

STUDY OF THE PROBLEMS OF MINOR IRRIGATION, 1961

1. The Study

The minor irrigation programme was taken up by the PEO for an evaluation study in 1960-61 at the instance of the Planning Commission who wanted that the problems of minor irrigation with special reference to the hindrances and difficulties in the way of its extension should be studied. Problems of minor irrigation engaged the attention of a number of Committees, study teams and working groups. After the launching of 'Grow More Food Campaign' in 1942-43, special funds and assistance began to be extended by the Government for the construction of Minor Irrigation works. The position changed significantly after the introduction of First Five Year Plan and more so in the course of Second Plan. With the completion of two five year plans, it was considered appropriate to undertake general review and evaluation of minor irrigation programme in the country. The study was undertaken in **all the major states** except Jammu and Kashmir.

2.Objectives

- i) To assess the nature, use and growth of minor irrigation works and facilities in the rural areas during the second plan period, and the impact of the minor irrigation programme on the cropping pattern;
- ii) To analyse the problems of utilisation and execution of the existing works and facilities;
- iii) To examine the state of repairs and maintenance of the older works, and the problems and difficulties in this field; and
- iv) To discuss the problems of organisation, administration and coordination of the minor irrigation programme with a view to finding out avenues for improvement.

3. **Sample Size/Criteria for Selection of Sample**

For the purpose of the study 14 States were selected from each of which one or more districts were selected according to the number of sources of minor irrigation deemed important in the area. Two blocks were selected randomly from each district, three villages similarly from each block and 10 cultivator households from each village on a random basis and five to six knowledgeable persons purposively. Field data had thus been collected from 1,255 cultivator households and 702 knowledgeable persons in 126 villages in 42 blocks of 21 selected districts in 14 States.

Selection at stage below the district was done according to the method of stratified random sampling. However, a purposive sample of knowledgeable persons was taken from the sample villages.

4. **Reference Period**

While 1959-60 had been taken as the major reference period for the field enquiry, attempts were made, as far as possible to collect relevant data covering the period since 1955-56.

5. **Main Findings**

1. The cost of extension of minor irrigation had increased over the years. The first plan outlay worked out to an average cost of Rs 76 per acre as compared to Rs.134 in the initial period and Rs.164 in the revised second plan provision.

2. The proportion of minor irrigation works in use to the total in the sample was nearly 88% in 1960-61, the lowest proportion in use (83%) was found in the case of Kutcha wells, and the highest (100%) in the case of tube-wells and pump sets. For pucca wells and tanks, the proportion in use were 92 and 95 per cent respectively.

3. Wells were, except for a negligible proportion, privately owned works, the ownership being either joint or single. Tanks, however, were under private, institutional and Government ownership. The interest in the use and maintenance of minor works by the user decreased with the social distance separating him from the owner.

4. The number of kutcha and pucca wells came to about 1.4 per 10,0 acres of net cultivated area in the sample villages. Tanks and other sources were

numerically smaller. In the sample areas, a pucca well, on an average could cover 6.1 acres, a kutchra well 1.4 acres and a tank 31.3 acres of irrigable area.

5. Between 1955-56 and 1960-61, **the number of** tanks in the sample areas had increased by 24 per cent, pucca wells by about 28%, tube wells by about 29 per cent. Pump sets, however recorded a growth of nearly three times.

6. Taking the sample area as a whole, about 29 per cent of the net cultivated area could be covered by the minor irrigation works and forty per cent by all works(major and minor) existing in the villages, as on the date of enquiry. Among the states, the percentage of the net cultivated area covered by minor works varied from 85 per cent in Punjab to 6% in Kerala.

7. The study revealed an increase in the cultivated area as well as in the areas newly brought under cultivation in the sample villages. The former rose by 8 per cent during the period 1955-56 to 1959-60 and the later from 0.02 per cent of the cultivated area to 0.3 per cent. The area reclaimed also rose during this period.

8. Intensity of cropping-was found to-be higher in the irrigated tracts than in the unirrigated ones in the sample. The extent of multiple cropping had gone up by nearly five points between 1955-56-and 1959-60 in the irrigated areas, from 31.0 per cent to 36.2 per cent the unirrigated areas showed no change. over this period, the share of paddy in the total gross cropped area recorded an increase from 19.3 per cent to 21.6 per cent.

9. The availability of water from minor irrigation sources was not considered sufficient even for lands enjoying irrigation facilities from them reported by a fairly high proportion of the cultivators.

10. Inadequate supply of irrigation water had particularly affected the irrigation of paddy and wheat crops. The respondent cultivators reporting their inability to irrigate paddy crop on account of the inadequacy of water were largely from the sample areas in Orrissa, Bihar, Andhra, Madras and West-Bengal.

11. Time lag in the construction of field channels was not reported to be an important problem in any of the sample areas, except Rajasthan. More than two-thirds of the respondents considered the existing adequate and satisfactory. The main

difficulties in the way of extension of field **channels appeared to be** lack of cooperation among the cultivators and-inadequacy of their finances.

12. In Gujarat and Andhra, canal irrigation was considerably cheaper than well irrigation not only for **the wet crops** but also for the lightly irrigated crops. The cost of well irrigation in these areas was four to six times that of canal irrigation. In U.P., the cost of irrigation from state tube-wells was higher **than that from canals for all** the crops.

13. The policy of some state governments to suspend the minor irrigation extension programme within the command areas of the new major projects had resulted in the neglect of the existing works even though the cultivators there had a marked desire for irrigation from them.

14. Instances of inadequacy of financial provision for maintenance were reported from the field.

15. The problem of silting of wells was quite serious in some area of Madhya Pradesh.

16. Loan facilities made available to the cultivators were relatively more for construction purposes than for maintenance.

17. About 39 per cent of the respondents in the sample had repairing facilities for pumping and other equipment within the village, 22 per cent had them at a distance of 1-5 miles, while the remaining 39 per cent had to travel more than five miles for getting their equipment repaired.

18. Difficulties and delays in the acquisition of land reported to have held up the progress of the minor irrigation programme in a number of states.

19. In a good number of sample tube-wells, the volume of water pumped out per hour per tube well had been found to be much lower than the expected figure of 33,000 gallons.

20. Average rates paid by the cultivators for tube-well irrigation was much higher than canal water rates, six times for paddy and three times for fodder crops in the same area in Saharanpur, Uttar Pradesh. While an adequate system of maintaining proper figures about areas irrigated from tube-wells, sometimes different departments reported differently for the same

item. Further no distinction was made between areas newly brought under irrigation by tubewells and those that were previously irrigated but precariously by other sources and were subsequently covered by tube-wells.

6. Major Suggestions

1. A systematic survey of the possibilities of undertaking minor irrigation schemes, and formulate a programme of execution in an order of priority, needed to be carried out. The Planning Commission made this recommendation in the report on the First Five Year Plan and repeated in the report on the Second Plan.

2. Water rates from sources like tanks were, in some states, not compulsory on the cultivators in the ayacut. Enforcement of water rates in such areas or at least a part of it, as a compulsory levy on the cultivators would help the state exchequer on one hand and utilisation of irrigation potential by the farmers, on the other.

3. Cultivation of the foreshore and bed of tanks were the serious problems affecting the life-time of the **tanks, particularly** in the southern states. Prevention or checking of such cultivation, -Was recognised as a matter of some urgency.

4. The periodicity of maintenance operations on tanks had not been scientifically fixed in many areas. A system like the circle system of maintenance as in Madras and Andhra should be considered 'for adoption by states where periodical maintenance was not a regular practice.

5. State Governments should make adequate and specific allocation of funds for the maintenance of minor works in the budgets of the administering departments.

6. The existing . arrangements for achieving administrative coordination in the field of execution, improvement, restoration and maintenance of minor irrigation works needed to be reviewed fairly regularly by the state governments in the light of field situation as it develops.

7. There was a considerable scope for streamlining the process of sanction and grant of loans and other financial assistance to the beneficiaries.

8. The disparity in the same area between the cost of irrigation from tube-wells and that from canals needed serious consideration. What was needed **WAS** to

bring two as much as in line as possible. A fixed amount might be imposed as a levy on all the cultivators within the command of a tube-well and a surcharge realised on the basis of volume of water sold. Another suggestion that might be considered in this connection was the use of differential rates of irrigation during day time and at night. Irrigation at night should be made cheaper, if electricity was supplied to the tubewells at concessional rates at night.

9. Field channels posed a number of problems not only to the tube-well authorities but also to cultivators. There was a need, on one hand for better public relations between the cultivators and the tube-well authorities, and on the other, for effective cooperation and sharing of responsibility between the two sides. Panchayats and local Committes should play an important role in such matters.