

CHAPTER - IV

IMPACT ON RURAL LIFE : DATA PRESENTATION AND ANALYSIS

Biogas Technology is being implemented by Shivsadan Society for the last 20 years. In order to assess the impact of biogas technology on rural life, 100 persons (as explained in Chapter-I) were interviewed with the help of a Schedule. Data collected with the help of the schedules are presented and analysed hereunder for assessing the impact of biogas technology on rural life. Three experts have also been interviewed and their views are narrated.

Land Ownership :

Table-4.1 : Statement Showing the Pattern of Land Ownership : Land Owned Among Respondents

Land Acres	5 acres and less than 5 acres	6 to 10 acres	11 acres and above	Total
No. of Respondents	22	63	15	100

It is clear from the above statement that most of the farmers (i.e. 63%) have land holding between 6 to 10 acres. If we add the number of biogas plant owners having 11 acres and more land (i.e. 15%) to the above, we find that 88% of the plant owners have land of 6 acres and above. Only 22% of the plant owners own land which is less than 5 acres.

Plant Capacity :

Table-4.2 : Statement Showing Capacity of Biogas Plant

Capacity	2 to 4 cum	5 to 8 cum	9 cum & more	Total
No. of Respondents	57	41	2	100

57% of the respondents have plant capacity between 2 to 4 cubic meters, 41% have 5 to 8 cubic meters and only 2% of the respondents have a higher capacity of 9 cubic meters and above.

Number of Family Members :

Table-4.3 : Statement Showing Members of Family of the Respondents

5 and less than 5	6 to 10 members	11 and above members	Total
14	72	14	100

In most of the cases (72) it is found that the size of family range between 6 to 10 members. 14% of the respondents had 5 or less than 5 members in their family and 14% had 11 and above members in their family.

Plant Age :

Table-4.4 : Statement Showing the Age of Biogas Plant

Age of the Plant (Years)	3 and less than 3 years	4 to 6 years	7 to 9 years	9 years & above	Total
No. of Respondents	8	65	23	4	100

As regards, age of bio-gas plant, i.e., years of service to the users after its installation, it is found that 65 respondents were using the plant for a period between 4 to 6 years and 23 respondents were using it for a period between 7 to 9 years, 4 persons were using it for 9 years and above, and 8 persons were using it for 3 years or less than 3 years. Thus most of the respondents (i.e. 92%) had an experience of using the gas plant for 4 years or more than 4 years.

Cattle Owned :

Table-4.5 : Statement Showing the Number of Cattle Owned by the Respondents

Cattle from 1 to 3	Cattle 4 to 6	Cattle 7 and above	Nil	Total
26	55	18	1	100

55% of the respondent-plant-owners had 4 to 6 cattle while 18% of the respondents had 7 or more cattle with them. 26 persons had cattle ranging from 1 to 3 while 1 person did not have any cattle with him. This person, with no cattle, had 500 chicken with him.

Annual Income :

Table-4.6 : Statement Showing Annual Income of Respondents

Annual Income Rs.	Rs. 10,000 and Less	Rs. 11,000 to 20,000	Rs. 21,000 to 30,000	Rs. 31,000 to 40,000	Rs. 41,000 and above	Total
No. of Respondents	None	5	16	55	24	100

As regards annual income of the respondents, it is found that 55% of the respondents had an income range of Rs.31000 to Rs.40000/- while there were 24 respondents having their annual income above Rs.41000/-. Thus 79 respondents had an annual income above Rs.31000/-. There were only 21 respondents having annual income of less than Rs.30000/-.

Pattern of Financing :

Table-4.7 : Statement Showing Pattern of Financing Gobar Gas Plants

Financing through	Loan funds	Own funds	Total
No. of Respondents	82	18	100

82 respondents had taken loan to finance the installation of gobar gas plant. Only 18 respondents could install the gobar gas plant with the help of their own funds.

Government Subsidy :Table-4.8 : Statement Showing Government Subsidy to the Respondents

Subsidy Amount (Rs.)	Upto Rs. 3,000	Above Rs. 3,000/- upto 5,000/-	Above Rs. 5,000/- upto 8,000/-	Above Rs. 8,000/-	Total
No. of Respondents	2	97	1	-	100

97 respondents received subsidy in the range of Rs.3000 to Rs.5000 from the Government.

Repairs Required :Table-4.9 : Statement Showing frequency of Repairs Required

Repairs required within (Period)	Within 6 months	7 months to 12 months	More than 12 months	Never	Total
No. of Respondents	-	1	28	71	100

As regards the frequency of repairs required for the biogas plants installed by Shivsadan Society, it was found that 71 persons did not require to do any repair work of the plant while 28 persons were required to do repairs after a period of more than 12 months from installation of the plant.

Fertilizer Yield :Table-4.10 : Statement Showing Fertiliser Yield of the Respondent.

Fertilizer Yield (Rs.) per Annum	Rs.750/- and Less than Rs.750/-	Above Rs. 750/- upto Rs.1,500/-	Rs.1,500/- and above	Total
No. of Respondents	3	6	91	100

With regard to the annual income from fertilizers obtained from the biogas plant, it is found that 91 of the 100 respondents could get Rs.1500/- or above Rs.1500/- from the sale/use of fertilizers. It was further found that most of these respondents used the fertilizer obtained from the gas plant for their own land. Amount saved by such respondents on yearly basis has been treated to be their yield from the fertilizer obtained by operating the plant.

Time Saving :Table-4.11 : Statement Showing Time Saved in Cooking

Time Saved (Hours)	Upto 2 hours	More than 2 hours	Total
No. of Respondents	100	-	100

All the respondents stated that above 50% time was saved, i.e., approximately 1 Hour 30 minutes in respect of cooking.

Export Opinion :

Following are the expert opinions of the three experts interviewed by the Researcher.

(1) Shri P.G.Kulkarni, Kolhapur :

Shri Kulkarni has his agricultural land in Uttur, a village about 40 miles away to South of Kolhapur. He has installed 2 gober-gas plants at Uttur.

According to Shri Kulkarni, apart from time and cost saving aspects of gober gas plant, the main advantages that accrue to the plant owner are in the form of quality manures daily obtained, income from milk, automatic creation of hygienic atmosphere and better health conditions for the women folk in rural area. According to him, quality of manures obtained from gober gas plant is always good. (Shri Sudhakar Mundhe of Kharshi, Dist. Satara has also emphasised this point). Farmer-cum-gas-plant owner does not have to buy that rough quantity of fertilizers and that leads to cost savings for him. Because of better quality manures, yield of crops raised also increases. Third advantage from this manure is that the quality of soil improves and the use of manure does not result in deterioration of soil as it happens in case of use of most of the fertilizers. If this manure is used for sugarcane crop, the yield increases by about 60% and depending on circumstances in results into an additional income of

Rs.4500 to Rs.6000 per acre to the farmer. According to Shri Kulkarni, benefits of quality maintenance of soil cannot be easily quantified.

According to Shri Kulkarni, the farmer-cum-gas-plant owner gets regular income from milk as he has to look after the cattle carefully.

For running the gober-gas plant, according to Shri Kulkarni, people use, in addition to the cowdung various wastes found in and around the house. This helps the atmosphere turn into a hygienic one. If the latrine is attached to a gober-gas plant the effects on atmosphere are more clearly visible.

Because women folk in rural area can cook their food in less than 50% time normally required by them and as they are not required to the cooking under strained and unhygienic conditions obtained with the use of chulla, their health shows improvement over a period of time. Time saved in cooking can be used for looking after children and their schooling.

(2) Shri P.S.Thakur, Sangli :

Shri P.S.Thakur has served for more than 20 years in Sangli District as Parishad Agricultural Development Officer. Moreover, he had taken a very active and keen interest in the development of grape-gardens in Sangli District.

Shri Thakur admitted the unique position by Shivsadan Society in the field of gober-gas plant. He was, however,

critical in respect of the following things :

1. Shivsadan Society does not really function as a co-operative Society. It does not possess all the necessary characteristics of a Co-operative Society.
2. The Society depends heavily on outsiders (like BDOs) for the development of its business.
3. Its follow-up service can be improved in respect of its various aspects.

(3) Shri Sudhakar Mundhe, Kharshi (Dist. Satara) :

Shri Sudhakar Mundhe is a well educated and a progressive farmer. He himself has 3 gober-gas plants established at various places in his village.

Shri Mundhe has emphasised the use of gober-gas plant as a mechanism of producing a manure which is better than the fertilizers normally used by the farmer. His views are very much similar to those expressed by Shri P.G.Kulkarni.