


**GOVERNMENT OF INDIA  
MINISTRY OF WATER RESOURCES**

**GUIDELINES  
FOR  
PREPARATION OF  
DETAILED PROJECT REPORT  
OF  
IRRIGATION & MULTIPURPOSE  
PROJECTS**


  
अविभागीय अभियन्ता  
जल संसाधन खण्ड  
सिरोही (राज.)

**2010**



Guidelines for  
PREPARATION OF DETAILED PROJECT REPORTS OF  
IRRIGATION AND MULTIPURPOSE PROJECTS



  
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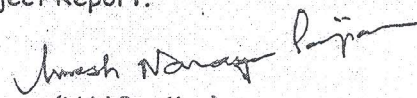
## FOREWORD


Detailed Project Report is an important document for examining techno-economic viability of a project and arriving at a decision for making investment. Therefore, it is essential that the project report is prepared well and is based on reliable data, adequate investigations and after comprehensive studies on various techno-economic aspects. A good project report enables the scrutinizing agencies speedier examination and minimizes the time taken for its approval.

Presently "Guidelines for Preparation of Detailed Project Reports of Irrigation and Multipurpose Projects-1980" is being used. In view of the changes in policy and technological developments in formulation, funding, execution, operation and maintenance of the projects and the experience gained in the use of these guidelines since 1980, it has been felt necessary to update them. Accordingly the Ministry of Water Resources constituted in May 1999, a Working Group under the chairmanship of the Chief Engineer, Project Preparation Organization, Central Water Commission with representatives from the State Governments, Union Ministries and the Central Government Departments and Institutions as its members. The Working Group submitted its report to Ministry of Water Resources in August, 2000.

Thereafter, the latest circulars/guidelines issued by the Planning Commission, Central Water Commission, Central Ground Water Board and various concerned ministries have been incorporated in the guidelines. Use of modern techniques such as remote sensing, satellite imageries, aerial photography, DGPS have been included for cutting short the time required in topographical surveys, site selection etc. Details of instrumentation have been included which will help in assessing the safety and proper functioning of dams and other hydraulic structures in river valley projects. Emphasis has been laid for inclusion of PERT/ CPM diagrams for construction programme of various components. This would help in effective monitoring of milestones and taking timely remedial measures. Details required for lift irrigation, pump storage schemes, power transmission system, power potential studies have also been incorporated. The guidelines also seek information on similar/pending project in the concerned States, their physical and financial expenditure during last five years etc to assess whether the State has capacity and resources to start new projects.

I acknowledge with thanks the valuable contribution made by the Working Group as well as the officers from the various organizations and hope that these guidelines would go a long way in the preparation of comprehensive Detailed Project Report.

  
(U.N. Panjiar)  
Secretary(WR)

  
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## PREFACE

Substantial outlay under the five Year plans in the country is being allocated to the irrigation sector including construction of projects. These projects are investigated, formulated and implemented by the State Governments concerned. However, before implementation, the projects require clearance from the Planning Commission and inclusion in the state plans. The procedure for formulation and appraisal of irrigation and multipurpose projects has been laid down by the Planning Commission in their circulars to the State Governments from time to time. These circulars inter-alia give a list of items on which information and details are to be incorporated at the time of preparation of project reports.

Central Water Commission has been entrusted with the responsibility of examination of technical and economic viability of the proposals prepared by the State Govts for major and medium irrigation and multipurpose projects before Planning Commission considers them. Recently, however, the State Governments have been permitted to accord investment approval to the major & medium irrigation projects not located on inter-state rivers or their tributaries subject to the condition that they will obtain confirmation/certification from the CWC to the effect that the proposed project does not have inter-state ramifications. However, major & medium projects located on interstate rivers and their tributaries are examined by CWC and put up to the Advisory Committee of MoWR for techno-economic acceptance. The environmental and ecological aspects which have to be addressed in the project reports have been outlined by the Ministry of Environment and Forests. They have also issued guidelines/check lists for submission of application for clearance of projects from environmental and forest angles. Similarly, Ministry of Tribal Affairs have also issued guidelines for resettlement and rehabilitation of SC & ST population.

Presently the guidelines issued in 1980 are being referred for preparation of detailed project reports of irrigation and multipurpose projects. In view of the changes in policies & priorities of the Government, technological advancements and experience gained through use of the guidelines since 1980, Ministry of Water Resources set up a working group under the chairmanship of Chief Engineer, PPO, Central Water Commission in May, 1999 with representatives from the State Governments, Union Ministries and the Central Government Departments and Institutions as its members. The Working Group submitted its report to MoWR in August, 2000. Thereafter, the draft guidelines have undergone several revisions in order to incorporate suggestions/ observations of various central agencies as well as State Governments. The present volume contains the finalized guidelines divided into four parts: Part-I -Guidelines for Preparation of Detailed Project reports of Irrigation and Multipurpose Projects, Part-II -Guidelines for Preparation Detailed Project reports for Flood Management Schemes, Part-III - Guidelines for Preparation of DPRs for Modernisation of Irrigation Projects and Part-IV -Guidelines for Preparation of DPRs for Command Area Development.


  
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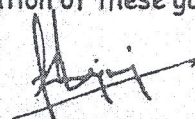


The modifications made in the 1980 guidelines cover use of modern techniques such as remote sensing, use of satellite imageries, aerial photography, Differential Global Positioning System (DGPS) for cutting short the time required in topographical surveys, site selection etc. Details of instrumentation to be provided on the civil structures have been included which will help in assessing the safety and proper functioning of dams and other hydraulic structures in river valley projects. Emphasis has been laid for inclusion of PERT Chart and CPM diagrams for construction programme of various components. This would help in effective monitoring of milestones and taking timely remedial measures. Details required for lift irrigation, pump storage schemes, power transmission system, power potential studies have also been incorporated.

The guidelines have been formulated in such a manner so as to facilitate not only the agencies responsible for formulation of the project reports but also the agencies charged with the responsibility of techno-economic scrutiny of the project. The list of references useful for formulation of the project report is also given at the end of guidelines.

The present edition of guidelines is the result of commendable efforts and hard work put in by Chief Engineer(PPO), other members of the working group & Officers of Project Preparation Organisation of CWC. I place on record appreciation for all Central and State agencies for their valuable contributions in preparation and finalization of these guidelines.

  
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(A.K. BAJAJ)  
Chairman  
Central Water Commission



## EXECUTIVE SUMMARY

### 1. Introduction

Water Resources Sector has made significant progress since independence. Still a lot more needs to be done for meeting overgrowing and competing demands of water for agriculture, domestic and industrial water supply, power generation (both thermal and hydel), aqua-culture, recreational & tourism activities etc. The experience gained over the years has shown that the time and cost over run on the projects could have been minimized, if not avoided altogether, if the projects were thoroughly investigated and properly formulated. For this purpose comprehensive guidelines for the preparation of project reports, were issued by the then Ministry of Irrigation (now Ministry of Water Resources) in 1980. The same guidelines are being used at present.


The revision of the guidelines has been felt necessary in view of the various changes that have taken place in the project formulation, funding and execution of the projects since then. For updating the Guidelines, Ministry of Water Resources constituted a Working Group in May, 1999. The Working Group submitted its report to MOWR in August, 2000 for approval. Thereafter, it was circulated to Central Govt. Department/State Govt and scrutinized by setting up a committee in CWC. The revised draft Report was forwarded to MOWR in Sept 2008 after incorporating various suggestions/ observation of Central Govt. Departments as well as State Govts. The report was also sent to the Chief Advisor (cost), Deptt of expenditure, Ministry of Finance. Comments/suggestions offered by various wings of MOWR and Deptt of expenditure have been incorporated in the present updated version of guidelines

### 2. The format of the Guidelines

The Guidelines has four parts: Part-I -Guidelines for Preparation of Detailed Project reports of Irrigation and Multipurpose Projects, Part-II -Guidelines for Preparation Detailed Project reports for Flood Management Schemes, Part-III - Guidelines for Preparation of DPRs of Modernisation of Irrigation Projects and Part-IV -Guidelines for Preparation of DPRs of Command Area Development.

#### Part-I - Irrigation and Multipurpose Projects:

Section-1 deals with the comprehensive check list and Section-2 deals with the salient features of the projects. Section-3 describes the details required under various chapters like physical features, interstate and international aspects, surveys and investigations, hydrology, design for various structures, reservoir operation, irrigation Planning, drainage, construction programme, manpower & plant planning, estimates, benefit cost Ratio, internal rate of Return, apportionment of cost among various purposes of multipurpose projects etc. The detailed proforma for compilation of information on surveys and investigations,

  
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hydrology, rainfall, crop water requirement, irrigation demand table, reservoir operation B.C. ratio and I.R.R. calculations are enclosed as annexures. To facilitate the project engineers, sample calculations for requirement of category and size of production equipment, B.C. ratio, I.R.R., cost apportionment have also been appended.

Irrigation projects with culturable command area (CCA) more than 10,000 ha., between 2000 ha. and 10,000 ha. and less than 2,000 ha. are classified as major, medium and minor projects respectively. The procedure for submission, appraisal and clearance has been outlined in the 'Guidelines for submission, appraisal and clearance of Irrigation and Multipurpose Projects 2010'. The guidelines are applicable to the major & medium irrigation projects located on inter-state rivers or their tributaries. The State Governments are empowered to accord investment approval to the major & medium irrigation projects which do not have inter-state ramifications subject to the condition that they will obtain confirmation/certification from the CWC to the effect that proposed project does not have inter-state ramifications. The State Governments are required to obtain statutory clearances like environmental and forests clearances from the Min. of Environment & Forests, approval for rehabilitation and resettlement plan from Ministry of Tribal affairs and all other clearances, as may be required before the investment approval is accorded.

The projects proposed for external assistance from the World Bank, Asian Development Bank, Japan Bank of International Cooperation, European Economic Community etc. are also to be prepared as per guidelines for Irrigation & Multipurpose Projects. Lift Irrigation Schemes are classified into Major, Medium and Minor Schemes as for any other project depending upon the CCA. The same procedure for scrutiny and approval as applicable for other projects, would apply to these schemes as well. The pumped storage schemes are planned for increasing the availability of peaking power by utilising the available surplus power during the lean period of the day. This increases the availability of water in reservoir during power generation in peak hour.

#### Part-II- Flood Management Schemes:

The guidelines for preparation of flood management schemes give the details of schemes e.g. embankment and anti erosion works, length of embankment and drainage channels, cost estimates, inter-state issues, design particulars, B.C. ratio calculation etc. It also includes the guidelines for submission, appraisal and clearance of flood management schemes. To facilitate the project engineers references of relevant Indian Standard for planning and design of revetments, groynes etc have been given. Model bill for flood plain zoning is also enclosed.

Flood management schemes are first considered & accepted by the state level Flood Control Technical Advisory Committee and then by the State Flood Control Board. Approval to these schemes is then accorded by the State Govt. Major & Medium schemes approved by the Flood Control Advisory Committee & the State Flood Control Board are examined by