

**REPORT ON EVALUATION OF RURAL ELECTRIFICATION
PROGRAMME VOLUME-II - 1983**

1. The Study

The Volume I of the report on the evaluation of the Rural Electrification Programme (REP), brought out in 1982, dealt with the organisation, growth and coverage of the programme. The volume-II brought out in 1983, covered among other things, views and problems faced by the beneficiaries as well as non-beneficiaries of the programme and also threw some light on the impact of the Programme on agriculture, rural industry and rural employment.

2. Objectives

Apart from the objectives of the study spelt out in the Volume I (PEO study No. 122) the volume II maintained two additional objectives. These were:

- i) To investigate in detail the factors influencing the spread and use of power in the rural areas; and
- ii) To examine the problems of realisation of arrears.

3. Sample Size/Criteria for Selection of Sample

The sampling design adopted for the study involved multi-stage sampling with states as strata and districts as first stage units. It generated a sample of 2266 beneficiaries of various categories and 2129 non-beneficiaries from 397 electrified villages located in 48 districts of the 19 states covered by the study. In addition, 79 non the electrified villages were selected to serve as control.

The methodology is given in details in the summary of volume-I presented under PEO Study No.122.

4. Reference Period

The data analysed in the Report mostly related to th period 1976-79.

5. Main Findings

1. Some of the States relaxed the criterion of economic viability of the Rural Electrification Scheme in the backward areas and areas predominantly populated by Scheduled Castes and Scheduled Tribes. The Rural Electrification Corporation (REC) was also operating a Special programme for the electrification of Harijan Bastis all over the country. However, there prevailed a lot of deficiencies in the Programme. Long and cumbersome procedure delayed electricity connections. Bill Collection Centres in a number of States were at a distance beyond 5 kms from the selected villages. Every sixth village reported about two interruptions per day. Again, for a large number of villages the repair facilities were available only beyond 5 kms from the villages. Ground Water survey was undertaken only in 17.9 per cent of the villages selected for the study.

2. Beneficiary farmers faced problems in submitting applications for getting electric connections, procuring pumpsets, other electric materials and electric fittings, etc. Shortage of pumpsets and other electric equipments was reported mainly from Karnataka, Madhya Pradesh and Maharashtra. In Gujarat, Maharashtra, Punjab and Uttar Pradesh, the services of licensed contractors were not available at reasonable rates for undertaking wiring and fittings. 29% of the rural industrial units experienced a time lag of more than 3 months between the date of application and sanction of connection.

3. In deciding about the horse-power of the motor, about 33% of the pumpset owners banked upon their own experience and another 32.2% consulted progressive cultivators while only 14.5% consulted SEB officials.

4. 18.9% of the beneficiaries of pumpsets switched over from diesel to electricity. Apart from the scarcity of diesel, the other reasons which prompted farmers and rural industries to shift to electric power was that it was more convenient and economical in use. Small or fragmented holdings prevented non-owner user from the installation of electric pumpset.

5. While 40% of the beneficiaries reporting irrigation in kharif and 50.9% in rabi complained that untimely and inadequate supply of power had adversely affected their yield. About 87% beneficiaries reported interruptions in power supply. About 93.1% of the beneficiary farmers reported fluctuations in voltage causing damages to motors of about 38% of the pumpsets.

6. Owners of rural industrial units opined that interruptions in power supply had depressed industrial production and labour employment. Fluctuations in voltage damaged the motors of 21.9% of the units. These difficulties led to the under-utilisation of the capacity of these units.

7. Two systems of power tariff were prevalent in the villages. 90% or more beneficiaries in most of the states preferred meter rate system of billing. However, flat rate system was preferred by the beneficiaries in Punjab (92.1%), Maharashtra (45%), Uttar Pradesh (45.2%) and Rajasthan (30.7%). About 96.2% of the owners of the selected rural industries preferred meter system. Almost 50% of the owners of the selected units believed that change in tariff rates would have parallel effect on the pricing pattern of products.

8. After electrification, about 10% increase in mandays employed in various agricultural operations was observed at the aggregate level. However, in the case of rural industrial units, the wholetime employment per unit showed a slight decline while the part-time employment per unit remained constant after electrification.

9. After energisation, there was a change in the cropping pattern. The area under cereal crops increased by 18.6% after the energisation of pumpsets. The cultivators switched over to comparatively remunerative crops like sugarcane, vegetable, plantations and fruits. The area covered under HYV seeds increased substantially after electrification; so did the yield rates of principal crops on irrigated lands. Besides, the percentage of area under chemical fertilizers, N,P,K and their various combinations increased in all the states after energisation. Moreover, the net area irrigated by the selected beneficiaries in 1977-78 was noticed to have increased by 145.7% after electrification.

10. 31% of the selected beneficiary farmers availed loans for the installation of electric pumpsets. Over 58% of these loans were taken from co-operative institutions.

11. A few State Governments banned the sale of water from electrically operated pumpsets. Cultivators who had opted for flat rate system of payment were sometimes prohibited to sell water. There were complaints of higher rates for water being charged by fellow cultivators.

12. Of the rural industrial units surveyed, 87% had been started after the electrification of the villages in which these units were located. About 9% of the investment per unit was consumed by installation charges, electric materials, fitting charges, etc. Indifferent attitude of the SEBs/Department officials, demand for illegal gratification, cumbersome official procedure of getting connections, etc. perturbed these units.

13. Though people were interested in streetlights, they were reluctant to pay their share of energy consumption charges. Expenditure on streetlighting per bulb per year was above Rs.24 in 85.5% of the villages studied. The financial inabilities of the local bodies to meet the recurring expenditure of electricity consumption was the main problem. Other problems related to breaking, stealing and frequent fusing of bulbs.

14. Streetlighting was available in 150 sample villages (37.8%) of 14 out of 19 states. Of this, 118 villages had streets predominantly inhabited by scheduled castes/scheduled tribes. In 76.8% of these villages, streetlights were maintained by panchayats. Of 247 villages without streetlighting, 212 had not made any proposal for streetlights.

15. Streetlighting in villages resulted in a large range of benefits. About 90% of the villages acknowledged better security, reduced chances of crime and improvement in the quality of life.

16. The owners of 219 selected commercial units had switched over to electricity for reasons of convenience, economy, better display of products, longer working hours, non-availability of kerosene oil, etc. After electrification, the percentage increase in commercial establishments and in the number of persons employed therein were 55.3 and 58.4 respectively. However, the average employment per establishment remained constant.

17. The initial expenditure per domestic connection at the aggregate level worked out to Rs. 341/- per beneficiary. This varied considerably across states. Higher cost and scarcity of materials used for internal wiring and service connections were reported from Meghalaya and Assam.

18. Electrification provided a large spectrum of indirect benefits to the individuals and to the community. These included facilitation of marketing/shopping late in

the evening and of knitting, working, reading etc. at night; reduction in the drudgery of woman by relieving them of the unpleasant routine like cleaning kerosene lanterns, working under inadequate lighting conditions etc. Moreover, electrification broadened the base of economic activities by creating more employment avenues.

19. The education and income levels of the non-beneficiaries of electricity were much lower than those of the beneficiaries. Cultivation was the principal occupation of 57.5% of the non-beneficiaries as against 70.2% of the beneficiaries. Similarly, labour was the main occupation of 21.1% of the non-beneficiaries as against 2.2% of the beneficiaries.

20. 63.4% of the selected non-beneficiaries owning diesel pumpsets liked to switch over to electric power. Lack of finance, availability of other sources of irrigation, fragmented holdings and frequent breakdown in power supply held some of them back from switching over to electric power. Though 61.8% of the selected non-beneficiaries having dug wells for irrigation liked to install pumpsets, preferably electric ones, on their wells. They were hurdled by lack of finance, distance of supply point, fragmented holdings and wells not suitable for etc. 58% of the non-beneficiaries having irrigated land, but not owning a well/diesel pumpset as well as 45.6% of the non-beneficiaries of electricity for domestic purposes also preferred to go in for electric power, but were hurdled in many ways such as lack of finance, unsuitable premises and high cost of adoption.

6. Major Suggestions

1. The "other development programmes and schemes" should converge in the electrified villages for exploiting the potentials for development created by the electrification programme.

2. More efforts are required on the part of the State Governments to electrify villages where scheduled caste and scheduled tribe population predominate. More incentives may be given for the weaker sections to opt for electrification.

3. Sufficient number of bill collection centres should be located at short distances so that the rural consumers do not have to travel long distances to pay electricity bills.

4. Steps should be taken to reduce the number of interruptions and to ensure timely and adequate supply of power to the rural industries for their speedy growth.

5. There is a need for diversification of industries and for providing necessary infrastructural facilities to entrepreneurs to develop rural industries in an organised manner.

6. The State Governments should augment the resources of the local bodies to meet the expenditure on streetlighting.

7. The SEBs should undertake the work of providing internal wiring to all prospective consumers and recover the costs in easy instalments. Conduit pipes may also be provided at subsidised rates to the domestic consumers who live in Kutcha houses to avoid any risk of fire. This will encourage domestic consumers to come forward.