business models** illustrated through a variety of existing business cases that can guide the set-up and out-scaling of projects and enterprises by donors, governments and the private sector. The project provides the ground for follow-up investments in RRR businesses.
- Pre-feasibility assessment for the potential of agro-waste reuse business models through knowledge dissemination of solutions to targeted entities, both public and private sector. Identify a common understanding of potential business models with feedback from local stakeholder, to develop research concepts and feasibility studies into long-term next steps.

Photo credit : Neil Palmer - CIAT



Linking with existing IFAD agricultural projects and country programs in selected countries.

The activities and outputs of the project will also link with IFAD agricultural projects and country programs in selected countries. Identified empirical cases are characterized by business models with potential for value-addition to several IFAD agricultural projects such as:

- The IFAD **Root and Tuber Improvement and Marketing Programme (RTIMP)** in **Ghana** where cassava waste is targeted,
- IFAD **Vegetable Oil Development project** in **Uganda** where vegetable oil waste is targeted,
- Exploring future opportunities for agricultural projects in **Vietnam** and **Bangladesh** where agro-waste such as livestock manure, rice husk and other agro-waste are targeted.

Information on IWMI's work on Resource, Recovery & Reuse (RRR)

- <http://www.iwmi.cgiar.org/issues/resource-recovery-and-reuse/>
- <http://wle.cgiar.org/research-programs/resource-recovery-and-reuse-strategic-research-program/>



Photo credit: jbdodane via Flickr

A research project funded by the International fund for Agriculture Development (IFAD)

Contact

Miriam Otoo, Researcher-Economics,
IWMI, Colombo, Sri Lanka,
Email: m.otoo@cgiar.org;
Tel: +94 11 288 0000