

## **1.1 INTRODUCTION :**

There is now a well established need for development of decentralised energy systems based on locally available renewable resources for self-reliant and environmentally sound development of rural areas in the economically less developed countries.

The international energy crisis in the year 1973 had awakened the whole country and made conscious about the need to conserve and augment its sources of energy supply. Energy in one form or another enters practically in every single economic activity and its availability and cost determines the economic future and well being of the nation as well as the quality of life of its people. The requirement of energy in India is met from a variety of forms, i.e. non-commercial ones like firewood, animal dung and agricultural wastes and commercial forms such as electricity, coal, oil and nuclear power.

While the non-commercial forms of energy have been traditionally used in India to meet the bulk of the rural energy demand especially of the household sector, the most convenient and versatile energy sources in the country are considered to be coal, oil and electricity.

In view of ever increasing population and limited reserves of petroleum and coal, India is facing a critical shortage of fuel. In villages, oil and coal are not easily available even at higher prices and, therefore, people cannot afford to use these as fuel. Other traditional source of fuel, i.e. wood is also in short supply owing to the increased pressure

of urbanisation. The area under local forests is also decreasing rapidly. Most of the fuel needs in the villages are met by burning the cow-dung cakes as these are readily available. The cow-dung cake is the most popular fuel in rural India.

The rural population used to depend heavily upon animal dung, firewood and agricultural wastes, they are satisfying fuel needs of the villages. Due to undirected wavering flame, inadequate aeration and excessive fuel feed the energy efficiency of cow-dung is low. What is most complained about it by the housewives is the time consuming nature of the exercise under unhealthy and difficult situations. All the smoke from this inefficient chullah acts as a big health hazard as it affects the women's eyes, throat and lungs very badly and all the women's using the traditional methods of cooking complained recurrent cough and respiratory infection. The smoke makes the utensils and walls of kitchen dark. The burning of dung cake is a major loss of a valuable organic manure which can be used as a manure to improve soil conditions.

To meet the energy crisis Government of India has the energy policy for the development and exploitation of indigenously available energy resources (conventional as well as non-conventional) with a view to achieve self-sufficiency, efficient utilisation of energy through elimination of waste fuel uses, conservation and demand management. The Government has given priority to the promotion and utilisation of new and renewable sources of energy as supplement to the fast depleting conventional sources of energy and also to meet the energy needs of rural areas. One of the new <sup>non-</sup>renewable/alternative sources which need urgent attention and encouragement is the adoption of biogas plant.

The role of biogas in rural development has been widely acknowledged. The biogas in addition to economising firewood and supply required energy to masses also provides better quality of fuel for cooking and lighting at cheaper rates, valuable organic manure, improves the environmental conditions in the rural areas and reduces the drudgery of rural women.

### 1.2 THE PROBLEM :

The adoption of gober gas as the non-traditional source of energy and fuel for the cooking and other needs has been done in the rural areas. This has its own impact on the life of rural housewives. It has changed the physical environmental conditions such as eradication of smoke, bringing of clean air and lessening of the time spent in kitchen. All these factors have been responsible for the improvement in the life conditions in the rural area. Rural women who have been benefitted by such gober gas plants have shown improvement in their daily life conditions.

The use of gober gas directly affects rural households particularly the life style of rural women. The present study has been designed to examine the sociological implications of gober gas plants on rural housewives.

### 1.3 OBJECTIVES OF THE STUDY :

The specific objectives of this study are to study :

- 1) The socio-economic characteristics of adopters gober gas plant in a particular village.

2) To study the changes in the working and time utilisation pattern of the adopters.

3) To study the problems which arise in the adoption of gohar gas plant and to find out the reasons for non-adoption of gohar gas plant.

#### **1.4 RESEARCH METHODOLOGY :**

##### **1.4.1 Selection of the area**

To accomplish the above mentioned objectives, the present study was carried out at a village named Koparde in the Kolhapur district of Maharashtra State. The selection of village Koparde is due to the following reasons :

- 1) It is a multi-caste village having a sizeable population of different caste groups.
- 2) It is under the impact of development programme launched by Khadi Gramodyog, Shri Kumbhi Kasari Sahakari Sakhar Karkhana Limited, Kuditre and Zilla Parishad, Kolhapur. All these agencies have made it possible for families to instal gohar gas plants.
- 3) The village under study is 13 kilometers away from Kolhapur in the Karveer taluka and it is the rural part of the district. The village though connected with the district place by a tar road is in the interior part of the western part of the district which is a Konkan area.
- 4) This village is in the area of operation of the Kumbhi Kasari Sugar Co-operative. It was the sugar co-operative which has launched the gohar gas plant scheme for the first time

In 1978. Since then the number of gobar gas plants installed have been in increasing number. The village is under the influence of gas plantation since 1978 and has witnessed the changes that have been in the life of house-wives due to gobar gas plants.

These are the reasons mainly responsible for the selection of the village for our study.

#### 1.4.2 Selection of Respondents

A sample of 100 families, who had adopted the gobar gas plant in the village has been selected for the study. There are 150 gobar gas plant adopters in the village two out of every three families have been taken into consideration for the present study. That is 66.66% of the total families who have adopted gobar gas plant have been taken into consideration. The families left out from our study are those who have adopted gobar gas in recent years i.e. that we have not taken into consideration those 50 families who have adopted gobar gas plant after 1990.

The selection of respondents from the non-adopters group is done on random basis. There are 410 households with 458 families in the village who have not adopted the gobar gas plant. The respondents selected are from 41 households which comes to 10% of the total number of non-adopters group. The general features of the non-adopters families as far as the structure of the house and other living conditions are concerned are more or less similar. Thus, the sample of 10% non-adopters represent the group properly.

### **1.4.3 Selection of-Variables**

The variables selected for the study have been based on the review of researches done on gobar gas plants and the primary survey taken in the village and discussions with the guide and other faculty members. The important socio-economic variables which we have <sup>been</sup> taken into consideration for the present investigation are - Age, Caste, Education of the respondent, Family size and type, Occupation and annual family income. Land owned by the family, number of domesticated animals is also taken into account for our study. Then the type of the house, number of rooms for living and other purposes, kitchen, fuel used and other related information is taken into consideration.

While dealing with the social and economic impact of gobar gas plants on rural housewives we have taken the following important variables for our purpose. The source of information regarding the gobar gas as a source of energy, the installation of the gobar gas plant, its size, type and the nature of subsidy received, the connection of lavatory to gobar gas plant, time saved after the installation of the plant, time saving of fuel, saving of time in cooking, increasing cleanliness and improvement in the health, enhancement in social prestige, easiness in hospitality and sociability and the improved quality of farm yard manure with the utilisation of organic waste.

These are the important variables which were taken into consideration of the present study.

#### **1.4.4 Interview Guide**

The data collection was done mainly with the help of a comprehensive interview guide and participant observation. The interview guide is composed of direct and indirect questions to be asked to the adopters and non-adopters of the gobar gas plants. The respondents who have not adopted the gobar gas plants have been interviewed specifically taking into account the reasons at situational level, economic level, technical level, educational level, and also at the psychological level also.

Part of the interview guide is concerned with demographic and socio-economic characters of the respondents and their family members. Then the information is collected about the housing pattern and the size and the infra-structure of the house. Information regarding the type of fuel used for cooking is gathered. The next part of the interview guide is concerned about the gobar gas plant. The information regarding the gobar gas plant received from the respondent, the installation of the gobar gas plant, its size, capacity, amount spent on it and the period of construction taken for the gobar gas plant.

The information regarding the dung collection is also collected for the better understanding of the working of the gobar gas plant.

Gobar gas plants and its impact on the housewife is the important aspect of our study. Detailed information regarding the housewives work in the home at the different levels is taken into account for to know her position in the family. The time factor as far as the household duties like cooking, cleaning of the house and utensils, cleaning of clothes, time spent on children and domesticated animals is also considered for

the present investigation. The nature of work after the installation of the gas is taken for the comparative analysis.

Data was collected from the respondents individually and personally with the interview guide. The respondents were explained the purpose of the study and they were convinced about the purpose of the research. The researcher being a lady could get the confidence of the respondents and could collect the information in time.

#### **1.5 CLASSIFICATION-AND ANALYSIS OF DATA :**

The collected data has been analysed by preparing tables and using suitable statistical devices. The conclusions drawn depend on the empirical investigation done by the researcher.