

**Evaluation Report On Soil and Water Management Pilot Projects - 1981**

**1. The Study**

In 1968-69, the then Ministry of Agriculture and Irrigation decided to set up soil and water management pilot projects in the Central Sector with the broad objectives of providing the farmers within command areas with the knowledge of the scientific techniques of soil and water management and of giving training to Command Area Development Authority (CADA) personnels.

Additional 20 pilot projects were sanctioned during the Fourth Five Year Plan and 50 more projects (including 20 **spillovers**) were approved during the Fifth Plan. These projects were to carry out an integrated action programme of surveys, land levelling and shaping, consolidation of holdings, provision of inputs, extension efforts, farmers' education and training, designing of field drainage etc. It was also envisaged that each project would be in life for a period of 3 to 4 years.

At the instance of the Ministry of Finance, the then Ministry of Agriculture and Irrigation requested the Programme Evaluation Organisation to conduct an evaluation study of these pilot projects. Accordingly, the PEO conducted an evaluation study of the working of seven selected pilot projects for soil and water management viz. (i) West Gandak Project (U.P.), (ii) East Gandak Project (Bihar), (iii) Mahandi Delta Project (Orissa), (iv) Neyyar Project (Kerala), (v) Pochampad Project (Andhra Pradesh), (vi) Ukai-Kakrapar Project (Gujarat) and (vii) Navalgund Project (Karnataka). The study was conducted in two rounds; the first in 1978-79 and the second in 1979-80. Considering the tremendous diversity among the projects in their formulation, budgets, agronomic conditions, etc. a case study approach was followed for studying the impact of the projects; first, comparing the present situation with that prevailed prior to the execution of the projects and second, comparing the present status of the cultivators within the projects with that of the cultivators outside the projects.

**2. Objectives**

- i) To study the strategy adopted in the selected pilot projects;
- ii) To study the organisational aspects of the projects and make suggestions wherever necessary;
- iii) To study the problems of co-ordination between the project authorities and other development agencies.
- iv) To assess the impact of the programme on the farmers in regard to (a) adoption of recommended practices of soil and water management, (b) adoption of recommended cropping pattern and (c) increase in yield, employment and income;
- v) To study the demonstration effect of the projects in the adjoining areas; and
- vi) To assess the reactions, attitude and difficulties of the cultivators regarding implementation of these projects.

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

The sampling design was a multi-stage one. 7 pilot projects were selected purposively so as to represent the different geographical, soil and agronomic situations in the country. Outlets of irrigation channels in the pilot projects constituted the second stage sampling unit. Two outlets giving representation to the major types of soils covered by them were selected on the basis of their Culturable Command Area (CCA). For control, 2 outlets outside the projects, but nearest to the selected outlets and covering the same types of soils were also selected. In all, 28 outlets at the rate of 4 per pilot project were selected. In the next stage, the beneficiaries of the projects i.e. cultivators in receipt of irrigation facility after the commencement of the pilot projects, were sampled. A sample of 10% of the beneficiaries, subject to a minimum of 6 and maximum of 10, were selected after stratifying them into marginal, small and other farmers. For an outlet, the sample beneficiaries were allocated to the three strata in proportion to their total number, subject to a minimum of 2 in each stratum. For control outlets, the cultivators were stratified into two on the basis of the receipt or non-receipt of water from the selected control outlets. The cultivators in each stratum were classified by size of holdings in the same pattern followed in the case of selected outlets. One cultivator was selected by simple random method from each of these strata. Based on the above sampling design, 96 pilot project beneficiaries, 31 control beneficiaries and 24 control non-beneficiaries were selected from 7 pilot projects.

### **4. Reference Period**

The study was conducted in two rounds viz. 1978-79 & 1979-80. The data analysed in the report ranged between 1971-72 and 1977-78.

### **5. Main Findings**

1. As against the sanctioned period of functioning of 3 to 4 years, 6 out of the 7 sample projects functioned for 5 years whereas the remaining one was terminated after 4 years.
2. The allocation of funds to the projects was in line with the requirements and merit of individual schemes. There were wide differences between sanctioned amounts and actual expenditures. As opposed to the norms, the proportion of expenditure on establishment was much higher than that on development works. The Ministry of Agricultural did not seem to have had any schematic budget or guidelines with regard to the expenditure on the projects.
3. The delay in the posting of qualified and experienced staff had adversely affected the completion of works within the prescribed limit in almost all cases. The key post of Project Officer was filled in time in only four out of the 7 selected projects. The condition was worse in the case of the posting of specialists like soil scientists, agronomists, training officers and farm management specialists.

4. Barring the projects of Neyyar and Mahandi in which no link could be established between the working of the projects and the Command Area Development Authority (CADA), the remaining 5 sample projects functioned under the supervision of the C.A.D.A.

5. Contour maps were prepared by almost all the projects. Contour Surveys and Soil Surveys were undertaken by five of them. However, Plane Table Survey was conducted only in one project, while Agro-economic Benchmark Survey was completed only by two of them.

6. Land shaping and levelling, irrigation channels, drainage channels, soil tests and crop demonstration were the main physical works taken up. The pattern of subsidy for different works differed among the projects. The targets of works were stipulated only in 5 projects. Land shaping and levelling work made impressive achievements in three projects whereas the results were reasonably good in another two. Construction of field channels produced commendable results in 6 projects, while construction of drains showed significant achievements in 4 projects. Arrangements for the maintenance and upkeep of works by the CADA or by the beneficiaries themselves were made in Pochamped, Navalgund and West Gandak. However, these arrangements were lacking in the remaining four projects.

7. Area under irrigation registered spectacular increase in most of the project areas, with farmers switching over to Canal irrigation. Percentage of area irrigated in East Gandak Project shot up to 100% from a mere 7% prior to the commencement of the project. In tandem with this, farmers started switching over to the high-yielding varieties and to a few other commercial crops like sugarcane and cotton. However, under-utilization of irrigation potential was a cause of worry.

8. There was an all round increase in yield in most of the project areas with the exception of some isolated bleak cases like decline in the yield of local paddy in West Gandak Project, marginal decline in the production of almost all crops in Mahanadi project and the return of the farmers to the local crop varieties in Neyyar project.

9. Employment opportunities availed by the beneficiaries, both in terms of family labour and hired labour, showed general improvements in most of the projects. Some exceptions like the absence of notable change in employment position in West Gandak area, stagnating Rabi Season employment in Neyyar project area and a deteriorating employment position in Mahanadi project area were discernible.

10. As compared to the pre-project period, no significant change had been observed in the acquisition of physical assets by either pilot project beneficiaries or control beneficiaries in any of the selected projects.

11. Testing of soil samples was done in all the projects. However, test results were not made available to the farmers; only standard recommendations were propagated. Crop demonstrations were laid and training camps were organised in most of the projects, but in largely varying number.

12. The projects manifested some serious deficiencies like the absence of any specific strategy with regard to on-farm development works; lack of research to develop the most suitable cropping pattern and the initial ignorance of project officials about their duties.

## 6. Major Suggestions

The analysis of information gathered in the course of the study leads to a solid core of suggestions. Projects like soil and water management projects should have realistic time frame of development and extension orientated action. Issues like the timely posting of specialists, continuity of essential staff for the entire duration of the project and timely sanction and availability of funds should engage the attention of the project authorities. They must be convinced of the utility of different surveys, thorough extension work and meticulous follow-up of project activities through periodic reviews. Pivotal project staff should be properly trained before their posting. Above all, the study re-iterated the need for a comprehensive approach on the issue of soil and water management. A team of specialists should work with the farmers on their fields to convince them of the value of various 'on-farm development works'.