6.1 MANUAL ON PLANNING AND MANAGEMENT OF RURAL DEVELOPMENT PROJECTS:

The ultimate objective of the Action Research was to improve the capabilities of district officers in planning and management of rural development projects by adopting action research process and institutionalising the same and also in developing area plans. As the district group is prone to frequent transfers, it was felt that there is a need for impersonal interventions for developing capabilities of the district officers. Therefore, it was decided to help the district officers to develop alternative strategies for planning and management of development projects through developing manuals or guidelines describing the practical steps involved in the projects. With this end view efforts were made during the last phase of Action Research to develop manual on project planning and management. The manual will serve as a guideline for project formulation, implementation, monitoring and evaluation of developmental projects. It will describe in a systematic manner the detailed procedures and steps to be taken for achieving the objectives of such projects. This will help the sectoral or project heads in communicating clear and specific instructions to their staff and will also relieve them of repeating the specific instructions for the same type of projects to be taken up at different times and places. In other words, the manual will help to institutionalise procedures and systems to make them a routine process.

This is meant to be 'Do-it-yourself' type of instruction book. This manual will also help in delegation of authority to the lower level functionaries for smooth implementation of the projects. It will also help the sectoral or project heads to concentrate their additional time on creative and innova-
tive activities and also for coordinating the activities of the project in a better manner. Care was taken that the manual does not become unrealistic and the activities mentioned could be managed within normal work load of the different categories of Officers. The idea of the manual is to systematise their present method of working and to make their working conditions better rather than difficult and burden-some.

The manual is meant for the district level sectoral officers or their subordinate staff who are involved in preparation of development projects in a more systematic, comprehensive manner dealing explicitly with necessary linkages to other sectors or departments. This helps in getting appropriate information for the decision makers without failure and helps in reducing the delays in analysis and approval of projects.

The methodology adopted in developing the manual was that the idea was discussed with the state level officers and the Secretary of planning so as to get their acceptance and ultimately to get their cooperation and participation while developing these manuals. Also it acted as an official sanction to the district officials to participate actively in this task. The strategy was to see that sectoral officers or administrators will develop and write the manual with the help of the researcher as an outside consultant to channelise the counterpart officers' efforts in a productive way. As described earlier the researcher has already developed sufficient expertise in the sector with the help of the diagnostic studies, action plans, formulation of new projects implementation of the development projects through the action seminar conducted and in the administration of various projects. The district level administrators have developed the conceptual frame-work for each of the elements of the project administration with their experience while formulating th manual to a certain extent. The officers also made
quick field trips wherever necessary so as to include the real practical situations that arise during the execution of developmental projects.

In order to facilitate the counterpart administrators to develop the manual, short term workshops of two days duration were conducted. After draft write up was developed, the inter-district and inter sectoral workshop was organised in which participants from all departments could take part and the linkages in the projects were properly incorporated in the manual. When rough draft manual report was ready, an inter-district work shop was organised at the state level. This helped in incorporating the opinions and experiences of other district officials and then further manuals were improved.

Before manuals were standardised, they were used by the officials, problems that arose and the way those were solved were noted. The researcher and the Head of the department at the state level held further discussions, the copies were circulated among the state level officials for comments. A copy of the manual was supplied to the officials concerned for further action after duly incorporating the suggestions. The flow diagram for preparation of the manual is as depicted in Fig. 6.1.

6.2 A CASE MINOR IRRIGATION PROJECTS (TANKS):

Based on the experiences of action research as mentioned in the previous chapters on a minor irrigation project, a manual on 'formulation and Implementation of an Integrated Minor Irrigation Project' was prepared with the Executive engineer of the project as the counter-part. The other officers who were involved in implementation of the project such as the Assistant Engineer, Junior Engineer, Work Inspectors and the contractors were also involved in order to consider the constraints of implementation of the project with the help of PERT/CPM methods for time scheduling and resource allocation. The participating departments such as Agriculture, Soil Conservation,
FIG. 6.1: FLOW CHART FOR DEVELOPMENT OF MANUAL:

1. Discussion with State/District level officers about the need, strategy and approach for preparation of manual.
2. Discussion on the existing methods, identification of gaps/constraints.
3. Modifying the scope and objectives of the development projects/area plans.
4. Evolving alternative methods and approaches for project planning, implementation, monitoring and evaluation.
5. Discussion with local officers and take their concurrence (YES/NO)
   - Yes: Organisation of district level workshop
     - Add suggestions and recommendations
       - Accepted
         - Preparation of draft manual
       - Not accepted
9. Organising inter-district workshop and incorporation of the suggestions
10. Final preparation of the manual
11. Evaluation of the efficacy of the manual after implementing for one year
12. Further discussion with officers
13. Institutionalisation of manual
Fisheries and Forest Departments were also involved in preparation of the manual. This manual on project formulation of Minor Irrigation Project will present simple step-by-step guidelines for formulation, implementation, monitoring and evaluation procedures of Minor Irrigation Projects.

The contents of the manual are as below:

6.3 PROJECT FORMULATION

Preliminary Project Formulation:

Peoples' representation through political representatives or through Department in the form of representations - Identification of potential areas by the department itself - Making aware of concerned Ministry and Chief Engineer's department regarding the M.I.Projects represented by the people identified by self (Department) - Collection of such identified projects by the people or department by the Chief Engineer - Chief Engineer asking for preliminary feasibility of such projects by the Minor Irrigation Investigation Department.

Preliminary Feasibility Analysis:

Having the physical view of the project area (by the Minor Irrigation Investigation Department) - Study of topography of the project area - Study of rainfall data with the help of nearby raingauge station - Having the physical view about the catchment area of the project - An approximate idea of the yield availability judging whether the catchment is good, average or bad with the help of norms - Study of reports - Determining the internal constraints of the project such as riparian rights and sources of finance etc. - Identifying the external constraints such as whether, that particular
basin belongs to the neighbouring district or state. In case it belongs to other district or State, exploring the possibilities for taking up the projects in that basin.

Preliminary technical feasibility:

Whether the project area is a well defined basin or not - Surplus course alignment - Availability of construction materials such as clay, sand, soils, stone etc., within economic leads - Digging of trial pits, in order to assess the depth of the foundation to be excavated for the bund portion as well as to the deep course. In other words studying the geology of the area - Ascertaining whether the necessary ayacut can be developed - Ascertaining whether the down steam riparian rights are safeguarded.

Preliminary Economic Feasibility:

Quick estimates of the project costs (approximate) - Capital, operational costs, incidental costs etc. - Assess the target groups that are to be benefited - Assess the benefits that accrue to the target groups - Assess whether the benefits can readily help the target group in increasing their economic and social conditions - How far the project will improve the employment position of targeted group as well as others.

Identification of alternative projects:

Identification of alternative project locations basing on the data regarding preliminary feasibility analysis and preliminary technical feasibility - Arriving at a particular type design to be followed which is an optimum, based on Preliminary feasibility analysis and Preliminary technical feasibility.
Administrative process for formulation of detailed feasibility report:

Completion of the preliminary feasibility report (PFR) - Submission of PFR to the Chief Engineer - Selection of some projects based on PFR - Asking for detailed feasibility report (DFR).

Detailed Feasibility Study:

Technical Analysis

Identification of all possible alternative locations - Develop each alternative course into complete design - Decide the holding capacity of tanks, and the heights of the bund - Block levelling in foreshore area in order to achieve the contour capacity and decide holding capacity with different levels and estimate the ayacut under the tank to be developed - Earthen bund - Arrangements for surplus alignment - Head sluice alignment - Supply channel alignment with minimum earth work and block levelling for the ayacut - Taking levels for distributaries - Collection of survey numbers for ayacut, foreshore submerision, barrow areas for soils and land acquisition purposes.

Project Estimates:

Providing broad financial estimates on engineering works - Land development activities - Watershed activities - Machinery costs - Material costs - Borrow area costs - Quarry area costs - Human resources.

Profitability Analysis (Social cost benefit analysis):

Project primary costs and benefits - Project secondary costs and benefits - Costs and benefits accruing to the individuals - Cost and benefits accruing to the community - Cost and benefits accruing to the Nation - Project profitability ratio - Social cost benefit appraisal - Calculation of benefit cost ratio,

Preparation of Detailed Project Report (DPR):

Project Objectives:

The specific objectives of the project such as the irrigation potential to be created etc - The target groups that were benefited and other objectives are to be clearly defined before going into the details of the project - Project details - Location - Rainfall data - Climate - Topography - Geology - Hydrology - Catchment Area - Yield - Foreshore submersion Area - Ayacut (Command area) - Soils of Ayacut or command area - Agricultural background.

Project Riparian Rights:

Upper Riparian rights - Lower Riparian rights-

Detailed Project Specifications:

Engineering works - Maximum Water levels - Surplus weir - Tank Bed Level - Reservoir - Earthen bund - Stripping of soil in foundation of bund - Key trenches - Cut off trench - Toe-drain - Rock toe - Longitudinal and cross filters - Sand chimney - Continuous sand filters - Casing soils - Hearting soils - Gravel backing under revetment - Consolidation - Upstream revetment - Trimming of side slopes of bund - Model sections - Testing the down stream face of the bund - Dowel banks chutes - Surplus alignment - Head sluice -
Supply channel - C.M. and C.D. works (Cross masonry and Cross drainage works) - Lateral distributories - Cross Section of the bund - Foundation of the bund - Profile of the bund - Execution of embankments - Piping at junction points - Testing of soil for embankments - Testing the permeability of the bank bed - Engineering designs for head sluice - Engineering designs for surplus weir - Engineering designs for foundation of bund in deep course - Detailed project specifications for ayacut or command area development - Land shaping and development - Testing soils and recommending suitable crop pattern - Arranging inputs such as finances (credit), fertilizers and pesticides - Arranging for extension services.

**Detailed project specifications for watershed activities.**

Arranging for soil conservation measures in the catchment and foreshore areas of the tank - Arranging for afforestation activities in the catchment and foreshore areas of the tank - Arranging for pasture development in the catchment area of the tank - Arranging for development of fisheries in the tank.

**Detailed Estimates of the Project :**


**Sources of Finance :**

Materials - Machinery - Land required.

**Detailed Economic and Social cost benefit analysis :**

Project capital cost - Project maintenance cost - Project direct benefit -
Project indirect benefit - Project benefit cost ratio - Project Internal rate of return - Project social costs - Project economic and social benefits.

Implementation plan and network analysis:
Agencies involved, coordinating agencies and linkages of implementing agencies.

Implementation plan for construction of Tank:
Floating Tenders - Selection of contractors - First half of the bund - Surplus course - Construction of other portion of the bund - Construction of supply channel and field channels - Land acquisition - Completion of the Earthen Bund - Utilisation of the irrigation potential by Ryots.

Implementation plan for ayacut development:
Land shaping and Land development - Testing of soils and recommending suitable crop pattern - Supply of inputs - Providing extension services.

Implementation Plan for Watershed Activities:
Soil conservation measures in the catchment area - Afforestation in the catchment and foreshore area - Pasture development in the catchment area - Development of fisheries in the tank.

Selection of beneficiaries, mobilisation of credit and administration of subsidy for ayacut development and watershed activities.

Machinery planning - Material planning - Human resource planning - Payment procedures - Anticipated problems and suggestions during implementation - Problems of engineering works - Problems of ayacut development - Problems of watershed activities.
Monitoring procedures of the Project:


Handling over the project to the Maintenance Division:

Maintenance of the Project.

Project Evaluation Procedures:

Pre-evaluation - Concurrent evaluation - Ex-post evaluation.

The flow diagram for preparation of detailed project report of implementation, monitoring, evaluation and feedback of the project and the master network for time scheduling and resource allocation for preparation of detailed project report and the four stages of the project formulation and management of a minor irrigation project are presented in figures 6.2, 6.3 and 6.4 respectively.