
CSR Activities for Environmental Protection in Kancheepuram and Tiruvallur District – A Case study

Dr. S. Radhakrishnan*, P. Deepan Bharathi **, Mr. S. Yesu Suresh Raj ***

* Assistant Professor, Department of Gandhian Thought and Peaces Science, Gandhigram Rural Institute- Deemed University, Gandhigram – 624 302, Dindigul. Tamil Nadu.

** P.h.D Research scholar Department of Gandhian Thought and Peaces Science, Gandhigram Rural Institute- Deemed University, Gandhigram – 624 302, Dindigul. Tamil Nadu.

*** P.h.D Research scholar Department of Gandhian Thought and Peaces Science, Gandhigram Rural Institute- Deemed University, Gandhigram – 624 302, Dindigul. Tamil Nadu.

Abstract:

God has given enough for our needs and not for our Greed – M.K.Gandhi. Excess use of natural resource and consumption of more electricity make the environment polluted. At micro- level, bio-gas programme alternate use of renewable energy some to control pollution. The cost of unit may not be affordable by the villages and hence Govt, corporate sector come forward to help them. This article briefs the Bio – gas programme speared by CSR project.

Case study – 1

Bio-gas Project

Introduction

An effective biogas programme leads to efficient use of cow dung for gas recovery and partial supplement to plant nutrient requirement. Biogas programme leads to improvement in rural living including rural sanitation. Biogas fermentation a process occurring widely in nature can be defined as a biological process, in which biomass or organic matter, in the absence of oxygen, is converted into methane and carbon dioxide.

Name of the Project : **Community Bio-gas Project**

Village : **Alathur village, Kancheepuram District, Tamil Nadu.**

Implementing Agency : **Orchid Trust**



What is biogas?

It is a gas produced by the anaerobic digestion or fermentation of organic matter under anaerobic conditions. These materials include but are not limited to manure, sewage sludge, municipal solid waste, and biodegradable waste. Biogas consists primarily of methane and carbon dioxide.

BIOCOMPONENTS OF BIOGAS

1.	METHANE (CH ₄)	=	(50-75%)
2.	CARBON DIOXIDE (CO ₂)	=	(25-50%)
3.	NITROGEN (N ₂)	=	(0-10%)
4.	HYDROGEN (H ₂)	=	(0-1%)
5.	HYDROGEN SULPHIDE (H ₂ S)	=	(0-3%)
6.	OXYGEN (O ₂)	=	(0 -2* %)

*often 5 % of air is introduced for microbiological desulphurization

SOURCES OF BIOGAS

Waste material like cow dung, buffalo dung, horse dung, sheep droppings, goat droppings, piggery waste and poultry droppings Night soil, vegetable waste, Brewery waste, Green clippings, Grass silage, Corn silage, Food scraps, Bakery waste, Fats & Grease can be used for gas production.

THREE BASIC POINTS ABOUT THIS PROCESS ARE

- (i) that most of the important bacteria involved in biogas production process are anaerobes and slow growing;
- (ii) that a greater degree of metabolic specialization is observed in these anaerobic microorganisms; and
- (iii) that most of the free energy present in the substrate is found in the terminal product methane. Since less energy is available for the growth of organism, less microbial biomass is produced and, consequently, disposal of sludge after the digestion may not be a major problem.

Orchid Trust believes that actions speak louder than words; therefore it has taken full responsibility to protect the environment that has given them so much by introducing programmes that prove to examples of sustainable development.

Creating Awareness on Bio-Gas:

After a small feasible study in their working area, Alathur village was selected for the implantation of this project. For a step towards implementation, the Trust last year held an awareness seminar on Bio-Gas for the farmers at Alathur Village. Eminent persons from the Agricultural research field talked about what is bio-gas, giving them a deep understanding about how the bio-gas works and how useful it is to them and the environment.

Implementation of Bio-Gas Plant:

This project is implemented in coordination with state government- District Rural Development Authority (DRDA) and Indian bank, Thiruporur. State Government allotted

subsidy for 50 biogas plant in Kanchipuram district of Tamil Nadu. In Kancheepuram district Orchid Trust is the only organisation expressed interest to take up the project and Orchid became the implementation agency.

So far 29 units have been completed and the rest of the units are developing and expected to be completed. Orchid Trust aim is to demonstrate Alathur as model biogas village make the entire village using biogas in a span of two year is aim of this project.

Construction process



Project benefits

The project leads to a reduction of CO₂ while improving the quality of life of the beneficiaries:

- Reduction of the consumption of fuel wood, protecting the scarce forest resources.

- Improvement of the soil quality and its water retention capacity thanks to the replacement of chemical fertilisers by high-quality compost.
- Reduction of expenditure on health as biogas cooking is clean and does not create indoor air pollution as much as the traditional firewood cook stove.
- Reduction on time and work for fuel wood collection
- Cost savings due to the avoidance of fire wood and kerosene purchases, gas.
- Creation of sanitation as the cattle dung is properly treated in the bio digester

Source Identification

1. Minimum requirement: 2 cattle
2. Area requirement : 10'x10' open place

ADVANTAGES OF BIOGAS

- Production of energy (heat, light, electricity).
- Transformation of organic wastes into high quality fertilizer.
- Improvement of hygienic conditions through reduction of pathogens, worm eggs and flies.
- Reduction of workload, mainly for women, in firewood collection and cooking.
- Environmental advantages through protection of forests, soil, water and air.
- Global Environmental Benefits of Biogas Technology.
- The biogas is use to run vehicle (car, bus, lorry, two wheeler, etc.,)

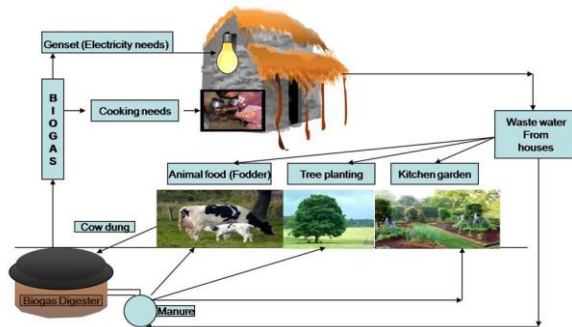
Cost Sharing pattern

Description	DRDA	BANK	ORCHID	TOTAL
2cubic meter tank with biogas stove	9000	10000	6000	25000

Total expense of a biogas unit for a house is Rs.25000/- (Rupees Twenty Five Thousand) Bank provides loan as beneficiary contribution, which will repay by beneficiary in monthly instalments of three years. DRDA will provide Rs.9000 as a subsidy to the beneficiary

Orchid has invested around Rs.6, 000 in providing gas stove, pipes, excavating pits for the Bio-Gas and pipes that connect the plant to the stove

ECONOMIC MODEL IN RURAL AREAS THROUGH BIOGAS PROJECT



Model of existing Bio-gas project at Alathur



Case Study – 2

Introduction

Mr. B.R. Sriramulu is a farmer from Palli village near Tiruttani. He is married with 2 daughters. Elder daughter is in 1st year engineering and younger daughter is doing her 12th standard. Wife is home maker. Agriculture is his main source of income.

- Name** : B.R. Sriramulu
- Age** : 46
- Village** : Palli village, Tiruttani
- Name of the Project** : Go Green
- Implementing agency** : Hyundai Motors

The Barren land

Palli village is a dry place and water source is very less as a result Mr. Sriramulu struggled to cultivate any crop. He owns 5 acre of dry land and is able to cultivate groundnut base on the rainfall at times. As the land is not much fertile the yield from the land is normally very less and the investment for it would be more. Due to which every time he was getting to heavy loss.



“Go Green Project”

Considering the struggles faced by the farmers of this village Hyundai Motors adopted this village and made several attempts to improve the fertility of the soil through local agricultural department. In consultation with various experts in agricultural field Hyundai Motors conceived an innovative project called “Go Green”.

Through this project Mr. Sriramulu got motivated to plant teakwood trees in his land. Hyundai provided necessary support to plant more than 1000 teakwood saplings at his 5 acre barren land.



Since then things started changing, the barren land became a lush green land and the fertility of the soil also got improved. As usual he started growing groundnuts along the teakwood trees, this improved the yield and he started earning more profit.

Profitable Business

This teakwood tree is remunerative, when it mature at the end of tenth year he can sell or otherwise he can also wait for five more years to grow so that he can get better profit. This

gives him definite return on an asset which would otherwise be lying waste. It is also an additional revenue through inter cropping on the same land.

Conclusion

Mr. Sriramulu not only feels happy he also provided local employment to landless labour from his village. His land is slowly becoming a fertile land and he is planning to experiment to grow different crops in consultation with local agriculture department.

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