

## CHAPTER-II

### REVIEW OF RELATED LITERATURE

Social scientists especially economists and sociologists have tried to study the impact of gobar gas plants on rural housewives and other areas of rural life. It is necessary to take a review of such works in the area.

H.S. Jahal and A.N. Shukla<sup>1</sup> have studied the Mangat, Ludhiana and Jagraon development blocks of IADP to collect the information regarding socio-psychological and situational factors which are influencing the pace of installation of gobar gas plants. Their studies has shown that the factors like education, extension contacts, social participation and mass media exposure of the respondents are found to be greatly associated with adoption of gobar gas plants. The study further shows that the adoption of gobar gas plant is the only way to convert dung now being used as fuel in the form of manure, is gobar gas plant. In this process not only the dung is converted into comparatively rich organic manure but also a gas is produced which can be safely and economically used as a fuel in kitchen by rural women.

Knowledge of Biogas plant owners about biogas technology was studied by S.N.Laharia and S.K.Bhati<sup>2</sup> with the objectives to find out knowledge level of bio-gas plant owners about its various aspects viz. installation (selection of size, operation and utilisation it was also the objective of this study to understand the association between their knowledge level and socio-psychological background factors. The study was conducted in three distinct of Haryana representing three districts

agro-climatic zone of the State. The conclusion joint by the this study is that the knowledge on same aspects only was correctly known to more than half of the respondents. There were also a good number of items which were not correctly known to the most of people. The study has suggested the necessity of vigorous extension education programme to increase their knowledge on various aspects of bio-gas plant installation operation and utilisation.

R.D. Pandya and Dr.J.C. Trivedi<sup>3</sup> have studied the reasons why the gobar gas has been adopted and what are the reasons for its non-adoption in the Kheda of Gujarat the study reveals that the adoption of gobar gas plant is due to the advantages of saving of fuel good farm yard manure and better health condition. The non-adopters give the reasons that the high cost of gobar gas plant, lack of space for installation difficulties in connecting latrine with gobar gas plant and difficulty in dung collection.

Varun Vidyarthi<sup>4</sup> has studied Renewable Energy Development Alternatives in Uttar Pradesh. It is a village study which is based on eighteen month participating action research in a village of Eastern Uttar Pradesh. It analysis the energy needs of the villagers in relation to their problems and priorities and present the experiences of the introduction of several technologies. It is shown that the process of adoption of different technologies has a direct connection with social and economic condition of the villagers, that determines their needs and constraints and hence the nature and level of their participation. Consideration of factors like poverty, household time budgeting resource access and social organisation is seen to provide important perspectives for refining renewable energy development strategies in villages.

V.K. Sharma and Mira Madan and Neeta Sharma<sup>5</sup> in their article titled "Biogas Technology in India" the state of art have reviewed present state of biogas technology in India the authors recommend development of small, cheap and efficient digesters for single households. Their study is concerned with bio-gas technology and its success and failure in Indian rural society. They say that introduction of bio-gas digestion will cause a number of changes in the fuel economy and in the socio-economic relations in the villages. Poor families will benefit from non-financial changes like reduced time and labour involved in fuel connection.

As soon as more social benefits - health, convenience, leisure etc. are realised, bio-gas will gain in attractiveness. Such benefits are mainly noticed by 'women users' and are less valued by 'men users' in general. Social feasibility, however, will be highest among the poorer families, particularly among the womenfolk.

They further say that effort should be made for the development and field trials of small, cheap and efficient digesters for single households. It should always be kept in mind that bio-gas digesters are appropriate only to people who have easy access to ample amounts of dung and water in the first place. And as such, generally the very poor do not qualify for this category.

M.G. Mulmule<sup>6</sup> has studied 'Socio-economic impact of gobar gas plants on rural families', in Betaul district of Madhya Pradesh. He says that replacement of cow-dung fuel to bio-gas has benefitted rural women as far as the health conditions time saving in the preparation

of food and household duties and in bring better manure for farm. There is an improvement in sanitary conditions after the installation of gobar gas plants. These gobar gas plant have benefitted the rural people.

Himat Patel<sup>7</sup> deals with 'Biogas plant and Rural Development'. He says that the adoption of bio-gas seems to be the ultimated answer to energy crises of present with simple and prennially available raw material involving simple technology and less cost, this plant has many advantages and it prevents air pollution. It gives better fertilizer by creating wealth from waste and it is safest fuel which improves rural health. He says that there is need for a nation campalagn for setting up bio-gas plant which will bring socio-economic and cultural development in rural India.

N.N.Rao<sup>8</sup> has studied, 'Gobar gas and other fuels', it is a study of comparision between other fuels and gobar gas he has compared kerosene, firewood, cow dung cake, charcoal, soft cake, butane, furnes oil, coal gas and electricity as other fuels and gobar gas. He has compared gobar gas with these fuels and come to the conclusion that gobar gas has many advantages. It gives sufficient quantity of fuel without smoke, it gives farm manure and it brings better health condition in the kitchen. The rural housewives having benefitted by gobar gas plantations.

K. Ahsan<sup>9</sup> has studied Biomass - the durable source of energy. In this article he looks at the biomass from the economic point of view and says that from the economic point of view use of biogas as a fuel is beneficial to rural women and it will also improve the hygine of the rural home.

P.B.S. Bhadoria<sup>10</sup> in his study of "Role of Bio-gas Technology in Rural Development" states that the bio-gas technology has brought noticable changes in the rural kitchens by introducing smokeless fuel. It has also reduced the cost of fuel as well as it saves cooking time of the rural housewife. He is of the opinion that there should be community bio-gas plants in rural areas.

R.B.L. Garg<sup>11</sup> in his article "Biogas : harbinger of a new way of life" has shown that the first gobar gas plant in Gujarat was installed as early as in 1954. However, the growth of bio-gas plants remained tardy till 1970, due to several factors, including ignorance and high cost involved in installation of a plant.

He also states that biogas technology is revolutionising home and hearth.

In prominent feature of bio-gas movement in Gujarat is that hold experiments are being made by voluntary agencies alongwith Gujarat Agricultural University to set up large sized community gobar gas plants capable of providing cooking fuel for more than 100 families daily in a village.

Lastly he says that this innovation will help the villagers in many ways. Firstly, it will rid the village of filth presently found rofting every where and will provide hygienic atmosphere. Secondly, it will put to economic use of the garbage of the village by way of producing valuable gas for cooking, heating etc. a luxury not known to the villagers earlier. Yet another major ecological advantage will

be that gas will help eliminating the use of twigs and logs as fuel, thereby saving the village forests from the axe of man.

V.B. Saxena<sup>12</sup> deals with "Gobar gas Plant - How and Why?"

He found that the Gobar gas plant can be constructed to provide methane gas in the rural areas which could provide power and light besides cleaning up the environment at the same time.

G.S. Kamat<sup>13</sup> is dealing with development activities in the rural areas in his article "Non-violent technology", he says that rural development activities in India have a peculiar problem in effecting a change. The populace here have deep rooted customs and traditions and not all of them something proud of as a cultural heritage. Most of them do come in the way of implementing the improved methods and technology. To bring about a change in them would require gentle and tactful handling and patient persuasion. In this connection he recommends bio-gas technology as the non-violent and effective technology.

C.R. Prasad<sup>14</sup> is concerned with the use of organic wastes in bio-gas plants he says that the changing requirements and situations force one to utilise organic wastes of agricultural and industrial origin in bio gas plants in place of cow dung which alone was used earlier. For this, efforts are to be made to design such bio gas plants in which all these materials could be digested.

There are studies made on socio-economic characteristics and installation of gobar gas plant by economists and sociologists. The study of time utilisation pattern after the use of gobar gas plants in

rural areas is also done by some scholars. There are some other studies concerned with difficulties during and after the installation of gobar gas plants and methods for producing more gas. Scholars like Johl, Moulik T.K. and Myra Rubin have studied the reasons for non-adopting gobar gas plants. These are some of the important studies referred for the present work.

The present study however is concerned with the impact of gobar gas on rural housewives. The study concentrates on a single village representing Indian rural society.

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