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Vol XXV
No. 1

ISSN 0019-5014

JANUARY-
MARCH
1970

INDIAN JOURNAL OF AGRICULTURAL ECONOMICS



INDIAN SOCIETY OF
AGRICULTURAL ECONOMICS,
BOMBAY

SUBJECT II

ECONOMICS OF RURAL ELECTRIFICATION

RAPPORTEUR : NILAKANTHA RATH*

The Group had a fairly full discussion of the problems raised in and arising out of the papers presented on rural electrification in India.

To start with it was noted that rural electrification which started only during the last decade and half of planned economic development in the country had made uneven progress in various States. The high capital requirement for not only generation of electric power but also its transmission to distant points of consumption on the one hand, and the varying uses of electric power in the rural areas on the other, have led policy makers in recent years to lay down priorities in regard to the uses for which power is to be supplied. Consequently, preference is now given to energization of water-lifting equipment in villages for irrigation, and non-agricultural uses have been relegated to the background. In fact, it was pointed out that unlike in earlier years, now a village is considered, for statistical purposes, to have been electrified only if it has a power connection for lifting water for irrigation. The question of this priority was discussed at some length. Some of the papers had reported that from the point of view of the State Electricity Boards, the change in emphasis was most desirable, since the return on investment was much higher in case of agricultural connections than non-agricultural ones. It was pointed out that the location of electrical connections for agricultural purposes being largely scattered over the village area, the cost of electrification for non-agricultural uses cannot always benefit from such installations. But at the same time it was suggested that where the incremental cost for non-agricultural uses (whether for domestic use or motive power) is lower than the returns from such uses, it would be undesirable to refuse power for such purposes. It was argued that the ultimate objective is the benefit of the nation; and fortunately the priority as laid down today served the objective as well as it did the interest of the Electricity Boards. The cluster approach to rural electrification, as it operates today, also mostly emphasizes agricultural use, though there is greater possibility that non-agricultural uses will be promoted by this method through a lowering of the capital costs. It was also noted that the emphasis on agricultural uses will not necessarily mean any discrimination against the smaller villages, as would more likely be the situation if non-agricultural use were an equal claimant in seeking priorities. And whatever the shortcoming of the revised policy in this regard, it should be possible to overcome them through the cluster approach, in which big as well as small villages in a cluster are considered for extension of electric power.

While recognizing generally the need for priority, in view of the demand for power and the relative inadequacy of capital resources, attention was given by the Group to the possibility of reducing the capital cost of transmission of power. A number of points were made in this connection. In the first place, it was stated

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that the capital cost often goes up because larger capacities are sought to be installed than are necessary. A proper assessment of the requirements made prior to extension of power can help bring down the capital costs. This is easily done when lifts operated by diesel engines are sought to be converted into electrically operated pumps. In other cases it is best for the consumer as well as the Board to properly assess the needs in advance. Secondly, it was pointed out that while the cost of the very high tension transmission lines is treated as a part of the cost of generating power (on the basis of which the basic tariff is charged), part of the 11 KV transmission line cost is usually included in the capital cost for extending power supply to villages. Instead, it was suggested, this may be treated the same way as the high tension lines. While this may increase the tariff somewhat, it might economise in the cost of capital for rural electrification. Indeed, it was pointed out that there are considerable other possibilities of improving the accounting procedure in the Electricity Boards, which can bring down capital costs. The inventory policy (or lack of it) has in some instances contributed its share to the high capital costs that the Boards are faced with. Not merely can accounting practices be improved, even technical changes that can bring down capital costs could not be entirely ruled out. While the Group naturally could not take a firm view in this matter, it was noted that devices like wooden transmission poles in place of metallic ones have been accepted. And such changes along with other accounting and technical devices have in certain instances brought down the capital costs by more than one-third, particularly in those areas where the cluster approach has been followed. The large incidence of theft of material as well as power was another factor that led to higher capital costs or low returns. In this connection, it was suggested by a number of speakers that rural electric co-operatives might help bring down the capital cost not only by checking thefts but also by reducing the capital costs of transmission. The rural electric co-operatives which are just being started in some parts of the country are going to buy electricity in bulk from the Electricity Boards and then make their own arrangement for distribution. It was thought that this might not only economise in capital costs but also in current operating charges and in the process reduce the cost of power to the farmer. This might also help the co-operatives to extend power to what might otherwise be considered an uneconomic proposition. But in the absence of any concrete experience in this matter, the Group merely noted the development hopefully.

An important element in the capital cost of extension of electric power to rural areas considered in this connection was the rate of interest charged for the capital provided to the Boards by the Government, and the various private commercial as well as co-operative financing agencies. The prevailing rate of interest for the Board is at least 8 per cent in most cases. The co-operative financing agencies have of late been financing the extension of lines by lending money to the cultivators, and this is made available to the Boards at a somewhat reduced rate, the difference between the rate paid by the Board and that charged by the co-operatives being borne by the Government. It was felt by the Group that no subsidizing of the service charge on loans for this purpose was really necessary. In fact, it was argued that in view of the general shortage of capital and its high opportunity cost in the market, it would be desirable not to charge any thing other than the going rate of interest, or at least to plan for rural electrification keeping this rate of interest as a shadow price in view.

The case for subsidy or low interest rate would have appeared stronger had there been a need to lower the price of electricity to consumers at the farm level. But the discussion on this point brought out the fact that electricity was today by far the cheapest energy for lifting water and if farmers can afford to lift water with the help of diesel engine operated pump, which was a more expensive method, there was no need for subsidizing electric power consumption. The new high-yielding varieties of crops had made irrigation a much more paying proposition and it was strongly suggested that such class of farmers should not be subsidized for using electric power. Indeed, there was a suggestion for discriminatory pricing of electricity on a regional and even farm basis. On the other hand, it was pointed out that in States like the Punjab and Haryana, the Boards charged a fixed price irrespective of the amount of power consumed in order to be spared of the problem of widespread theft of electric power. This device amounted to a discrimination against the small consumers. There was general agreement that subsidizing the consumption of electric power was not necessary in the prevailing circumstances, except where a case could be made out that a lower rate might tempt and persuade farmers in certain areas to use power for irrigation. Like in case of protection for infant industries, this subsidy should be withdrawn as soon as the farmer is made familiar with the usefulness of power for irrigation.

In this connection the case of those regions where both lift irrigation and use of power for the purpose are low, was specially considered. It was pointed out that here the problem was basically one of both finding out adequate sources of water supply, and, through agricultural extensions, creating adequate demand for water. Cheap subsidized electric power is not likely to be of much help in this.

In this connection the use of benefit-cost analysis of rural electrification attempted by some authors was considered. It was pointed out that while the benefit-cost analysis is a useful method for choosing between alternative projects, they cannot in every case be a justification for neglecting the financial feasibility of a project.

Most of the papers had tried to show that electrically operated pumps were cheaper than diesel pumps, and had greater capacity for irrigation than the country lifts, which may be useful for only very limited and light irrigation of small areas. But at the same time, it was pointed out that the greater mobility of the diesel engines and the greater fragmentation of holdings sometimes made diesel pumps more convenient than electric ones.

Special attention was given to the problem of small farmers in the context of rural electrification. It was pointed out that the small farmers can usefully invest in pump sets for irrigation if they can also share the water with others through sale or joint production arrangements. The prohibition of the sale of water lifted with the help of subsidized power was considered rather unfortunate in this connection. It was also pointed out that in some areas the small farmers were buying water from large farmers and that was about the best arrangement in the situation. A contrary point however was made by referring to the pressures in some areas by the large farmers on the small farmers to sell their lands to them if the latter wanted water from the former. A suggestion was made that the small farmers who wished to instal pump sets for their own use, could economise in costs by using motors of

low horsepower. It was thought that the small farmers should be helped jointly to have irrigation wells and lifts, and State tube-wells should as far as possible be so located that the small farmers be the greatest beneficiaries. But all said and done, it was felt that the small farmers who cannot be made viable through the new varieties, fertilizer and water were sizable in number and a policy of cheap electrical energy for irrigation was unlikely to be of much use to them.

SUBJECT III

ECONOMIC PROBLEMS OF PLANTATIONS

RAPPORTEUR : GOUTAM K. SARKAR

The Group decided to take up the discussion of the topics suggested in the Rapporteur's Report in the order mentioned therein. Accordingly, the first topic considered was the scope of rationalization in the tea industry with particular reference to the mechanization of plucking operations. The need for rationalization in the context of increased efficiency (defined as output per unit of input) was clearly appreciated. But as regards the feasibility of widespread mechanization, opinions were divided. While it was acknowledged that replacement of labour by machinery would generate surpluses, that could be re-invested to the advantage of the industry in the long run, it was agreed that labour displacement would create highly complicated problems in the short run. This had largely prevented the introduction of labour-saving machinery in the industry in the post-Independence era, as evident from the recent statistics relating to the use of machinery in the industry. It was also noted that alternative employment opportunities for the displaced labour force in tea producing regions were highly limited as a whole. So the Group decided to recommend some measures other than mechanization to enhance the productive efficiency of tea estates in the country.

The first and foremost measure advocated in this connection was replantation of estates having old and uneconomic bushes, by high-yielding varieties. Especially, bushes over 50 years old needed immediate replantation. The major obstacle in this sphere seemed to be that of finance which had restricted the pace of replanting operations in recent years to much less than the recommended rate of 2.5 per cent per year. Owing to the non-availability of relevant information pertaining to the exact financial requirements of replantation per acre, it was not possible to gauge the total financial commitments involved but it was recommended that capital costs of a replantation programme should be borne jointly by the industry and the Government and institutional agencies like the Agricultural Refinance Corporation, the State Financial Corporation and the nationalised commercial banks. One member suggested that the industry should bear about 30 per cent of the expenses involved.

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