



Environment Preservation through Construction of Bio gas Plants based on Rubber Latex Waste Water



Climate Change



Background of the project

This project had been implemented for constructing 150 Bio gas plants based on rubber latex waste water. The project aimed to reach out to the poor, small and marginal farmers who couldn't afford the cost on their own. Since the project was a need based one, the beneficiaries took special interest in maintaining the system.

Introduction

In India, an organized move to popularize the Bio gas plants was carried out in the year 1960. Different models played their role in making the program popular among the farmers. They are Floating Drum Model, Janatha Fixed Dome, Pragati Model and Deenabhandu Model. Deenabhandu is understood as the model of the poor farmer. But according to today's cost standards, this model was also becoming expensive. Andhyodaya organization constructed more than 8000 Bio gas plants of different models. Their R & D wing has conducted research in the cost reduction of Bio gas programme. They came up with a new model "Andhyodaya Ready Made Ferro Cement Bio gas Plant". The project had the following objectives.

- Conduct awareness campaigns in the project area focusing on environment preservation and use of renewable energy.
- Construct 150 Bio gas plants based on rubber latex wastewater.
- Ensure people's participation in the proposed project and make it a full fledged people's programme.
- Strengthen the level of awareness among the people.
- Form environment preservation committees in gramodyas.

Project beneficiaries

The poor, small and marginal rubber farmers living in the project area were the major beneficiaries.

Community participation

The Environment Preservation Committees were formed sharing costs and decisions. They were instrumental in arranging the awareness programs, selecting beneficiaries and implementation of the project. Men, materials and field supervisors were selected from the project area itself to ensure quality and smooth implementation of the project. Training was imparted to local masons on construction of Bio gas plants to ensure creation of employment for local people and local ownerships.

Capacity building efforts

- 12 awareness programs at the site of project area
- Formation of more than 40 environment preservation committees
- Local mason trainings for construction of plants, repairs and maintainence
- More than 50 meetings of local house hold trainings in management and operations of Bio gas plants.



Geographical area	:	19 villages in Ernakulam distt. Kerala.
No of Beneficiaries	:	150 Families, extended to 200 more.
SGP Grant	:	32,725 USD
Co Financing	:	16,000 USD
Project Time Period	:	2004-2006

The Technical Details

The Andhyodaya Ready Made Ferro Cement Bio gas Plants can be constructed in sizes of 1M³, 2M³ and 3M³. The Dimensions of the pit are as follows: -

Size	1M ³	2M ³	3M ³
Dia (in Feet)	4.50	5.50	5.50
Depth (in Feet)	4.50	6.50	8.50

Deenabhandu model which is now popular, is getting costlier now a days because of the rise in the cost of materials. The comparison of costs of Deenabhandu Model and Andhyodaya Ready Made Ferro cement model are as follows

Size	Deenabhandu Model (Rs.)	Andhyodaya Ready Made Ferro Cement Bio gas plants (Rs.)
1M ³	9,500	7,500
2M ³	13,500	9,500
3M ³	16,500	11,500

Number of Bio gas Plants constructed by The Andhyodaya

District	Size	1M ³	2M ³	3M ³
Ernakulam		45	45	60
Wyanad		0	200	0

Global environment impact of the project

The effluent flowing out from the process of beating rubber sheets has a very foul-smell and the health of people living in the area is jeopardized in a such situation. Standing water generates methane. Bio gas is an alternate to the wood being used as a fuel. This has reduced considerable pressure on the neighbouring forests.

Sustainability of the project

The communities shared costs and were locally trained in the management and operations. The local masons are acting as technology providers-repairs on paid basis. The Self Help Groups (SHGs) have been also formed to sustain the process of implementation.

Replicability of the project

The ripple effect has been very profound in the area. Kerala being a rubber producing state, many exposure visits took place from neighbouring farmers. Ministry of New and Renewable Energy (MNRE) has come to replicate with more than 1000 such Bio gas plants. Andhyodaya has been sharing technologies with other countries and Rubber Board and other partners in the state.

Project results

- 150 families in the project had clean environment Bio gas plants, 200 more contracted through co-financing.
- Women in the households get extra time by not having to fetch firewood.
- People enjoy improved health status due to enhancement of environment and no waste water.
- Low cost, simple and easy to manage technology propagated to other geographical areas.

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