

Final Report
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Innovation to bring clean energy for livelihood generation- Training and capacity building report for Odisha

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Innovation to bring clean energy for livelihood generation-

Training and capacity building report for Odisha

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For more information

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Introduction:

"Innovating to bring clean energy for livelihood generation in India" as one of the activities under the "TERI-Framework Funding for Institutional Cooperation on Energy and Climate Change" signed between the Norwegian Ministry of Foreign Affairs and TERI is being implemented in two districts of Odisha (Mayurbhanj and Cuttack) at three sites namely (Potapolsahi, Baunsidiha and Laxmiposi) in facilitation with Sambandh, a partner NGO based in Odisha.

This project, supported by the Royal Embassy of Norway and implemented by TERI, aims to use clean energy as a facilitator for livelihood generation in rural areas. The objective is to implement clean energy systems in four Indian States and to ensure their technological, financial and institutional sustainability even after project closure at TERI's end. To achieve this, customized technology packages are created and tested in the lab, along with frameworks for demand assessment, livelihoods assessment, socio-economic indicators and baselines, capacity building and innovative business models and institutions.

The project was initiated in 2010. Currently clean energy systems have been installed in the States of Assam, Odisha and Uttar Pradesh. The design of system is complete for Madhya Pradesh and installation will be complete by 2013.

The project has been planned in a holistic way such that it is not purely technology-driven. Rather, the focus is also on activities that enhance initiatives such as building reliable local institutions, innovations in business and delivery models, training and capacity building, laboratory testing and customization, ensuring market linkages and linkages to local development programmes and initiatives.

Solar Multi Utility (SMU)

The Solar Multi Utility is a community based solar power system. Using electricity from a solar power plant, a variety of different appliances and machines are operated, such as water purifiers, grinders, driers, etc. Each machine or appliance forms the technology input for a pre-identified livelihood generation activity or intervention in the area, such as provision of clean drinking water, grinding of wheat, mixing of manure and so on. The business unit charges a certain fee for each service provided. The unit itself is common property of the village, managed and owned by community members and not restricted to any one household. Self Help Groups, Farmer's Associations and Individuals from the surrounding villages access this SMU and utilize services for a fee. The revenue earned by the SMU is

utilized to pay operator salaries and also to maintain a fund for maintenance and future battery replacements or other repairs. (see Figure 1)

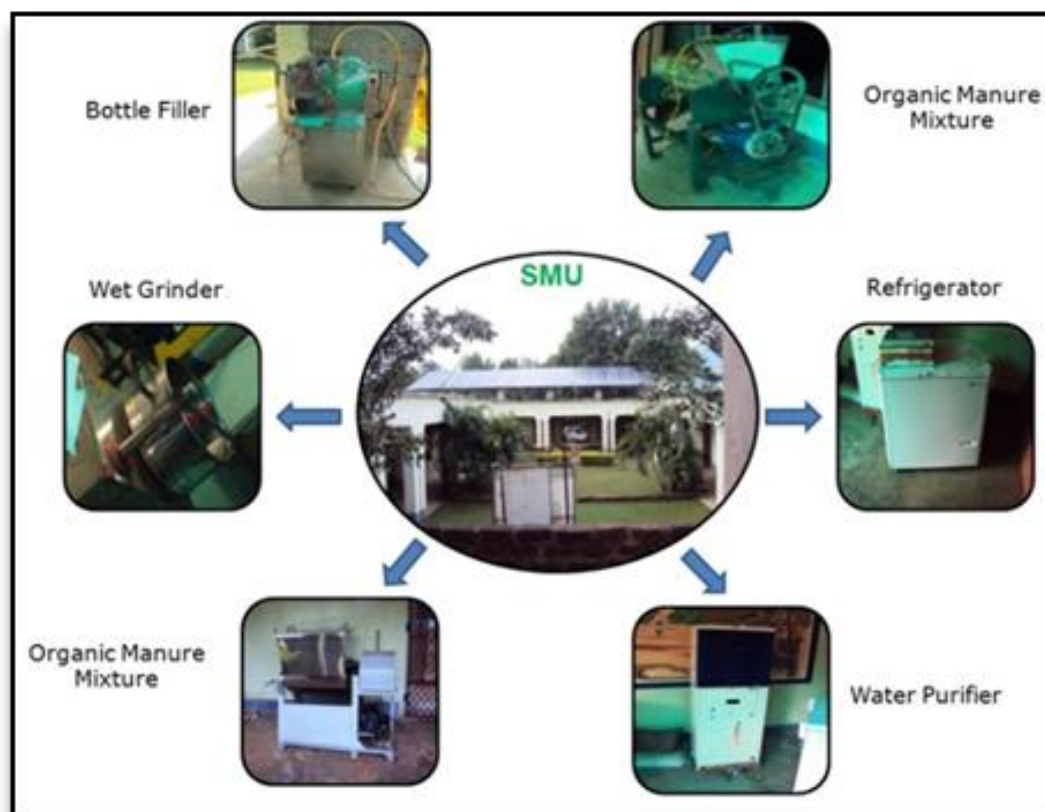


Figure 1: Solar Multi Utility

This report summarises the status of the sites in Odisha and the training programmes and exposure visits conducted since the sites have been operation.

1. Site Status

The sites chosen for the installation are very strategically located to ensure an optimal access and utilization by the community members. A series of community level meetings have been held by the field animators of the partnering facilitators (Sambandh and TERI), who have disseminated information on the purpose and usage of such a community asset. Today, the buildings not only provide space for the housing of equipment and appliances but

have also turned into places where people gather and discuss issues pertaining to daily life such as – Job Demand under MGNREGA, Old Age Pension and Disabled Allowance for the needy, PDS etc. The infrastructure has now evolved into a ‘Resource Centre’.

Site	Status
Potapolsahi	A meeting hall with a capacity of 150 People A peripheral to 11 villages
Baunshidiha	Supports three SHG Groups on Livelihood Generation (Nutrimix, Horticulture, Sal Leaf Stitching, Tailoring Vocational Training) Is a direct resource to 1 Village (120 Families approx.) and 12 other villages in the periphery are utilizing the services. A women resource center.
Laxmiposi	Infrastructure supports to be the discussion hub of all the farmer’s in 5 villages implementing the visionary WADI Project supported by NABARD Facilitates regular evening meetings of the farmers post their daily chores of livelihood.

Operations:

All the three sites have been optimally functionalized. Operations like Installations, Wiring, Procurement and shipping of Appliance have been done to the respective sites. Throughout this process, active community participation has been witnessed. The areas of operation being remote, the designated operators and stakeholders rendered a helping hand in the process, thus enabling the communities to understand the systems and technology up-close.

Status:

- SMA Inverter and Battery have a separate Enclosure.
- Presence of Grid connection for backup power
- Quality wiring by experienced technicians
- Contactors are present for smart load sharing
- In house planting of Inverter and Battery, well ventilated.
- Quality wiring is done by Expert Technician
- Training has been provided to the local electrician

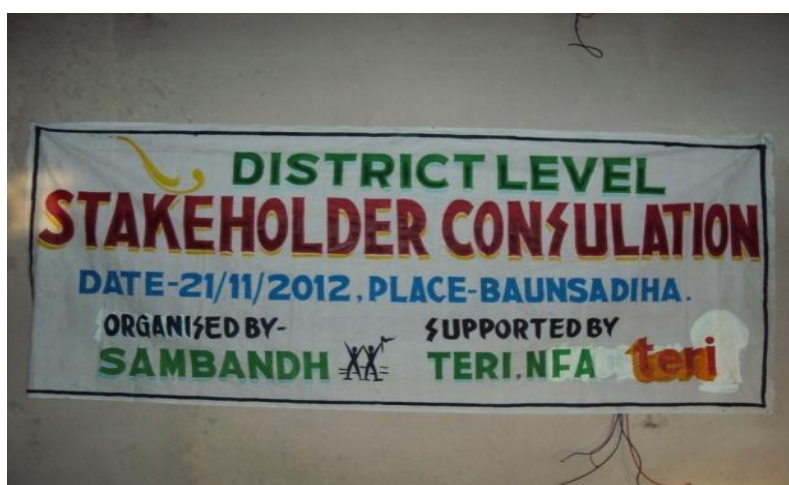
Appliances:

Through meticulous need assessment and participatory need evaluation based on the strengths of the community, different appliances suiting to the context – need – periphery – ability were accorded to the three community based institutions. The table below summarizes the list of appliances at each of the following sites.



Site	Status
Potapolsahi	RO Water Purifier Bottle Filler Multipurpose 50 KG Mixer Freezer
Baunshidiha	Grinder Multipurpose 50 KG Mixer Motorized Sewing Machine Freezer
Laxmiposi	Freezer Tamarind Pulper Capacity 50-60 kg Tamarind Deseeder & Dehuller (Two-in-one) capacity 40KG/HR Pulper Machine

Awareness Generation Activities and Training:

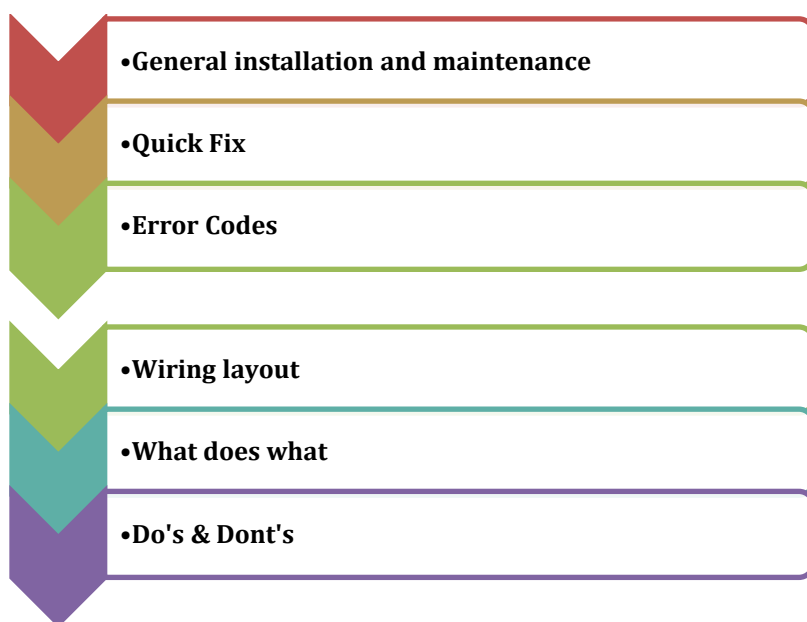


Since installation and operationalization there have been four trainings for “Capacity Building and Skill Inducement” , eleven community level awareness generation and issue/query resolving meets (As per Reviewed ‘Field Record and Resolution Register, Sept – 2011 – March 2013 , Sambandh) and three community level stake holder’s consultations .All the events have been participatory in nature and the pedagogy of constructive learning has been followed through means of demonstration and practice.

During training sessions at all the respective sites, the first step of the training was to give knowledge on the general installation and the maintenance of the SMU to the entrepreneurs or the operators. The second process involved the explanation of the quick fixes and the error codes. Thirdly, the wiring layout was described to the operators. Following this, the functioning of the SMU was explained and finally Do’s & Don’ts related to the SMU were explained in conclusion. A standardized module was followed at all the sites, to have same

level of knowledge sharing for each site. To tailor to the community need – These sessions were participatory and ample space was provided for the participants to question and clarify their stances regarding SMU and the related technology.

Therefore the training process comprises of six steps:-



Training for Entrepreneur/Operator:

Sl no	Venue	Purpose	Date
1	Potapolsahi	General Installation and Maintenance Quick Fixes Error Codes Wiring Layout What Does What? Do's and Don'ts	23 rd September 2012

2	Baunsidiha	General Installation and Maintenance Appliance Installation and maintenance. Quick Fixes Error Codes Wiring Layout What Does What? Do's and Don'ts	19 th November 2012
3	Laxmiposi	General Installation and Maintenance Appliance Installation and Maintenance Quick Fixes Error Codes Wiring Layout What Does What? Do's and Don'ts	20 st November 2012
4	Potapolsahi	Appliance Handling and Maintenance	22 nd November 2012

The presence of operators and other stakeholders at the training sessions exemplified the positive outcome of the awareness generation programs. The main focus was laid on the need and purpose of the community members' participation. This part of the training indulged the community members in handling and maintenance of the appliances, describing to them the profit sharing criteria and information related to the funds and their tracking.

Stake Holders Consultation:

Sl no	Venue	Purpose	Quorum	Date
1	Baunsidiha	Defining the Need and Purpose by Community members Appliance Handling and Maintenance Profit Sharing and Fund Tracking Operator Remuneration	33	19 th November 2012
2	Laxmiposi	Defining the Need and Purpose by Community members Appliance Handling and Maintenance Profit Sharing and Fund Tracking Operator Remuneration	17	20 st November 2012

3	Potapolsahi	Defining the Need and Purpose by Community members Appliance Handling and Maintenance Profit Sharing and Fund Tracking Operator Remuneration	14	22 nd November 2012
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The training reflected ownership of the village community towards the whole initiative and also provided a sphere to plan a way forward at the implementation and project planning level.

Appliance Handling Training:

Sl no	Venue	Training	Topics	Quorum	Date
1	Baunsidiha	Nursery Development	Plant Grafting Pruning and Air Layering Market Linkages Financial Support	67	19 th January 2013
2	Laxmiposi	Micro Enterprise	Dairy Development Market Linkage Financial Support	72	19 th January 2013
3	Laxmiposi	Tamarind Processing	Appliance Handling Tamarind Pulp Making Deseeding	65	14 th April 2013

Knowledge Sharing:

The project also witnessed academic linkages with educational institutions such as Kalinga Institute of Industrial Technology (KIIT) University Bhubaneswar, The Energy and Resources Institute (TERI) University New Delhi, and Tata Institute of Social Sciences (TISS) Mumbai.

KIIT University:

Date: July 12 2013

A group of rural management students from Kalinga School of Rural Management visited Potapolsahi in the District of Cuttack to learn about Rural renewable Energy Access.

They were exposed to the working of renewable energy solutions, the livelihood generation activities associated to them and their socio-economic impact on the local rural population.

Tata Institute of Social Sciences:

Date: August 26 - September 28

Three interns from TISS did extensive field work at the three sites doing community outreach on livelihood and market linkages.

While conducting a baseline survey and participatory rural appraisal, they worked upon the thematic study of the clean energy project and prepared their respective reports on spheres like:

- Strategizing a new business model and plan for two project sites.
- Micro enterprise development for women through technology transfer in rural areas.
- Sensitization of clean energy through visual art.

TERI University:

Date: May 30- June 6 2013

A collaborating doctoral research scholar from TERI did a participatory review of the project in Mayurbhanj to gauge the involvement and ownership of the various stakeholders and consumers.