PROBLEMS RELATING TO REGULAR SUPPLY OF ELECTRICITY AND ITS IMPACT ON AGRICULTURAL DEVELOPMENT

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Introduction:

Electricity plays a vital role in the development of agriculture sector as well as rural economy. It is one of the basic infrastructure facilities necessary for changing rural life. Agriculture sector of Western Maharashtra and Vidarbha region of Maharashtra state 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 variation. Therefore, in selected districts, 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, large amount of electric bills, 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 selected 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. In this chapter, rural electrification in India, an evaluation of energy balance in India and trends in consumption of energy in India has been explained. In this paper an attempt has been made to analysis the regular supply of electricity and its impact on agriculture sector with reference to Western Maharashtra and Vidarbha region of Maharashtra State. Use of electricity in farming activities can be considered as an indication of the modernization in agriculture sector of the economy.

Significance of the Study:

This study has focus on the comparative analysis of the various factors to explain the regular supply of electricity and its impact on agricultural economy of the Western Maharashtra and Vidarbha

region of Maharashtra State. Inspit of the all natural resources the farmers of Vidarbha region are lagging behind than the farmers of Western Maharashtra. Lack of electrification in the field of agriculture has been hypothetically granted as the prime reason of this backwardness. So the study has helpful in finding the real problem and provide the right solution to tackle them.

Objectives of the Study:

The main objectives of this study are as follows:

(1) To find out the impact of electrification on agricultural development.

(2) To study the impact of regular supply of electricity on rural development.

Research Design and Sampling:

In Maharashtra State, Western Maharashtra and Vidarbha have been selected for the study. For the purpose of this study, the survey method has been used. The Western Maharashtra region comprises of 6 districts and Vidarbha region consists of 11 Districts. For the purpose of this study the Western Maharashtra region has been divided into two groups. The first group consists of 3 Districts i.e. Kolhapur, Satara and Sangli and second group consists of 3 Districts i.e. Pune, Amhadnagar and Solapur. Out of which 2 Districts have been selected. Similarly regarding to the Vidarbha region, it has been divided into two groups. The first group comprises of 6 Districts i.e. Nagpur, Wardha, Bhandara, Gondia, Chandrapur and Gadchiroli and second group consists of 5 Districts i.e. Amaravati, Yavatmal, Vasim, Akola and Buldhana. Out of which 2 Districts have been selected. The study covers selected Districts from the Western Maharashtra viz; Kolhapur and Solapur and from Vidarbha viz; Nagpur and Yavatmal.

For the purpose of selecting Tahasils from sample Districts Random Sampling Method has been used. Three (03) Tahasils have been selected from each selected District of Western Maharashtra and Vidarbha. The study covers selected Tahasils from the Kolhapur District viz; Karveer, Ajra and Hatkanagale and from Solapur District viz; Akkalkot, Pandharpur and Barshi. The study also covers from the Nagpur District viz; Narkhed, Hingna & Kalmeshwar and from Yavatmal District; Arni, Digras and Pusad. For the purpose of selecting villages, Stratified Random Sampling Method has been used. From the selected Tahasils five (5) Villages from each Tahasils have been taken as sample i.e. 60 Villages.

In order to study the impact of regular supply of electricity on agricultural development, 10% farmers out of total farmers available in the respective villages have been selected. Only those farmers have been selected who have electric pump sets. The data collected from the farmers is based on the pre-structured questionnaire and information collected from the sample farmers.

Analysis of Data:

The analysis presented in this study is mainly based on primary as well as secondary sources of data. The statistical data and relevant information is collected from the farmers with the help of pre-structured questionnaire. The data collected from all groups of sample farmers for the year 2001 and 2015. The methodology used for this study has been categorized as Multistage Stratified Random Sampling Technique and for selecting villages Cluster Sampling Technique used.

Secondary data and additional information have been collected from the Agricultural Census Report, District Census Handbook, Districts Gazetteers, and Government Reports Relating to Rural Electrification, Government Publications Library, Patwarie's / Talathi's Handbook and Internet etc.

Keeping in view the objectives of the study, some appropriate statistical techniques such as percentages, average, etc. have been used in this study. To analyzed the impact of regular supply of electricity on agricultural development Component Principal Method has been used for this study.

Regular supply of electricity and its impact on agricultural development:

In this part, the problems arising out of use of electricity and regular supply 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 selected districts, such as misuse of water, increase salinity, theft of electricity etc.

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 selected districts. The load shedding has brought inverse impact on production of farms. The problems arising from the use of electricity and its regular supply in sample districts are shown in the following table.

Problems Faced by the Farmers Relating to Electricity

Sr. No.	District/ Region	No. of Farmers	Difficulties in getting electric connection	Irregular and discrete electric supply	Difficulties in maintaining of electric equipments	Other Problems
1	**Kolhapur**	170	114 (67.06)	149 (87.65)	144 (84.71)	140 (82.35)

2	**Solapur**	170	145 (85.29)	135 (79.41)	125 (73.53)	95 (55.88)
3	**Nagpur**	170	128 (75.29)	117 (68.82)	103 (60.59)	67 (39.41)
4	**Yavatmal**	170	133 (78.24)	122 (71.76)	137 (80.59)	97 (57.06)
	Total	680 (100)	520 (76.47)	523 (76.91)	509 (74.85)	399 (58.68)

Note: Figure into bracket shows percentage of total and figure outside bracket shows total number of farmers.

The problems indicated by sample farmers arising from regular supply of electricity presented in the above table. All problems are analyzed considering the total sample size. Out of 680 selected sample farmers, 76.47% of them pointed out that taking connection for the electric pump sets it becomes the major problem. According to 76.91% of farmers irregular and discrete supply of electricity in the agriculture sector also creating obstacle in increasing the level of production. About 74.85% of farmers were of the opinion that there is a difficulty in maintaining electric equipments. Out of total sample farmers, 58.68% 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 numbers of the farmers depend on the electricity for the purpose of irrigation. The government and MSEB have not able to provide regular electric supply to the energized agricultural pump sets.

As has been already mentioned, electricity has helped in bringing changes in cropping pattern. The crops now a days, required regular supply of electricity however, currently MSEB is facing difficulty in providing regular supply. This has badly affected rural sector of the economy and especially agriculture. Commercial or cash crops require adequate water and irrigation facilities. Electrification has created new scenario relating to cropping pattern in the region under study. Due to electrification cropping pattern has shifted from low value crops to high value crops. Alternative arrangement needs to be developed in situation of non-availability of regular electric supply. Now a days, supply of electricity is one of the instruments for the irrigation. The demand for electricity increases with the increase in irrigated area. So, electricity has played a very significant role in providing irrigation as well as in increasing the production of agriculture for the farmers in selected districts. If the supply of electricity decreases the irrigation facilities and agricultural production

also decreases this may adversely affect the farmers' income. An increase in the production of agriculture directly depends on the increase in the supply of electricity. The problem may occur when the supply of electricity is stopped or discontinued, means of irrigation cannot be used as all irrigation sources depend on the electric pump sets. The use of electricity for the purpose of agricultural activities is very important, since there is no other source for irrigation at present, which can replace the use of electricity with the cheaper cost than that of electricity. The use of animals for lifting water from wells; diesel engines etc. are traditional instruments for irrigation, which can replace the electric pump sets.

In the above section the problems faced by sample farmers due to the use of electricity have been explained. On the other hand the source of electrification i.e. MSEB also has to face severe problems because of increase in electrification. Few of the problems are maintained here.

1. **The Problem of Overdue:** The farmers having overdue payment to MSEB have initially to face the action of their meters being disconnected temporary.
2. **Less Manpower:** MSEB has to face multiple problems due to lack of sufficient manpower. Generally one wireman has a workload to look after four to five villages. As such the complaint cannot be attended immediately.
3. **Shortage of Electricity:** The demand of electricity is increasing day by day. The government is finding it difficult to maintain the supply of electricity as per the required demand. Therefore, consumers are facing the acute problem of load shedding. It is true that the load shedding is creating innumerable problems for agricultural sector as well as non-agricultural sector.
4. **Theft and Wastage of Electricity (T&D Loss):** Transmission and Distribution loss in Nagpur district for the months between January and June 2006 was 20% of the power supplied which is less than the loss suffered in the other zones in Maharashtra state. The rate of loss is highest in Latur zone i.e. 50% of total power supplied followed by Aurangabad zone, Amaravati zone and Nasik zone i.e. 37%, 36% and 36% respectively. Due to this the sufficient supply of electricity is not possible.
5. **Lack of Capital Fund for Maintaining Electric Equipments:** This is one of the major problems faced by MSEB. This results in the delay in the repair of electric equipments. The result of this the regular power cannot to be supplied to consumers and farmers for their electric pump sets.

Conclusion:

In this paper, regular supply of electricity and its impact on agricultural development has been explained. The farmers are facing many difficulties and problems related to regular supply of electricity. These are delay in connection, large amount of electric bills, repair of electric

instruments, low voltage of electric supply, load shedding etc. The Government and MSEB 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.

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