CHAPTER IV

4. Electrification on Problems Relating to its Regular Supply

4.1. Introduction

Agriculture sector of Erode district is mainly depending on natural factors to a great extent. The fluctuations in climate obviously affect the agricultural production. The fertility of land cannot be maintained for a long time when farmers take repeated cultivation on the same area of land. The price of agricultural production also fluctuates according to seasonal variations. Therefore, in Erode district, sample farmers in general have to face many difficulties relating to price and non-price factors. Farmers have been facing the problems of availability of finance, marketing, irrigation, fertility of soil, seasonal fluctuations in the level of prices, climate and so forth. The sample farmers are also facing difficulties relating to the electricity. These difficulties or problems are, related to delay in obtaining electric connection, repair of electric instruments, irregular electric supply, low voltage supply of electricity, load shedding etc. In recent times the major problems in rural economy of the Erode districts have been poverty, unemployment and burden of debt. Primary attention for creating employment opportunities for the rural people and electricity can play an important role in creating employment opportunities in rural areas. Increase in agriculture income is necessary in order to improve the status of farmers. Having irrigation facility itself may help them to implement modern farm techniques and can bring change in outlook of farmers to bring suitable changes in the agricultural sector.

4.2. Year Wise Use of Electricity by Farmers for Agricultural Sector

In Erode district, farmers have been using electricity for various agricultural activities in the different years. The use of electricity by various sample farmers for agricultural sector has been presented in the following Table 4.1.

Table 4.1: Use of Electricity by Sample Farmers for Agricultural Operations

S. No.	Year	No. of Sample Farmers	% of Total
1	1951-1960	1	00.83
2	1961-1970	3	02.50
3	1971-1980	46	38.33
4	1981-1990	54	45.00
5	1991-2000	16	13.33
Total		120	100.00

Out of 120 selected sample farmers, 54 sample farmers have started making use of electricity for farming operations during the period of 1981 to 1990. Maximum number of farmers has shown their inclination for the use of electricity. From the above Table 4.1 it can be seen that 1981 to 1990 is the period of turning point for use of electricity by farmers. Introduction of modern equipment's and sophisticated methods of agricultural production have helped in increasing use of electricity by the farmers. The change in the number of sample farmers using electricity has also been shown with the help of percentage of total over period of time i.e., 1951 to 2000. Percentage of total was the highest for the period of 1981 to 1990 and the increase in the number of farmers using electricity. Maximum number of farmers has made use of electricity after the period of 1971 to 1980; however, after this period the number of farmers using electricity has not increased significantly.

4.3. Consumption Pattern of Electricity

Now a days, the demand of electricity has increased for different purposes. The modern gadgets require electricity at a very high level. Therefore, people are giving more importance to the demand of electricity. The electricity has played an important role in different sectors. In India, consumption pattern of electricity is divided into following sectors:

1. Industrial sector
2. Agricultural sector
3. Domestic sector
4. Commercial sector
5. Railway traction
6. Other sector

The consumption pattern of electricity in India is presented in the following Table 4.2.

Table 4.2: Consumption Pattern of Electricity in India (Figures in KWh)

Sectors	**2012-2013**	**2013-2014**
Industrial	352291(44.87)	382670(45.52)
Agricultural	140960(17.95)	140960(16.77)
Domestic	171104(21.79)	185858(22.11)
Commercial	65381(08.33)	71019(08.45)
Rail Traction	14206(01.81)	15431(01.84)
Others	41252(05.25)	44809(05.33)
Total	785194(100)	840747(100)

Note: 1. Government of India (2013-2014), Central Electricity Authority Ministry of Power, New Delhi.

2. Figures in bracket shows percentage to total electricity consumption.

3. KWh means Kilowatt hour.

From the above Table 4.2 it can be seen that energy consumption in terms of actual figures has gone up in all sectors. In the year 2012-13 and 2013-14, consumption of electricity has gone up to 785194 and 840747 respectively. The share of electricity consumption in terms of percentage has gone down for the agricultural sector. However, in recent times the electricity consumption in industrial and domestic sectors of the economy has started picking up and this has reduced the proportion of electricity consumption of agricultural sector. In the recent times it has been observed that the consumption of electricity for domestic purpose, due to frequent use of modern machines has been increasing day by day.

The consumption pattern of electricity of Tamil Nadu is presented in the following Table 4.3.

Table 4.3: Consumption Pattern of Electricity IN Tamil Nadu (2013-2014) (Figures in KWh)

Items	**Electricity Consumption**
Industries (including Traction)	19238(32.71)
Agriculture	10091(17.16)
Domestic	18231(31.00)
Commercial	6851(11.65)
Public Lighting & Water works	1711(02.91)
Sales to other States	188(00.32)
Miscellaneous	2500(04.25)
Total	58810(100)

Note: 1. The Chief Engineer (Planning), Tamil Nadu Generation and Distribution Corporation Ltd, Chennai-2.

2. Figures in bracket shows percentage to total electricity consumption.

3. KWh means Kilowatt hour.

From the above Table 4.3 it can be seen that the consumption of electricity in Tamil Nadu is more for the industrial sector (including Traction) as compared to the other sectors of the economy. In the year 2013-2014, the percentage wise consumption of electricity was 32.71% for the industrial purposes. The consumption of electricity for domestic purpose or household purpose comes next, which is about 31.00% of the total consumption of electricity.

The consumption pattern of electricity of Erode District is presented in the following Table 4.4.

Table 4.4: Consumption Pattern of Electricity in Erode District (2013-2014) (Figures in KWh)

Items	Electricity Consumption
Industry	664.20(22.73)
Agriculture	386.55(13.23)
Domestic	1258.37(43.06)
Commercial	448.32(15.34)
Public Lighting & Water Works	98.67(03.38)
Miscellaneous	66.38(02.27)
Total	2922.49(100)

Note: 1. The Chief Engineer (Planning), Tamil Nadu Generation and Distribution Corporation Ltd, Chennai-2.

2. Figures in bracket shows percentage to total electricity consumption.

3. KWh means Kilowatt hour.

The consumption of electricity in Erode district for the year 2013-2014 is 2922.49. Out of the total electricity consumption, the highest consumption of electricity for the domestic purpose is found to be 1258.37(43.06), which are the highest amongst all the sectors of the economy. In the field of agriculture the consumption of electrification is too low. i.e., only 13.23%. If the electricity is properly utilized for agricultural purposes it can lead to increase in agricultural production, which in turn will help to increase the income of farmers and the agro-based industries, can also automatically be developed. In Erode district, there is a wide scope of using electricity in agricultural sector for the purpose of rural development. With this background about the electricity consumption and its importance in bringing suitable changes in agrarian economy, it would be interesting and useful to analyze the rural electrification on agricultural development in selected area of this study.

4.4. Use of Electricity by Sample Farmers for different Kinds of Activities in Agricultural Sector

The sample farmers make use of electricity for different kinds of agricultural activities such as irrigation, green house, cattle-shed, poultry house etc. The use of electricity for different purposes in the agricultural sector has contributed significantly for the overall development of the primary sector. Due to utilization of electricity for irrigation activities, area under irrigation has increased. Therefore, farmers have started cultivating crops twice or even thrice in a year. Regarding the poultry houses and poultry products, the use of electricity has increased for their development. The use of electricity for different kinds of agricultural activities has been presented in the following Table 4.5.

Table 4.5: Use of Electricity by Sample Farmers for different Kinds of Activities in Agricultural Sector

Items	No. of Farmers	% of Total
Irrigation	120	100
Green House	01	0.83
Poultry House	18	15.00
Cattle Shed	84	70.00
Rest House	13	10.83

Note: 1. Total sample farmers are 120.

The use of electricity by sample farmers for different kinds of agricultural activities has been presented in the above Table 4.5. All different kinds of agricultural activities are analyzed considering the total sample size. Out of 120 sample farmers, all farmers used electricity for the purpose of irrigation. Sample farmers have started making use of electricity for irrigation activities in farm. Regular supply of water provided for their crops by electric pumps. Electric pump sets are also helpful for lifting water from wells and other sources of irrigation. Therefore, it is helpful for increasing production and improving productivity.

Out of total selected sample farmers, 0.83% of them have used electricity for the purpose of green house. In recent times electricity has proved to be helpful in development of green house. Electricity has also helped in lighting the green house, supply of water for their crops and also for maintaining temperature of the green house. Out of the total farmers, 15.00% of them have started making use of electricity for poultry product or poultry house. Electricity can also be helpful for the poultry and poultry product. Out of total selected sample farmers, 70.00% of farmers make use of electricity for the purpose of cattle shed. Sample farmers also use of electricity for lighting purpose in the cattle shed. Out of the total selected farmers, 10.83% of farmers make use of electricity for the purpose of rest house. The large number of sample farmers is making use of electricity for irrigating their own area of land. The farmers are using electricity for electric pump sets, lifting water from wells, canals, ponds, tanks, lakes, rivers etc. this has contributed in increasing the total area under irrigation. It is helpful in increasing production and improving productivity. Therefore, it automatically improves the level of income and standard of living of farmers.

4.5. Benefits Arising from the use of Electricity

In this section, benefits arising from the use of electrification have been discussed. Due to electrification, cropping pattern has changed from subsistence to commercial one, area under

irrigation has increased, production of all commodities has increased, sample farmers income has increased and farmers have also started using equipment's like TV, refrigerators, iron etc. Therefore, electricity has been playing a lead role in the rural economy as well as overall development of agricultural sector. Some benefits derived from electricity in agriculture sector listed in the following Table 4.6.

Table 4.6: Benefits derived from the use of Electricity

Items	**No. of Farmers**	**% of Total**
Improvement in Water Supply	85	70.83
Use of Modern Inputs	79	65.83
Improvement in Land	96	80.00
Increase in Irrigated Area	83	69.17
Increase in Area Under Non-food Crops	102	85.00
Increase in Production	109	90.83
Increase in Income	105	87.50

Note: 1. Total sample farmers are 120.

The benefits derived from the use of electricity are presented in the above Table 4.6. All benefits are analyzed considering the total sample size. Out of 120 selected sample farmers 70.83% were of the opinion that due to electrification for agriculture purpose water supply has improved. Due to the improved facilities of water supply, area under irrigation has increased and it has helped to increase in the level of income, production and productivity. About 65.83% of farmers pointed out that the use of modern inputs has increased for agricultural sector after electrification. The use of modern inputs in agriculture has helped in increasing the quality of agricultural product and productivity also. Selected sample farmers are used modern agricultural inputs such as high yielding varieties of seeds, fertilizers, pesticides and machinery (tractor, thresher, cutter etc.) in their farm after electrification. Out of 120 sample farmers, 80.00% of them were of the opinion that because of the use of electricity there is an improvement in fertility of land. About 69.17% of farmers were of the opinion that because of the use of electricity area under irrigation has increased. Out of total sample farmers, 85.00% of farmers opined that supply of electricity has helped in increasing area under non-food crops. Therefore, farmers have changed their life style and are earning more money from their farms. About 90.83% of farmers were of the opinion that production of the all commodities has increased because of use of the electricity. According to 87.50% of farmers viewed that because of the use of electricity income has increased consequently their consumption expenditure have gone up.

4.6. Problems and Negative Aspects Arising from the Use of Electricity

The benefits arising out of use of electricity in agricultural activities have been explained in the preceding paragraph. In this section, the problems arising out of use of electricity by the sample farmers are analyzed. The sample farmers have already been facing some of the common problems relating to rural sector, such as inadequate irrigation facilities, fluctuation in climate, lack of knowledge about farm management, shortage of storage facilities, fertility of land, prices of agriculture product, finance, transportation, lack of market knowledge and many more.

Electrification has further aggravated some difficulties faced by sample farmers in Erode district, such as misuse of water, increase salinity, theft of electricity etc. Out of total 120 selected sample farmers, 13.33% of them were of the opinion that there is misuse of water due to electrification. About 21% of farmers were of the opinion that the use of electricity in the agriculture sector has increased salinity of land and have adversely affected level of production. Out of total sample farmers, 5.26% of them were of the opinion that the use of electricity has increased theft of electricity. The electric pump sets can run on well but the main requirement for that is adequate availability of water in well. If the water level decreases the use of electricity ultimately affects the agricultural production. Erode district lies in the dry region; as such availability of water in an adequate amount is a very important for the farmers.

Now-a-days, farmers have to face many problems related to the electricity such as the irregular and discrete electric supply, maintenance of electric equipments, frequent faults in the electric instruments, power thefts and thefts of the electric pump sets, low voltage supply of power, damage of the electric pump sets etc. Now, the load shedding is one of the problems faced by sample farmers in Erode district. The load shedding has brought inverse impact on production of farms. The problems arising from the use of electricity in Erode district are shown in the following Table 4.7.

Table 4.7: Problems Faced by the Farmers Relating to Electricity

Items	**No. of Farmers**	**% of Total**
Difficulties in Taking Connection	45	37.50
Irregular and Discrete Electric Supply	93	77.50
Difficulties in Maintaining of Electric equipment	37	30.83
Low Voltage Supply of electricity	89	74.17
Load Shedding	120	100.00

Note: 1. Total sample farmers are 120.

The problems indicated by sample farmers arising from electrification presented in the above Table 4.7. All problems are analyzed considering the total sample size. Out of 120 selected sample farmers, 37.50% of them pointed out that taking connection for the electric pump sets itself becomes the major problem. According to 77.50% of farmers irregular and discrete supply of electricity in the agriculture sector also creating obstacle in increasing the level of production. About 30.83% of farmers were of the opinion that there is a difficulty in maintaining electric equipments. Out of total sample farmers, 74.17% expressed their view that low voltage supply of electric power is also a major problem which many times spoil their agriculture equipments. Low voltage of power supply creates major problem in the irrigation, as it becomes difficult to run the electric pump sets and this ultimately affects the irrigation and crop production. All the farmers pointed out that load shedding is now the new problem creating hindrance in the development of agriculture sector. Large number of the farmers depend on the electricity for the purpose of irrigation.

4.7. Farmers Expectations from Government and TNEB

The expectations of sample farmers from government and TNEB for solving their problems are to reduce house charges for marginal and small farmers, there should be no charges in natural calamity, TNEB employees should improve their approach, regular electric supply should be made, to inform well in advance about the discrete supply of electricity etc. The expectations expressed by sample farmers from government and TNEB are listed in the following Table 4.8.

Table 4.8: Expectations Expressed by Farmers from Government and TNEB

Items	**No. of Farmers**	**% of Total**
Bringing reduction in house bill for marginal and small farmers	102	85.00
No charges in natural calamity	93	77.50
Good behaviour from the TNEB employees	97	80.83
To provide regular electric supply	120	100.00
To provide information before discrete supply of electricity	52	43.33

Note: 1. Total sample farmers are 120.

2. TNEB means Tamil Nadu Electricity Board.

The farmers expectation presented in the above Table 4.8. All expectations are analyzed considering the total sample size. Out of total sample farmers, 85.00% of them were of the opinion that there is a need to reduce electric house bill for the marginal and small farmers because the income of these farmers is very less as compared to other farmers. About 77.50%

of sample farmers were of the opinion that no charges should be imposed in natural calamity. Out of total sample farmers, 80.83% of farmers expect good behaviour from TNEB employees. All sample farmers demanded the provision of regular electric supply. Out of 120 selected sample farmers, 43.33% of them suggested that TNEB should provide information in advance regarding electric supply.

4.8. Conclusion

In this chapter, electrification and its problems relating to regular supply has been explained. The farmers are facing many difficulties and problems related to regular supply of electricity. These are delay in connection, repair of electric instruments, low voltage of electric supply, load shedding etc. The Government and TNEB have not able to provide regular supply of electricity to the energized agricultural pump sets. Therefore, sample farmers have faced problem that is load shedding. Due to load shedding farmers are unable to provide water to their crops regularly and the time lag between two turns of watering has caused adverse effect on agricultural production. Thus sample farmers are the worst sufferers of load shedding and are losing crops productivity and income also.