



Report of the  
Comptroller and Auditor General of India  
on

# Accelerated Irrigation Benefits Programme



Union Government  
Ministry of Water Resources, River Development  
& Ganga Rejuvenation  
Report No. 22 of 2018  
(Performance Audit)





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## Contents

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|                    | <b>Contents</b>  | <b>Page No.</b> |
|--------------------|--|-----------------|
|                    | <b>Preface</b>   | <b>iii</b>      |
|                    | <b>Executive Summary</b>                                     | <b>v</b>        |
| <b>Chapter I</b>   | <b>Programme Overview and Audit Approach</b>                 | <b>1</b>        |
| <b>Chapter II</b>  | <b>Planning</b>  | <b>9</b>        |
| <b>Chapter III</b> | <b>Financial Management</b>                                  | <b>18</b>       |
| <b>Chapter IV</b>  | <b>Programme Implementation</b>                              |                 |
|                    | <b>Section A: Achievement of Programme Deliverables</b>      | <b>32</b>       |
|                    | <b>Section B: Factors affecting Programme Implementation</b> | <b>47</b>       |
| <b>Chapter V</b>   | <b>Monitoring, Operation and Maintenance of Projects</b>     | <b>68</b>       |
|                    | <b>Conclusion</b>  | <b>77</b>       |
|                    | <b>Recommendations</b>                                       | <b>79</b>       |
|                    | <b>Annexures</b>   | <b>81-159</b>   |
|                    | <b>Glossary</b>  | <b>161</b>      |



## **Preface**

This Report for the year ended March 2017 has been prepared for submission to the President of India under Article 151 of the Constitution of India.

This Report of the Comptroller and Auditor General of India contains the observations of Performance Audit of Accelerated Irrigation Benefits Programme for the period 2008-17.

The instances mentioned in this Report are those, which came to notice in the course of test audit for the period 2008-17 as well as those which came to notice in earlier years, but could not be reported in the previous Audit Report; matters relating to the period subsequent to 2016-17 have also been included, wherever necessary.

The audit has been conducted in conformity with the Auditing Standards issued by the Comptroller and Auditor General of India.





## Executive Summary

|   | Major and Medium Irrigation (MMI) Projects | Minor Irrigation (MI) Schemes               |
|---|--|---|
| <b>Key Facts</b>  |  |   |
| Number of projects under implementation during 2008-17                                    | 201  | 11,291                                      |
| Number of projects completed during 2008-17   | 62   | 8,014                                       |
| Number of projects ongoing as on 31 March 2017  | 139  | 3,277                                       |
| Total sanctioned cost of projects undertaken (excluding National Projects) during 2008-17 | ₹ 2,22,799.98 crore                        | ₹ 16,800.78 crore                           |
| Central Assistance released to AIBP projects (excluding National Projects) during 2008-17 | ₹ 28,334 crore                             | ₹ 12,809 crore                              |
| Number of sampled projects/schemes  | 118<br>(59 per cent of total MMI Projects) | 335<br>(Three per cent of total MI schemes) |
| Sanctioned cost of sampled projects/schemes   | ₹ 1,80,145.79 crore                        | ₹ 1,680.55 crore                            |
| Expenditure on sampled projects/schemes   | ₹ 62,801 crore                             | ₹ 1,591.71 crore                            |
| Number of sampled projects/schemes completed  | 30   | 213   |
| Central Assistance released to sampled projects/schemes                                   | ₹ 19,184 crore                             | Not available <sup>1</sup>                  |
| Target for creation of Irrigation Potential for sampled projects/schemes                  | 85.41 lakh ha                              | 1.50 lakh ha                                |

| <b>Key Findings of sampled MMI projects/MI schemes</b>                           |                                |                               |
|--|--------------------------------|-------------------------------|
| Number of projects with time overrun (in completed and ongoing projects/schemes) | 105                            | 153                           |
| Extent of time overrun (in completed and ongoing projects/schemes)               | Up to 18 years                 | Up to 12 years                |
| Extent of cost overrun   | ₹ 1,20,772.05 crore            | ₹ 61.61 crore                 |
| Irrigation Potential created   | 58.38 lakh ha<br>(68 per cent) | 0.58 lakh ha<br>(39 per cent) |
| Irrigation Potential utilised  | 38.05 lakh ha<br>(65 per cent) | 0.33 lakh ha<br>(72 per cent) |

<sup>1</sup> Central Assistance is released for cluster of MI schemes.

| Key Findings of sampled MMI projects/MI schemes            |   |   |
|--|---|---|
| <b>Non-submission of Utilisation Certificates</b>          | ₹ 1,455.71 crore<br>(32 per cent of<br>CA released) | ₹ 731.69 crore<br>(52 per cent of<br>CA released) |
| <b>Projects/Schemes irregularly included under AIBP</b>    | 30  | 41  |
| <b>Diversion of funds</b>                                  | ₹ 1,572.31 crore                                    | ₹ 6.24 crore                                      |
| <b>Short-realisation/loss of revenue</b>                   | ₹ 1,251.20 crore                                    | ₹ 0.19 crore                                      |
| <b>Fictitious and fraudulent expenditure</b>               | ₹ 4.54 crore  | ₹ 3.04 crore                                      |
| <b>Financial implications due to poor works management</b> | ₹ 1,572.63 crore                                    | ₹ 68.54 crore                                     |

The Accelerated Irrigation Benefits Programme (AIBP) was launched during 1996-97 as a Central Assistance (CA) programme for accelerating the implementation of large projects which were beyond the resource capability of the States and completion of other irrigation projects which were at an advanced stage but were delayed due to resource constraints faced by State Governments. Initially, the primary goal of AIBP was to speed up completion of Major and Medium Irrigation (MMI) projects. The coverage under AIBP was gradually expanded over the years to include drought prone area of KBK districts of Odisha and Minor Irrigation (MI) schemes of Special Category States (SCS); Extension, Renovation, Modernization (ERM) projects and MI schemes of Special Areas<sup>2</sup> (SA) of non-SCS. Ministry of Water Resources, River Development and Ganga Rejuvenation (MoWR, RD&GR/Ministry) is responsible for framing policy guidelines for implementation while State Governments are primarily associated with planning and implementation of irrigation projects and schemes.

A Performance audit of the AIBP revealed several deficiencies in the planning, implementation and monitoring of the programme. Projects and schemes were included under AIBP in violation of the programme guidelines, resulting in irregular release of ₹ 3,718.71 crore. Deficiencies in preparation and processing of Detailed Project Reports (DPRs) such as inadequate surveys, inaccurate assessment of water availability, Irrigation Potential (IP) and Command Area, lack of activity wise construction plans, etc. and incorrect calculation of Benefit Cost Ratio of the projects led to modifications in design and scope of work and revision in cost estimates after commencement of work, also adversely affecting the schedule of implementation of the projects.

Financial management for AIBP was inefficient, as there were cases of non/short release of funds, delays in release of funds at various levels, releases at the fag end of the financial year and non-adjustment of unspent balances of funds in the subsequent releases. Utilisation Certificates for funds amounting to ₹ 2,187.40 crore, constituting 37 per cent of the total CA received by the State agencies were not submitted to the Ministry in time. Other financial irregularities such as diversion of funds amounting to ₹ 1,578.55 crore,

<sup>2</sup> The Special Areas denote Drought prone areas, Tribal areas, Desert areas, Flood prone areas.

parking of funds amounting to ₹ 1,112.56 crore and fictitious and fraudulent expenditure amounting to ₹ 7.58 crore were also observed. There were also instances of short/non-realisation of revenue amounting to ₹ 1,251.39 crore.

Implementation of projects under AIBP was tardy, with delays in completion of projects ranging from one to 18 years. Out of the sampled 118 MMI projects and 335 MI schemes, only 30 MMI projects and 213 MI schemes were completed as of March 2017. The delays were attributed to shortfall in land acquisition, inability to obtain statutory clearances in advance, changes in design and scope of work, etc. The delays in implementation of projects together with inefficient works management led to cost overrun in the projects. The total cost overrun in 84 MMI projects, including 16 completed and 68 ongoing projects was ₹ 1,20,772.05 crore which was 295 *per cent* of their original cost. The realization of envisaged benefits in terms of Irrigation Potential (IP) creation was only 68 *per cent* in MMI projects and 39 *per cent* in MI schemes. The utilization of IP created was 65 *per cent* and 72 *per cent* respectively for MMI projects and MI schemes.

There were deficiencies in works management such as delays in award of work, splitting of works, incorrect phasing of project implementation, execution of sub-standard work, undue benefits to contractors, etc. The extra financial implications seen in audit were to the extent of ₹ 1,337.81 crore towards irregular/wasteful/avoidable/extra expenditure and ₹ 303.36 crore due to undue favour to the contractor.

Monitoring by Central and State agencies was lax. There were shortfalls in number of monitoring visits by Central Water Commission (CWC) and reports were not prepared in all projects evaluated. Further, compliance to issues highlighted in the CWC reports were also pending. State Level Monitoring Committees were not formed in all the States. Monitoring through Remote Sensing Technology by National Remote Sensing Centre, Hyderabad (NRSC) was very limited due to the low resolution of imageries and other limitations attributed by the Ministry. There were gaps in IP highlighted by NRSC and variance in IP data of the NRSC and the Ministry. Participatory irrigation management through Water Users Associations suffered from serious limitations due to limited number, status and the resources at their command affecting the Operation & Maintenance of projects.



## Chapter I: Programme Overview and Audit Approach

### 1.1 Introduction

Irrigation is a State subject and the role of the Government of India (GoI) in this sector primarily focuses on overall planning, policy formulation, co-ordination and guidance. The irrigation requirements of the country are met through various modes of irrigation including Major<sup>1</sup>, Medium<sup>2</sup> Irrigation (MMI) projects and Minor Irrigation (MI) schemes<sup>3</sup>. The Accelerated Irrigation Benefits Programme (AIBP) was launched during 1996-97 as a Central Assistance programme for accelerating the implementation of large projects which were beyond the resource capability of the States and completion of other irrigation projects which were at an advanced stage but were delayed due to resource constraints faced by State Governments. However, the scope of the programme was thereafter, expanded from time to time to cover MI schemes in Special Category States<sup>4</sup> (SCS) and in specified areas of other States.

### 1.2 Programme evolution and design

As stated above, the primary goal of AIBP launched in 1996-97 was to speed up completion of MMI projects which were at advanced stages of construction. The coverage under AIBP was gradually expanded over the years to include drought prone area of KBK<sup>5</sup> districts of Odisha and MI schemes of Special Category States (SCS); Extension, Renovation, Modernization (ERM) projects and MI schemes of Special Areas<sup>6</sup> (SA) of non-SCS.

From October 2013 onwards, additional emphasis was placed on *pari-passu* implementation of Command Area Development (CAD) works for increasing utilization of Irrigation Potential (IP). During 2015-16, AIBP was made one of the four components of *Pradhan Mantri Krishi Sinchayee Yojana* (PMKSY) with focus on faster completion of on-going MMI projects including National Projects. MI schemes were made a part of the separate component of PMKSY-*Har Khet ko Pani*. Under PMKSY, 99<sup>7</sup> incomplete MMI projects were identified (July 2016) for completion in a mission mode and referred as Priority projects. All Priority projects were segregated into Priority-I (23), Priority-II (31) and Priority-III projects (45) having schedule of completion by March 2017, March 2018 and December 2019 respectively.

<sup>1</sup> Projects with Irrigation Potential (IP) greater than 10,000 ha of Culturable Command Area (CCA).

<sup>2</sup> Projects with IP of 2,000 ha to 10,000 ha of CCA.

<sup>3</sup> Projects with IP less than 2,000 ha of CCA.

<sup>4</sup> North Eastern States and Hilly States (Himachal Pradesh, Sikkim, Jammu & Kashmir and Uttarakhand)

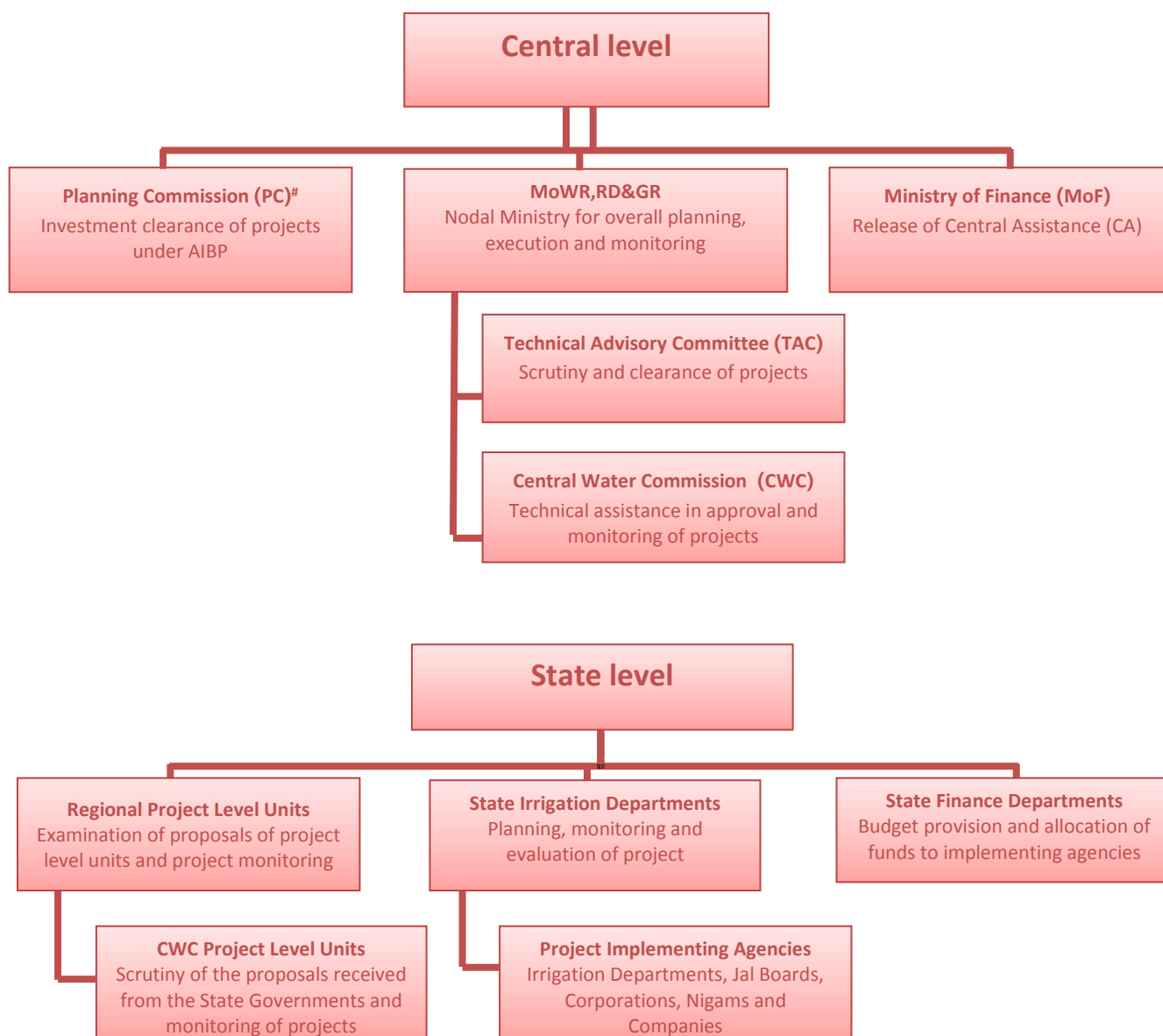
<sup>5</sup> Koraput, Bolangir and Kalahandi.

<sup>6</sup> The Special Areas denote Drought Prone Areas, Tribal Areas, Desert Areas, Flood Prone Areas.

<sup>7</sup> At the time of introduction of PMKSY, 149 projects, including five National Projects, were ongoing. The 99 priority projects include two National Projects (Saryu Nahar Pariyojana in Uttar Pradesh and Gosikhurd Project in Maharashtra).

### 1.3 Organizational Structure

Ministry of Water Resources, River Development and Ganga Rejuvenation (MoWR, RD&GR/Ministry) is responsible for framing policy guidelines for implementation while State Governments are primarily associated with planning and implementation of irrigation projects and schemes. A chart depicting the role of various agencies in implementation of AIBP is given below:



# Since constitution of NITI Aayog (January 2015), investment clearance for projects is being given by the Ministry.

Under PMKSY, a three-tier implementation structure as detailed below, has been created (September 2016) at Central level for implementing the programme.

- A **PMKSY Mission** with Additional Secretary/Special Secretary of MoWR,RD&GR as Mission Director, with responsibility inter-alia, for completing the 99 identified MMI projects including their CAD works in a Mission mode.
- A **Council** headed by CEO NITI Aayog and Secretaries of MoWR,RD&GR and Ministry of Agriculture, Cooperation and Farmer's Welfare (AC&FW) as members, for overall implementation of works, coordination, policy matters and monitoring of the Mission. Chief Secretaries of States with large number of projects were appointed as members along with one Chief Secretary from other States in rotation. The Mission Director is Member Secretary of the Council.
- A **High Level Empowered Committee (HLEC)** with the Finance Minister, Minister of WR,RD&GR, Minister of AC&FW, Minister of Rural Development and Vice Chairman (NITI Aayog) as Members was constituted for reviewing the progress of the projects and other components of the PMKSY.

#### 1.4 Projects approved under AIBP

There were 201 MMI projects under AIBP during 2008-17 (period of Audit coverage) which included 47 MMI projects that were brought under AIBP during the audit period. Similarly, there were 2,808 MI ongoing schemes as on 31<sup>st</sup> March 2008 and 8,483 schemes were taken up under AIBP during 2008-17. State wise number of MMI projects and MI schemes is given in **Annexure 1.1**. Summary of MMI projects and MI schemes covered during the period under AIBP is given in Table 1.1 below:

**Table 1.1: Number of AIBP projects/schemes**

| Period   | MMI and ERM projects | MI schemes |
|--|----------------------|------------|
| Ongoing projects/schemes as on 2008-09         | 154                  | 2,808      |
| Added during 2008-09 to 2016-17                | 47                   | 8,483      |
| Completed during 2008-09 to 2016-17            | 62                   | 8,014      |
| Ongoing AIBP projects/schemes as on 31.03.2017 | 139*                 | 3,277      |

\*includes four deferred projects

#### 1.5 Central Assistance under AIBP

A key objective of AIBP was to provide Central Assistance (CA) to States implementing MMI projects and MI schemes to meet their resource gap so as to ensure accelerated completion of irrigation schemes and projects. The funding arrangements under AIBP has also evolved since the inception (October 1996) of the programme and is summarized in Table 1.2.

**Table 1.2: Changes in funding pattern**

| Month/Year    | Criteria for funding   |
|---------------|--|
| October 1996  | Funding of MMI projects in the form of Central Loan Assistance (CLA) on 1:1 basis between Centre and the States.   |
| April 1997    | Funding for MMI projects for SCS on 2:1 basis between Centre and the States.   |
| April 1999    | Funding basis for both MMI projects and MI schemes for SCS on 3:1 between Centre and the States.   |
| February 2002 | <ul style="list-style-type: none"> <li>Concept of Reforming States<sup>8</sup> introduced with funding on 4:1 basis.</li> <li>Provision of 100 <i>per cent</i> CLA for SCS, including KBK districts of Odisha.</li> </ul>                                    |
| April 2004    | CLA to be converted on project completion to 30 <i>per cent</i> grant/70 <i>per cent</i> loan for General States and 90 <i>per cent</i> grant/10 <i>per cent</i> loan for SCS.   |
| April 2005    | The loan component to be raised by the States and grant component to be released by the Centre.  |
| December 2006 | In addition to SCS, grant (CA) of 90 <i>per cent</i> also made applicable to SA viz. Tribal Areas, Drought Prone Areas Programme (DPAP), Flood-Prone Areas and KBK districts whereas for projects of all other areas the grant would be 25 <i>per cent</i> . |
| October 2013  | CA as grant reduced to 75 <i>per cent</i> of project cost in SA viz.; DPAP areas, Desert Development Programme (DDP) Area, Tribal Areas, Flood-Prone Areas in non-SCS. Arrangement for all other areas remained unchanged.                                   |
| October 2015  | Provision for 60 <i>per cent</i> CA of project cost in SA i.e. Drought prone/Desert prone/Tribal and Flood prone area in non-SCS and 25 <i>per cent</i> for other areas. Arrangement for all other areas remained unchanged.                                 |
| July 2016     | Provision for funding of 99 Priority projects through NABARD by creation of Long Term Irrigation Fund with an initial corpus of about ₹ 20,000 crore.  |

(Source: Ministry)

CA for projects under AIBP is provided to States in the form of grants based on AIBP guidelines<sup>9</sup>. During 2008-17, GoI released ₹ 41,143 crore<sup>10</sup> as CA for the programme, which included ₹ 28,334 crore for 197 MMI projects and ₹ 12,809 crore for 11,291 MI schemes. Under PMKSY, the total CA requirement for completion of Priority projects had been estimated at ₹ 31,342 crore.

State-wise details of releases of CA and State share and reported expenditure during 2008-17 in respect of 20<sup>11</sup> States are given in **Annexure 1.2**. The details of CA released for MMI projects and MI schemes are given in **Annexure 1.3**. The summary position of funds released for MMI projects and MI schemes under AIBP and expenditure reported with respect to the 20 States for which complete information was made available is given in Table 1.3.

<sup>8</sup> Based on year-wise Operation and Maintenance (O&M) cost per ha and net revenue collection, increase in water rates at the rate of ₹ 225 *per* ha for MI schemes and ₹ 450 *per* ha for MMI projects at interval of three years and increase in water rates to meet full O&M costs for all categories of projects at the end of five years.

<sup>9</sup> Central Loan Assistance (CLA) was released before November 2006. From December 2006 onwards, CA released in the form of grants only.

<sup>10</sup> Including ₹ 2,421 crore as loan from NABARD during 2016-17.

<sup>11</sup> Details on release of States' share in respect of five States viz. Arunachal Pradesh, Goa, Odisha, Rajasthan and West Bengal were not made available by the States/Ministry. Details of States' share and expenditure in respect of Manipur and Punjab is also not available as these were not selected for Audit.



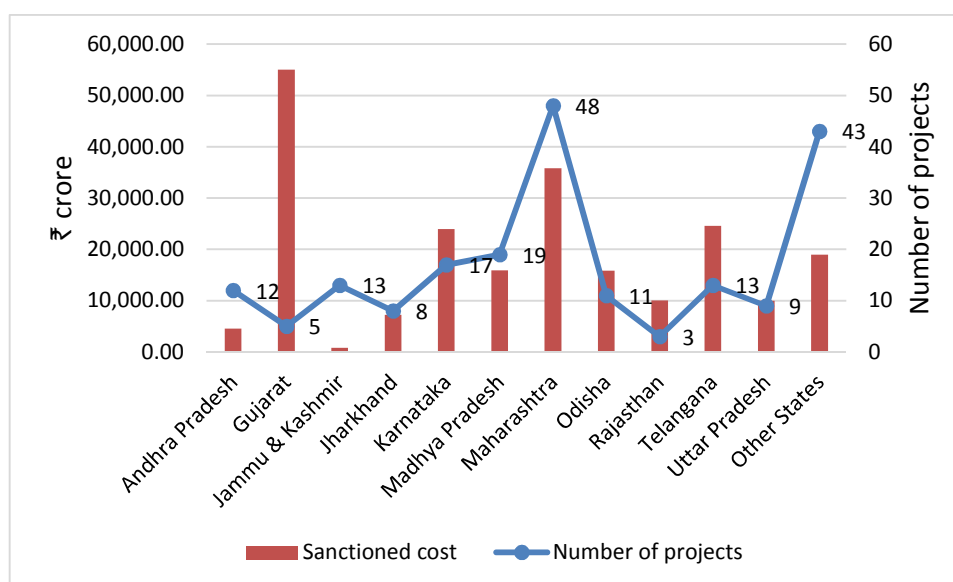
**Table 1.3: Financial outlay and Expenditure on AIBP****(Amount in ₹ crore)**

| Period             | Central share released | State share released | Total Releases | Reported Expenditure |
|--------------------|------------------------|----------------------|----------------|----------------------|
| 2008-09 to 2016-17 | 41,143                 | 56,805.84            | 97,985.32      | 92,522.39            |

Source: Central releases are based on the records of the Ministry, while figures of States share and reported expenditure have been compiled from information provided by the State Governments for 20 States only.

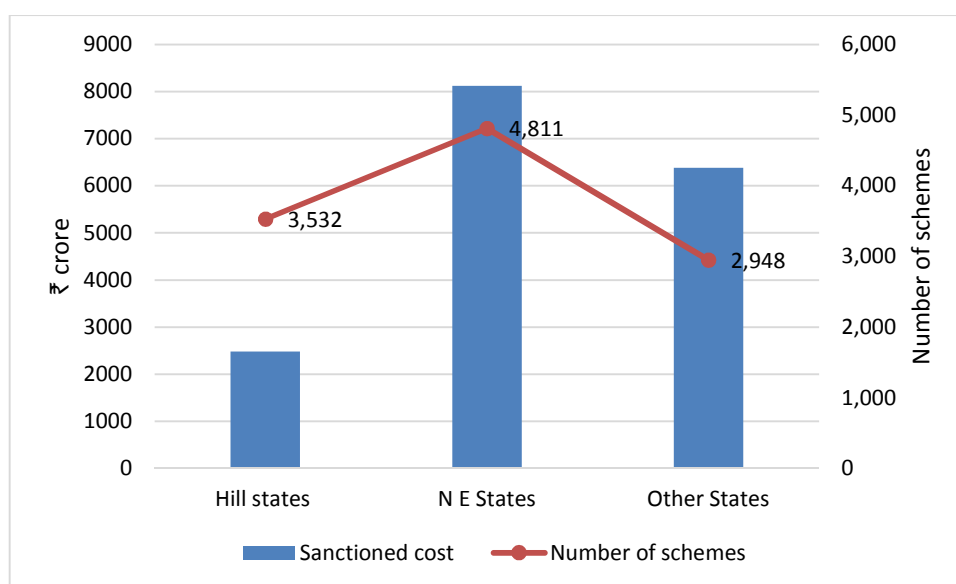
### 1.6 State-wise distribution of projects/schemes and their sanctioned costs

The total sanctioned cost of the 201 MMI projects which were part of AIBP during 2008-17, was ₹ 2,22,799.98 crore. An analysis of State wise distribution of the MMI projects shows that nine States viz. Maharashtra (48); Madhya Pradesh (19); Karnataka (17); Telangana (13); Jammu and Kashmir (13); Andhra Pradesh (12); Odisha (11); Uttar Pradesh (nine) and Jharkhand (eight) accounted for about 75 per cent of projects covered under AIBP. In terms of sanctioned cost, the States of Gujarat (24.71 per cent), Maharashtra (16.07 per cent), Telangana (11.05 per cent), Karnataka (10.76 per cent), Madhya Pradesh (7.14 per cent), Odisha (7.11 per cent), Rajasthan (4.50 per cent), Uttar Pradesh (4.49 per cent) and Jharkhand (3.26 per cent) accounted for the major share of projects in financial terms. The distribution of projects and sanctioned cost among these States and the remaining States is shown in Chart 1.

**Chart 1: MMI projects under AIBP during 2008-17**

The total sanctioned cost of 11,291 MI schemes was ₹ 16,800.78 crore. Of this, major portion was allocated for the North East States (47.82 per cent) followed by the Hill States (14.60 per cent), and Other States (37.58 per cent). The distribution of MI schemes and sanctioned cost to these States is shown in Chart 2.

**Chart 2: MI schemes under AIBP during 2008-17**



### 1.7 Audit Objectives

We undertook a performance audit of AIBP to examine and assess:

- If planning of the programme was adequate for achieving targeted IP creation and its utilization;
- Whether funds were adequate, available timely and utilized properly;
- Whether the projects were executed in an economic, efficient and effective manner by ensuring availability and sustainable management of water;
- Whether the mechanisms for monitoring and evaluation of projects were adequate and effective; and
- Whether the assurance given by the Ministry in reference to previous recommendations of the PAC have been complied with and implemented.

### 1.8 Audit Criteria

The main sources of audit criteria for the performance audit were as follows:

- AIBP guidelines;
- Guidelines issued by Central Water Commission (CWC) for preparation of Detailed Project Reports (DPRs);
- Project-wise Memorandum of Understanding (MoU) between the State and Central government;
- State PWD Manual/State Procurement Manuals;

- General Financial Rules;
- Other related circulars/instructions issued by MoWR, RD&GR and CWC; and
- PMKSY Guidelines

## 1.9 Audit scope and sampling

In this Performance Audit, we covered the MMI projects and MI schemes pertaining to the period 2008-09 to 2016-17 from 25<sup>12</sup> States. A sample of 118 MMI projects from the universe of 201 projects was selected on random basis subject to the condition that 50 *per cent* projects in each State subject to a minimum of one and all Priority I projects were selected under the two groups i.e. Sample A and Sample B. Sample A consists of 30 MMI projects (six Priority I, six Priority II, nine Priority III and nine other projects) drawn from the 47 projects added during 2008-17, whereas Sample B includes 88 MMI projects (15 Priority I, nine Priority II, 18 Priority III and 46 other projects) drawn from rest of the 154 projects. The selected 118 MMI projects constitute 58 *per cent* of total MMI projects.

From the universe of 11,291 ongoing and completed MI schemes pertaining to the period 2008-17, a Sample C of 335 schemes which constitutes three *per cent* of the total number of schemes, was drawn on random basis subject to the condition that five *per cent* of completed and ongoing schemes in each State subject to a maximum of 15 ongoing and completed schemes were selected. State wise numbers and sample of projects/schemes under three samples are given in **Annexure 1.4**.

The 118 MMI projects selected have a total sanctioned cost of ₹ 1,80,145.79 crore and includes 64 priority (21 Priority I, 15 Priority II and 28 Priority III) projects under PMKSY. Further, out of sampled 118 MMI projects, 25 MMI projects pertain to SCS and KBK areas of Odisha and 40 projects pertain to SAs in non-SCS & Agrarian Distress Areas covered under Prime Minister's Package. Of these 118 MMI projects, 30 projects were completed, three were deferred and 85 were ongoing as on 31<sup>st</sup> March 2017. GoI released ₹ 19,184 crore for 115 sampled MMI projects<sup>13</sup> as CA and expenditure incurred on these projects was ₹ 62,801 crore during 2008-17.

The total sanctioned cost of 335 selected MI schemes was ₹ 1,680.55 crore, of which 213 were completed and 122 were ongoing as on 31<sup>st</sup> March 2017. Expenditure to the tune of ₹ 1,591.71 crore was incurred against 335 MI schemes during 2008-17<sup>14</sup>.

State-wise distribution of release and expenditure for sampled MMI projects and MI schemes is given in **Annexure 1.5**. It is pertinent to mention that in case of MI schemes, CA is released for cluster of schemes and not for individual schemes.

<sup>12</sup> We covered MMI projects and MI schemes in 21 States each. The total number of States covered for both MMI projects and MI schemes was 25.

<sup>13</sup> Three deferred projects prior to 2008.

<sup>14</sup> The Scheme wise release of CA was not furnished by the authorities.

### 1.10 Audit Methodology

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The Performance Audit commenced with an Entry meeting with the Ministry on 12 April 2017 in which the audit objectives, scope and methodology were explained. Field audit was conducted from April to September 2017. At the Central level records pertaining to the Ministry and CWC were examined for evaluating the performance of agencies involved in approval/clearance, funding, monitoring and evaluation of projects. State Audit Offices in 25 States examined records relating to planning, financial management, execution, monitoring and evaluation of the selected projects pertaining to the concerned States.

Draft of the Audit Report was issued to the Ministry on 30 November 2017 and their comments received on 09 February 2018. An Exit conference was held with officials of the Ministry on 15 February 2018. The report was revised based on the discussions held in the exit meeting and issued (July 2018) to the Ministry for their further comments. The comments of the Ministry on the revised report are awaited.

### 1.11 Previous Audit Findings and Public Accounts Committee Recommendations

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AIBP was previously examined in audit on two occasions. Audit findings arising out of the first audit were reported in the CAG's Report No. 15 of 2004 (Union Government-Performance Appraisal). The findings of the second audit undertaken of AIBP was reported in the CAG's Report No.4 of 2010-11 (Performance Audit). The findings contained in CAG's Report No.4 of 2010-11 (Performance Audit) were taken up for detailed examination by the Public Accounts Committee (PAC) and its recommendations on the subject were made in its 68<sup>th</sup> Report (15<sup>th</sup> Lok Sabha). Action Taken Report submitted by the Ministry with respect to the PAC recommendations and related audit findings in the present report are given in **Annexure 1.6.**

### 1.12 Acknowledgement

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We acknowledge the cooperation extended by MoWR, RD&GR, CWC and State Government Departments at each stage of the Performance Audit.

## Chapter II: Planning

### 2.1 Introduction

AIBP provides for an elaborate framework for planning involving multiple agencies both at the Central and State levels. In the case of MMI projects, the planning process broadly involves preparation of Preliminary Reports on projects after conducting necessary survey and investigations. These are thereafter submitted to the Central Water Commission (CWC) which scrutinizes the same and accords *in-principle* consent for preparation of Detailed Project Reports (DPRs). The DPRs prepared by the State governments are examined by the CWC and sent to the Technical Advisory Committee (TAC) of the Ministry for technical clearance. After clearance by the TAC, the DPRs are sent to the Planning Commission/Ministry for final approval and investment clearance<sup>15</sup>. Minor Irrigation schemes are to be taken up under AIBP only after these have been approved by State TAC/State Planning Department.

### 2.2 AIBP Eligibility Criteria and Norms

AIBP guidelines lay down the eligibility criteria and norms for inclusion of projects and schemes under AIBP. These norms have undergone numerous amendments since the inception of AIBP in October 1996, as summarized in Table 2.1 below:

**Table 2.1: Revisions in norms for inclusion of projects under AIBP**

| Month/Year    | Norms for inclusion of project under AIBP  |
|---------------|--|
| October 1996  | <ul style="list-style-type: none"> <li>▪ Multipurpose projects costing over ₹ 1,000 crore where <i>substantial progress</i> had been made and were beyond the resource capability of the States.</li> <li>▪ MMI projects at an <i>advanced stage</i> of completion, with potential benefit of assured water supply to 1,00,000 ha.</li> <li>▪ Projects should have investment clearance of Planning Commission.</li> </ul>   |
| April 1997    | <ul style="list-style-type: none"> <li>▪ Projects costing over ₹ 500 crore.</li> </ul>   |
| April 1999    | <ul style="list-style-type: none"> <li>▪ Projects in KBK districts of Odisha.</li> <li>▪ MI schemes of SCS (seven States in North East and other Hilly States viz. Himachal Pradesh, Sikkim and Jammu &amp; Kashmir).</li> </ul>   |
| April 2005    | <ul style="list-style-type: none"> <li>▪ MI schemes in SCS with IP of more than 50 ha for group of schemes and 20 ha for individual schemes with cost per ha not exceeding ₹ one lakh and MI schemes in non-SCS with IP of more than 100 ha for individual schemes with preference for Tribal Areas and Drought Prone Areas, wholly benefiting <i>dalits</i> and <i>adivasis</i> (Special Areas).</li> <li>▪ Inclusion of ERM projects.</li> <li>▪ One-for-one condition<sup>16</sup> specified for MMI and ERM projects (with exceptions).</li> </ul> |
| December 2006 | <ul style="list-style-type: none"> <li>▪ For inclusion under AIBP, MMI and ERM projects should have stipulated period of completion in next four years.</li> <li>▪ In non-SCS with IP more than 50 ha for each scheme which serve Tribal Areas and Drought Prone Areas.</li> </ul>   |
| October 2013  | <ul style="list-style-type: none"> <li>▪ ERM projects with investment clearance of Planning Commission related to projects already completed and commissioned at least 10 years earlier subject to conditions.</li> </ul>  |

<sup>15</sup> After replacement (1 January 2015) of Planning Commission by National Institution for Transforming India (NITI) Aayog, investment clearance is accorded by the Ministry.

<sup>16</sup> Only on completion of one project under the programme, inclusion of another project will be considered.

| Month/Year | Norms for inclusion of project under AIBP   |
|------------|---|
|            | <ul style="list-style-type: none"> <li>▪ Exceptions to one to one rule allowed for projects in agrarian distressed districts identified under Prime Minister's package.</li> <li>▪ "Advanced stage" defined to mean project which had incurred expenditure of at least 50 <i>per cent</i> of the latest approved estimated cost and achieved at least 50 <i>per cent</i> physical progress in the case of essential works<sup>17</sup>.</li> <li>▪ For MI schemes in non-SCS the stipulated date of completion was two FYs.</li> <li>▪ <i>Pari-passu</i> implementation of CAD works for the utilization of IPC.</li> </ul> |
| July 2015  | <ul style="list-style-type: none"> <li>▪ AIBP was made one of the four components of PMKSY and included the incomplete MMI projects.</li> <li>▪ MI schemes were made a separate component of PMKSY, under <i>Har Khet Ko Pani</i>.</li> </ul>   |
| July 2016  | <ul style="list-style-type: none"> <li>▪ Out of 144 incomplete MMI projects and five National Projects, 99<sup>18</sup> projects were declared as Priority projects for completion in phases up to December 2019.</li> </ul>  |

(Source: Ministry)

Report No. 4 of 2010-11 of the C&AG had highlighted that frequent modifications in AIBP guidelines (1997, 1999, 2005 and 2006) showed lack of clarity in the focus, approach and objectives of AIBP. The Parliamentary Standing Committee (16<sup>th</sup> Lok Sabha) in its Fourteenth Report on Review of AIBP (March 2017) had also observed that such frequent changes in guidelines "hampered the smooth implementation of the programme and reflects lack of farsightedness in framing policy". Audit examination revealed that even thereafter, the guidelines have continued to be modified from time to time viz. in 2013, 2015 and 2016.

### 2.3 Inclusion of projects under AIBP without adherence to prescribed criteria

#### MMI projects

Audit noticed that 30 MMI projects involving sanctioned cost of ₹ 30,192.70 crore i.e. 17 *per cent* of the total sanctioned cost of the 118 sampled projects, were included under AIBP in violation of norms and criteria prescribed in the guidelines. An amount of ₹ 3,718.71 crore had been released as Central Assistance (CA) up to 2016-17 to these projects since their inclusion under AIBP. Details of the above 30 projects are given in **Annexure 2.1**. Audit findings relating to the 30 MMI projects that were included in AIBP in violation of the guidelines are discussed in following paragraphs:

- In the case of four States viz., Jammu and Kashmir, Karnataka, Kerala and Uttar Pradesh which already had ongoing MMI projects under AIBP, nine ERM projects with a total sanctioned cost of ₹ 1,016.02 crore were included under AIBP during 2005-12 in violation of conditions stipulated in AIBP Guidelines<sup>19</sup>. An amount of ₹ 239.46 crore had been released against these nine ERM projects. Ministry's explanation (February 2018) that the guidelines allow inclusion of ERMs where new potential is

<sup>17</sup> Head works, earth works for canal, land acquisition, R&R activities for reservoir areas, finalization of designs and availability of construction drawings matching with completion of work as per award of work.

<sup>18</sup> Includes two National projects

<sup>19</sup> Para 6 (a) of the 2005 AIBP Guidelines.

envisaged is not tenable as for inclusion in AIBP, the primary requirement that the State should not have any ongoing MMI project is to be met first.

- Four MMI projects in two States i.e. Karnataka and Maharashtra, with a total sanctioned cost of ₹ 2,045 crore were included under AIBP between 2002-03 and 2009-10 without obtaining investment clearance of the Planning Commission. An amount of ₹ 301.18 crore had been released against these projects during 2003-10. Ministry justified (February 2018) the above based on instructions issued by Planning Commission in 1997 which permitted State Governments to accord investment approval for medium irrigation schemes without Inter-State aspects. This is not acceptable, as since 1996 itself AIBP guidelines had mandated inclusion of MMI projects only after investment clearance by the Planning Commission.
- 14 MMI projects in eight States viz., Andhra Pradesh, Himachal Pradesh, Jammu & Kashmir, Karnataka, Maharashtra, Odisha, Telangana and Uttar Pradesh with a sanctioned cost of ₹ 26,822.10 crore were included under AIBP during 2005-06 to 2009-10 even though these were not at an advanced stage of construction. We noticed that the expenditure on these projects ranged between nil to 34 *per cent* of their estimated cost at the time of their inclusion. Further, since their inclusion under AIBP, an amount of ₹ 3,114.15 crore had been released to these projects till March 2017. Ministry stated (February 2018) that 2006 AIBP guidelines did not define “advance stage of construction” and hence these projects were included. The Ministry’s contention is not tenable as the expenditure on these projects was low and ranged from nil to 34 *per cent* of their original estimated cost only.
- In Jharkhand, the projected gross command area of three projects with a sanctioned cost of ₹ 309.58 crore were included under AIBP even though these did not fulfil the criteria of having a planned command area of one lakh ha as required under provisions of the AIBP guidelines stated *ibid*. As such, selection of these three projects under AIBP was irregular. An amount of ₹ 63.92 crore had been released to these projects till March 2017.

### MI schemes

Eligibility criteria under AIBP guidelines for inclusion of MI schemes varied between SCS and non-SCS and were also modified by the Ministry from time to time as shown in Table 2.2 below:

**Table 2.2: Eligibility criteria for MI schemes**

| Year | Category of State | Area                  |                  | Development cost per ha |
|------|-------------------|-----------------------|------------------|-------------------------|
|      |                   | Individual MI schemes | Group of schemes |                         |
| 2005 | SCS               | At least 20 ha        | At least 50 ha   | Less than ₹ one lakh    |
|      | Non-SCS           | More than 100 ha      | -                | -                       |
| 2006 | SCS               | At least 20 ha        | At least 50 ha   | Less than ₹ one lakh    |
|      | Non-SCS           | More than 50 ha       | -                | Less than ₹ one lakh    |
| 2013 | SCS               | 10 ha                 | 20 ha            | Less than ₹ 2.50 lakh   |
|      | Non-SCS           | 20 ha                 | 50 ha            | Less than ₹ 2.50 lakh   |

Audit scrutiny of MI schemes included under AIBP in three States revealed 41 cases of inclusion of MI schemes which was not in accordance with the laid down criteria. State-wise details of important findings are given in the Table 2.3 below:

**Table 2.3: MI schemes included without adherence to prescribed criteria**

| State             | Schemes included without adherence to prescribed criteria  |
|-------------------|--|
| Arunachal Pradesh | <ul style="list-style-type: none"> <li>Cluster of MI schemes at Kukurjan, Old Ganga MI scheme, Singri Hapa Jote, Inderjuli MI scheme, Model MI scheme at Chimpu WRD Complex, Rillo MI scheme at Poma under Itanagar Sub. Division and Cluster of MI scheme at Pareng, Boleng, Supsing, Rengo, Yingku, Lileng, Mopit, Begging, Dosing, Parong, Riew, Riga, Pangkang, Kumku, Ugging, Yemsing, Kallek, Komsing</li> </ul> <p>For the above two clusters of MI schemes sanctioned during February 2011, development cost per ha were ₹ 1.81 lakh and ₹ 1.24 lakh respectively as against the prescribed cost per ha of less than ₹ one lakh.</p> <ul style="list-style-type: none"> <li>Gipjang MI scheme for Budagaon, Wanghoo, Takhongand Ramalingam Agri field areas</li> </ul> <p>The scheme was sanctioned in January 2009 with the total IP of 42 ha, which was less than the stipulated minimum of 50 ha.</p> |
| Jammu & Kashmir   | <ul style="list-style-type: none"> <li>Development cost in respect of 11 out of 30 test checked schemes sanctioned prior to the year 2013-14, was in excess of ₹ one lakh per ha and ranged between ₹ 1.05 lakh and ₹ 3.10 lakh per ha. The expenditure incurred on these schemes was ₹ 33.22 crore for the period ending March 2017. The Department stated that as the schemes were duly approved by the competent authority, (TAC) funds were released for execution of works.</li> <li>20 tube wells involving an approved cost of ₹ seven crore, were included as MI Scheme under AIBP during 2008-09, which was irregular as the schemes did not involve any surface irrigation.</li> </ul>   |
| Rajasthan         | <p><b>Bhimni MI scheme</b></p> <p>The development cost per ha for the projects was ₹ 1.13 lakh as against the prescribed cost per ha of less than ₹ one lakh; though the scheme was not eligible for grant under AIBP, the Department got the project sanctioned and received the grant for ₹ 7.87 crore.</p>  |

## 2.4 Detailed Project Reports (DPRs)

As per CWC Guidelines for submission, appraisal and clearance of irrigation and multipurpose projects, DPRs submitted by State governments are subjected to techno-economic scrutiny by CWC, which has to complete the appraisal within a maximum time of



38 weeks. Further, block-wise information<sup>20</sup> on Command Area is also required to be furnished for each project. The Public Accounts Committee in its 68<sup>th</sup> Report during 15<sup>th</sup> Lok Sabha recommended that DPRs must be insisted on for all minor irrigation projects as in the case of major and medium projects, and concept papers or simple project proposals should not be treated as sufficient. AIBP guidelines also require that MI schemes should be technically appraised by State TAC on the basis of DPRs and after their approval, submitted to the Ministry for inclusion under AIBP.

In the case of 14 sampled MMI projects pertaining to seven States<sup>21</sup> including three Priority-I projects with overall sanctioned cost of ₹ 10,550.91 crore, DPRs were not made available to audit.

In one case, a project (Rongai Valley, Meghalaya) with sanctioned cost of ₹ 16.30 crore was included under AIBP without preparing a DPR. An amount of ₹ four crore had been released by GoI up to 2002-03 for the project. The project was subsequently abandoned by the contractor in April 2003 after an expenditure of ₹ 17.90 crore was incurred and physical progress of 95 *per cent* was achieved, due to submergence of command area and abnormal delay in land acquisition.

Of the balance sampled MMI projects where DPRs were made available, our test check disclosed that in 35 projects with an overall sanctioned cost of ₹ 55,955.19 crore (31 *per cent*), there were shortfalls and deficiencies in preparation and processing of DPRs such as delays, inadequate surveys, deficiencies in surveys, inaccurate assessment of water availability, incorrect IP, inaccurate assessment of Command Area, reduction in Command Area, lack of activity wise construction plans and inadequate provision of cross drainage works in distribution systems. These deficiencies resulted in changes in quantities of items of work, modifications in scope of work and in structural engineering and designs after commencement of work which had significant financial implications.

In six MI schemes of five States, instances of non-preparation of DPRs, incomplete information in the DPRs and improper survey and investigations were noticed.

Details are given in **Annexure 2.2**. A few illustrative cases covering different issues are discussed in the Table 2.4.

**Table 2.4: Deficiencies in DPR**

| State             | Deficiencies in the DPR  |
|-------------------|--|
| Arunachal Pradesh | <p><b>Cluster of MI schemes under Bana Block</b></p> <p>Project proposal with estimated cost of ₹ 98.00 lakh contained only survey and estimates of sub MIPs. Important information such as BC ratio, salient features of the project, project phasing/schedule, Index maps, etc. were not included in the project proposal.</p> |

<sup>20</sup> Command area details, location, classification of land, Gross command area, Culturable command area, size of land holding, etc.

<sup>21</sup> Andhra Pradesh: two, Assam: four, Bihar: one, Goa: one, Karnataka: three, Odisha: one, Tripura: two.

| State                          | Deficiencies in the DPR   |
|--------------------------------|---|
|                                | <p><b>Cluster of MI schemes at Kukurjan, Old Ganga MI scheme, etc., under Itanagar Sub-Division</b></p> <p>The above cluster of MI schemes was approved for the cost of ₹ 1.43 crore with physical target of 79 ha. Audit scrutiny of the DPR revealed that the project consists of seven sub-MI schemes whose total targeted area as per the survey reports was 270 ha. Thus, the information given in the DPR regarding the coverage of ha was not in line with the survey.</p>   |
| Andhra Pradesh and Maharashtra | <p><b>Velligallu (Andhra Pradesh), Lower Wardha, Wang and Krishna Koyana LIS (Maharashtra)</b></p> <p>There were delays ranging from four to 25 years in approval of DPRs. These projects were finally approved for a total amount of ₹ 7,498.77 crore. Delay in approval of DPRs deprived beneficiaries from envisaged benefits from the projects for prolonged periods.</p>   |
| Karnataka                      | <p><b>Upper Tunga Project</b></p> <p>The alignment of the main canal from Km. 212 to Km. 217 was modified at the time of approval. After completion of one stretch of the canal, the work from Km. 212 to Km. 213.220 could not be taken up as the farmers demanded change of alignment to the alignment originally surveyed for which they had agreed to provide land. Thus, modifying the original alignment resulted in protests by the farmers and stoppage of work. The contract was later rescinded and a new tender notification was issued for the balance work. As a result, the project that was to be completed by March 2015 and now included under Priority-I category is still incomplete depriving farmers of irrigation.</p>  |
| Madhya Pradesh                 | <p><b>Kachnari Diversion scheme</b></p> <p>The canal length of 3,420 m could not be constructed due to non-availability of actual command area (CCA of 220 ha) on site during execution. This showed that the DPR had not correctly assessed the availability of command area. Non-completion of canal rendered the expenditure amounting to ₹ 3.21 crore on the project wasteful.</p>  |
| Maharashtra                    | <p><b>Chandrabhaga barrage</b></p> <p>The work of construction of the barrage was completed in June 2015 at a cost of ₹ 188.96 crore, but canal could not be constructed due to location of command area at a higher level than the submergence area, indicating improper survey and planning and resulted in blocking of huge expenditure of ₹ 188.96 crore. Besides the water could not be stored in the barrage due to non-rehabilitation of two villages coming under submergence.</p>  |
| Nagaland                       | <p><b>Alachila MI scheme (Mokokchung), Balijan MI scheme (Dimapur), Balughoki MI scheme (Dimapur), Cluster-II MI scheme (Dimapur), Khekiho RWH (Dimapur), Upper Amaluma MI scheme (Dimapur), Ralan MI scheme (Wokha), Krazhol MI Project (Kohima), Kiyeaki MI scheme (Kohima), Chenyak MI scheme (Tuensang), Choklotso (Tuensang) and Shopong MI scheme (Tuensang)</b></p> <p>DPRs of 12 sampled MI schemes did not have the meteorological data, soil surveys, hydrological aspects like monsoon rainfall, nature of catchment area, existing water availability of catchment area, ground water potential, etc. Although the independent monitoring team (NABCONS Pvt. Ltd.) pointed out these deficiencies in December 2016, STAC approved DPRs without the aforementioned vital data.</p> |
| Telangana                      | <p><b>Sri Ram Sagar Stage Phase II project</b></p> <p>Water availability had not been properly assessed and water from two of the three reservoirs did not become available due to problems of land acquisition in forest area and absence of catchment area. As a result, the deficit had to be supplemented through another new lift irrigation scheme constructed with a cost of ₹ 121.69 crore (March 2017). This led to additional financial burden on SRSP II project and also delayed achievement of irrigation potential.</p>   |

| State         | Deficiencies in the DPR   |
|---------------|---|
| Tripura       | <p><b>Pratyekroycherra diversion scheme, Duraicherra diversion scheme, Chandukcherra diversion scheme, Purba Nadiapur LI scheme, Taltala LI scheme, Rabiadrafida para LI scheme, Shankhola LI scheme and Kalashati para LI scheme</b></p> <p>In case of eight out of the nine selected MI schemes, DPRs were not prepared. Instead of DPRs, the State Government submitted project proposals indicating the targeted CCA and estimated cost to the GoI for funding. The Department stated that preliminary survey and investigations were carried out, but these reports were not made available to audit.</p>  |
| Uttar Pradesh | <p><b>Modernisation of Lahchura Dam</b></p> <p>In case of the project originally approved at a cost of ₹ 99.66 crore, there were significant variations in quantities of 75 items of works mentioned in the approved DPR. This indicated deficiencies in surveys and investigations and inaccurate estimation of quantities at the stage of preparation of DPR. The project has suffered a cost overrun of ₹ 229.16 crore and a time overrun of eight years.</p> <p><b>Madhya Ganga Canal Project Stage-II</b></p> <p>The work of concrete lining of the canal sanctioned in July 2007 at a cost of ₹ 117.87 crore was stopped after completion of work up to 31.55 km out of 66.20 km on the pretext of affecting the ground water recharge. This showed that the requirement and feasibility of providing concrete lining had not been adequately analysed at the DPR stage leading to avoidable expenditure on bed lining.</p> |

## 2.5 Benefit Cost Ratio (BCR)

The Benefit Cost Ratio (BCR) is the ratio of annual additional benefit on account of irrigation to the annual cost of providing those benefits. The calculations of BCR are incorporated in the DPRs, as it is an essential requirement for determining the economic feasibility of an irrigation project. As per guidelines for preparation of DPRs of irrigation and multipurpose projects, the minimum BCR for approval of such projects in Drought Prone Areas was one and in other areas it was 1.5.

PAC in its 68<sup>th</sup> Report during Fifteenth Lok Sabha recommended that Ministry must ensure that the BCRs for all projects are properly worked out, based on validated and verifiable data and assumptions relating costs, revenues and cropping patterns, etc.

In all six MMI projects and two MI schemes selected in Andhra Pradesh, the inputs considered for computation of BCR were not made available to audit, in the absence of which the accuracy of data could not be ascertained.

In 28 MMI projects in nine States<sup>22</sup> and 82 MI schemes in 10 States<sup>23</sup>, CWC and the project authorities did not adopt uniform parameters for calculation of BCR. There were divergences and discrepancies in adoption of capital cost of development of land, costs of various works, annual Operation and Maintenance (O&M) charges and depreciation whereas yield of various food grains and annual benefit were found to be inflated.

<sup>22</sup> Assam, Bihar, Chhattisgarh, Jharkhand, Karnataka, Odisha, Maharashtra, Rajasthan and Uttar Pradesh

<sup>23</sup> Assam, Bihar, Jharkhand, Mizoram, Sikkim, Madhya Pradesh, Nagaland, Odisha, Rajasthan and Uttarakhand

Important findings are given below:

### MMI projects

- In five projects<sup>24</sup> in three States, authenticated data from District Agriculture Officer regarding annual yield of crops were not used for calculation of BCR.
- In case of Aruna project in Maharashtra, cost of ₹ 129.01 crore in respect of land acquisition was excluded from the cost of project for calculating BCR.
- In four projects in Chhattisgarh<sup>25</sup>, there were discrepancies in calculation of annual O&M charges viz. adoption of non-uniform parameters for calculation of annual O&M charges in two projects. The annual O&M charges were included at rates ranging from ₹ 500.00 to ₹ 600.00 per ha in two projects whereas administrative expenditure at ₹ 100.00 and ₹ 600.00 per ha were included in place of O&M charges in two other projects. Depreciation and interest on capital cost were also seen to have been estimated at different rates. Besides, contingencies such as cost escalation due to delay in land acquisition and finalisation of drawing and design were also not taken into account in any project.
- In four projects<sup>26</sup> in Odisha, depreciation cost was not taken as per prescribed rate of one *per cent* of cost of the project having life of 100 years/two *per cent* of cost of the project with a life 50 years.
- In Tarali project in Maharashtra, no separate BCR of Tarali valley and Drought Prone Area (Man and Khatavtaluka) were calculated.
- In case of Narmada Canal Project in Rajasthan, the un-irrigated area before construction of project was considered as 1,70,222 ha in place of 1,14,927 ha and net receipt was also calculated at higher value i.e. as ₹ 651.83 crore in place of ₹ 633.42 crore. Further, operation and maintenance cost was calculated on the basis of CCA in place of Gross Command Area (GCA), which was higher.

### MI schemes

In the case of MI schemes, calculation of BCR was not found to be as per prescribed guidelines in 82 schemes in 10 States. In 20 MI schemes<sup>27</sup> in three States, there were discrepancies in calculation of O&M charges. In 59 schemes<sup>28</sup> in three States, data on post-irrigation increase of food grains had been taken without authentication by District Agriculture Office and in three schemes in Jharkhand, the irrigated land of area was incorrectly computed.

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<sup>24</sup> Durgawati in Bihar, Lower Panzara and Bawanthadi in Maharashtra, Restoration of Hardoi Branch and Bansagar in Uttar Pradesh

<sup>25</sup> Maniyari Canal, Kelo, Mahanadi and Koserteda

<sup>26</sup> Lower Indra, Lower Suktel, Anandpur Barrage and Ret Irrigation in Odisha

<sup>27</sup> 12 MI schemes in Mizoram, one in Assam, two in Sikkim, three in Madhya Pradesh, one in Rajasthan and one in Nagaland

<sup>28</sup> 14 MI schemes in Bihar, 30 MI schemes in Uttarakhand, eight MI schemes in Madhya Pradesh, four in Jharkhand, and three in Odisha

It has been observed that BCR calculated while approving the projects/schemes is not sacrosanct as the actual BCR may reduce significantly due to increase in cost as outlined in subsequent chapters and decrease in benefits in cases where the utilized Irrigation Potential is below the Irrigation Potential envisaged.

## 2.6 Audit Summation

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Overview of planning of the programme reflects widening coverage of projects under AIBP. The criteria for inclusion of projects/schemes were modified repeatedly in the AIBP guidelines and projects/schemes were included under AIBP without adherence to the same resulting in irregular release of ₹ 3,718.71 crore. There were shortfalls and deficiencies in preparation and processing of Detailed Projects Reports such as delays, inadequate and deficient surveys, reduction in command area and inadequate provision of cross drainage works in distribution systems. While Benefit Cost Ratio (BCR) was key for assessing economic viability of projects, Project Authorities did not adopt uniform parameters for calculation of BCR and on account of delays and cost overrun, actual BCRs were likely to be much lower than calculated BCR by the time projects were complete.

## Chapter III: Financial Management

### 3.1 Introduction

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Central Financial Assistance (CFA) to States for projects and schemes under AIBP has been provided as loans / grants on the basis of AIBP guidelines as revised from time to time. CFA was given as a loan till the year 2004 and was thereafter partly allowed to be converted into grants based on performance. From December 2006 onwards, the loan component of the assistance was removed and the entire assistance was given as grants. The AIBP guidelines provide for different funding patterns for projects pertaining to Special Category States (SCS) and for Special Areas (SAs) in general States and for the remaining areas of general States as discussed in para 1.5 of this report. Under PMKSY, creation of a Long Term Irrigation Fund (LTIF) with National Bank for Agriculture and Rural Development (NABARD) has been envisaged for funding of the 99 Priority projects. The salient features of the new funding arrangements under LTIF is given in **Annexure 3.1**.

### 3.2 Central Assistance releases under AIBP

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The Ministry released total Central Assistance (CA) amounting to ₹ 19,184 crore<sup>29</sup> for 115 selected MMI<sup>30</sup> projects and ₹ 12,809 crore<sup>31</sup> for all MI schemes during the period 2008-17. The above includes CA amounting to ₹ 2,413 crore provided from the LTIF through NABARD in 2016-17. Out of ongoing 201 MMI projects during 2008-17, 150 (75 *per cent*) projects were being implemented in nine States (Andhra Pradesh, Jammu and Kashmir, Jharkhand, Karnataka, Madhya Pradesh, Maharashtra, Odisha, Telangana and Uttar Pradesh) and received 73 *per cent* of the AIBP grants released during 2008-17.

#### 3.2.1 Non/short release of CA

As per AIBP guidelines<sup>32</sup> of 2006 and 2013, CA is to be released to States in two instalments based on release of State's share and utilization of funds released earlier. Audit findings with respect to release of CA to States for 115 sampled MMI projects are discussed in the following paragraphs.

- In 42 MMI projects pertaining to 13 States, there was short release of central share amounting to a total of ₹ 9,665.88 crore during the period 2008-09 to 2016-17. The short release ranged from ₹ 4.76 crore in the case of projects in Tripura to ₹ 3,345 crore in the case of projects in Jharkhand. Details are given in **Annexure 3.2**.

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<sup>29</sup> ₹ 17,372 crore as CA and ₹ 1,812 crore through NABARD.

<sup>30</sup> Three projects were deferred.

<sup>31</sup> CA under MI schemes is released for cluster of schemes.

<sup>32</sup> Para B (2) of 2006 AIBP guidelines and Para 4.6 of 2013 AIBP guidelines.

- Six Priority I projects<sup>33</sup> pertaining to three States scheduled for completion by March 2017 did not receive any CA during 2016-17. Of these, CA was not released in three cases<sup>34</sup> as funds provided in the previous year were not utilised and in one case<sup>35</sup> CA was not released on the ground that CA for the previous year had been released at the fag end of that year.
- In 457 MI schemes in four States (Assam, Chhattisgarh, Jammu & Kashmir and Rajasthan) there was short release of central share amounting to a total of ₹ 695.73 crore during the period 2008-17.

Audit noticed that Non/short release of CA was due to shortcomings in proposals submitted by States, delay and non-submission of Utilization Certificates and audited statements of expenditure, slow progress with regard to expenditure on projects and inability to ensure evenness in expenditure.

Ministry (February 2018) accepted the observation and stated that non/short release of CA was due to submission of incomplete proposals by the States, shortfall in State's expenditure in the previous year and ceilings on expenditure in the last quarter of the Financial Year.

### 3.2.2 Delay in release of CA by Ministry

AIBP guidelines provide for timely submission of proposals by the States for release of CA and timely release of CA thereafter by the Central Government so that funds become available in the same Financial Year (FY). PAC had, in the context of C&AG's Report No. 4 of 2010-11, also recommended timely release of funds by the Ministry to the States.

Audit analysis of release of CA by the Ministry to the States in the case of sampled MMI projects disclosed that during the period 2008-09 to 2016-17, Ministry released ₹ 5,717.23 crore in the case of 53 MMI projects in 16 States<sup>36</sup> which constituted 30 *per cent* of the total release of funds to these projects, at the very end of the FY, i.e. in the month of March. In addition, in 11 instances pertaining to the years 2008-09 and 2009-10, funds amounting to ₹ 1,030.41 crore were released after the close of the FY. In the case of MI schemes, Ministry released an amount of ₹ 2,725.55 crore in the case of 95 clusters<sup>37</sup> of MI schemes in 19 States during 2009-10 to 2015-16, at the very end of the year.

<sup>33</sup> Dhansiri, Champamati (Assam), Tral LIS, Restoration of main Ravi Canal, Pravachik Khows (Jammu & Kashmir), Sri Rameshwar (Karnataka)

<sup>34</sup> Tral LIS, Restoration and Modernisation of Main Ravi Canal and Champamati.

<sup>35</sup> Sri Rameshwara project in Karnataka.

<sup>36</sup> Assam, Bihar, Goa, Gujarat, Himachal Pradesh, Jammu & Kashmir, Jharkhand, Karnataka, Madhya Pradesh, Maharashtra, Odisha, Rajasthan, Telangana, Tripura, Uttar Pradesh and West Bengal.

<sup>37</sup> Assam (nine), Andhra Pradesh (one), Arunachal Pradesh (four), Bihar (one), Chhattisgarh (12), Himachal Pradesh (two), Jammu & Kashmir (10), Jharkhand (two), Karnataka (two), Madhya Pradesh (20), Maharashtra (seven), Meghalaya (five), Mizoram (four), Nagaland (three), Odisha (two), Sikkim (one), Tripura (four), Uttarakhand (five) and West Bengal (one).



Persistent release of funds at the very end of the FY indicated weak financial planning and affected timely availability of funds for project execution. As a result, most of these projects faced prolonged time overruns.

Ministry accepted the above position and attributed (February 2018) late releases of funds to late submission of proposals and defects in the proposals submitted by the State Governments.

### 3.3 Lapses in release of funds to project authorities by State governments

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As per AIBP guidelines, the grant component along with the State's share must be released to the project authorities, by the State governments within 15 days of its release by the GoI. Our findings with regard to compliance with this requirement are given below:

- In 15 MMI projects in five States, there was short release of the matching State's share to the project authorities amounting to ₹ 1,514.34 crore, during 2008-09 to 2016-17. Details are given in **Annexure 3.3 A**.
- In seven States, the State governments released ₹ 2,314.49 crore to project authorities after delays ranging from three days to 17 months during the period 2008-09 to 2015-16. The details are given in **Annexure 3.3 B**.
- In Bihar, during the period 2008-17, CA of ₹ 369.41 crore had to be surrendered inter-alia due to short release of matching share by the State government.
- In the case of two projects (Warna and Sangola Branch Canal) in Maharashtra, no funds were released by the State government and no expenditure was made for two to three years<sup>38</sup> as the amount sanctioned in original approvals were exceeded and the revised administrative approvals were not approved in time. As a result, ongoing works were held up for prolonged periods.

Short/non-release of funds along with delays in release in funds carried the risk of adversely affecting progress of work and all the projects referred to above suffered from significant time overruns.

### 3.4 Non-submission of Utilization Certificates and Statements of Expenditure

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As per General Financial Rules (GFRs) and terms of the sanction letters for release of CA, States are required to furnish Utilization Certificates (UCs) for the expenditure incurred against grants released. AIBP guidelines also required the States to submit audited statements of expenditure within nine months of the completion of the financial year in which the funds were released. Timely submission of UCs and audited expenditure statements were essential for regulating flow of funds for the project and to ensure that funds have been utilized for the purpose for which they have released and are not parked or

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<sup>38</sup> Warna: 2013-16 and Sangola Branch Canal: 2014-16



diverted. Due to delays/non-submission of UCs and audited statements of expenditure, future fund flow of projects and their progress were also liable to be adversely impacted.

Audit noted that in 24 MMI projects of 12 States and 1,041 MI schemes in four States for which ₹ 5,900.31 crore had been released during the period 2008-09 to 2016-17, UCs for only ₹ 3,712.91 crore were submitted by the State governments. The utilization for the balance funds of ₹ 2,187.40 crore (37 per cent) was not furnished as of March 2017. Details of the cases are given in **Annexure 3.4**. In addition, in the case of 65 MMI projects<sup>39</sup> pertaining to 14 States, audit observed that audited statements of expenditure for different periods were not available in the project records provided by the Ministry to Audit. A few illustrative cases relating to shortcomings with regard to furnishing of UCs and audited statements of expenditure are discussed in Table 3.1 below:

**Table 3.1: Shortcomings in UCs and Statement of Expenditure**

| State        | Shortcomings in UCs and Statement of Expenditure  |
|--------------|---|
| Assam        | Statements of expenditure in respect of Modernization of Jamuna Irrigation and Borolia projects were not forwarded as of July 2017 for audit.   |
| Chhattisgarh | In four MMI projects, State government did not submit the SOE for ₹ 147.63 crore released during 2005-06 to 2010-11. UCs for ₹ 688.37 crore released for 421 MI schemes during 2008-09 to 2016-17 had not been submitted by the State government as of March 2017.  |
| Gujarat      | In Sardar Sarovar project, grants amounting to ₹ 166.66 crore for the FY 2016-17 were released before the submission of UC for the FY 2015-16 <sup>40</sup> . Ministry explained (February 2018) that CA of ₹ 166.66 crore released in 2016-17 was against ₹ 426.51 crore approved in 2015-16 which could not be released during the year for want of budget availability at that time. |
| Jharkhand    | In 537 MI schemes for which ₹ 538.64 crore had been released during the period 2008-09 to 2016-17, UCs for only ₹ 526.54 crore were submitted by the State government. The UCs for the balance funds of ₹ 12.10 crore was not furnished as of March 2017.   |
| Kerala       | In two projects, statements of expenditure for the years 2006-07 to 2016-17 were audited in July 2017 since the same was received from the Department in June 2017 only.  |
| Maharashtra  | In two MI schemes namely, Sur and Kang under TIDC, the UC was not submitted to GoI by the project implementing authority, though funds amounting to ₹ 14.40 crore and ₹ 7.85 crore were released during 2008-09 and 2009-10 respectively. The dam work of both the projects were completed but canal/distributaries were incomplete.  |
| Odisha       | In 81 MI schemes for which ₹ 150.55 crore had been released during the period 2008-09 to 2016-17, UCs for only ₹ 138.58 crore were submitted by the State government. The UCs for the balance funds of ₹ 11.97 crore was not furnished as of March 2017.  |

Deficiencies in submission of UCs and Statements of Expenditure not only dilutes the system of budgetary and financial control but also makes the programme monitoring difficult resulting in slippages in physical performance.

<sup>39</sup> Andhra Pradesh (three), Assam (four), Chhattisgarh (four), Goa (one), Himachal Pradesh (two), Jammu and Kashmir (six), Karnataka (nine), Kerala (two), Madhya Pradesh (one), Maharashtra (16), Odisha (six), Telangana (three), Rajasthan (two) and Uttar Pradesh (six).

<sup>40</sup> UC for the CA amounting to ₹ 128 crore for FY 2015-16 was submitted on 21 June 2016, but grants for FY 2016-17 were released on 3 June 2016.

### 3.5 Physical versus Financial progress of work

We examined the physical and financial performance in 85 ongoing MMI projects based on the data regarding Physical Progress (PP) and Financial Progress (FP) obtained from concerned State agencies. Audit findings relating to MMI projects are discussed below:

- In seven projects<sup>41</sup> of four States, though PP and FP were stated to be 100 *per cent*, the projects were reported to be ongoing.
- In 32 MMI projects, FP was higher than PP by four to 144 *per cent*. Out of this, only Modernization of Gang Canal in Rajasthan had achieved 100 *per cent* PP. This indicates that excess expenditure was incurred against the sanctioned cost of these projects.
- Out of the 32 projects where FP was higher than PP, nine projects in eight States<sup>42</sup> had achieved more than 100 *per cent* FP though PP ranged between 29 to 99 *per cent*. This indicates inadequate financial planning and the need to formulate and approve revised project costs.
- In Subarnarekha Barrage project in West Bengal, only preliminary work relating to the project had been taken up and original project work was yet to commence. As a result, FP achieved was only four *per cent* even though the project was included under AIBP in 2001-02.

Ministry stated (February 2018) that physical progress gets understated vis-à-vis financial progress in some cases due to expenditure on land acquisition and Rehabilitation and Resettlement (R&R). This is not tenable as cost of land acquisition and R&R is required to be incorporated in the revised cost of projects to accurately reflect the FP of projects.

Audit findings in respect of MI schemes test checked in audit are discussed in the Table 3.2 below:

**Table 3.2: Physical and Financial progress of MI schemes**

| State | Physical and Financial Progress   |
|-------|---|
| Assam | In 13 incomplete MI Schemes, as of March 2017, the PP ranged between 41 and 85 <i>per cent</i> . A meagre 12 <i>per cent</i> (1,300 ha) of the overall targeted IP (11,048 ha) could be created with an expenditure of ₹ 88.68 crore (49 <i>per cent</i> of the estimated cost). PP in Nonoi IS and FIS from Tilka Nala was 41 and 47 <i>per cent</i> respectively although no payments were made against the work. |

<sup>41</sup> Balh Valley Left Bank, Sidhata, Shahnehar (Himachal Pradesh), Gul (Maharashtra), Narmada Canal (Rajasthan), Modernization of Lahchura Dam and Improving Irrigation intensity of Hardoi Branch (Uttar Pradesh).

<sup>42</sup> Durgawati (Bihar), Tillari (Goa), Modernisation of New Pratap Canal (Jammu & Kashmir), Surangi and Panchkhero (Jharkhand), Varahi (Karnataka), Sanjay Sagar (Madhya Pradesh), Modernization of Ganga Canal (Rajasthan) and Khowai (Tripura).

| State             | Physical and Financial Progress  |
|-------------------|--|
| Jammu and Kashmir | <ul style="list-style-type: none"> <li>In three MI schemes viz. Construction of Pattangar Khul, Gravity Feeder Channel Rajal and Construction of LIS Ambaran II, FP was 100 <i>per cent</i> but PP ranged from 33 to 70 <i>per cent</i>.</li> <li>In two MI schemes, Construction of Khoi Khul and Goriwan Zamindari Khul, PP was 100 <i>per cent</i> but FP was 50 and 82 <i>per cent</i> respectively.</li> <li>In Construction of Hansa Khul, FP was 37 <i>per cent</i>, but PP was nil due to diversion of funds.</li> <li>In three MI schemes viz., Construction of Ghaikhul, Checkdam Taloor and Construction of Dulanja Khul, FP were more than PP ranging from 10 to 70 <i>per cent</i> due to change in design and drawing, not taking up of works by the contractor, changes in the site of pump house and non-installation of machinery.</li> </ul> |
| Madhya Pradesh    | In 11 selected MI Schemes, FP exceeded 100 <i>per cent</i> indicating excess of expenditure over sanctioned cost. The total expenditure in excess of the sanctioned cost in these 11 schemes was ₹ 25.73 crore. Of these, in three schemes the PP was shown as 100 <i>per cent</i> but the work was still ongoing.   |

### 3.6 Diversion of Funds

GFR 209 (6) (ix) (b) inter-alia stipulates that grantees would not divert funds/grants received by them. Sanctions issued by the Ministry also stipulate that grants should be utilized only on the programme and expenditure in deviation of approved guidelines is not permissible. Test check of project records however, revealed instances of diversion of funds amounting to ₹ 1,578.55 crore in 13 States. This indicated inadequate financial discipline, control and monitoring on expenditure by pay and accounting authorities. Further, projects were also deprived of funds required for timely project implementation. These cases are discussed in the Table 3.3 below:

**Table 3.3: Diversion of Funds**

| State             | Diversion of funds   |
|-------------------|--|
| Arunachal Pradesh | In seven MI schemes, ₹ 82.07 lakh was diverted for maintenance of the existing projects and for other works not related to AIBP.   |
| Assam             | <ul style="list-style-type: none"> <li>An amount of ₹ 9.93 crore was incurred in Dhansiri and Champamati projects towards items not admissible under AIBP such as construction, repairs and renovation of office building/boundary wall, staff quarters and colony roads; repair of vehicles; repair and improvement works of canal systems and procurement of office stationery, computers and accessories.</li> <li>Funds amounting to ₹ 15.66 lakh provided for Humaisri Flow Irrigation Scheme under Kokrajhar Division were diverted for construction of an Irrigation Colony even though it was not a permissible item under AIBP guidelines.</li> <li>In seven schemes viz. Hakama, Horinchora, Dangdhara, LIS from River Tuni, Menaha, Jamun and Horujia, expenditure of ₹ 5.16 crore was incurred on repairs and maintenance, construction of approach road and accommodation out of AIBP funds.</li> </ul> |
| Bihar             | Out of the budgetary provision for AIBP of ₹ 3,730.64 crore during 2008-17, expenditure of ₹ 1,007.93 crore <sup>43</sup> was incurred on non-AIBP projects. As per records, such diversion of fund was made in anticipation of inclusion of projects under AIBP in future.  |

<sup>43</sup> Eastern Kosi Canal (ERM): ₹ 618.62 crore and Bateshwarsthan Pump Canal Scheme: ₹ 389.31 crore

| State             | Diversion of funds  |
|-------------------|---|
| Gujarat           | <p>Test check of project records of Sardar Sarover Project revealed utilisation of AIBP funds amounting to ₹ 447.44 crore for ineligible purposes as discussed below:</p> <ul style="list-style-type: none"> <li>• Scrutiny of statement of expenditure for the years 2014-15 and 2015-16 revealed that an expenditure of ₹ 213.17 crore<sup>44</sup> on Power projects and Canal Top Solar Power Plant was booked under AIBP even though CWC had excluded Power projects from components eligible for funding under AIBP if installed on main/branch canals. Thus, AIBP funds were diverted for an ineligible item and incorrect UCs were furnished without highlighting the same to the Ministry.</li> <li>• Expenditure on repairs and maintenance of canal, branches, and distributaries was not permissible from funds received under AIBP. Further, the Ministry had specifically excluded expenditure on repairs and maintenance from the revised costs of the project. However, ₹ 179 crore incurred on repairs and maintenance of the Canal network was booked by the project authorities during April 2010 to March 2017 under AIBP.</li> <li>• An expenditure of ₹ 55.27 crore was incurred on sub-minors which were covered under Command Area Development &amp; Water Management (CADWM) activities<sup>45</sup> and not eligible for AIBP and was incorrectly booked under AIBP grant during the period 2010-17.</li> <li>• In this project, several divisions were found to be booking expenditure like royalty, compensation other than land, service tax, insurance charges, office and other miscellaneous expenses under AIBP which was not permissible.</li> </ul> <p>Project authorities accepted that expenditure on power projects were inadvertently booked under AIBP and has issued instructions regarding booking of only eligible expenditure under AIBP.</p> |
| Himachal Pradesh  | <p>In Shahnehar and Sidhata projects, expenditure of ₹ 83 lakh and ₹ 2.35 crore incurred on compensatory afforestation, setting up of fuel depot, provision for public health measure, enforcement of anti-poaching laws, construction of pump house, other components, etc. was incurred.</p>  |
| Jammu and Kashmir | <ul style="list-style-type: none"> <li>• In Tral LIS project, an amount of ₹ 5.77 crore was incurred on payment of land compensation, travel allowance, POL, repairs of vehicles, purchase of stationery, wages to casual labourers, etc. which was not admissible under AIBP. Besides in the case of Rajpora LIS project, an amount of ₹ 3.37 crore was incurred on payment of land compensation out of AIBP funds though not permissible.</li> <li>• Under the MI scheme 'Construction of Hansa Khul', construction material worth ₹ 2.03 crore was diverted for utilization on other schemes pertaining to Flood and Irrigation sector as no funds were available under these schemes. The Department accepted (August 2017) the diversion of funds.</li> <li>• In nine MI schemes<sup>46</sup>, an expenditure of ₹ 83 lakh was incurred out of funds under AIBP for purchase of POL, hire charges of vehicles, purchase of hard coke, wages of casual labours, advertisement charges, protection work, purchase of stationery, other schemes and loading/unloading charges, etc.</li> </ul>  |
| Karnataka         | <p>In Narayanapura Left Bank Canal ERM, an expenditure of ₹ 40.70 crore on canal maintenance works and sanitation/colony maintenance works was included in the audited SOE for AIBP furnished in March 2017, which were not part of components approved by the Planning Commission.</p>   |

<sup>44</sup> ₹ 94.63 crore was booked for the year 2014-15 in March 2015 and ₹ 118.54 crore booked in 2015-16.

<sup>45</sup> (i) UGPL sub minor (₹ 53.49 crore) and (ii) Farmers training and awareness (₹ 1.78 crore).

<sup>46</sup> Ari Canal Ganderbal, Tilgaon Jamindar khul, Modernisation of Daulat Khul, Jamindar Khul, Pathon Jamindar Khul, Pattangarh Khul, Dethang Garkone, Waju Nala and Hasna Khul Diversion scheme.

| State       | Diversion of funds  |
|-------------|---|
| Maharashtra | <ul style="list-style-type: none"> <li>During 2015-16, ₹ 3.17 crore provided specifically for Hetwane project was diverted to another AIBP project viz. Gadnadi project.</li> <li>In Wang and Tillari projects, work for providing civic amenities in villages inhabited by Project Affected Persons (PAPs) amounting to ₹ 14.59 crore were executed using AIBP funds even after the transfer of villages to concerned Zila Panchayats which amounted to diversion of funds.</li> </ul>   |
| Mizoram     | In Mizoram, ₹ 9.08 lakh provided for Mat scheme was diverted for procurement of electronic items and electric generator though not contemplated in the estimate and ₹ 1.50 lakh provided under another MI scheme.   |
| Odisha      | <ul style="list-style-type: none"> <li>Salandi Sanskar Project, a part of Integrated Anandapur Barrage Project was approved by Planning Commission in October 2003 at an estimated cost of ₹ 99.14 crore for completion by 2007-08. As of July 2017, the project was under progress with work value of ₹ 144.64 crore. The objective of the project was to mitigate the effects of flood by raising and strengthening of existing protection of embankment along Salandi and Gopalia rivers, improving the existing Dasmouza and Gopalia Nallah and improvement to drainage system of Bhadrak town to escape the surplus flood water. As such, this project was a flood protection work without any envisaged IP and was in deviation of AIBP guidelines. Despite incurring substantial amount of ₹ 144.66 crore under AIBP on the project, no IP was created.</li> <li>In case of Kanupur project, an expenditure of ₹ 29 lakh was incurred on improvement to CE's Liaisoning Office and procurement of computer peripherals.</li> </ul> |
| Rajasthan   | <ul style="list-style-type: none"> <li>In the case of Narmada Canal project, an expenditure of ₹ 2.27 crore was incurred on construction of buildings such as residence of Assistant Conservator of Forest, Forest chowki, Forester's office and on purchase of vehicles, computers and printers though not allowed under AIBP.</li> <li>Out of seven MI schemes, four<sup>47</sup> schemes having a total sanctioned grant amount of ₹ 1.89 crore, were cancelled by State Government but the whole amount of grant received for these cancelled projects (₹ 1.70 crore, 90 per cent of sanctioned grant) was used on the remaining of three projects. Thus, ₹ 1.70 crore was un-authorisedly utilized on projects for which it was not sanctioned.</li> </ul>   |
| Tripura     | <ul style="list-style-type: none"> <li>The concerned division spent a sum of ₹ 11.32 crore provided for Manu Irrigation Project for meeting expenditure on Khowai and Gumti projects. The Department justified the diversion on the ground that work on Manu project had come to a halt due to land availability problems and available funds had been temporarily utilized for other projects.</li> <li>Expenditure of ₹ 2.41 crore was incurred on repairs and maintenance under Manu and Khowai projects which was not admissible under AIBP.</li> </ul>   |
| West Bengal | <ul style="list-style-type: none"> <li>AIBP fund of ₹ 15.37 crore related to Subarnarekha Barrage Project was transferred to Teesta Barrage Project due to the reason that State Government was not in a position to continue both these projects at the same time.</li> </ul>  |

### 3.7 Unspent funds lying idle

Audit scrutiny disclosed that in 17 MMI projects in nine States, unspent balances ranging from ₹ 40 lakh to ₹ 500.34 crore were lying idle for periods ranging from one to seven years.

<sup>47</sup> Anwa, Kishorepura, Ladpura, Data

Of these, in two projects<sup>48</sup>, funds were released in subsequent years. Details of cases noticed in audit are given in **Annexure 3.5**. Existence of large unspent balances under projects indicates inadequate funds management and lack of commensurate physical progress of works.

### 3.8 Parking of Funds

Audit test check of records relating to MMI projects revealed that in the case of 18 MMI projects in seven States and MI schemes in two States, funds totalling ₹ 1,112.56 crore were parked in different bank accounts and Personal Deposit (PD) accounts. Drawal of programme funds and their deposit outside government accounts had the effect of inflating project expenditure and also led to idling of funds. This indicates serious weakness in the system of expenditure control as funds were not surrendered to avoid lapse of grants and dilutes the system of legislative financial controls and effective budgetary management. Some illustrative cases are discussed in Table 3.4 below:

**Table 3.4: Parking of funds**

| State            | Parking of Funds   |
|------------------|--|
| Bihar            | <ul style="list-style-type: none"> <li>In the case of Durgawati and Punpun projects, even though possession of 96 and 86 <i>per cent</i> of land respectively had been given to the State government, compensation released was only 72 and 42 <i>per cent</i>. Consequently, an amount of ₹ 128.60 crore remained unspent and parked in PD account/banks.</li> <li>Plan funds of amounting to ₹ 134.09 crore pertaining to Durgawati, Punpun and Restoration of Koshi Barrage projects remained unutilized for more than five years with Sone Command Area Development Agency (SCADA) and Kosi Command Area Development Agency (KCADA). Out of this amount, SCADA had unutilized deposit of ₹ 108.63 crore out of which ₹ 35.15 crore was kept as a fixed deposit without the same being accounted for in its cash book while KCADA had ₹ 25.46 crore in the bank account out of which ₹ 8.65 crore was in fixed deposit. Besides, interest of ₹ 1.13 crore earned from these deposits was also not deposited in the Government account.</li> </ul>   |
| Goa              | In the case of the Tillari project, funds amounting to ₹ 3.95 crore remained with the erstwhile implementing agency viz. GTIDC in its bank accounts even after the project was transferred to the Water Resource Department on 1 October 2014 and has remained unutilized since then.  |
| Himachal Pradesh | <p>In three MMI projects (Shahnehar, Sidhata and Balh Valley), Audit noticed that during the period 2008-17, the sum of ₹ 62.59 crore was drawn from treasury in the last week of each financial year and reported as final expenditure in the accounts. The division then transferred this amount to other divisions on the same day. In subsequent financial years however, these funds were received back by the divisions concerned during March 2009 to June 2017 and kept under deposit. Parking of regular budgetary funds in deposit head to avoid its lapse and merely booking of expenditure to works resulted in depiction of incorrect expenditure without actual execution of works.</p> <p>Further, in Balh Valley Project, the division involved with execution of the project had over reported total expenditure by ₹ 8.39 crore in the Project Completion Report (PCR) as compared to reported expenditure of ₹ 95.47 crore appearing in the Division's accounts. Further, the division showed expenditure by transferring funds amounting to ₹ 23.14 crore from budget allocated for the years 2006-07, 2008-09 and 2009-10, to the Deposit Head. Actual expenditure against these deposits up to August 2017 was only ₹ 5.56 crore. Similarly,</p> |

<sup>48</sup> Guddada Mallapura (Karnataka) and J. Chokha Rao (Telangana)



| State         | Parking of Funds  |
|---------------|---|
|               | unspent funds of ₹ 5.09 crore under two grant heads were transferred to a Deposit head in March 2016 out of which ₹ 1.20 crore was actually spent upto August 2017. Thus, excess expenditure of ₹ 21.47 crore was shown under the project even though funds were lying unspent with the division.   |
| Jharkhand     | In case of Subarnarekha Multipurpose project in Jharkhand, compensation for land acquisition and for R&R amounting to ₹ 113.62 crore remained undisbursed despite Government orders for depositing the unspent balances into the Treasury and was parked in different bank accounts of Additional Director/Special Land Acquisition Officers (SLAOs) and Rehabilitation officers as of 31 <sup>st</sup> March 2017.   |
| Mizoram       | <ul style="list-style-type: none"> <li>The project authority parked ₹ 14.18 crore in Civil Deposits ranging from 10 to 70 months.</li> <li>During 2009-12, the department submitted UCs of ₹ 144.06 crore, of which ₹ 117 crore was parked in Civil Deposit.</li> </ul>   |
| Nagaland      | An amount of ₹ 213.10 crore meant for MI schemes was parked in Civil Deposits.  |
| Odisha        | In the case of seven MMI projects, ₹ 294.95 crore of AIBP funds were parked in various bank accounts by seven SLAOs.  |
| Tripura       | In two MMI projects, ₹ 2.73 crore remained unutilised and parked in the personal ledger account of Land Acquisition Collectors since March 2010 and March 2011 respectively.  |
| Uttar Pradesh | <p>Against the provisions of Uttar Pradesh Budget Manual<sup>49</sup>, an amount of ₹ 6.28 crore were drawn for purchase of land during 2009-17 and kept irregularly in the form of Bank Drafts (BDs) in Madhya Ganga Stage-II project. Scrutiny revealed that BDs prepared (2009-17) for paying compensation to the farmers for purchase of land were not disbursed due to non-mobilization of farmers subsequently for selling their land.</p> <p>Keeping the unutilized funds in the form of BDs after the close of the financial year was not only irregular in terms of financial rules but it also led to loss of ₹ 1.88 crore on account of interest<sup>50</sup>.</p> |

### 3.9 Rush of expenditure

The Ministry of Finance issued instructions to Ministries/Departments in September 2007 to restrict expenditure during the month of March to 15 *per cent* of the budgeted estimates. In six MMI projects in three States, instances of rush of expenditure amounting to ₹ 1,262.88 crore during March of the FY, which ranged between 16 and 83 *per cent* of the total expenditure incurred during the year were noticed. Rush of expenditure affects the financial discipline and outcome of expenditure. Details of the cases are given in **Annexure 3.6**.

<sup>49</sup> UP Budget Manual Chapter XV Para 174 (10), Para 107 (v) and Para 108.

<sup>50</sup> Calculated at prevailing rates at which State Government borrowed funds from GoI and other financial institutions.

### 3.10 Cases of non-conversion of grants into loan

As per AIBP guidelines, if the State governments fail to comply with the agreed date of completion, the grants component released will be treated as loan and recovered as per usual terms of recovery applicable to Central loans.

In course of the detailed examination of AIBP based on C&AG's Report no.4 of 2010-11 on AIBP, the PAC had observed that the Nodal Ministry had failed to enforce the provisions of the AIBP guidelines for converting the grant component into loan in cases of failure to complete the projects in time. We noticed that though these provisions were liable to be invoked in the case of 105 projects which had received CA of ₹ 31,120.59 crore the Ministry did not take recourse to the same even though these projects had faced delays ranging from one to 18 years. Details are given in **Annexure 3.7**.

Ministry stated (February 2018) that progress of these projects were affected by many factors and extensions of time have been given by the competent authority from time to time. This reply shows that the intention of providing for a deterrence against delays in projects by stipulating conversion of grants into loans in the case of delayed projects, was being diluted by giving relief even in case of badly delayed projects through extension of time.

### 3.11 Fictitious and Fraudulent expenditure

Audit scrutiny of records relating to AIBP projects and schemes revealed cases of fraudulent and suspected fraudulent payments in four States amounting to ₹ 7.58 crore. Details of the cases are given in Table 3.5 below:

**Table 3.5: Fictitious and Fraudulent Expenditure**

| State     | Fictitious and Fraudulent Expenditure  |
|-----------|--|
| Assam     | In case of Dhansiri Irrigation Project, the Branch Canal B3M was idle since the damage caused due to flash floods during 1980-81. Test check of records, however, revealed that repair and restoration works was executed besides concrete lining works at a total cost of ₹ 28.68 lakh. During site visit of the canal with the Divisional staff, there was no noticeable canal system and the concrete lining was in the canal system in the reported area. The above position indicates that expenditure of ₹ 28.68 lakh was against fictitious works.                |
| Karnataka | In Upper Tunga project (Priority-I), an amount of ₹ 98 lakh was withdrawn between 06 June 2014 and 23 July 2014 through five forged cheques. Though an amount of ₹ 51 lakh was recovered, ₹ 47 lakh had not been recovered as of December 2016. In the same project, against an award amount for land compensation and damage compensation of ₹ 32 lakh, a compensation of ₹ 2.63 crore was fraudulently released.   |
| Nagaland  | <ul style="list-style-type: none"> <li>Balijan MI scheme was included in AIBP in 2010-11 and was reported as completed in September 2011 after incurring ₹ 2.29 crore. However, physical verification of the works revealed that the works were not part of the scheme or its components as given in the approved scheme nor what was shown to have been completed as per records. The actual execution of this scheme was, therefore, doubtful and indicated at the possibility of misappropriation of ₹ 2.29 crore stated to have been spent on the scheme.</li> </ul> |



| State         | Fictitious and Fraudulent Expenditure  |
|---------------|--|
|               | <ul style="list-style-type: none"> <li>Two MI schemes namely Atughoki and Akhijighoki at Dimapur district of Nagaland were completed (September-November 2014) at a cost of ₹ 64.69 lakh and ₹ 28.77 lakh respectively and final payment was released to the Division during March 2016. However, against the same projects, additional amount of ₹ 28.02 lakh was released as final bill during March 2017.</li> <li>The department had drawn the final instalment bill (March 2016) against 155 cluster of MI schemes for an amount of ₹ 24.46 crore from the Treasury (South), Kohima for immediate disbursement to the beneficiaries and released to the respective Divisions for payment to the beneficiaries. It was also noticed from the Measurement Books (MBs) that the works were completed as per the approved DPRs and the measurement prepared by the competent technical experts of the Department and same was accepted. From the MB it was noticed that neither extra works were done by the beneficiaries nor any liabilities was outstanding for payment. In this regard, the department had stated the 155 batch project was completed during the month of December 2015. Further examination of bills/vouchers revealed that the department had drawn (March 2016) an amount of ₹ 2.71 crore for payment to the 45 beneficiaries/schemes of 155 batch (2013-14) project. It is pertinent to note that out of 45 MI schemes, 16 MI schemes were not in the list of 155 batch which shows that the amount drawn for 16 schemes were also inadmissible. Thus, the department drew ₹ 46.55 lakh on fabricated bills, without execution of the works.</li> </ul> |
| Uttar Pradesh | In case of Restoration of Improving Intensity of Hardoi branch canal, audit found that in five agreements there was duplication of works as the restoration works were carried out in those reaches which had already been executed under other contracts and ₹ 1.47 crore was spent fraudulently.   |

### 3.12 Short realization/loss of revenue

Cases of short realization/loss of revenue to the extent of ₹ 1,251.39 crore were noticed in 10 MMI projects in five States and two MI schemes in two States, which are discussed in the Table 3.6 below:

**Table 3.6: Short realization/ Loss of revenue**

| State | Non-realization of revenue   |
|-------|--|
| Assam | <ul style="list-style-type: none"> <li>In pursuance of the Assam Irrigation Act, 1983, the Irrigation department in March 2000 notified that Irrigation Service Charges will be realized from the beneficiaries for water supplied in command areas for irrigation purpose. Under the four selected MMI projects in the State, the department utilized IP of 490.99 th ha during the period 2008-17. Test check of records on water charges revealed that against the realizable amount of ₹ 16.58 crore, water charges of ₹ 14 lakh only was realized from the cultivators resulting in short realization of water charges of ₹ 16.44 crore.</li> <li>Under the project 'Modernisation of Jamuna Irrigation Scheme', against earth work of 1,60,131.27 cum executed during 2008-09, Forest Royalty of ₹ 27.85 lakh (including tax) was not realized. The Divisions could not produce the appropriate land document for relaxation of Forest Royalty.</li> <li>In case of Dhansiri Irrigation Project, under the work 'Construction of Aqueduct over river Daisam', against the amount of ₹ 70.43 lakh of Forest Royalty (including taxes) due, an amount of ₹ 27.76 lakh only was realized, resulting in short-realisation of ₹ 42.67 lakh.</li> <li>In the Humaisiri scheme, there was short-realisation of Forest Royalty for utilization of sand, gravel, boulders during 2016-17 to the extent of ₹ 6.13 lakh.</li> </ul> |

| State          | Non-realization of revenue   |
|----------------|--|
| Chhattisgarh   | Scrutiny of records of Mahanadi and Kelo Project revealed that hard rock (2.68 lakh cum) obtained from canal excavation work through various contracts was lying idle over the canal since last eight years. Though number of contracts were awarded for the work of construction of structures and canal lining of the same projects by the same division, efforts for utilization of the excavated hard rock in any contract were not made by the department resulting in non-realization of cost of hard rock amounting to ₹ 3.19 crore.  |
| Madhya Pradesh | Under Sindh Phase II and Singhpur projects, in the agreement of RBC Division, Narwar, Royalty of ₹ 24.92 lakh was recoverable. The contractor neither paid nor produced royalty clearance certificate of Collector, Mining but an amount of only ₹ 7.22 lakh was recovered, resulting in short recovery of ₹ 17.70 lakh.   |
| Odisha         | As per State Government Revenue department circular, royalty on earth taken from borrow area should be recovered at ₹ 10 per cum which was to be increased by 40 <i>per cent</i> after completion of three years. We noticed that under the Lower Indra Irrigation Project, Royalty of ₹ 2.18 crore for earth lifted from borrow area was not recovered from the contractor. In the Dabljore MI scheme, Royalty of ₹ 13.21 lakh for earth obtained from borrow area by the contractor was not recovered by the Government. The EE accepted the observation.  |
| Uttar Pradesh  | <ul style="list-style-type: none"> <li>Under Bansagar Canal Project, earth along three main feeder channels namely Bansagar Feeder Channel (BFC) Adwa Meja Link Channel AMLC and Meja Jirgo Link Channel (MJLC) contained varying quantities of boulders. In the case of AMLC and MJLC, the quantity of stones accounted by the project authorities fell short by 19,04,509 cum, valuing ₹ 79.99 crore at the rate of ₹ 420 per cum. Besides, in respect of BFC, the quantity of 2,08,34,755 cum stone boulders valuing ₹ 875.06 crore assessed by the division was not accounted and reported to district authorities for auction.</li> </ul> <p>Thus, short reporting of stone boulders in AMLC and MJLC and non-reporting of stone boulders in BFC to district authorities led to a loss of government revenue to the tune of ₹ 955.05 crore<sup>51</sup>. Further, even from the quantity accounted for, 20,59,003 cum stone boulders valuing ₹ 86.48 crore at the rate of ₹ 420 per cum remained undisposed.</p> <p>Further, even though a Government order of 2011 stipulated provision of establishment charges at the rate of 6.875 <i>per cent</i> in the estimates and transfer of the same to revenue head, an amount of ₹ 266.65 crore which had been provisioned was not remitted to the revenue head. The amount was used irregularly on the project works, thus increasing the project cost which led to loss of revenue of ₹ 266.65 crore to Government.</p> <ul style="list-style-type: none"> <li>UP Mineral (Prevention of Illegal Mining, Transportation and Storage) Rules 2002 provide that transportation of minerals without a valid transit pass (MM-11) is irregular. Section 21(5) of the Mines and Minerals Development and Regulation Act, 1957 and Government order (October 2015) prescribe that in case of consumption of minerals from illegal mining, cost of mineral (five times of royalty) would also be recovered along with applicable royalty. In Modernisation of Lahchura dam, ₹ 1.36 crore was recovered from the contractor on account of royalty since the contractor failed to submit MM-11. However, the project authority did not recover the cost of minerals amounting to ₹ 6.80 crore (five times ₹ 1.36 crore) from the contractor.</li> </ul> |

### 3.13 Audit summation

Financial management for AIBP was marred by non/short release of funds, delays in release of funds at various levels, releases at the fag end of the financial year and non-adjustment of unspent balances of funds in the subsequent releases. Utilisation Certificates for funds

<sup>51</sup> ₹ 79.99 crore + ₹ 875.06 crore

amounting to ₹ 2,187.40 crore constituting 37 *per cent* of the total CA received by the State agencies were not submitted to the Ministry in time. There were instances of diversion of funds amounting to ₹ 1,578.55 crore, parking of funds amounting to ₹ 1,112.56 crore and fictitious and fraudulent expenditure amounting to ₹ 7.58 crore in works being executed under the projects. Delays in release of fund and their incomplete utilization within the stipulated duration affected the programme leading to time and cost overruns. Despite there being prolonged time overrun of up to 18 years in the projects, the Ministry failed to invoke the provision for conversion of grants to loans, thereby rendering it an ineffective and weak deterrent against defaults and deficiencies. There were also instances of short-realisation of revenue amounting to ₹ 29.69 crore and loss of revenue of ₹ 1,221.70 crore to the Government.

## Chapter IV: Programme Implementation

### 4.1 Introduction

AIBP was launched primarily to accelerate completion of irrigation projects and schemes by providing Central Financial Assistance (CFA) to States implementing projects and schemes. Implementation of the programme was also required to ensure optimal utilization of financial and other resources. Besides, as the ultimate objective was to ensure availability of water to farmers, the projects and schemes included in AIBP also had defined deliverables in terms of creation and utilization of Irrigation Potential (IP). Section A of this chapter deals with achievement against the identified programme deliverables. The various factors affecting the extent of achievement are dealt with in Section B of the chapter.

#### Section A: Achievement of Programme Deliverables

### 4.2 Implementation of MMI projects

There were 154 ongoing MMI projects as on 31<sup>st</sup> March 2008 under AIBP and 47 MMI projects were included during the audit period i.e. 2008-17. Thus the total number of MMI projects covered under AIBP during 2008-17 was 201. Under PMKSY, 99 MMI projects including two National Projects were categorized as Priority projects for completion in phases up to December 2019. Out of the 201 MMI projects, 62 projects were completed during 2008-17 which included eleven Priority projects<sup>52</sup>. As of March 2017, 139 MMI projects were ongoing and four had been deferred.

#### 4.2.1 Status of Completion

Out of the sampled 118 MMI projects, three projects were deferred and of the balance 115 projects, only 30 projects i.e. 26 *per cent*, were completed. This includes three Priority I and four Priority II and Priority III projects each during the period 2008-09 to 2016-17. As of March 2017, 85 projects (including 18 Priority-I) were ongoing. Of the 118 sampled MMI projects, 65 MMI projects pertained to SCSs, SAs in non-SCSs and Distressed Districts under PM's package. However, of these projects only eight were completed<sup>53</sup> during the period covered by this audit. Of the 23 projects categorized as Priority I which were scheduled for completion by March 2017, only three projects i.e. 13 *per cent* had been completed whereas 20 projects were yet to be completed. Thus, the overall percentage of completion was low and progress remained tardy even after prioritizing of projects under PMKSY.

<sup>52</sup> Priority I: Rameshwar Irrigation project (Karnataka), Lower Panjara and Bawanthadi (Maharashtra), Priority II: Meddigedda (Andhra Pradesh) Singhpur, Mahuar and Sagad (Madhya Pradesh), Priority III: Maniyari Tank and Khurang (Chhattisgarh), Dongargaon and Warna (Maharashtra).

<sup>53</sup> Only one out of 25 MMI projects pertaining to SCS (Modification of Jamuna Irrigation (ERM), Assam) and seven out of 40 projects in SA in non-SCS and distressed districts under PMs package were completed (Andhra Pradesh-one, Karnataka-one, Maharashtra-five).

While obtaining approval for PMKSY, the Ministry intimated to the competent authority that projects where 100 *per cent* head works have been completed and 90 *per cent* of targeted IP has been created are deemed to be complete. A review of status of sampled completed MMI projects revealed that out of 30 MMI projects declared as completed, there were 12 projects in five States constituting 40 *per cent* of the completed MMI projects, which were treated as complete even though there were pending works under the projects and IP created was less than 90 *per cent* of the targeted IP. Details of some of these projects are covered in Table 4.10. This showed that the system of reporting on progress and completion of projects was not reliable. Non-achievement of targeted/threshold IP would affect the key assumptions for computing benefits from irrigation projects and their viability in terms of BCR.

#### 4.2.2 Time overrun in MMI projects

Only those projects which were expected to be completed within two to four years<sup>54</sup> were eligible for inclusion under AIBP. However, audit scrutiny of 118 sampled projects revealed that out of the 30 projects completed, 23 projects had been completed with delays ranging between one and 11 years from stipulated time of completion. Project wise details of time overrun faced by sampled MMI projects are given in **Annexure 4.1**. Out of 85 ongoing projects, 82 projects were delayed with delays ranging from two to 18 years. Thus, 105 MMI projects consisting of both completed and ongoing projects, suffered from time overrun. In addition, out of the 83 projects not included in the sample, there was time overrun in 70 projects ranging from two to 18 years.

The status of delay in sample MMI projects is given in Table 4.1 below:

**Table 4.1: Delays in MMI projects**

| Period of delay    | MMI projects |           |
|--------------------|--------------|-----------|
|                    | Completed    | Ongoing   |
| < 2 Years          | 5 (22%)      | 0         |
| Between 2-5 Years  | 11 (48%)     | 26 (32%)  |
| Between 5-10 Years | 6 (26%)      | 27 (33%)  |
| > 10 Years         | 1 (4%)       | 29 (35%)  |
| <b>Total</b>       | <b>23</b>    | <b>82</b> |

Under PMKSY, 23 projects had been categorized as Priority I with a completion deadline of March 2017. However, 20 out of the 23 projects had missed this deadline as a result of which the Ministry further shifted the deadline for completion of 14 projects to March 2018 and of six projects to March 2019.

<sup>54</sup> The guidelines originally provided for stipulated period of completion of two years. In April 2004 guidelines, the timelines were revised to 6-8 seasons (3-4 years). Under 2006 guidelines the timeline is four years.

Audit scrutiny showed that delays were mainly due to factors such as issues relating to availability of land; revision in alignment, design, scope and nature of work; issues relating to availability of funds; lack of requisite clearances and site related issues; delayed dispensation of Rehabilitation and Resettlement (R&R) measures and law and order issues. Persistent and prolonged time overruns not only led to cost overruns but also diluted the central objective of AIBP of accelerating project completion so that benefits from the projects became available to farmers at the earliest.

### 4.3 Implementation of MI schemes

#### 4.3.1 Status of Completion

There were 2,808 ongoing MI schemes as on 31<sup>st</sup> March 2008 and 8,483 schemes were added during 2008-17. The total number of MI schemes during 2008-17 (period of Audit coverage) was 11,291. Out of the total, 8,014 MI schemes constituting 71 *per cent* of total MI schemes were completed during the period 2008-09 to 2016-17. As of March 2017, 3,277 MI schemes constituting 29 *per cent* of total MI schemes were ongoing.

Out of 335 sampled MI schemes which was three *per cent* of total cases pertaining to the period 2008-09 to 2016-17, 213 (63 *per cent* of sample schemes ) were completed during the audit period and 122 were ongoing as on 31<sup>st</sup> March 2017. Of the sampled schemes, 135 schemes constituting 40 *per cent* of sampled cases were in seven North Eastern (NE) States and 200 schemes constituting 60 *per cent* in other States<sup>55</sup>. In NE States, out of 135 MI schemes, 88 (65 *per cent*) were completed and the remaining 47 (35 *per cent*) schemes were ongoing. In other States, out of the 200 MI schemes, 125 schemes (63 *per cent*) were completed and remaining 75 (37 *per cent*) were ongoing.

Test check of completed MI schemes in States showed that in 14 MI schemes pertaining to five States, execution of work was incomplete though the schemes had been declared as completed. The cases are discussed in Table 4.2 below:

**Table 4.2: Incomplete MI schemes**

| State             | Minor Irrigation schemes/ Sub schemes   | Incomplete schemes/ Sub schemes   |
|-------------------|---|---|
| Arunachal Pradesh | Sub MI scheme at Kuto Hapa/nderj Uliltanagar Sub Division and Sub MI scheme at Sarshang Paddy field at Lish village | Two sub MI schemes were reported as completed without construction of the headwork, as provided in the approved estimates.  |
| Himachal Pradesh  | LIS Bharol, FIS Pandli, LIS Pabbar to Thana & Group of Villages and LIS Koku Nallah to Halallah                     | Out of the 17 sampled MI schemes, 15 schemes were reported as completed. However, test check of records revealed that four were actually still incomplete after incurring total expenditure of ₹ 14.23 crore. |

<sup>55</sup> In 14 States, namely Andhra Pradesh, Bihar, Chhattisgarh, Himachal Pradesh, Jammu & Kashmir, Jharkhand, Karnataka, Maharashtra, Madhya Pradesh, Odisha, Rajasthan, Telangana, Uttarakhand and West Bengal.

| State             | Minor Irrigation schemes/<br>Sub schemes                   | Incomplete schemes/ Sub schemes   |
|-------------------|--|---|
| Jammu and Kashmir | MI scheme 'Construction of Pattangarh Khul <sup>56</sup> ' | The scheme involved construction of a <i>khul</i> of 1,500 m to be completed by March 2014 with envisaged IP of 101 ha. Though the scheme was shown as completed at a cost of ₹ 53 lakh, it was found during site visit that only 500 m of <i>khul</i> length had been constructed involving an expenditure of ₹ 22 lakh. It was also noticed that the <i>khul</i> had also not been connected to the source of water. The Department accepted (September 2017) that the work was incomplete due to local disputes. |
|                   | The scheme 'Construction of 20 no. tube-wells at Samba'    | The scheme was taken up in 2007-08 to create an IP of 1,184 ha at an estimated cost of ₹ seven crore for completion within a period of two years. However, only 18 tube wells were commissioned and the remaining two were abandoned due to lesser yield/discharge of water. Besides there was a shortfall in creation of distribution channel (5,075 m as against 15,000 m).   |
| Madhya Pradesh    | Six schemes  | In case of six MI schemes which were shown as completed, physical components of work such as main canals, distributaries and minors/sub-minors were either not executed or were partially constructed. Audit also noted that against an approved cost of ₹ 21.80 crore of these schemes, expenditure incurred was ₹ 24.94 crore. Thus, despite incurring excess expenditure of ₹ 3.14 crore physical components under the above six MI schemes remained incomplete.   |
| Mizoram           | Mat Project  | The project was reported as completed but joint inspection visits of the project in May 2017 revealed that the project had not been completed so far due to land dispute; 35 m of channel work was incomplete and work for covering channel with cement plaster had not yet commenced.  |

#### 4.3.2 Defunct MI schemes

Instances of defunct MI schemes were found in 41 cases in nine States constituting 12 *per cent* of sampled MI schemes involving IP of 5,021 ha as enumerated in Table 4.3 below:

**Table 4.3: Defunct MI schemes**

| Sl. No.                     | State             | Number of defunct projects         | IP (ha) | Expenditure (In ₹ crore) |
|-----------------------------|-------------------|------------------------------------|---------|--------------------------|
| <b>North Eastern States</b> |                   |                                    |         |                          |
| 1                           | Arunachal Pradesh | 12 consisting of 29 sub-MI schemes | 259     | 2.80                     |
| 2                           | Nagaland          | 6                                  | 938     | 12.21                    |
| 3                           | Sikkim            | 6                                  | 174     | 1.94                     |
| 4                           | Tripura           | 4                                  | 570     | 2.35                     |
| <b>Other States</b>         |                   |                                    |         |                          |
| 5                           | Jammu and Kashmir | 2                                  | 336     | 2.28                     |

<sup>56</sup> *Khul* is a water channel.



| Sl. No. | State          | Number of defunct projects | IP (ha)      | Expenditure (In ₹ crore) |
|---------|----------------|----------------------------|--------------|--------------------------|
| 6       | Jharkhand      | 4                          | 500          | 4.6                      |
| 7       | Madhya Pradesh | 2                          | 2,095        | 32.96                    |
| 8       | Uttarakhand    | 4                          | 21           | 9.11                     |
| 9       | West Bengal    | 1                          | 128          | 0.25                     |
|         | <b>TOTAL</b>   | <b>41</b>                  | <b>5,021</b> | <b>68.50</b>             |

The State wise list of defunct MI schemes/sub-schemes is given in **Annexure 4.2**. The projects were defunct due to various reasons like improper survey, poor implementation, damage/break down of headwork/sluice gate/distribution canals, landslides, water leakages, obstructions between alignment of channel, non-accumulation of water, non-construction of distribution canals, etc. As a result of schemes becoming defunct, IP created was un-utilized.

### 4.3.3 Time overrun in MI schemes

Of the 11,291 MI schemes implemented during 2008-2017, 335 (three *per cent*) MI schemes were selected for audit. Out of these 335 schemes, time overrun was observed in 153 i.e. 46 *per cent* of sampled MI schemes.

There was time overrun ranging from one month to 12 years in 73 (65 *per cent*) out of 113 test checked MI schemes operating in six NE States<sup>57</sup> as shown in Table 4.4 below:

**Table 4.4: Delay in completion of MI schemes in NE States**

| Sl. No. | State        | Number of completed MI schemes | Delay                   | Number of ongoing MI schemes | Delay                  |
|---------|--------------|--------------------------------|-------------------------|------------------------------|------------------------|
| 1.      | Assam        | 12                             | One year to five years  | 13                           | One year to five years |
| 2.      | Meghalaya    | 6                              | One year to 12 years    | 2                            | One year               |
| 3.      | Mizoram      | 7                              | One year to two years   | 1                            | Three years            |
| 4.      | Nagaland     | Nil                            | One year                | 8                            | One year               |
| 5.      | Sikkim       | 7                              | Two months to 13 months | 8                            | One month to 16 months |
| 6.      | Tripura      | 8                              | One year to eight years | 1                            | Two years              |
|         | <b>TOTAL</b> | <b>40</b>                      |                         | <b>33</b>                    |                        |

Of the 73 delayed MI schemes, 40 MI schemes were completed after delays ranging from two months to 12 years and 33 were ongoing with time overrun ranging from one month to five years. In other States, time overrun was observed in 80 (50 *per cent*) out of 159 test checked MI schemes pertaining to 12 States<sup>58</sup>. The time overrun ranged from six months to eight years as shown in Table 4.5.

<sup>57</sup> Information on the status of MI schemes in Arunachal Pradesh was not available.

<sup>58</sup> Information on the status of MI schemes in Bihar, Himachal Pradesh, Maharashtra and Telangana was not available.



**Table 4.5: Delay in completion of MI schemes in other States**

| Sl. No. | State            | Completed MI schemes | Delay  | Ongoing MI schemes | Delay                                  |
|---------|------------------|----------------------|--|--------------------|--|
| 1.      | Andhra Pradesh   | 1                    | Six years                                      | 1                  | Six years                              |
| 2.      | Chhattisgarh     | 1                    | One year                                       | 6                  | One to six years                       |
| 3.      | Himachal Pradesh | 10                   | One year & 10 months to six years & six months | 1                  | Three years                            |
| 4.      | Jammu & Kashmir  | 6                    | One to three years                             | 15                 | One to six years                       |
| 5.      | Jharkhand        | nil                  | -  | 5                  | Six months to two years & three months |
| 6.      | Karnataka        | 6                    | Five months to three years & nine months       | 3                  | Four years to four years & ten months  |
| 7.      | Madhya Pradesh   | 6                    | One year to two years                          | 8                  | One to three years                     |
| 8.      | Odisha           | nil                  | -  | 1                  | Six years                              |
| 9.      | Rajasthan        | nil                  | -  | 1                  | Eight years                            |
| 10.     | Telangana        | 1                    | Three years                                    | nil                |  |
| 11.     | Uttarakhand      | 7                    | Two years                                      | -                  |  |
| 12.     | West Bengal      | 1                    | Seven months                                   | nil                |  |
|         | <b>TOTAL</b>     | <b>39</b>            |  | <b>41</b>          |  |

In the test checked 80 schemes, it was noticed that 39 MI schemes (49 *per cent*) were complete but with delays ranging from five months to over six years. The balance 41 schemes (51 *per cent*) were ongoing and had time overrun ranging from six months to eight years.

The broad reasons for delays were land acquisition problems, deficiencies in Detailed Project Reports (DPRs), changes in site, non-availability of funds, delays in release of fund, non-utilization of fund, local disputes, delay in requisite clearances, and abandonment of work by contractor. Delays resulted in cost escalation, damage/ deterioration of completed structures of schemes and shortfall in IP Utilisation.

#### 4.4 Cost Overrun

MMI Projects have a long gestation period and involve considerable outlays. As mentioned in Chapter I of the report, an important consideration for launching AIBP was to financially assist States which were facing resource constraints in completing irrigation projects. It was therefore, important that resources provided for projects were optimally utilized and costs were efficiently managed. Audit of MMI projects however, disclosed significant cost overruns in most projects as discussed in the subsequent paragraphs.

Out of the 115 selected MMI projects, revision in costs was observed in 84 projects (71 *per cent* of sample). The combined cost overrun in these projects was ₹ 1,20,772.05 crore which was 295 *per cent* of their original aggregate cost of ₹ 40,943.68 crore. The extent of cost overrun in individual projects ranged between ₹ 4.40 crore to ₹ 48,366.88 crore. The list of these projects and details of cost overrun are given in **Annexure 4.3**. Of the remaining 31 (14 completed and 17 ongoing) projects, while no cost overrun was reported in 20 projects, in 11 projects expenditure had exceeded their sanctioned costs but revised approvals were

yet to be obtained. Details of these eleven projects are given in Table 4.6. The financial liability with respect to these projects was thus open-ended.

**Table 4.6: Excess Expenditure vis-à-vis Sanctioned Cost**

(₹ in crore)

| State          | Project                   | Sanctioned cost under AIBP | Expenditure as on March 2017 | Excess over cost |
|----------------|---------------------------|----------------------------|------------------------------|------------------|
| Chhattisgarh   | Koserteda (completed)     | 154.65                     | 166.19                       | 11.54            |
| Gujarat        | Aji-IV (completed)        | 75.16                      | 134.42                       | 59.26            |
|                | Bhadar-II (completed)     | 73.09                      | 138.61                       | 65.52            |
| Kerala         | Chitturpuzha (ongoing)    | 34.57                      | 41.69                        | 7.12             |
| Madhya Pradesh | Sanjay Sagar (ongoing)    | 250.33                     | 277.07                       | 26.74            |
|                | Sagad (completed)         | 239.99                     | 280.21                       | 40.22            |
|                | Mahuar (completed)        | 191.27                     | 229.09                       | 37.82            |
| Karnataka      | Sri Rameshwar (completed) | 304.51                     | 430.94                       | 126.43           |
|                | Varahi (ongoing)          | 522.34                     | 665.36                       | 143.02           |
| Maharashtra    | Krishna (completed)       | 648.05                     | 676.21                       | 28.16            |
|                | Arjuna (ongoing)          | 476.49                     | 508.04                       | 31.55            |

In addition, out of the 20 projects where no cost overrun has been reported, there are 13 projects in which though no cost overrun has been reported, there has been time overrun ranging from two to 12 years. These cases carry risk of future cost escalation due to delays and time overrun.

The reasons for cost overrun in 84 projects were enhanced cost of land acquisition and R&R, changes in Schedule of Rates (SoR) and price escalation due to time overruns, variation in quantities, change in designs, etc. Illustrative cases are discussed in Table 4.7 below:

**Table 4.7: Cost Overrun**

| State               | Cost Overrun  |
|---------------------|---|
| <b>MMI projects</b> |   |
| Gujarat             | <b>Sardar Sarovar project</b><br>Cost of project was revised from ₹ 39,240.45 crore (PL 2008-09) in May 2010 to ₹ 54,772.94 crore (PL 2014-15) with stipulated completion by March 2020. This led to an increase in project cost by ₹ 15,532.49 crore (40 per cent) of which increase of ₹ 5,722.29 crore alone was attributable to price escalation and ₹ 6,384.70 crore was due to change in design and inclusion of additional requirements. The company (SSNNL) stated (January 2018) that the project works were delayed due to delay in statutory clearances, court cases and R&R issues. Further, SSNNL decided in 2014 to construct underground pipe line in sub-minor canals under the head "U- Distributaries, Minors and Sub-minors", necessitating change in design with financial implication of ₹ 2,339.65 crore. |
| Maharashtra         | <b>Krishna Koyna LIS</b><br>The cost was revised at 2013-14 price level from ₹ 2,224.76 crore (PL 2005-06) to ₹ 4,959.91 crore. This led to an increase in project cost by ₹ 2,735.15 crore (122 per cent) of which ₹ 244.64 crore alone was attributable to price escalation, ₹ 282.77 crore was due to other causes and ₹ 41.51 crore was due to change in design. Besides, ₹ 683.69 crore was increased due to District Schedule of Rates (DSR), ₹ 555.79 crore was increased due to inadequate survey, ₹ 764.61 crore was increased due to increase in rate of land acquisition and ₹ 134.02 crore was increased due to increase in area of land acquired.  |

| State         | Cost Overrun   |
|---------------|--|
| Telangana     | <p><b>J. Chokha Rao project</b></p> <p>Project cost was revised from ₹ 6,016 crore to ₹ 13,445.44 crore in 2017. This led to an increase in project cost by ₹ 7,429.44 crore (123 <i>per cent</i>) due to changes in the scope of work.</p> <p>The Government replied (January 2018) that the original cost of ₹ 6,016 crore comprised of Phase I and Phase II only and did not include reservoirs and Phase III works. The first revised cost of ₹ 9,427.73 crore included all the phases. Hence, the increase was only 42 <i>per cent</i> when compared to the first revised cost, which included all the phases. The reply of the Government was not acceptable as there was no increase in the ayacut.</p> <p><b>Indiramma Flood Flow Canal</b></p> <p>The cost was revised from ₹ 1,331.30 crore to ₹ 5,940.09 crore in 2016 due to change in Standard Schedule of Rates, deviation in the project execution and changes in the scope of work. This led to an increase in project cost by ₹ 4,608.79 crore (346 <i>per cent</i>).</p> |
| Uttar Pradesh | <p><b>Bansagar Canal Project</b></p> <p>The project was included under AIBP in 1997-98 at an estimated cost ₹ 330.19 crore. The project was revised to ₹ 955.06 crore, ₹ 2,053.60 crore and ₹ 3,148.91 crore in 2003, 2007 and 2010 respectively. The latest approved cost of the project was ₹ 3,148.91 crore. This led to an increase in project cost by ₹ 2,818.72 crore (854 <i>per cent</i>) compared to original cost. The cost revisions were primarily due to non-release of funds on due time, increase in the rate of land, increase in cost of construction material and labour, increase in the quantity of works, additional works like bridges, drainage, crossing fall as per requirement, change in drawing and design in and increase in the scope on miscellaneous works.</p>  |

#### 4.4.1 Cost increase due to change in Scope and Design

Test check of sampled MMI projects and MI schemes disclosed that in 12 MMI projects pertaining to six States and three MI schemes pertaining to three States, the scope and design of the projects were changed after sanction of the projects which led to cost increase and extra expenditure to the tune of ₹ 3,082.36 crore in these projects. Details are given in **Annexure 4.4**. A few illustrative cases are discussed in Table 4.8 below:

**Table 4.8: Cost Escalation due to change in Scope and Design**

| State          | Cost Escalation  |
|----------------|--|
| Andhra Pradesh | <p><b>Conversion of Bhavanasi Tank into Mini Reservoir in Prakasam district</b></p> <p>The original cost of the scheme of ₹ 27 crore was revised to ₹ 47.72 crore, resulting in cost overrun of ₹ 20.73 crore. The project was ongoing as of March 2017.</p>           |
| Chhattisgarh   | <p><b>Gharjia Bathani Tank MI scheme</b></p> <p>An amount of ₹ 86.21 lakh was incurred for construction of three vertical falls and MS pipe Aquaduct which was originally not included in the scope of work leading to enhancement of cost of the work.</p>            |
| Gujarat        | <p><b>Sardar Sarovar Project</b></p> <p>In 2014 the SSNNL decided to construct underground pipe line in sub-minor canals under the head “U- Distributaries, Minors and Sub-minors”, necessitating change in design with financial implication of ₹ 2,339.65 crore.</p> |
| Jharkhand      | <p><b>Subarnarekha Multipurpose Project</b></p> <p>The value of 13 out of 70 test-checked works was increased from ₹ 487.28 crore to ₹ 603.35 crore due to change in drawings, design and scope of works.</p>  |

| State          | Cost Escalation  |
|----------------|--|
| Madhya Pradesh | <p><b>Barkheda Chhajju Minor Tank</b></p> <p>The scope of work of was increased by including new work of chute fall, bridge, box culvert, diverted road and spill channel cutting of ₹ 7.67 crore in revised Administrative Approval. This resulted in additional cost implication of ₹ 7.67 crore.</p>  |
| Odisha         | <p><b>Kanupur project</b></p> <p>The project was included under AIBP in 2003-04 at a cost of ₹ 428.32 crore. Due to water seepage and soil conditions in the zone of construction, design of components in Spillway, Head Regulator, Cross Drainage works, Bridge and Distributaries had to be altered which resulted in additional cost of ₹ 111.50 crore. Audit found that the soil condition and problem of water seepage was known but had not been catered for at the design stage necessitating subsequent changes in designs and additional costs.</p> <p><b>Lower Suktel Irrigation project</b></p> <p>Construction of balance work of one item was awarded at a cost of ₹ 140.74 crore for completion by December 2014. However, in August 2016, a supplementary agreement with one substituted item and four extra items was signed which enhanced the cost of construction of the balance work to ₹ 232.60 crore. The deviation in quantities was due to change in the General Agreement Drawing, as the original estimate was prepared on tentative drawing and design.</p> <p>Ministry stated (February 2018) that change in design may be unavoidable keeping in view the complex nature of irrigation projects.</p> |

Increase in cost due to changes in design and scope are indicative of lack of due diligence and shortcomings in initial planning of the projects.

#### 4.5 Irrigation Potential

As per AIBP guidelines, the Memorandum of Understanding (MoU) signed between the Ministry and the State Government for each project sets targets for creation of IP and for utilization of the IP created for the project/scheme. Achievement of these targets is critical for meeting the overall objective of AIBP of ensuring assured and adequate water supply for agriculture.

Out of the 118 sampled MMI projects, data regarding IP target and creation for 115 projects (30 completed and 85 ongoing projects) and for IP utilization for 114 projects (30 completed and 84 ongoing projects) as of March 2017, were made available by the concerned State level agencies. Details relating to IP targets, IP created and IP utilized of completed and ongoing projects are given in **Annexure 4.5** and **Annexure 4.6** respectively.

Out of 335 sampled MI schemes, information regarding IP target and IP created (IPC) was provided with respect to 323 MI schemes and on IP utilization (IPU) for 281 schemes/projects. Details of IP targets, IPC and IPU for MI schemes are given in **Annexure 4.7** and **Annexure 4.8**.

Audit findings with regard to IPC and IPU are discussed in the following paragraphs.

#### 4.5.1 IP Creation (IPC)

##### MMI projects

Against the overall target of 85.41 lakh ha of IP from 115 projects, IP of 58.38 lakh ha was created which showed an achievement of 68 *per cent* and a shortfall of 27.03 lakh ha (32 *per cent*). Envisaged IPC was achieved in only 27 out of the 115 sample MMI projects i.e. in 23 *per cent* of the projects. Out of the Priority-I projects examined in Audit, only two projects (Sri Rameshwar LIS and Narmada Canal) achieved the targeted IP creation, as of March 2017.

IPC in 30 completed projects was 14.47 lakh ha as against the target of 15.58 lakh ha reflecting a gap of 1.11 lakh ha. Thus there was a combined shortfall of approximately seven *per cent* of the IP target with respect to these 30 projects. In the case of the 85 ongoing projects, against the target of 69.83 lakh ha, overall IPC was 43.91 lakh ha which constituted an achievement of 63 *per cent*. The shortfall was 25.92 lakh ha which constituted around 37 *per cent* of the target. A brief analysis of IPC in completed and ongoing projects and expenditure incurred on the projects is given in Table 4.9 below:

**Table 4.9: IP creation *vis a vis* IP Target**

| Percentage of IPC to target IP | No. of completed MMI projects | No. of ongoing MMI projects | Expenditure during 2008-2017 (₹ in crore) |
|--------------------------------|-------------------------------|-----------------------------|---|
| Nil                            | --                            | 12                          | 8,938                                     |
| Up to 25                       | 2                             | 5                           | 864                                       |
| 26 to 50                       | 1                             | 16                          | 15,573                                    |
| 51 to 75                       | 2                             | 19                          | 10,314                                    |
| 76-89                          | 7                             | 10                          | 18,282                                    |
| 90-99                          | 4                             | 10                          | 4,390                                     |
| 100                            | 14                            | 13                          | 4,440                                     |
| <b>Total</b>                   | <b>30</b>                     | <b>85</b>                   | <b>62,801</b>                             |

The above table shows that only 14 completed projects achieved full IPC and four others achieved the threshold IPC of 90 *per cent* and above which is recognised by the Ministry for considering a project as completed. 12 completed projects did not achieve the threshold IPC of 90 *per cent* but were still shown as completed.

In the case of ongoing projects, 23 projects had achieved more than threshold percentage of IPC of 90 *per cent* and 52 projects had a IPC of below 75 *per cent* of which in 12 projects IPC was “nil” even though expenditure on these projects amounted to ₹ 35,689 crore.

Illustrative list of both completed and ongoing projects with achievement of IPC of below 90 *per cent* has been discussed in Table 4.10.

Table 4.10: Gap in IPC

| State                                   | Achievement of IPC (in per cent) | Gap in IPC   |
|---|----------------------------------|--|
| <b>Gap in IPC in completed projects</b> |                                  |  |
| Andhra Pradesh                          | 78                               | <b>Swarnamukhi project</b><br>The project was declared as complete in 2008-09, but only 3,651 ha of IP was created against the envisaged IP of 4,656 ha as of March 2017, due to reduction in command area/ayacut.   |
| Chhattisgarh                            | 79                               | <b>Maniyari project</b><br>The project was declared as complete in 2016-17, but only 11,515 ha of IP was created against the envisaged IP of 14,515 ha. Sanction for the remaining canal work under the project was included in the revised DPR which was awaited.   |
| Gujarat                                 | 89                               | <b>Aji-IV project</b><br>The project was included under AIBP in 2000-01 with total projected CCA of 3,750 ha to be catered through two main canals and seven minors. The project was declared as complete in March 2010 with IP creation of only 493 hectares. Though the project was declared as completed, the main canal was completed only in March 2016 and work on one out of the seven minors was still in progress as on March 2017 with IPU of 14 per cent. |
| Karnataka                               | 54                               | <b>Ghataprabha project</b><br>The project was declared as complete in 2010-11, but only 5,344 ha of IP was created against the envisaged IP of 9,963 ha as of March 2017.  |
| Maharashtra                             | 58                               | <b>Kar project</b><br>Project was declared complete 2010-11, but only 70 per cent of work under AIBP was completed. Balance work was proposed to be completed with funding from the State but remained incomplete due to land acquisition issues and insufficient funding.   |
|   | 18                               | <b>Hetwane project</b><br>Project had been declared as complete in 2008-09, but canal and distributary work were still incomplete as of March 2017 due to land acquisition problems. It was also seen that an expenditure of over ₹ 100 crore was made after showing the project as complete.  |
|   | 4                                | <b>Warna project</b><br>Though declared as complete in 2016-17, only 3,678 ha of IP was created against the envisaged IP of 87,792 ha. Three aqueducts were incomplete though most of the canal works between Km 1 to Km 29 and Km 35 to Km 47 were physically completed.  |
|   | 48                               | <b>Lal Nala</b><br>The project was declared as complete in 2008-09, however, IP created was less than 90 per cent.   |
|   | 87                               | <b>Lower Panzara</b><br>The project having a target of IP creation of 6,785 ha was completed during 2016-17 with achievement of 5,881 ha. The IPC could not be achieved due to encroachments in canal area.  |
| <b>Gap in IPC in ongoing projects</b>   |                                  |  |
| Andhra Pradesh                          | Nil                              | <b>Tarakarama Thirtha Sagaram Project</b><br>IPC in the project was nil due to change in alignment, non-completion of canal network. The project could not be completed due to non-acquisition of land.  |

| State             | Achievement of IPC (in per cent) | Gap in IPC   |
|-------------------|----------------------------------|--|
| Bihar             | Nil                              | <b>Punpun Barrage Scheme</b><br>As against the envisaged IP of 13,680 ha, IPC was nil. The barrage of the scheme was almost 90 per cent complete whereas the main canal, branch canal, distributaries and water course had not yet started. DPR of Punpun CADWM had not been approved.   |
| Gujarat           | 79                               | <b>Sardar Sarovar Project</b><br>As of March 2017, SSNNL developed IP of 14.13 lakh ha against projected IP of 17.92 lakh ha. Thus progress achieved in creation of IP was 79 per cent. Non-creation of envisaged IP was due to non-acquisition of private land, non-obtaining permission from the Forest Department for diversion of protected /reserved forest land, opposition by the farmers to handover their land, demand for UGPL /change of alignment and non-shifting of utilities in time and canal works not completed or partly completed. Test check of records showed that due to 585 missing links in distributaries and minor canals, irrigation potential in area of 1,90,354 ha could not be created. In Kachchh Branch canal, due to 42 missing links in branch and non-commencement of distributaries and minors, the IP of 1,12,778 ha could not be created. Audit also noticed that IP was shown to have been created even where there were missing links in the canal and water could not flow. |
| Jammu and Kashmir | Nil                              | <b>Kandi Canal project</b><br>IP creation was nil due to abandonment of work by the contractor.  |
| Jharkhand         | 45                               | <b>Subarnarekha Multipurpose project</b><br>As against the targeted IP of 2.37 lakh ha, only 1.07 lakh ha could be achieved till March 2017. This was due to the fact that works relating to the project were delayed due to shortfalls in land acquisition to the extent of 20,556 ha which was 38 per cent of required land. The major part of the shortfall was with respect to land required for head works. In addition, work relating to a dam was held up due to non-clearance by Tribal Advisory Council and delays in R&R activities.   |
| Karnataka         | 9                                | <b>Dudhganga Irrigation project</b><br>The project with envisaged IP of 11,367 ha was scheduled for completion up to 2011-12 but the project was not progressing due to opposition of farmers for acquisition of land. As a result, IPC after inclusion in AIBP was only 1,000 ha.   |
| Telangana         | 40                               | <b>J Choka Rao LIS Project</b><br>There was shortfall of 1,48,191 ha in IP creation due to delay in land acquisition. The shortfall in land acquisition in this project was 2,483 ha which affected the taking up of work of distributary network and minors which were required for increasing IP creation.   |
| Uttar Pradesh     | 43                               | <b>Modernisation of Lachura Dam, Improving Irrigation Intensity of Hardoi Branch, Bansagar Canal, Restoration of Sarda Sahayak Canal System and Madhya Ganga Canal Phase-II</b><br>In five projects, against total targeted IP of 12.29 lakh ha, IP created was only 5.34 lakh ha. The shortfall in IPC was highest in the case of Restoration of Sharda Sahayak Canal Project at 5.4 lakh ha and in the case of Madhya Ganga Canal Project –II at 1.05 lakh ha. Restoration of Sharda Sahayak Canal Project was reported to be abandoned after incurring an expenditure of ₹ 229 crore. In the  |



| State       | Achievement of IPC (in per cent) | Gap in IPC  |
|-------------|----------------------------------|---|
|             |                                  | case of Madhya Ganga Canal Project –II, the shortfall in IPC was due to gaps in construction of canals due to less than required land acquisition.  |
| West Bengal | Nil                              | <b>Subarnarekha Barrage Project</b><br>Against IP target of 1,30,014 ha, IPC was nil, as due to land acquisition of only 1.32 per cent of required land, lack of forest clearance and shortage of funds original project work had not commenced and only some preliminary work had been undertaken. |

### MI schemes

As against the overall target of IP of 1.50 lakh ha in 323<sup>59</sup> MI schemes, total IPC was 0.58 lakh ha (39 per cent) only.

The main reasons for shortfall in IPC were delayed execution of work, subsequent changes in the scope and design of the projects, commencement of work without ensuring fulfilment of essential pre-requisites such as land acquisition, delay in obtaining of clearances and non/delay in provision of R&R measures. As stated in para 4.2.1, failure to meet targeted IPC would affect the key assumptions for computing benefits from irrigation projects and their viability in terms of BCR.

#### 4.5.2 IP utilization (IPU)

##### MMI projects

Out of a total IPC of 58.36 lakh ha in 114 projects, after incurring a total expenditure of ₹ 62,801 crore, IPU was 38.05 lakh ha i.e. 65 per cent. Thus, there was a gap of 20.31 lakh ha (35 per cent) between IPC and IPU in these projects. Full IPU was achieved in only 33 projects.

The position with regard to IPU both in completed and ongoing projects is enumerated in Table 4.11 below:

**Table 4.11: IP utilization vis a vis IP created**

| Range of IP Utilization (in percentage)                  | Number of completed MMIs | Number of ongoing MMIs | Expenditure during 2008-17 (₹ in crore) |
|--|--------------------------|------------------------|---|
| Nil  | Nil                      | 20 <sup>#</sup>        | 11,790                                  |
| Up to 25   | 3                        | 8                      | 11,317                                  |
| 26 to 50   | 2                        | 19                     | 23,520                                  |
| 51 to 75   | 9                        | 8                      | 3,139                                   |
| 76-99  | 6                        | 7                      | 3,295                                   |
| 100  | 10                       | 23                     | 9,740                                   |
| <b>Total</b>   | <b>30</b>                | <b>85</b>              | <b>62,801</b>                           |
| <sup>#</sup> Including 12 projects with nil IP creation. |                          |                        |   |

<sup>59</sup> IPC of 12 MI schemes out of total 335 MI schemes was not furnished.



In the case of completed projects, IPU was 10.42 lakh ha and the gap between IPC and IPU was 4.05 lakh ha constituting 39 *per cent* of IPC. In only 10 completed projects was IPC being fully utilised whereas in 14 projects IPU was 75 *per cent* or less.

In the ongoing projects, IPU was 27.64 lakh ha or 63 *per cent* and the gap between IPC and IPU was 16.26 lakh ha constituting 37 *per cent* of IPC. In 23 projects IPU was 100 *per cent* whereas in 55 projects it was 75 *per cent* or less with IPU being “nil” in 20 projects. Eight projects of seven States<sup>60</sup> had nil IP utilization despite IP created ranging between 1,000 ha in case of Dudhganga in Karnataka to 1,31,319 ha SRSP-II in Telangana.

Some cases of projects which saw significant variation between IPC and IPU are discussed in Table 4.12 below:

**Table 4.12: Gap in IPU**

| State          | Gap in IPU   |
|----------------|--|
| Andhra Pradesh | <p><b>Gundlakamma Reservoir Project</b></p> <p>The IP created was not fully utilised due to gaps in canal arising out of litigation in land acquisition. This showed that IP was being wrongly showed as created even though there were gaps in canal work.</p>  |
| Bihar          | <p><b>Restoration of Kosi Barrage and its appurtenance (completed)</b></p> <p>The work of this project and CADWM programme were completed in March 2010 and March 2017 respectively. Audit scrutiny disclosed that the 3.45 lakh ha out of 4.40 lakh ha of the command area developed under CADWM was covered with unlined (<i>Kutcha</i>) structures. During joint site visits it was noticed that the <i>Kutcha</i> structures did not exist in three districts and details with regard to these structures were not available either with the Division or with the Kosi CAD Agency. Thus, the irrigation potential created under CADWM had been lost in unlined channels and the actual IP utilised was only 0.95 lakh ha.</p> <p><b>Durgawati Reservoir Project</b></p> <p>Against envisaged IP of 39,610 ha, the reported IP creation was 23,000 ha and utilization was only 2,345 ha, which was 9.45 <i>per cent</i> of IP created. The head works, Main/Branch Canal and distributaries/minors were 88, 96 and 42 <i>per cent</i> respectively complete. The process of land acquisition and Durgawati CAD&amp;WM was incomplete.</p> |
| Chhattisgarh   | <p><b>Mahanadi Project (completed)</b></p> <p>Bhatapara Branch Canal (BBC) under the project had an IPC of 17,882 ha through 19 distributary canals. However, shortfall of IPU was 6,488 ha i.e. 36 <i>per cent</i> of IPC. The shortfall was due to low head discharge of water as against its capacity despite availability of water which indicated that the canal system of BBC was not adequate and due to some works still being incomplete as of May 2017.</p>  |
| Gujarat        | <p><b>Sardar Sarovar project</b></p> <p>As of March 2017, IP created was 14.13 lakh ha and IP utilization was 6.28 lakh ha. Thus, progress achieved in IP utilisation against created IP was only 44 <i>per cent</i>. Audit noted that as the water delivery system up to field level was not fully developed, the created IP remained underutilized. Further, due to non-acquisition of private land, non-obtaining of permission from the Forest Department for diversion of protected/reserved forest land,</p>   |

<sup>60</sup> Bihar (one), Jharkhand (one), Karnataka (two), Maharashtra (one), Telangana (one), Tripura (one) and Uttar Pradesh (one).

| State         | Gap in IPU  |
|---------------|---|
|               | opposition from farmers, change of alignment and non-shifting of utilities in time, canal work were not completed or partially completed.   |
| Jharkhand     | <b>Subarnarekha Multipurpose project</b><br>As against IP creation of 1.07 lakh ha till March 2017, IPU was 44,844 ha leaving a gap of 62,482 ha. This was due to the fact that works relating to minors and sub-minors were not completed.   |
| Karnataka     | <b>Guddada Mallapura LIS and Dudhganga Project</b><br>As against the IP creation of 5,000 ha and 1,000 ha, IP utilization was nil due to land acquisition problems.   |
| Telangana     | <b>J Choka Rao LIS Project</b><br>The gap of 82,007 ha between IP created and IP utilization was due to shortfall in utilization of ayacut due to non-availability of water.<br><b>SRSP Phase II project</b><br>IP utilization was nil due to inadequate inflows of water to the reservoir and non-utilization of ayacut.   |
| Uttar Pradesh | <b>Modernisation of Lahchura Dam, Improving Irrigation Intensity of Hardoi Branch, Bansagar Canal, Restoration of Sarda Sahayak Canal System, Eastern Ganga Canal (completed) and Madhya Ganga Canal Phase-II</b><br>In six projects (one completed and five ongoing), against IP creation of 6.39 lakh ha only 4.92 lakh ha i.e. 77 <i>per cent</i> was utilized. The created IP of projects could not be utilised mainly due to non-completion of the canals in continuous stretches, non-acquisition of land and gaps in the canals. |

### MI schemes

Data on IPU was available for 281<sup>61</sup> schemes with the IPC being 0.46 lakh ha in these schemes. Of this, 0.33 lakh (72 *per cent*) was utilized.

Shortfalls in IPU were largely due to variation in the planned Command Area, incorrect phasing of project implementation, gaps in the main/branch canals, non-completion of minors and distributaries, defects in canals, insufficient water availability, poor Operation and Maintenance (O&M) and slow *pari-passu* implementation of Command Area Development work for creation of final distributaries to ensure supply of water in the fields. As in the case of failure to meet targeted IPC, shortfall in IPU would also affect the key assumptions for computing benefits from irrigation projects and their viability in terms of BCR.

<sup>61</sup> IPU of 54 MI schemes out of total 335 MI schemes was not furnished.

## Section B: Factors affecting Programme Implementation

### 4.6 Land acquisition

While evaluating AIBP, the Planning Commission identified (November 2010) land acquisition as one of the main constraints in implementation of AIBP. The 2013 AIBP guidelines recognized this by stipulating that while processing release of Central Assistance (CA) under AIBP, the same should be made commensurate with works related to land under possession.

Audit of sampled MMI projects revealed that in 56 projects (including 11 Priority-I projects) pertaining to 16 States<sup>62</sup> involving a total sanctioned cost of ₹ 1,31,707.77 crore (73 per cent), land acquisition had not been completed and there was shortage of 53,881.06 ha of land which was 20 per cent of the total land required. Of these 56 projects, eight were completed without acquiring the envisaged areas of land and 48 projects were ongoing with significant delays in land acquisition. Details are given in **Annexure 4.9**. The audit findings with regard to availability of land covering both completed and ongoing projects are discussed below:

#### Completed Projects

- Eight completed projects<sup>63</sup> of two States viz. Maharashtra and Karnataka which had a total requirement of 10,916.91 ha of land, experienced shortage of land. The shortage in these eight projects ranged from 4.32 ha to 449.12 ha as shown in Table 4.13 below. In percentage terms the shortfall ranged from one to 64 per cent.

**Table 4.13: IPC, Time and cost overrun in completed projects having Land shortages**

| Shortage of land<br>(In Percentage) | Number of projects | Area<br>(In Ha) | Time overrun |        | Cost overrun<br>(In crore) |            | Gap in IPC<br>(In Percentage) |         |
|-------------------------------------|--------------------|-----------------|--------------|--------|----------------------------|------------|-------------------------------|---------|
|                                     |                    |                 | No.          | Year   | No.                        | Amount     | No.                           | %       |
| Up to 10                            | 4                  | 4 to 1, 148     | 3            | 1 to 9 | 3                          | 121 to 706 | 4                             | 0 to 82 |
| 11-20                               | 1                  | 9               | 0            | --     | 0                          | --         | 1                             | Nil     |
| 21-40                               | 2                  | 175 & 449       | 1            | 5      | 1                          | 209        | 2                             | 13 & 42 |
| >40                                 | 1                  | 449             | 1            | 2      | 0                          | --         | 1                             | Nil     |
| <b>Total</b>                        | <b>8</b>           |                 | <b>5</b>     |        | <b>4</b>                   |            | <b>8</b>                      |         |

<sup>62</sup> Andhra Pradesh-two, Assam-two, Bihar-two, Chhattisgarh- one, Goa-one, Gujarat-one, Jammu & Kashmir-one, Jharkhand-five, Karnataka-four, Kerala-one, Maharashtra-17, Odisha-seven, Telangana-six, Tripura-two, Uttar Pradesh-two and West Bengal-two.

<sup>63</sup> Sri Rameswar in Karnataka, Bawanthadi, Lower Panjara, Hetwane, Sarangkhedda, Kar, Pentakli and Tajnapur in Maharashtra.

- Out of eight projects completed with shortage of land, there was time over run in five projects, cost overrun in four projects and gap in IPC in five projects, as shown in Table 4.13 above.
- One project i.e. Sarang Kheda where shortfall of land was 4.32 ha was however, able to achieve its targeted IP without time and cost overrun. In other cases, shortfall in IPC ranged between nil and 82 *per cent*.

### Ongoing Projects

In the case of 48 ongoing projects (including eight Priority-I projects), an area of 59,567.77 ha which was 29 *per cent* of the total requirement of 2,08,016.33 ha, had not been acquired as of March 2017. The shortfall of land ranged from 1.33 ha to 20,556 ha. In percentage terms, the shortage ranged from 0.40 to 90 *per cent*. The shortfall in availability of land contributed to both time and cost overrun in these projects which ranged from two years (Upper Tunga in Karnataka) to 18 years (Dhansiri in Assam) and from ₹ 11.33 crore to ₹ 48,366.90 crore respectively. The details are given in Table 4.14 below:

**Table 4.14: Time, cost overrun and gap in IP in MMI projects with incomplete land acquisition**

| Shortage of land<br>(In Percentage) | Number of projects | Time over run   |                        | Cost over run   |                                    | Gap in IPC      |                           |
|-------------------------------------|--------------------|-----------------|------------------------|-----------------|------------------------------------|-----------------|---------------------------|
|                                     |                    | No. of projects | Range of delay (years) | No. of projects | Range of cost overrun (Percentage) | No. of projects | Range of Gap (Percentage) |
| Up to 10                            | 24                 | 23              | 3 to 18                | 21              | 9 to 7,268 <sup>#</sup>            | 20              | 13-100                    |
| 11-20                               | 9                  | 9               | 2 to 14                | 7               | 110 to 854                         | 9               | 20-100                    |
| 21-30                               | 1                  | 1               | 9                      | 1               | 792                                | 1               | 100                       |
| 31-40                               | 6                  | 6               | 2 to 18                | 4               | 32 to 1,896 <sup>##</sup>          | 7               | 21-100                    |
| 40-50                               | 1                  | 1               | 2 to 13                | 0               | 0                                  | 1               | 100                       |
| 50-60                               | 1                  | 1               | 18                     | 1               | 371                                | 1               | 76                        |
| 60-70                               | 2                  | 2               | 3 to 5                 | 1               | 122                                | 2               | 60-91                     |
| 70-80                               | 3                  | 3               | 4 to 15                | 3               | 170 to 843                         | 2               | 72-100                    |
| >80                                 | 1                  | 1               | 5                      | -               | -                                  | -               | -                         |
| <b>Total</b>                        | <b>48</b>          | <b>47</b>       |                        | <b>38</b>       |                                    | <b>43</b>       |                           |

<sup>#</sup>Karapuzha Project (Kerala); <sup>##</sup>Tatko Medium Irrigation Project (West Bengal)

Cases of projects where significant shortfall in land acquisition were observed are discussed in Table 4.15.

Table 4.15: Shortfall in Land Acquisition

| State          | Shortfall in Land acquisition  |
|----------------|--|
| Assam          | <p><b>Borolia Irrigation Project</b></p> <p>There was shortage of land measuring 224.30 ha as of July 2017 despite payment of ₹ 94.63 lakh to the local Revenue Authority in March 2012. As a result, the work of some canals and distributaries was delayed even though construction of the Barrage and main canal had been completed. The project has suffered a time overrun of 18 years and cost overrun of ₹ 123.67 crore since its inclusion in AIBP. Besides, the IPC achieved was only 24 <i>per cent</i> and IPU was 27 <i>per cent</i> of IPC. The possession of land was yet to be handed over to the Division. The Division stated (July 2017) that the matter was with the local Revenue officers and also that the process for acquisition of land had been initiated with district authority during the period from 2007 to 2011.</p> <p><b>Champamati Irrigation Project</b></p> <p>Two canals could not be completed due to non-availability of land as compensation for acquisition could not be settled. As a result, length of two canals had to be curtailed leading to loss of IP of 90 ha. In addition, expenditure of ₹ 3.02 crore on construction of the two canals beyond the point where land became unavailable was rendered unproductive. The reason for non-acquisition of the required land was stated to be non-settlement of demand of compensation value at four times the present value of land by the land owners.</p> <p><b>Dhansiri Irrigation Project</b></p> <p>The construction of the work 'Cross drainage over river Ghogra at ch. 9,180 m of Branch Canal B-7 was awarded (June 2008) to a contractor at a tender value of ₹ 2.26 crore with the stipulation to complete the work within three months. As of July 2017, the Division incurred an expenditure of ₹ 1.60 crore but the construction of cross drainage was yet to be completed. Physical verification of the work site (19 July 2017) revealed that a well settled village existed over the proposed canal length at both the ends of the cross drainage, indicating that the process of land acquisition for the canal system was not completed. The Division admitted (July 2017) that due to non-acquisition of land, work could not be done in the remaining portion of the canal system.</p> |
| Andhra Pradesh | <p><b>Gundlakamma Reservoir Project</b></p> <p>Out of 4,644 ha, the acquisition was pending for 19.53 ha due to a court case. During execution of work, the Engineer-in-Chief reported (August 2009) to Government that the contractor was not able to identify land to create IP for 8,905 acres within the command area of the project.</p> <p><b>Bhavanasi scheme</b></p> <p>For acquiring 188.47 ha of land, ₹ nine crore was deposited with LAO in 2010. As of 2017 the LAO acquired 77 ha only resulting in delay of seven years for the land acquisition. Delay was due to increase in cost of land and objection from farmers.</p>   |
| Gujarat        | <p><b>Sardar Sarovar Project</b></p> <p>Out of 59,122.17 ha required under the project, only 57,150.07 ha had been acquired leaving a shortfall of 1,972.11 ha as of March 2017. Several cases of work being affected due to land acquisition issues were observed. These are dealt with below:</p> <p>As per the instructions of SSNNL, 20 <i>per cent</i> of the required land should be in possession of the Company while inviting tenders and 60 <i>per cent</i> before giving the work orders.</p> <p>Under Kachchh Branch Canal, nine out of 17 works were awarded by the company without availability of required land. In absence of the required land, the progress achieved in the works ranged between zero and 100 <i>per cent</i>.</p> <p>The work of construction of Morbi canal awarded in July 2012 at cost of ₹ 26.09 crore to be completed by January 2014 could not be completed till May 2017 as ownership rights of</p>  |

| State             | Shortfall in Land acquisition  |
|-------------------|--|
|                   | <p>acquired land could not be transferred to project authorities due to discrepancy in the land revenue records.</p> <p>Work of construction of a distributary of Limbdi Branch Canal awarded in January 2014 for ₹ 11.54 crore could not be completed as farmers did not accept compensation despite declaration of awards in February 2012. The work was, however, shown as completed in December 2015 after incurring expenditure of ₹ 8.67 crore.</p> <p>242 ha land had to be acquired for construction of 10 minor canals of Gadsisar Branch Canal but process of acquisition land had not been initiated as of July 2017. Thus, even after expenditure of ₹ 106.16 crore on construction of the branch and distributary canals, CCA in 28,548 ha could not be created rendering the expenditure as unproductive.</p> <p>The project suffered from time overrun of 16 years and cost overrun of ₹ 48,367 crore since its inclusion under AIBP. Besides, the IPC achieved was only 79 <i>per cent</i> and IPU was 44 <i>per cent</i> of IPC.</p> <p>The main reasons for non-acquisition of land were demand of enhanced compensation, change of alignment, change of ownership, difference in area to be acquired, transfer of Government land to private land, land possession issues, etc.</p> |
| Jammu and Kashmir | <p><b>Tral LIS</b></p> <p>Though land acquisition process had been completed for the first and second stage of the project during the implementation of project works, the same was not completed from the third stage onwards for construction of rising main and portion of canal beyond delivery tank. The land acquisition process continued even beyond the revised completion date of 2013-14 up to March 2015. This delayed the completion of the scheme. An expenditure of ₹ 103.33 crore was incurred up to March 2017.</p> <p><b>Rajpora LIS</b></p> <p>Land acquisition process was initiated only during the execution of the project till March 2012 despite the fact that the completion date for the project was 2013-14. An expenditure of ₹ 64.86 crore was incurred up to March 2017. The main reason for delay was resistance in land acquisition.</p>  |
| Jharkhand         | <p><b>Subarnarekha Multipurpose Project</b></p> <p>As against requirement of 54,558 ha, land acquired was 34,002 ha. Shortfall in IP creation was 1,29,520 ha and IP utilization was 62,482 ha, which was 58 <i>per cent</i> of IP created under the project. The main reason was due to delay in acquisition of land by the project authorities.</p>  |
| Maharashtra       | <p><b>Krishna Koyna Lift Irrigation Scheme</b></p> <p>In the fourth revised project report of KKLIS Project, an increase of ₹ 134.02 crore over third RPR was shown due to increase of area of land acquisition. Out of 6,305.87 ha required, 4,193.63 ha of land was yet to be acquired. Even land for head works was not acquired fully till March 2017. Land acquisition cases were not filed resulting in delay in acquisition of land and subsequent increase in rates.</p> <p><b>Waghur</b></p> <p>Waghur Major Irrigation Project included creation of IP of 38,570 ha. Further, LBC comprises two branch canals and its distributaries namely, Asoda and Bhadli. Audit scrutiny revealed that the work orders were awarded to contractors for construction of Asoda branch canal and Asoda distributaries without acquiring of full continuous length of land required for the same. Consequently, in Asoda branch canal a total length of 2.854 km</p>  |

| State       | Shortfall in Land acquisition  |
|-------------|--|
|             | between km 5.886 and km 11.00 were executed without continuity of length for which payment of ₹ 2.78 crore was made to contractor and ₹ 1.05 crore paid to PWD for deposit work. Similarly, in Asoda distributaries, a total length of 9.16 km between km 0.00 to km 11.20 was executed without continuity of length for which payment of ₹ 4.83 crore was made to contractor. The portion of land was later abandoned. It was also observed that expenditure of ₹ 1.63 crore for land acquisition and ₹ 85.66 lakh for miscellaneous items was incurred in this abandoned portion. Subsequently, Government of Maharashtra accorded (June 2017) approval to Pressurized Pipe Distribution Network (PDN) work in the abandoned portion of length of Asoda branch canal and Asoda distributaries for irrigation of projected IP at a cost of ₹ 75 crore. The work was yet to begin as of July 2017.   |
| Odisha      | <p><b>Anadapur Barrage, Kanupur, Lower Indra, Lower Suktel, Ret Irrigation, Rukura Irrigation, Telengiri</b></p> <p>The shortfall in land acquisition ranged from four to 79 <i>per cent</i> of the required land. The delays were reported due to pending sanction of land acquisition estimates. The main reason for non-acquisition of land in Anandpur Barrage Project was the resistance from the land holders.</p>   |
| Telangana   | <p><b>J Choka Rao LIS Project</b></p> <p>The shortfall of 2,483 ha land was due to higher compensation demanded by the farmers. The project suffered from time overrun of eight years and cost overrun of ₹ 7,429.44 crore since its inclusion under AIBP. Besides the IP creation was only 40 <i>per cent</i> and IP utilization was 18 <i>per cent</i> of IP created.</p> <p><b>Indiramma Flood Flow Canal project</b></p> <p>The shortfall of 1,735 ha of land was due to obstruction from land owners demanding higher compensation for land. The project suffered from time overrun of five years and cost overrun of ₹ 4,609 crore since its inclusion under AIBP. Besides the IP created was nil.</p> <p>Reasons for non-acquisition of land were due to the demand from farmers for hike in land compensation and creation of obstructions in viz. (i) survey work and subsequent process of land acquisition and (ii) not allowing the agencies to bring machinery to the site.</p> |
| West Bengal | <p><b>Subarnarekha Barrage project</b></p> <p>The main reason for non-acquisition of 4,034 ha (73 <i>per cent</i>) of land was non-availability of funds as the State government was not in a position to continue both Teesta Barrage project and Subarnarekha Barrage project. As a result, there was no physical progress with regard to the project. Land acquisition proposals of 862.30 ha were lying with Land Acquisition department.</p>  |

The main reasons for non-acquisition of land were administrative delays, demand for enhanced compensation, lack of fund, public objection, change of alignment, change of ownership, difference in area to be acquired and legal disputes.

Thus, shortfalls and delays in land acquisition not only affected the timely implementation of projects but was also one of the limiting factors for the achievement of targets for IP creation and utilisation.

The Ministry stated (February 2018) that land acquisition is an ongoing process which runs through the execution period of the project. However, as is evident from the findings mentioned above, delays in land acquisition was the principal cause of time overrun across



most of the delayed projects. In addition, shortage of land also adversely affected timely creation and utilization of IP of the projects.

#### 4.7 Rehabilitation and Resettlement

Rehabilitation and Resettlement (R&R) measures are governed by the Land Acquisition Act, 1894 and the Land Acquisition, Rehabilitation and Resettlement Act, 2013 of the Union and relevant State Acts. Timely implementation of R&R measures is necessary for undertaking land acquisition, obviating public opposition to projects and for taking up key components of projects such as dams and reservoirs.

Test check of records revealed slow progress of R&R measures in 20 projects of eight States. There were deficiencies such as incomplete coverage of all Project Affected People (PAPs), non-distribution of land, lack of basic infrastructure and administrative delays. There were shortcomings in the quality of R&R such as non availability and poor maintenance of basic amenities in resettled villages. Delays in release of funds led to protests and demand for payment of higher compensation. These deficiencies led to project delays and shortfalls in IP creation and utilization. Details are given in **Annexure 4.10**.

A few illustrative cases are discussed in Table 4.16 below:

**Table 4.16: Incomplete R&R measures**

| State          | Incomplete R&R measures  |
|----------------|--|
| Andhra Pradesh | <p><b>Gundlakamma Reservoir Project</b></p> <p>Rehabilitation of all families from seven partial submergence villages were not initiated due to non-completion of R&amp;R centres. In case of 'full submergence villages', rehabilitation for all families was not done till June 2017. Further, land acquisition of 48.27 acres was held up. As a result of non-completion of land acquisition and R&amp;R there was shortfall in creation of envisaged Culturable Command Area (CCA)/ ayacut and the canal work was not completed leading to shortfall in IP creation.</p>   |
| Maharashtra    | <p><b>Wang project</b></p> <p>R&amp;R plan under the project envisaged resettlement of the inhabitants of nine affected villages. As per Maharashtra PAP Rehabilitation Act, 1999, 18 amenities were to be provided in each village. However, there were deficiencies in implementing R&amp;R measures such as all project affected families not being resettled, distribution of land being incomplete and civic facilities being deficient. Deficient R&amp;R measures led to public protests affecting the dam work and gorge filling. As a result, the project suffered time overrun and IP creation was only 14 per cent.</p> <p><b>Aruna Project</b></p> <p>Authorities did not release ₹ 54.57 crore to SLAO for timely dispensation of R&amp;R measures. As a result, farmers demanded higher compensation after implementation of Land Acquisition Act, 2013 and refused to shift from their villages. This affected work relating to gorge filling of dam and no IP creation was achieved under the project even after a time over run of three years.</p> |
| Odisha         | <p><b>Lower Indra Irrigation Project</b></p> <p>The initial estimate for displacement of families rose from 1,460 to 9,441 up to March 2017. The project authorities paid compensation of ₹ 58.74 crore only to 2,937 Displaced</p>  |



| State     | Incomplete R&R measures  |
|-----------|--|
|           | Persons (DP) as per the Rehabilitation and Resettlement (R&R) Policy of 1994 without ensuring their eviction from the submergence area. As a result of non-eviction of the DPs, ineffective implementation of R&R measures and delay in land acquisition the project has suffered a time over run of 13 years and cost overrun of ₹ 1,541 crore. The State Government stated (March 2018) that eviction and R&R issues were a difficult task and Government had to move very carefully and tactfully.  |
| Telangana | <b>Indiramma Flood Flow canal project</b><br>The State Government deleted (January 2016) the work of Thotapally Balancing Reservoir (TBR) taken up in September 2008 due to delay and increasing cost of R&R measure under new Land Acquisition (LA) Act. The work of Mothe Reservoir could not commence due to obstructions caused by the villagers and non-settlement of the R&R issues within the agreement period. Further, though the overall physical progress of the project was 91.8 <i>per cent</i> , the progress in respect of branch canals and distributaries was only 14.9 <i>per cent</i> . As a result, no ayacut could be created so far. The State Government replied (January 2018) that as the project would become un-economical due to increased cost of R&R after new Land Acquisition Act came into force, Thotapally reservoir was deleted. |

The delay and lapses in completion of R&R measures affected the progress of work leading to time and cost over-run in these projects.

#### 4.8 Clearances from various authorities

For ensuring hindrance free and timely execution of projects, it was essential both in terms of codal provisions and AIBP guidelines that all necessary statutory clearances from other Ministries/ Departments be either obtained at the approval stage of the project and in an expeditious manner. These clearances covered forest, wildlife and environmental clearances as also clearances from Railways and National Highway authorities. These clearances are necessary to ensure that execution of works is unhindered and timely.

Audit of sampled projects showed that in 22 MMI projects in nine States<sup>64</sup>, there were delays in obtaining requisite clearances for the projects. In nine projects<sup>65</sup>, forest clearance and in nine other projects<sup>66</sup>, both environment and forest clearance had not been obtained or were delayed. In one project, clearance for railway crossing had been obtained with delays. In seven other projects, multiple clearances viz. environment, forests, wildlife, railway and road crossing had not been obtained prior to approval of the projects. The details of all 22 projects are given in **Annexure 4.11**. A few illustrative cases are discussed in Table 4.17.

<sup>64</sup> Bihar, Gujarat, Jharkhand, Karnataka, Madhya Pradesh, Maharashtra, Odisha, Telangana and West Bengal

<sup>65</sup> Durgawati in Bihar, Sardar Sarovar, Aji-IV and Bhadar-II in Gujarat, Sonua in Jharkhand, Warna and Krishna Koyna LIS in Maharashtra, Subarnarekha Barrage and Tatko in West Bengal

<sup>66</sup> Surangi, Sonua, Gumani, Anandpur Barrage, Telengiri, Lower Shuktel, Kanupur, Lower Indra in Odisha and IFFC in Telangana.

Table 4.17: Clearances Issues

| State       | Clearances   |
|-------------|--|
| Gujarat     | <p><b>Sardar Sarovar Project</b></p> <p>There were three cases in which certain clearances had not been obtained which had affected progress of work and achievement of deliverables. These are dealt with below:</p> <ul style="list-style-type: none"> <li>The work of constructing distributary and minors of Limbdi Branch Canal was awarded in February 2014 for completion by August 2015. This work required construction of one railway crossing for which agreement was concluded with the Railways only in March 2015 and the work was in progress (August 2017). This delay resulted in non-completion of the work and also held up creation of CCA of 2,000 ha.</li> <li>The work on a stretch of Kachchh Branch Canal (KBC) crossing the Kachchh Desert Wild Life Sanctuary (KWLS) area remained incomplete due to delay in obtaining wildlife clearance. This delay has led to both cost and time overrun. In addition, the missing links in the canal has also led to three Pumping Stations which were completed at an estimated cost of ₹ 515.80 crore for lifting water to the canal, to remain idle.</li> <li>Work on Suraj distributary and its minors with a projected CCA of 2,751.95 ha was completed in May 2014. The CCA created was, however, only 2,504.08 ha and utilization was only 279.80 ha (11 <i>per cent</i>) due to non-completion of structure on railway crossing of Suraj Distributary due to delay in obtaining the clearance from Railway authorities.</li> </ul> |
| Jharkhand   | <p><b>Gumani project</b></p> <p>Despite payment of estimate charges of ₹ 24.67 lakh in November 2015 to the Railways, final drawings and estimates of proposed Gumani Canal crossings at Barharwa Station under Eastern Railways Division, Malda Town was yet to be obtained as of April 2017.</p>   |
| Odisha      | <p><b>Kanupur project</b></p> <p>Several works were dependent on the completion of a bridge on National Highways. However, NHAI did not take up the work as of May 2017 even though the matter was with them since 2011 and despite sanction of estimate for the bridge for ₹ 36.95 crore. This project had suffered a cost overrun of ₹ 2,010.00 crore and a time overrun of nine years. In addition, both IPC and IPU for the project is nil.</p>  |
| Maharashtra | <p><b>Tarali Project</b></p> <p>Clearance from NHAI was required for Koparde approach canal crossing and clearance from railways was required for Koparde approach Canal at KM 181/3-4 of Pune Miraj railway track (Canal C.27/240 km). The requisite clearances remained to be obtained. The project has suffered a time overrun of five years and cost overrun of ₹ 366 crore since its inclusion in AIBP. Besides, the IPC achieved was only 48.35 <i>per cent</i> and IPU was 33 <i>per cent</i> of IPC.</p>   |
| Karnataka   | <p><b>Ghataprabha Stage-III project</b></p> <p>Alignment for Ghataprabha Right Bank Canal from Km.150 to Km.180 passing through forest land for different reaches was surveyed and approved in 2001-02. The work on the canal was, however, started without approval of the Forest Department. Further, three works awarded to contractors, had to be rescinded after an expenditure of ₹ 1.03 crore due to absence of approval from Forest Department.</p>  |
| Telangana   | <p><b>Indiramma Flood Flow Canal project (IFFC)</b></p> <p>The deviations from the original proposal resulted in change in the scope of the project and entailed obtaining fresh clearances which had not been obtained till March 2017. The project suffered a time overrun of five years and cost overrun of ₹ 4,609 crore since its inclusion under AIBP. Besides, the IP created under the project was nil.</p>  |

| State | Clearances  |
|-------|---|
|       | <p><b>Sri KomaramBheem Project</b></p> <p>Under the project, the main Canal and Distributory No.25 was crossing a railway line. An amount of ₹ 12.80 crore was deposited with the Railway authorities for construction of bridges in April 2015 and the work was started. There was time overrun of eight years and cost overrun of ₹ 680 crore since inclusion of the project under AIBP. Besides, the IP created was only 61.46 per cent.</p> |

Out of the 22 projects having delays in obtaining requisite clearances, four projects<sup>67</sup> were completed after delays ranging between two to 11 years. The remaining 18 ongoing projects have suffered a cost overrun ranging from ₹ 16.26 crore to ₹ 48,366.88 crore and time over run ranging from two to 18 years. The Ministry accepted (February 2018) that projects were delayed due to delays in getting clearances from other departments like Railways and NHAI.

## 4.9 Works Management

Procedures for execution and management of works are contained in the General Financial Rules, applicable State Financial Rules, Public Works Department Works Manuals and circulars and instructions issued by Vigilance authorities from time to time. The overall objective is to ensure that works are undertaken in terms of prescribed procedures and are executed efficiently in accordance with project aims and within approved time lines and costs. A test check of records of the selected AIBP projects revealed several deficiencies and irregularities in works management which are discussed in the succeeding paragraphs.

### 4.9.1 Splitting of works

For the purpose of approval and sanctions, a group of works are considered as one work if they form part of one project. The necessity for obtaining the sanction of the higher authority should not be avoided because of the fact that the cost of each particular work in the project was within the powers of such approval of a lower authority (Rule 130, GFR). State Governments have also prescribed delegation of powers for granting approvals and technical sanction and laid down limits of works that can be awarded to different classes of contractors. Test check of project records showed that in case of eight MMI projects in four States and six MI schemes in two States, 23 works amounting to ₹ 47.41 crore were awarded after splitting these into 271 works in violation of GFRs and extant orders of the State Governments. This led to bypassing of rules of delegation of powers, diluted technical scrutiny over works and undermined transparency and accountability. Details are given in Table 4.18.

<sup>67</sup> Aji-IV and Bhadar-II of Gujarat, Mahuar in Madhya Pradesh and Warna in Maharashtra.

Table 4.18: Splitting of works

| State               | Splitting of works   |
|---------------------|--|
| <b>MMI projects</b> |  |
| Maharashtra         | <p><b>Tilari and Dhom Balkawadi project</b></p> <p>As per Rule 136 of Maharashtra Public Works Manual, a group of works the aggregate cost of which exceeds what an officer is empowered to sanction should not be split up to bring them within the sanction power of that officer. Government Resolution of 1996 limited the sanctioning power of EE to ₹ 25 lakh. In the following projects, works were split into components of below ₹ 25 lakh to keep the works within the powers of the EE.</p> <ul style="list-style-type: none"> <li>○ In Tillari project, three works valuing ₹ 3.99 crore were split into 10 works.</li> <li>○ In Dhom Balakwadi project, four works valuing ₹ 4.73 crore were split into 24 works to avoid sanction of competent/higher authorities.</li> </ul>  |
| Uttar Pradesh       | <p><b>Bansagar, Madhya Ganga, Hardoi Branch Canal project and Eastern Ganga Project</b></p> <p>As per orders of State Government of 1995, delegation of financial powers of EE, SE and CE were ₹ 40 lakh, ₹ one crore and unlimited respectively. In the four projects, works valuing ₹ 28.54 crore were split into 121 components of below ₹ 40 lakh to keep the works within the powers of the EE. The details are as follows:</p> <ul style="list-style-type: none"> <li>○ In Bansagar Canal project, work of construction of retaining wall and drainage of ₹ 6.63 crore was split into 22 components.</li> <li>○ In Madhya Ganga Canal project the work of construction of Canal of ₹ 4.10 crore was split into 15 components.</li> <li>○ In Hardoi Branch Canal Project the work of improving irrigation intensity of ₹ 17.63 crore was split into 74 components.</li> <li>○ In Eastern Ganga Project earthwork of ₹ 17.50 lakh was split into 10 components.</li> </ul> |
| Telangana           | <p><b>SRSP-II project</b></p> <p>As per Andhra Pradesh Government orders (July 2003), a class III contractor can execute works up to ₹ one crore only. A portion of work under Package 55 was deleted from the main contract for the package and split into nine works. Out of the nine works, five works costing a total ₹ 5.81 crore and each work valuing more than ₹ one crore were entrusted (June 2012) on nomination basis, to a single contractor.</p>   |
| West Bengal         | <p><b>Subarnarekha Barrage project</b></p> <p>According to State Government instructions (November 2000), powers of the EE to sanction original works were limited to ₹ 10 lakh in each case. Land development work near Barrage site with a total cost of ₹ 66 lakh was split into nine different works during 2002-03 so as to keep award of works within the financial power (₹ 10 lakh) of the Divisional Office.</p>  |
| <b>MI schemes</b>   |  |
| Mizoram             | <p><b>Mat, Zilngai, Buhchandil and Changte schemes</b></p> <p>In four schemes having cost of ₹ 3.43 crore, the division split 11 sub-works into 49 components to bypass approval of the competent authority. Of these, 37 works were awarded to contractors and the remaining 12 works were undertaken departmentally.</p>   |
| Odisha              | <p><b>Dablajore and Temurapalli MI schemes</b></p> <p>As per Appendix VII of OPWD code Vol-II, tenders should be invited for all works costing more than ₹ 50,000. In case of emergent situations such as relief works, repairs required due to damage by flood, closing of breaches in embankments on road, splitting up of work,</p>   |

| State | Splitting of works  |
|-------|---|
|       | etc. may be done in public interest for smooth and expeditious execution. Works valuing ₹ 40.59 lakh were split into 56 F2 agreements <sup>68</sup> during 2009-13 limiting value of each agreement to ₹ 50,000 thereby obviating approval of higher authority and wide publications of tenders was also not resorted to in violation of OPWD code. |

#### 4.9.2 Incorrect phasing of project Implementation

AIBP guidelines (1998-99) envisaged assistance to projects for their phased completion so that benefits start flowing early with comparatively smaller investment. The construction programme should be synchronized in a manner that allows the Dam, Main Canal and the distributaries to be completed in a phased manner so that phase wise benefits can be obtained. The AIBP guidelines of 2013 stressed on *pari-passu* implementation of Command Area Development (CAD) works so that utilization of IP created can be enhanced. The erstwhile Planning Commission also stressed upon the 'vertical integration' approach<sup>69</sup> in construction of canal network. Improper phasing of various project components leads to delay in both creation and utilization of IP and idling of project assets created at considerable expenditure and consequently affecting the total useful life of the project besides postponing the benefits to farmers.

Test check of sampled projects disclosed incorrect phasing of works in 10 MMI projects and four MI schemes pertaining to seven States which are discussed in Table 4.19 below:

**Table 4.19: Incorrect Phasing of Project Implementation**

| State   | Incorrect phasing of implementation   |
|---------|---|
| Bihar   | <p><b>Durgawati Reservoir Project</b></p> <p>Dam section, main/branch canals were complete but branch canals and water courses were incomplete. Durgawati CADWM programme was also incomplete.</p> <p><b>Punpun Barrage</b></p> <p>The barrage was almost complete, but main canal and Branch Canal/distributaries were incomplete. Further, the Department started construction of check dam structures without approval of the design by CDO Patna. Punpun CADWM programme was yet to start.</p>  |
| Gujarat | <p><b>Sardar Sarovar Project</b></p> <p>Under Limbdi Branch Canal (LBC) priority was accorded to construction of branch canals and distributaries and minors were taken up after completion of the branch canals. Sub-minor canals were also not developed. As a result, there were missing links in the distributaries and minor canals and developed CCA of 84.21 Th ha could not be utilized.</p> <p>Total length of the KBC is 357.185 km of which water flows only in length of 157.214 km due to completion of KBC in patches beyond this chainage. The KBC Division 2/7, Gandhidham has jurisdiction of KBC between chainage 271.224 and 357.185 km.</p> |

<sup>68</sup> F2 Agreement - Standard contract form as per OPWD code

<sup>69</sup> State should draw up an implementation schedule, segment wise, for completion of canal network, in such a way that a segment of the canal network taken up from head is completed in all respects so as to make the irrigation water available for the designed potential of that segment up to the outlet in that particular segment.

| State     | Incorrect phasing of implementation  |
|-----------|--|
|           | <p>Tender clause stipulates that the contract of Operation and Maintenance (O&amp;M) for five years shall commence from the date of taking over of the canal system. The defect liability period of two years run concurrently with O&amp;M for first two years.</p> <p>The work of constructing KBC reach 354.542 km to 357.185 km (2.643 km) with O&amp;M for five years (package IR-22) was awarded (October 2012) to M/s Montecarlo Limited, Ahmedabad at tendered cost of ₹ 39.41 crore (Estimated cost: ₹ 44.45 crore). Stipulated date of completion was October 2014 and the work was completed in March 2015 with final cost of ₹ 36.09 crore.</p> <p>Though this last stretch of KBC is complete and ready to serve, but initial stretches from Ch. 157.214 to 354.542 km are still incomplete, therefore, the last stretch from 354.542 km to 357.185 km is lying idle since April 2015 as the water can flow up to 157.214 km only. The Division is paying O&amp;M cost as per tender agreement since April 2015. The total O&amp;M cost paid to the agency is ₹ 16 lakh. In the absence of operation of branch canal without flowing water, the cost towards O&amp;M incurred has not served any purpose. The defect liability period of two years as per clause stated above has also lapsed without serving its purpose.</p> <p>Moreover, without flowing of water, the expenditure incurred on the last stretch of ₹ 36.09 crore remained idle besides rendering the O&amp;M cost of ₹ 16 lakh and the defect liability period redundant.</p> <p>The EE, KBC Division 2/7, Gandhidham stated (July 2017) that the land was acquired easily and immediately so tender for the work was awarded. The agency has maintained the canal though water is not flowing and for this the agency has engaged security persons and carried out the work of repairing and rectification of erosion of earthwork.</p> <p>The reply is not tenable as there should be segment wise construction schedule to ensure that asset should be utilised immediately after its creation so that expenditure incurred does not lie idle. Further, O&amp;M expenses should not be incurred without commencement of operations.</p> <p>The company stated (January 2018) that the construction of Branch canal, Distributaries and Minor canals of LBC works were taken up in a phased manner with the construction of pumping stations, CCA of 84,216 ha was developed up to minor level in the command area of Limbdi Branch Canal by the end of March 2017 and about 39,994 ha. CCA was irrigated. The remaining developed CCA of 24,222 ha was not utilized due to non-completion of missing links.</p> |
| Jharkhand | <p><b>Subernarekha Multipurpose Project</b></p> <p>The work of Icha Dam was not started due to pending decision of Tribal Advisory Council of Jharkhand. However, an expenditure of ₹ 475.29 crore had been incurred on construction of distribution system as of March 2017.</p>  |
| Karnataka | <p><b>Sri Rameshwara LIS project</b></p> <p>While the work of intake canal, jack well, raising main were completed and water was received in the canals since March 2013, construction of Field Irrigation Channels (FICs) were taken up only in 2014-15. As a result, out of an envisaged command area of 13,800 ha only 10,182 ha has been completed as of March 2017.</p> <p><b>Ghataprabha Project</b></p> <p>Though the work of the main canal was completed between 2005-06 and 2007-08, tenders for FICs works were initiated only between August 2011 to March 2012. Delay in construction of FICs in both cases led to benefits not accruing to farmers despite completion of canal and distributary network.</p>   |

| State          | Incorrect phasing of implementation   |
|----------------|---|
| Madhya Pradesh | <p><b>Mahuar Project</b></p> <p>Gates of dams are installed after execution of work of the dam up to crest level. However, in this project, work of radial gates was awarded in 2008-09 with provision of price escalation for completion within 24 months before the award of civil works in 2011-12. As a result of the mismatch in the award of work for gates and civil works, the Department made avoidable payment of escalation of ₹ 1.14 crore on gate work.</p>  |
| Maharashtra    | <p><b>Warna</b></p> <p>The works relating to down-stream parts of the canal were completed before the up-stream works and aqueducts were taken up for construction. As a result, the down-stream parts of the canal remained unutilized and IPC remained much below envisaged levels.</p> <p><b>Chandrabhaga MI scheme</b></p> <p>While the barrage work was completed, the canal work had not been commenced.</p> <p><b>Kang, Sur and Tandulwadi MI schemes</b></p> <p>In these schemes, dams have been completed but ancillary works were yet to be completed. Incorrect phasing of expenditure therefore resulted in schemes remaining non-functional despite investment of ₹ 351.70 crore as of March 2017.</p> |
| Odisha         | <p><b>Anandapur Barrage Project</b></p> <p>The project was included in AIBP in 2005-06. Though construction of the barrage was 34 <i>per cent</i> complete and expenditure incurred was ₹ 941.62 crore on the work, tail end of the leading Channel was yet to be taken up. As a result, IPC and IPU of the project were both nil.</p> <p><b>Kanupur Irrigation project</b></p> <p>In case of the work of spill channel, a quantity of 6.35 lakh cum excavated earth was disposed of. With proper phasing of work, the same could have been utilized in another work of the same project “construction of the earth dam” at a distance of two km and enabled saving of over ₹ six crore.</p>                        |

#### 4.9.3 Execution of sub-standard works



AIBP guidelines of October 2013 envisaged that the State Government shall ensure required quality control in the execution of the works, i.e. all mandatory quality control checks and mandatory inspection by supervisory officers of field laboratories has been carried out. The periodical report of quality control will also be reported to CWC. However, during site verification of sampled projects, audit noticed execution of sub-standard works in 11 MMI projects/MI schemes pertaining to six States. Execution of sub-standard and defective works affected the functionality of projects in terms of IP creation and utilization and also led to expenditure on repairs. The cases referred to above are discussed in Table 4.20 below:



**Table 4.20: Sub-standard Works**

| State          | Sub-standard works   |
|----------------|--|
| Andhra Pradesh | <p><b>Veligallu Project</b></p> <p>The project was completed in August 2007 and the Department issued Completion Certificate in May 2010. However, several defects were noted during site inspection (November 2010) and the contractor was issued notices for rectification. As these defects were not rectified, supply of water to the fields was not made. The Department has assessed the cost of rectification at ₹ 16 crore. The work was yet to be taken up.</p>   |
| Bihar          | <p><b>Durgawati Project</b></p> <p>The works relating to canals for the project was both incomplete and technically sub-standard. The canal was constructed in negative slope at many locations due to which water could not reach the tail end of the canal. At places, faulty structure of one distributary led to overflow of water and led to a breach in the canal. Further, at many places in the canal, lining work was needed.</p>   |
| Chhattisgarh   | <p><b>Dhotimara MI scheme</b></p> <p>Construction of Dhotimara Tank was awarded in February 2009 for ₹ 3.31 crore with the stipulated date of completion as January 2010. As of August 2017, the work was still incomplete with expenditure of ₹ 2.45 crore incurred in December 2012. The following defects were observed by audit:</p> <p>Concrete work of the spill way wall was completely damaged. Rain cuts in earthen dam and the stone pitching work was dispersed.</p>  |
| Madhya Pradesh | <p><b>Sindh Project Phase-II</b></p> <p>In Sindh Project Phase-II, concrete banks of LBC feeder canal and RBC were damaged and an amount of ₹ 1.53 crore was spent towards repairs.</p>  |
| Maharashtra    | <p><b>Warna Project</b></p> <p>The canal embankment was to be provided with a heartening zone of impervious material to prevent water leakage. This work was taken up during 2007 to 2009 at a cost of ₹ 54.97 crore. During site visit, leakages were noticed in the canal indicating sub-standard construction of the hearting zone at the embankment.</p> <p><b>Kar Project</b></p> <p>Due to heavy seepage in the 33.30 km long Left Bank Canal of the project completed at a cost of ₹ 111.67 crore, water could not flow beyond km 23. Heavy seepage was also reported in the Lohara Sawangi distributaries under the project.</p> <p><b>Madan Tank project</b></p> <p>There was seepage in 19 places in the main canal and minors, gates of 29 minors were not functional, 14 structures were damaged and there was heavy silting in the canals.</p> <p><b>Lal Nala project</b></p> <p>The pipes used for Rashtasant Bhumi LIS were manufactured using small pieces of metal sheet instead of spiral welding which was against tender conditions and indicated sub-standard work.</p> |



| State     | Sub-standard works   |
|-----------|--|
|           |  <p><i>Ordinary welded pipe in Lal Nalla Project</i></p> <p><b>Wang and Tarali projects</b></p> <p>Steel reinforcement bars were rusted due to exposure even though tender specifications provided for protection of bars from rusting/corrosion.</p>  <p><i>Rusted reinforcements in Tarali Project</i></p> |
| Karnataka | <p><b>Ghataprabha Stage III project</b></p> <p>In the Right Bank Canal, a two km stretch was found to be filled with silt and was water logged due to vegetation growth by a Lokayukta team. Due to the defects, expenditure of ₹ 1.09 crore incurred on the work was rendered unfruitful.</p>  |

#### 4.9.4 Irregularities and deficiencies in award of work

General Financial Rules and codal provisions related to Public Works envisage competitive bidding procedures in accordance with pre-determined laid down criteria so as to ensure that eligible, efficient and cost effective bidders are awarded contracts. Codal provisions also require that sufficient time should be given for submission of tenders. In addition to ensure efficient works management, it is important that works be taken up and tenders be finalized without delays. Test check of sampled MMI projects and MI schemes disclosed that in 14 MMI projects of eight States and in 27 MI schemes in three States, there were deficiencies in award of work such as award of work on non-competitive basis without valid justification, flaws in Notice Inviting Tender (NIT) with regard to duration of notice and evaluation criteria and delays in finalization of tender and award of works. Details are given in **Annexure 4.12**. These details show that works relating to 10 MMI projects and 15 MI schemes with a total value of ₹ 1,260.58 crore were awarded on a non-competitive basis. Further, in works relating to four MMI projects with a total value of ₹ 109.92 crore, tender processes adopted in terms of time given for submitting bids or entering into agreements restricted/ diluted competition, etc. In addition, there were delays in award of works in two projects with total estimated cost of ₹ 5,035.26 crore.

#### 4.9.5 Deficiencies in Works expenditure

Expenditure and payments related to various works are required to be made in accordance with financial rules, codal provisions, terms and conditions of tenders/contracts, administrative approvals and sanctions. In addition, expenditure should yield envisaged benefits, be necessary for implementing the program, meet program goals and create assets that are put to use effectively. Test check of works expenditure on sampled schemes and projects disclosed several cases of irregular expenditure (₹ 274.01 crore); wasteful, unproductive and idle expenditure (₹ 233.25 crore); and extra and avoidable expenditure (₹ 830.55 crore) with a total financial implication of ₹ 1,337.81 crore. Details are given in **Annexures 4.13, 4.14 and 4.15** respectively. These instances are those that have come to the notice of audit during test check of records and do not exclude the risk of other similar instances.

#### 4.9.6 Undue benefits to the Contractor

Adherence to Public Works Manual, Government instructions, extant orders and contract agreements provide the framework for governing rights and obligations of contracting parties and ensuring accountability in public work management. The stipulated terms and conditions regulate the release of advance and payments to the contractors. Adequate safeguards in the form of penal provisions aid in promoting economy and efficiency in works. In 29 MMI projects of 16 States and 22 MI schemes of three States, audit noticed that there were cases of grant of undue benefits to the contractors amounting to ₹ 303.36 crore by violating the terms and conditions of the agreements. Broadly, the undue benefits to contractors were due to termination of contracts without invoking risk and cost clause

under the contract (₹ 137.12 crore), non-levy of liquidated damages (₹ 90.07 crore), non-recovery of advances (₹ 42.86 crore) and excess payments to contractors (₹ 33.31 crore). The details are given in **Annexure 4.16**. Some illustrative cases are discussed in Table 4.21 below:

**Table 4.21: Undue benefits to the Contractors**

| State   | Issues   |
|---|--|
| <b>Termination of contracts without invoking Risk and Cost clause</b> |  |
| Chhattisgarh  | <p><b>Mahanadi Reservoir</b></p> <p>The work of construction of Balance Cement Concrete lining by Paver machine in selected reaches from Km.102.10 to 113.33 of Mahanadi Main Canal was awarded (September 2007) to a contractor under two contracts for a total cost of ₹ 14.01 crore. As per the terms and conditions of the contracts, the works would remain at the risk and cost of the contractor till complete work was delivered.</p> <p>The contractor did not complete the work as stipulated in the contract. Based on a proposal (February 2009) of the Executive Engineer (EE) for termination of the contracts with imposition of penalty and forfeiture of earnest money deposit, the Chief Engineer, recommended termination of the contracts by invoking risk and cost clause. However, the EE paid dues of ₹ 1.10 crore and closed the contracts without invoking the risk and cost clause. No immediate effort was taken to complete the balance work valuing ₹ 10.96 crore. The department entered into a fresh contract for the remaining work only in February 2015 for an amount of ₹ 28.66 crore, which further resulted in extra cost of ₹ 17.70 crore to the Government.</p> |
| Jharkhand   | <p><b>Subarnarekha Project</b></p> <p>As per the terms and conditions of contract, in the case of termination of contract due to fundamental breach of contract by the contractor, the Engineer shall issue a certificate for the value of work done after deducting the values of advance payments received, other recoveries due, taxes and 20 per cent of the value of the work not completed representing the additional cost for completing the work. The amount worked out, if in excess of any payment due to the contractor, would be owed to the Department.</p> <p>An agreement was executed (April 2014) for Construction of Earthwork and lining from Km 0.00 to 4.56 and Km 6.03 to 6.39 of Icha Right Main Canal for a total cost of ₹ 26.75 crore. The agreement was subsequently terminated (August 2015) after execution of work to the extent of ₹ 2.50 crore, due to breach of contract by the contractor. However, the Engineer did not issue the necessary certificate of execution of work as per contract conditions. As a result, an amount of ₹ 1.88 crore<sup>70</sup> due from the contractor could not be recovered.</p>   |
| Madhya Pradesh  | <p><b>Barkheda Chajju Tank, Chandwahi Tank, Parsatola Tank and Mirhasan Tank MI schemes</b></p> <p>The original agreements were rescinded due to delay or non-execution of work by contractor and balance works were executed through other agreements at higher rates, extra cost of which was debitable and recoverable from original contractor as per contract conditions. Audit observed that the terms and conditions in the contracts were changed, resulting in short-recovery of the debitable cost of ₹ 2.79 crore from the contractor.</p>  |

<sup>70</sup> Total value of work done: ₹ 2.50 crore (A); Less Advance Payment: Nil (B); Less other recoveries as per agreement: ₹ 3.85 lakh (C); Less other taxes/recoveries to be deducted at source: ₹ three lakh (D); Less 20 per cent deduction of value of work not done: ₹ 4.85 crore (E); Total (A to E): (-) ₹ 2.41 crore; Less Adjustments (Revocation of Performance Security): ₹ 53.50 lakh; Net Demand (-) ₹ 1.88 crore

| State                                 | Issues  |
|---------------------------------------|---|
| <b>Non-levy of Liquidated Damages</b> |   |
| Gujarat                               | <p><b>Sardar Sarovar Project</b></p> <p>The work for providing and constructing service road on Limbdi and Vallabhipur Branch Canal was awarded (January 2017) at a total cost of ₹ 95.68 crore with stipulated completion by July 2017. As per the terms and conditions of the contract, in the case of non-completion of works within the stipulated duration, Liquidated Damages (LD) of 0.10 <i>per cent</i> of the contract value per day for the duration of delay subject to maximum of 10 <i>per cent</i> of the contract value would be levied. However, as of September 2017, the contractors could only complete works valued at ₹ 37.47 crore (39 <i>per cent</i>).</p> <p>The Project Management Consultant (PMC) informed (July 2017) the division that contractor had engaged in extensive outsourcing, there was shortage of key staff, non-availability of supervisory staff, etc. which had delayed the project. Since the reasons for delay were solely attributable to the contractor, LD from the contractor was required to be levied. However, audit noticed that LD was not recovered from the contractors. This led to undue financial benefit to the contractor to the extent of ₹ 11.89 crore being 10 <i>per cent</i> of the estimated cost of the works.</p> <p>The company stated (January 2018) that work could not be completed due to early onset of monsoon, local interferences and extra/excess works resulting from site inspections, which were not attributable to the contractor. The reply is not acceptable as PMC specifically brought to the notice of the Company the fact that contractor was responsible for delay in execution of work.</p> |
| Jharkhand                             | <p><b>Subarnarekha Multipurpose, Gumani, Sonua, Surangi and Panchkhero Project</b></p> <p>As per terms and conditions of contracts for execution of the projects, the contractor shall be liable to pay LD at the rate of 1/2,000<sup>th</sup> of the Initial Contract Price per day for delay up to a maximum of 10 <i>per cent</i> of the Initial Contract Price along with compensation of an amount equal to half <i>per cent</i> on the estimated cost of the work for every day that the due work remains incomplete up to a maximum of 10 <i>per cent</i> of the estimated cost of work. The contractor was also required to provide insurance cover for a minimum amount of ₹ five lakh per occurrence limited to four occurrences, for any loss or damage or personal injury or death, before start date of the work. In case of failure of contractor to provide the required insurance, premium from any payment due to the contractor was to be recovered.</p> <p>We observed that 66 works<sup>71</sup> under the projects were delayed ranging between 23 and 1,467 days, due to which LD of ₹ 78.55 crore<sup>72</sup> was liable to be paid by the contractor. However, against this, ₹ 20.17 crore only was deducted resulting in short deduction of LD of ₹ 58.38 crore. We also observed that in 43 agreements, neither did the contractors submit insurance cover working out to ₹ 8.60 crore nor did the employer recover premium for insurance cover as per the provisions of the contracts.</p>  |
| Karnataka                             | <p><b>Upper Tunga Project</b></p> <p>As per the conditions of the contract, penalty of half <i>per cent</i> per week on the estimated cost of the work was leviable for the delay in completion of the work subject to a maximum of 7.5 <i>per cent</i> of the estimated cost of the work. In 16 works, though there were delays in completion of the works by the contractor, the Company levied only nominal penalty of ₹ 0.59 lakh as against ₹ 6.47 crore in violation of the conditions of the contract.</p>   |

<sup>71</sup> Subarnarekha Multipurpose: 46; Gumani: nine; Sonua: nine; Surangi: one; Panchkhero: one

<sup>72</sup> Subarnarekha Multipurpose: ₹ 73.96 crore; Gumani: ₹ 3.75 crore; Sonua: ₹ 72 lakh; Surangi: ₹ 10 lakh; Panchkhero: ₹ two lakh

| State                           | Issues  |
|---------------------------------|---|
| Assam                           | <p><b>Baksa MI scheme</b></p> <p>The work for the project Hatigudi FIS under the scheme was awarded (June 2010) to a contractor for ₹ 1.27 crore, to be completed by 12 months. As per the terms of the contract, the time allowed for carrying out the works entered in the tender was strictly to be observed failing which the contractor shall be liable to pay compensation at the rate of one <i>per cent</i> every day of delay up to ten <i>per cent</i> of the estimated cost /tender value of the work.</p> <p>The work was completed in January 2014 (delayed by 32 months) but full payment was made to the contractor without recovery of LD amounting to ₹ 12.75 lakh (10 <i>per cent</i> of tendered value).</p>   |
| Madhya Pradesh                  | <p><b>Kachnari Diversion Scheme and Sawli Tank MI schemes</b></p> <p>As per standard tender documents, the contractor shall have to pay penalty at the rate of 0.5 <i>per cent</i> per week subject to a maximum of 10 <i>per cent</i> of total contract value for delay in execution of works. The contractor did not execute or complete the work in stipulated period of completion but the Department did not levy penalty for same and granted extension of time. This resulted in undue financial benefit to contractors of ₹ 50.92 lakh due to non-levy of penalty for delay.</p>  |
| <b>Non-recovery of Advances</b> |   |
| Gujarat                         | <p><b>Sardar Sarovar project</b></p> <p>Miscellaneous Public Works (MPW) advances were given by two divisions to various agencies for shifting of utilities and other works of special nature such as railway crossing. An amount of ₹ 11.16 crore towards MPW advances paid between 2011 and 2014 were outstanding (March 2017) from these agencies. SSNNL stated (January 2018) that MPW advance shall be adjusted on receipt of works account.</p>   |
| Telangana                       | <p><b>Indiramma Flood Flow Canal (IFFC) project</b></p> <p>The contractor was paid (March 2006) mobilization advance of ₹ 16.97 crore (five <i>per cent</i> of the contract value). The scope of work was reduced (November 2010) by ₹ 255.95 crore due to entrustment of certain portions to other agencies. An amount of ₹ 12.55 crore was recovered (April 2010) out of the mobilization advance of ₹ 16.97 crore. The balance of ₹ 4.42 crore was not recovered though more than seven years have elapsed.</p> <p>The Government of Telangana stated (January 2018) that the agency did not submit any bills after that and hence the advance was not recovered. The reply is not acceptable as the Government did not furnish any reasons for not recovering the balance of mobilization advance from the deposits/retention money of the agency, which was in possession of the Department.</p>   |
| <b>Excess Payments</b>          |   |
| Maharashtra                     | <p><b>Lower Wardha Project</b></p> <p>The contractor consumed 17 lakh cum of Cohesive Non Swelling (CNS) material at the rate of ₹ 468.55 per cu m (including cost of transportation of material for 30 km at the rate of ₹ 362.50 per cu m) during the execution of the work of construction of CC lining of Main Canal, Giroli and Deoli branch canal. The project authorities failed to produce any record of the quarry from which the material was extracted. The District Mining Office of Wardha district had confirmed that no permission was granted to the contractor for extraction of the material. Thus, basis of preparation of estimate of ₹ 67.40 crore to the contractor for the distance of 30 km without ensuring the actual location of the quarry could not be verified in audit.</p> <p>The Ministry stated (February 2018) that no government quarry was available nearby the main and Branch canal, so the nearby Quarry Sarangpuri which is 15 km from Main Canal was considered in the estimate by considering the length of Main canal and both branch</p> |



| State          | Issues  |
|----------------|---|
|                | canals and the average lead i.e. 30 km. The reply is not acceptable since there was no evidence of the source of material produced by the contractor and supplemented by the District Mining Office, Wardha about any permission for extraction of the material.  |
| Odisha         | <p><b>Kanupur Irrigation project</b></p> <p>The work of construction of spillway was awarded for ₹ 135.67 crore. As per the State Analysis of Rates 2006, only cost of labour, material and machineries were allowed for preparation of the cost estimates for all cement items such as fine aggregates and coarse aggregates. From the departmental estimate, it was, however, revealed that one km conveyance with re-handling charges were also added in the estimate in contravention with the State Analysis of Rate. As a result, undue benefit of ₹ 6.41 crore was passed on to the contractor for re-handling charges in the execution of 3.76 lakh cum of cement work.</p>   |
| Uttar Pradesh  | <p><b>Bansagar Canal Project</b></p> <p>Due to slow progress of work, the project authorities decided (March 2012) to close on-going 88 contract bonds and execute one single high value contract bond to execute the balance works of previous agreements. The balance works of the previous running contract bonds were awarded to a contractor (January 2013) at a cost of ₹ 402.52 crore scheduled to be completed by January 2015.</p> <p>In nine out of 14 test-checked bills of quantities awarded to the contractor, extra items amounting to ₹ 99.56 crore were added after finalization of the contract. Further, an amount of ₹ 21.85 crore was paid by two test-checked Divisions on account of price adjustment. Audit observed that there was no provision for price adjustment in the contract and a clause for the same was added (October 2012) later after submission of bids (September 2012). Hence, undue benefit of ₹ 121.41 crore was given to contractor.</p> |
| Madhya Pradesh | <p><b>MI scheme Barkheda Chhajju Tank</b></p> <p>For construction of embankment, a quantity of 7,446.52 cum of different items (Filter Sand, stone pitching, etc.) used for construction of embankment, were also paid but not deducted from total embankment quantity to work out net payable quantity. This resulted in excess payment of ₹ 4.43 lakh at the rate of ₹ 59.48 per cum.</p> <p>Though 3,790.63 cum metal was available at site for utilization in work, a lead of boulder/metal of minimum two km at the rate of ₹ 95.22 per km was clubbed in estimated rates and paid to contractor. This resulted in excess payment of ₹ 4.29 lakh.</p> <p>The contractor used stone dust in concrete in place of Karera sand (sand from Sindh river at Karera) but was made payment with a lead of 110 km which also resulted in excess payment of ₹ 36.10 lakh.</p>  |

The undue benefits to the contractors were indicative of lack of compliance with the conditions of the contracts, thereby affecting transparency, fairness and accountability in use of government funds.

#### 4.10 Audit summation

Implementation of projects under AIBP, including the projects under Priority I category, Special Category States, Special Areas in non-Special Category States and Prime Minister's package for agricultural distress districts was very slow, despite prioritization and provision of enhanced central assistance. There were delays in completion of projects under both MMI projects and MI schemes by periods ranging from one to 18 years due to shortage in land, pending clearances, administrative and managerial failures and lack of fund. The time

overrun led to cost overrun arising from extra financial implications due to changes in Schedule of Rates, price escalation, variation in quantities, additional requirement at sites, enhanced cost of land acquisition, tender excesses, etc. The realization of envisaged benefits in terms of Irrigation Potential (IP) creation was only 68 *per cent* in MMI projects and 39 *per cent* in MI schemes. The utilization of IP created was 65 *per cent* and 72 *per cent* respectively for MMI projects and MI schemes. A synchronized approach was missing in the States leading to gaps between envisaged IP, IP created and IP utilized. Project implementation was affected by many limiting factors such as incomplete land, necessary clearances and deficient works management. The total financial implications arising from deficiencies in works management noticed by audit in the sampled projects and schemes amounted to ₹ 1,641.17 crore. The findings as above have arisen from audit of only a sample of MMI projects (58 *per cent* of total MMI projects taken up during the period) and MI schemes (three *per cent* of MI schemes taken up during the period). Government should review the remaining projects /schemes not included in the sample for likely delays and other problems revealed by the examination of the sample projects/schemes.



## Chapter V: Monitoring, Operation and Maintenance of projects

### 5.1 Introduction

Monitoring, operation and maintenance are very crucial for implementation and continuance of the programme. Effective monitoring ensures proper implementation besides aiding course correction. This acquires greater importance in programmes where the focus is on expediting progress of works and ensuring completion within stipulated time lines. AIBP guidelines provide detailed framework for monitoring and evaluation of projects and schemes. Operation and maintenance is crucial for ensuring the benefits from infrastructure and logistics in a sustained manner. It adds efficiency and enhances the effectiveness of the programme. Audit examination however, disclosed a number of deficiencies with regard to monitoring, operation and maintenance of projects as highlighted in the following paragraphs:

### 5.2 Monitoring of projects/schemes

#### 5.2.1 Monitoring by Central Water Commission (CWC)

As per the 2006 AIBP Guidelines, CWC is required to carry out monitoring visits and submission of Status Reports at least twice a year for the period ending September and March of the year. The release of instalments of CA were to be based on the recommendations of CWC after physical and financial verification of projects/schemes by them. The prescribed frequency of physical and financial verification by CWC was later reduced in the 2013 guidelines, from two to one in case of all MMI projects where funds had been released in the previous year.

##### 5.2.1.1 Shortfall in monitoring by CWC

##### MMI projects

Although information was sought regarding monitoring by CWC for the period from 2008-09 to 2016-17, CWC provided (September 2017) details only for the period from 2010-11 to 2016-17. Details of monitoring by CWC are given in the Table 5.1.

**Table 5.1: Details of monitoring by CWC during 2010-17**

| Particulars  | 2010-11       | 2011-12        | 2012-13        | 2013-14        | 2014-15        | 2015-16        | 2016-17        |
|--|---------------|----------------|----------------|----------------|----------------|----------------|----------------|
| Total Sampled projects to be monitored (No. of visits) | 88 (176)      | 88 (176)       | 88 (176)       | 22             | 21             | 19             | 27             |
| Projects not monitored at all                          | 22<br>(25%)   | 38<br>(43%)    | 26<br>(29%)    | 4<br>(18%)     | 14<br>(67%)    | 6<br>(31%)     | 2<br>(7%)      |
| Projects monitored only once in a year                 | 66<br>(75%)   | 50<br>(57%)    | 41<br>(46%)    | Not applicable | Not applicable | Not applicable | Not applicable |
| Projects monitored but report not issued               | 9<br>(10.23%) | 10<br>(11.36%) | 24<br>(27.27%) | 6<br>(27.27%)  | 5<br>(23.81%)  | 4<br>(21.05%)  | Nil            |

(Source: Ministry)

[NB: Excluding three deferred projects viz. Kanupur (Odisha), Rongai valley (Meghalaya) Lakhwar Vyasi (Uttarakhand)]

Audit noticed the following:

- Three MMI projects<sup>73</sup> were not monitored even once during any of the years from 2010-11 to 2016-17.
- Year wise, MMI projects ranging from two to 38 were not monitored at all during 2010-11 to 2016-17. MMI projects ranging from 41 to 67 were monitored only once in a year during 2010-11 to 2012-13 instead of twice, as required under the guidelines.
- During 2013-14 to 2016-17, there was shortfall of 26 visits in the case of 22 MMI projects where CA had been released in the previous years.
- In 58 cases, monitoring reports were not issued during the period 2010-11 to 2015-16.

### MI schemes

The 2006 Guidelines prescribed periodic monitoring of MI schemes on sample basis by CWC against pre-determined targets fixed by the Ministry. The 2013 Guidelines stipulated that at least five *per cent* of the MI schemes should be monitored by the concerned regional offices of CWC.

Audit could not get the information regarding targets prescribed by the Ministry for monitoring of MI schemes by field offices of CWC to evaluate the adequacy of monitoring of MI schemes by CWC. Audit findings in respect of monitoring of MI schemes by CWC are discussed below:

### North Eastern States

- In Arunachal Pradesh, CWC conducted monitoring of only 12 out of 625 MI schemes in the State during 2008-17.
- In Assam, no information regarding monitoring of MI schemes was made available to audit.
- In Mizoram, monitoring was carried out in five selected MI schemes during 2008-09. There was no information on monitoring undertaken thereafter.

### Other States

- In Bihar and Himachal Pradesh, CWC conducted monitoring of six out of 14 and two out of 17 selected MI schemes respectively, during the period 2008-17.
- In Jammu & Kashmir, Jharkhand, Madhya Pradesh, Rajasthan and West Bengal, none of the MI schemes selected for audit were monitored by CWC during 2008-17. In Uttarakhand, monitoring of sampled MI schemes was not conducted by CWC after May 2012.

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<sup>73</sup> Koserteda project (Chhattisgarh), Modernization of Kandi Canal and Modernization of New Pratap Canal (Jammu & Kashmir).

- In Karnataka, information about monitoring of sampled MI schemes by CWC was not available in records.

Shortfall in monitoring by the CWC not only affected the execution of projects with respect to time and cost overruns but also adversely affected the quality of works and utilization of IP as already brought out in Chapter IV of this report.

#### 5.2.1.2 Pending follow-up action

Audit noticed that follow up action on CWC's monitoring reports was incomplete due to land acquisition problems in case of four out of five<sup>74</sup> MMI projects of four States test checked in audit. These cases are discussed below.

- In the case of Tillari Project in Goa, monitoring report pertaining to the period 2008-13 highlighted that certain works were pending for land acquisition, which had not been resolved till July 2017. Further, the issue of delay in constitution of the agricultural wing of CAD was not addressed leading to non-registration of Water Users Association, since October 2014.
- In the cases of Khowai project and Manu projects of Tripura, CWC had recommended (September 2013) that land acquisition be expedited to complete the branch canals. However, in Khowai project, construction remained below target (as of July 2017) due to non-acquisition of land. It was noted that the project had been declared as complete (March 2015) by the State Government without the completion of the canal. In respect of Manu Project, the work was delayed by more than five years and there was a shortfall in IP creation of 2,439 ha due to land acquisition problems.
- In case of Karapuzha Irrigation Project, Kerala, the works of rectification of seepage pointed out during CWC monitoring in June 2013 was pending up to March 2016 and R&R for some families mentioned in CWC monitoring report for 2016-17 was also pending.

Pending remedial action in cases highlighted in monitoring reports indicates ineffectiveness of monitoring mechanism.

### 5.3 Management Information System (MIS)

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#### 5.3.1 Web-based Management Information System for PMKSY

As per para 18 of Operational Guidelines of *Pradhan Mantri Krishi Sinchayee Yojana* (PMKSY), a web-based Management Information System for PMKSY (PMKSY-MIS) will be developed to collect essential information related to each project. However, from PMKSY-MIS website so developed by the Ministry, it was seen that IP utilization of AIBP projects and district-wise data was not available.

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<sup>74</sup> Tillari (Goa), Karapuzha and Chitturpuzha (Kerala) and Khowai and Manu (Tripura).

Ministry accepted the audit observation and replied (February 2018) that the details of IPU would be added to the PMKSY-AIBP Dashboard.

### 5.3.2 Discrepancy in data of IP of MMI projects

The Standing Committee of the Fourteenth Lok Sabha (2016-17) recommended reconciliation of data regarding IP and maintaining the data at one place so that a holistic picture of progress with regard to creation and utilization of IP is available against envisaged targets.

We noticed discrepancies between the data on IP targets, IPC and IPU data obtained from State Agencies (April-September 2017) and the data provided by the Ministry (February 2018). The variations in the data are summarized below:

- In 110 projects, there was difference in data of targeted IP between the State and CWC to the tune of 5.30 lakh ha<sup>75</sup> reflecting higher target of IP in State's data.
- IPC of 110 projects showed difference between State data and CWC data to the tune of 5.55 lakh ha<sup>76</sup> indicating higher creation of IP as per State's data.
- There was a difference between State and CWC data regarding IPU in 60 projects to the tune of 8.42 lakh ha<sup>77</sup> indicating higher IPU in State's data.

### 5.4 Use of Remote Sensing

As per 2006 AIBP guidelines, monitoring through Remote Sensing Technology may be used by the GoI to monitor the progress of works, specifically in respect of the IP created. CWC envisaged satellite based monitoring of AIBP projects to supplement the existing monitoring mechanism by providing authentic and objective data. It sought to digitize the completed components for visualization of the extent and size of projects for comparison of target and achievement of physical progress of work, IPC and IPU.

CWC assigned the work to National Remote Sensing Centre, Hyderabad (NRSC) in phases. In the *first phase* (2007-08 to 2009-10), NRSC completed the study for 50 out of 53 projects for which CWC made the data available to it, highlighting gap of about 25 *per cent* (6.54 lakh ha<sup>78</sup>) between field reported IP and satellite based study carried out by NRSC. In 35 projects, there were deviations of more than 10 *per cent* and more than 100 *per cent* in eight projects. In the *second phase*, NRSC completed assessment of IP of 43 out of 50 MMI projects in April 2013 and reported a gap of 38,202 ha between the field data and data

<sup>75</sup> In 110 projects: In 61 cases no difference, in 25 cases CWC data is higher by 9.28 lakh ha and in 24 cases States data higher by 14.58 lakh ha.

<sup>76</sup> In 110 projects: in 34 cases no difference, in 33 cases States data higher by 12.83 lakh ha and in 43 cases CWC data is higher by 7.28 lakh ha.

<sup>77</sup> In respect of 40 cases, there was no difference, in four cases CWC data was higher by 3.80 lakh ha and in 16 cases State's data was higher by 1.32 lakh ha.

<sup>78</sup> Out of 32.72 lakh ha, IP reported as created by field in 50 projects, the satellite based study through NRSC found that only 26.18 lakh ha had been actually created.

generated by NRSC through satellite in case of 38 MMI projects. In *third phase* only three out of 13 identified projects were monitored through in-house web enabled online monitoring system of CWC.

Ministry contested (February 2018) the assessment of IP done by NRSC based on break in hydraulic connectivity and proportionately reducing the IP creation. Ministry also stated that remote sensing has limitations in digitizing and assessing the minors and sub-minors using imageries. However, the Ministry did not confirm whether any methodology had been prescribed for calculation of IP.

Thus, the use of remote sensing technology was not developed as per the envisaged objectives and the calculation of IP were not based on any uniform and standardized methodology leading to gaps in the data of IP reported by different agencies. Lack of reconciled and complete data on IP at one place hampered in obtaining a holistic picture of IP under AIBP.

## 5.5 Monitoring at State level

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### 5.5.1 MMI projects

According to 2013 Guidelines, State Level Monitoring Committees (SLMC) were to be activated immediately for the MMI projects under AIBP for implementation of environmental safeguards. Besides, concurrent evaluation of the project by State government was mandatory at the end of each Financial Year, during the period of funding.

In the case of 13 out of 19 States, information regarding formation of SLMC was available. It was noticed that SLMC was formed only in four States<sup>79</sup>.

Out of 115 MMI projects of 19 States, information regarding concurrent evaluation was made available by 17 States<sup>80</sup> for 86 ongoing MMI projects only. Out of these 86 MMI projects, concurrent evaluation of 43 projects was conducted during 2013-17.

### 5.5.2 MI schemes

As per 2006 Guidelines, monitoring of the MI schemes had to be done by the State government themselves through agencies independent of construction agencies. Audit findings on monitoring of MI schemes are discussed below:

#### North Eastern States

- Monitoring by independent agency was done only in Nagaland.
- In Arunachal Pradesh, Assam, Meghalaya, Sikkim and Tripura, monitoring of selected MI schemes by the State Government through independent agency was not done.

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<sup>79</sup> Chhattisgarh, Goa, Gujarat and Odisha

<sup>80</sup> Assam, Andhra Pradesh, Bihar, Chhattisgarh, Jammu & Kashmir, Jharkhand, Goa, Gujarat, Karnataka, Kerala, Maharashtra, Madhya Pradesh, Odisha, Rajasthan, Telangana, Tripura and West Bengal

- In Mizoram, no records in support of monitoring and evaluation of selected MI schemes through independent agency were furnished to audit.

#### **Other States**

- In Jammu & Kashmir, Jharkhand, Himachal Pradesh, Rajasthan and Uttarakhand, except for two MI schemes in Jharkhand and Uttarakhand (one each), the concerned State Governments had not conducted evaluation of the selected MI schemes through independent agencies.
- In Andhra Pradesh, Chhattisgarh, Karnataka, Madhya Pradesh, Maharashtra, Odisha, Telangana and West Bengal, records relating to monitoring of MI schemes by State level agencies were not available.

#### **5.5.3 Use of Satellite imageries in Quarterly reports**

As per 2013 AIBP guidelines, paper print of Satellite imagery clearly indicating the project components should reach the Chief Engineer (PMO), CWC and to the concerned regional CWC Chief Engineer's office from the concerned States at the end of each year and on completion of the project. For monitoring of the distribution network related works, a list of all the major structures, outlets to be covered in the year concerned and rail/road crossings/utility crossings should be defined as targets and monitored for their achievement.

Audit found that paper print of satellite imagery clearly indicating the project components at the end of each year for all MMI projects under AIBP were not furnished by the State governments to Chief Engineer (PMO), CWC with the physical and financial progress reports.

Ministry accepted (February 2018) that States had not been able to furnish these imageries because of lack of availability of technical expertise, inability to procure the good quality imageries, etc.

### **5.6 Operation and maintenance of projects/schemes**

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#### **5.6.1 Water Users' Association**

Public Accounts Committee (68<sup>th</sup> Report on AIBP during 15<sup>th</sup> Lok Sabha) recommended to the Ministry to oversee and ensure that all the State Governments enact laws on participatory irrigation management and constitution of Water Users' Associations (WUAs) for the effective implementation of the AIBP projects. As per AIBP Guidelines, Water User Associations were to be formed for post construction maintenance of assets created under the MI schemes.

Information regarding enactment of laws on participatory irrigation management was available for 21 States of which 13 States had enacted laws on participatory irrigation management.

Information regarding formation of Water User Associations (WUAs) was provided by 20 States of which 12 States had formed WUAs but were not formed for all the projects/schemes.

The objective of ensuring participatory irrigation management was not adequately met which affected monitoring and collection of water usage charges, control over distribution of water and theft and diversion of water.

#### CASE STUDY OF ILLEGAL LIFTING OF IRRIGATION WATER FROM CANALS

In the Narmada Canal Project, compulsory pressure irrigation was adopted by using sprinklers or drip. It was observed that the Narmada Main Canal and its distributaries and minors suffered due to water theft by nearby cultivators who illegally lifted water from canals to irrigate their fields by using motor pumps. As such, a campaign was launched (28 April 2016 to 30 April 2016) to remove illegal motor pumps and other encroachments from Narmada Main Canal and a number of motor pumps/engines and pipes were seized. It was observed that no such campaign was undertaken for checking drawal of water from distributaries and minors, although these were also facing the problem of water theft.



**Distributory of Narmada Canal**

#### CASE STUDY OF LIS AT BAMBARDE, TARALE, PAL AND INDOLI

The project authorities incurred expenditure of ₹ 28.32 crore and ₹ 42.38 crore on construction of LIS at Bambarde & Tarale and at Pal & Indoli respectively. Though the work was completed in May 2013, the said LISs were not utilized as the WUAs were not formed. The work of formation of WUA was undertaken in September 2014 at a cost of ₹ 40.64 lakh with a time limit of 30 months i.e. by March 2017, however the same was incomplete and payment of only ₹ 4.75 lakh was made. As a result, the expenditure amounting to ₹ 70.70 crore incurred on the construction of LIS remained blocked. Further, due to non-functioning of LIS, the projected IP could not be utilised despite availability of water.



### 5.6.2 Deficiencies in Operation and Maintenance of projects/schemes

Timely and proper maintenance of project assets created under AIBP is necessary to ensure uninterrupted functioning of the facilities created and continued accrual of benefits to farmers. In the absence of an established mechanism for operation and maintenance of the infrastructure created and of participatory irrigation management as mentioned in para 5.6.1 above, audit found several cases of poor maintenance resulting in damage to structures and non-utilisation of IP, which are discussed in Table 5.3 below:

**Table 5.3: Shortcomings/ Deficiencies in O&M**

| State          | Issues in O&M   |
|----------------|---|
| Andhra Pradesh | In case of Veligallu Project completed in August 2007, Audit observed that proper maintenance was not taken up by the concerned Department as certain defects in the original work stated to be completed by the contractor were not rectified.   |
| Goa            | In case of Tillari project, due to non-execution of maintenance work in certain section of the canals, there was significant growth of vegetation.  |
| Jharkhand      | In Sonua Reservoir scheme, audit noticed civil structures like concrete slab of spillway, Aqueduct-cum-bridge of Left Main Canal and Cross Drainage at 12 Km of Left Main Canal were damaged and obstructing the flow of water despite incurring expenditure of ₹ 7.18 crore till 31 March 2017 for maintenance of the assets.  |
| Karnataka      | Under Gandorinala project, audit noticed poor maintenance of canal network in the completed portion, affecting the flow of water.   |
| Kerala         | In Karapuzha project, there was decline in IP utilization during 2011-12 to 2015-16 from 938 ha to 530 ha due to seepage at many places and curtailment in water distribution. Due to delay in repair work of the canal, IP created could not be utilized for five years.   |
| Madhya Pradesh | Although an amount of ₹ 12.88 lakh was spent towards repair of the damaged portion of the Berkhedhi Weir scheme for restoration of lost IP, a portion was washed away with flow of water and the weir could not be maintained.<br><br>Audit also noticed damages in canal and blocks in sluice outlet in Rehmanpura Tank and Bekhalda Tank MI schemes reflecting inadequate maintenance work by the department. |
| Maharashtra    | In case of five projects, audit noticed blockage of water due to growth of heavy vegetation in the canal. In two projects, flow of water was obstructed due to debris. In two projects, the farmers had encroached on the service road and inspection paths of the canal and were carrying out agricultural activities on the encroached land.  |
| Tripura        | In Manu and Khowai projects, audit noticed that many stretches of canal network required repair and maintenance for clearing obstruction caused due to felling of trees, landslides and growth of bushes.   |
| West Bengal    | During site visit of Tatko Irrigation project in May 2017, pier and abutments of spillway under the Head works portion completed before inclusion under AIBP (2000-01), were in bad condition. The project authority stated (June 2017) that maintenance work has been initiated.   |

## 5.7 Audit summation

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There were shortfalls in number of monitoring visits by CWC and evaluation of projects at the State level. State Level Monitoring Committees were formed in four States only. CWC reports were not prepared in all projects visited by officials and issues highlighted in the CWC reports were also pending for compliance. Monitoring through Remote Sensing Technology by NRSC was very limited due to the low resolution of imageries and other limitations attributed by the Ministry. However, gaps in IP highlighted by NRSC and variance in IP data of the NRSC and the Ministry was indicative of systemic limitations in calculation of IP. Participatory irrigation management through Water Users Associations suffered from serious limitations due to limited number, status and the resources at their command affecting the O&M of projects. Besides, lack of timely follow-up action to address deficiencies and deviations and shortfall in monitoring affected evaluation of the programme.

## Conclusion

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Lack of adequate and assured supply of water has been the bane of Indian Agriculture adversely affecting the agricultural output and growth. AIBP was conceived as a programme to expedite a large number of irrigation projects taken up at considerable cost so that the objective of providing adequate and assured water supply for farming was met and agriculture received the required impetus. The programme was taken up in 1996-97 and gradually expanded to cover all types of irrigation schemes and projects. The funding pattern under the Programme also continued to evolve with focus on Special Category and Hilly States and on Special Areas. The programme has now been subsumed in the *Pradhan Mantri Krishi Sinchayee Yojana* and is focussing on 99 incomplete MMI projects to be completed in Mission Mode. During the period covered by this Performance Audit i.e. 2008-17, 201 MMI projects and 11,291 MI schemes were being implemented under AIBP and the total Central Assistance (CA) released to these projects /schemes was ₹ 41,143 crore. Despite the importance of the Programme, its continued existence since 1996-97 and substantial Central outlays on the projects, audit of the AIBP revealed several deficiencies in the planning, implementation and monitoring of the programme.

Projects and schemes were found to have been included under AIBP in deviation of guidelines and deficiencies in preparation and processing of Detailed Project Reports and incorrect calculation of Benefit Cost Ratio of the projects were observed. These led to modifications in design and scope of work and revision in cost estimates affecting the schedule of implementation of the projects. Shortfalls were also found in the way the finances for the programme was managed with funds not being fully released or being released with delays. Utilisation Certificates for funds amounting to ₹ 2,187.40 crore, constituting 37 *per cent* of the total CA received by the State agencies were not submitted to the Ministry in time. Financial irregularities such as diversion and parking of funds and fictitious and fraudulent expenditure were observed.

Implementation of projects under AIBP was slow with percentage of projects getting completed being low and projects facing delays ranging from one to 18 years. The delays in implementation of projects together with deficient planning and inefficient works management led to substantial cost overrun in most of the projects. The realization of envisaged benefits in terms of Irrigation Potential (IP) creation was only 68 *per cent* in MMI projects and 39 *per cent* in MI schemes. The utilization of IP created was 65 *per cent* and 73 *per cent* respectively for MMI projects and MI schemes. The delays and cost overruns were due to factors such as delays in land acquisition, delayed Rehabilitation and Resettlement (R&R) measures and clearances and deficiencies in works management. Several instances of irregular/wasteful/avoidable/extra expenditure and undue favour to contractors were also observed.

Audit also disclosed that monitoring by Central and State agencies was lax and modern technology such as Remote Sensing Technology was not effectively deployed. In addition, participatory irrigation management through Water Users Associations suffered from serious limitations due to their less number, status and the resources at their command affecting the Operation and Maintenance of projects.

Thus, even though AIBP was of critical importance for the growth of the agricultural and farming sector and substantial Central outlays had been made on projects covered by it, the Programme continues to lag and faced ballooning costs. Moreover, most of the projects have not achieved their target IP. Cost escalation due to various factors outlined in the Report and lower benefits than envisaged on account of shortfall in IP creation and utilisation resulted in actual Benefit Cost Ratio (BCR) being lesser than the original calculated BCR of projects. Thus, delays in completion of projects, escalation in their costs and shortfall in IP creation and utilisation undermined the overall objective of the Programme which was to ensure expeditious completion of irrigation projects so that adequate and assured water supply was made available for farming.


## Recommendations

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Based on the audit findings the following recommendations are made:

1. Due diligence must be exercised while computing Benefit Cost Ratio of projects which should be based on realistic assumptions and should be reviewed continuously.
2. The Ministry may evaluate performance of the programme and of individual projects to identify specific areas for focussed attention and also intensify efforts for expeditious completion of the programme.
3. To improve IPU, *pari passu* implementation of Command Area Development Work in the projects should be ensured and concerned States should be advised to submit Command Area Development proposals at the earliest.
4. State Government should be advised to ensure adequate checks in management of works under the programme and fix accountability for deficient execution of works.
5. The Ministry may ensure regular monitoring and evaluation at the Central level as well as by various agencies and take up timely follow up action.
6. The Ministry may develop a uniform and reliable system for calculation of Irrigation Potential created and reconcile the same with data obtained through Remote Sensing Technology so as to obtain an accurate assessment of the performance of the projects/schemes.

New Delhi  
Dated: 20 September 2018

  
(MANISH KUMAR)  
Director General of Audit  
Scientific Departments

Countersigned

New Delhi  
Dated: 24 September 2018

  
(RAJIV MEHRISHI)  
Comptroller and Auditor General of India



# Annexures





**Annexure 1.1**  
**(Refer paras 1.4 and 1.6)**

**State wise number of MMI projects and MI schemes under AIBP**

(Amount in ₹ crore)

| Sl.No.       | State             | MMI Projects                            |                       | MI Schemes                                |                       |
|--------------|-------------------|---|-----------------------|---|-----------------------|
|              |                   | Total number of projects during 2008-17 | Total sanctioned cost | Total number of MI Schemes during 2008-17 | Total sanctioned cost |
| 1.           | Gujarat           | 5                                       | 55,049.28             | -   | -                     |
| 2.           | Maharashtra       | 48                                      | 35,803.69             | 169                                       | 723.19                |
| 3.           | Telangana         | 13                                      | 24,614.09             | -   | -                     |
| 4.           | Karnataka         | 17                                      | 23,980.51             | 750                                       | 966.74                |
| 5.           | Madhya Pradesh    | 19                                      | 15,902.27             | 593                                       | 1,748.13              |
| 6.           | Odisha            | 11                                      | 15,840.36             | 58  | 92.52                 |
| 7.           | Rajasthan         | 3                                       | 10,024.23             | 7   | 73.49                 |
| 8.           | Uttar Pradesh     | 9                                       | 9,994.90              | -   | -                     |
| 9.           | Jharkhand         | 8                                       | 7,255.13              | 537                                       | 544.31                |
| 10.          | Bihar             | 6                                       | 3,893.43              | 268                                       | 198.02                |
| 11.          | Andhra Pradesh    | 12                                      | 4,564.50              | 100                                       | 373.41                |
| 12.          | Chhattisgarh      | 7                                       | 3,413.06              | 409                                       | 1,700.30              |
| 13.          | Manipur*          | 3                                       | 2,286.26              | 505                                       | -                     |
| 14.          | West Bengal       | 4                                       | 2,078.80              | 57  | 23.88                 |
| 15.          | Punjab*           | 3                                       | 1,599.47              | -   | -                     |
| 16.          | Uttarakhand       | 1                                       | 1,446.00              | 2,295                                     | 1,351.87              |
| 17.          | Assam             | 6                                       | 1,184.06              | 1,554                                     | 6,211.36              |
| 18.          | Kerala            | 4                                       | 1,058.17              | -   | -                     |
| 19.          | Goa               | 1                                       | 1,051.69              | -   | -                     |
| 20.          | Jammu & Kashmir   | 13                                      | 796.09                | 878                                       | 1,075.54              |
| 21.          | Himachal Pradesh  | 4                                       | 674.33                | 359                                       | 52.11                 |
| 22.          | Tripura           | 3                                       | 273.36                | 181                                       | 104.48                |
| 23.          | Meghalaya         | 1                                       | 16.30                 | 348                                       | 450.29                |
| 24.          | Mizoram           | -                                       | -                     | 207                                       | 182.35                |
| 25.          | Sikkim            | -                                       | -                     | 444                                       | 121.91                |
| 26.          | Arunachal Pradesh | -                                       | -                     | 625                                       | 313.77                |
| 27.          | Nagaland          | -                                       | -                     | 947                                       | 493.11                |
| <b>TOTAL</b> |                   | <b>201</b>                              | <b>2,22,799.98</b>    | <b>11,291</b>                             | <b>16,800.78</b>      |

\*Manipur and Punjab were not selected in the sample.

**Annexure 1.2**  
**(Refer para 1.5)**

**State-wise releases and reported expenditure of MMI projects and MI Schemes under AIBP during 2008-17**

(Amount in ₹ crore)

| Sl.No.   | Name of the State | CA released      | State share released | Reported Expenditure |
|--|-------------------|------------------|----------------------|----------------------|
| 1.   | Andhra Pradesh    | 444.00           | 1,463.06             | 1,619.85             |
| 2.   | Arunachal Pradesh | 336.00           | Not furnished        | 394.76               |
| 3.   | Assam             | 3,682.00         | 454.19               | 3,992.90             |
| 4.   | Bihar             | 416.00           | 3,314.64             | 2,345.46             |
| 5.   | Chhattisgarh      | 1,040.00         | 1,348.51             | 2,373.86             |
| 6.   | Goa               | 107.00           | Not furnished        | 544.99               |
| 7.   | Gujarat           | 4,644.00         | 10,770.83            | 14,498.80            |
| 8.   | Himachal Pradesh  | 466.00           | 41.85                | 488.51               |
| 9.   | Jammu & Kashmir   | 1,377.00         | 117.38               | 1,416.29             |
| 10.  | Jharkhand         | 1,839.00         | 1,866.24             | 3,676.09             |
| 11.  | Karnataka         | 3,512.00         | 4,205.16             | 8,876.44             |
| 12.  | Kerala            | 15.00            | 553.27               | 745.59               |
| 13.  | Madhya Pradesh    | 4,864.00         | 11,508.57            | 16,153.73            |
| 14.  | Maharashtra       | 5,953.00         | 9,371.39             | 14,442.98            |
| 15.  | Manipur           | 1,388.00         | Not available*       | Not available*       |
| 16.  | Meghalaya         | 451.00           | 105.44               | 555.73               |
| 17.  | Mizoram           | 182.00           | 20.49                | 306.67               |
| 18.  | Nagaland          | 512.00           | 52.86                | 578.99               |
| 19.  | Odisha            | 3,469.00         | Not furnished        | 9,294.45             |
| 20.  | Punjab            | 243.00           | Not available*       | Not available*       |
| 21.  | Rajasthan         | 483.00           | Not furnished        | 1,619.19             |
| 22.  | Telangana         | 2,301.00         | 8,877.64             | 15,279.16            |
| 23.  | Tripura           | 181.00           | 17.08                | 193.80               |
| 24.  | Sikkim            | 60.00            | 12.72                | 72.83                |
| 25.  | Uttar Pradesh     | 1,784.00         | 2,491.82             | 3,341.71             |
| 26.  | Uttarakhand       | 1,352.00         | 212.70               | 1,563.00             |
| 27.  | West Bengal       | 42.00            | Not furnished        | 116.84               |
| <b>TOTAL</b>   |                   | <b>41,143.00</b> | <b>56,805.84</b>     | <b>1,04,492.62</b>   |
| *Manipur and Punjab were not selected in the audit sample. |                   |                  |                      |                      |

**Annexure 1.3**  
**(Refer para 1.5)**

**Central assistance/Grants released for MMI projects and MI Schemes during 2008-17**

(Amount in ₹ crore)

| Sl. No.      | State             | MMI projects  | MI schemes    | Total         |
|--------------|-------------------|---------------|---------------|---------------|
| 1.           | Andhra Pradesh    | 70            | 374           | 444           |
| 2.           | Arunachal Pradesh | -             | 336           | 336           |
| 3.           | Assam             | 389           | 3,293         | 3,682         |
| 4.           | Bihar             | 218           | 198           | 416           |
| 5.           | Chhattisgarh      | 219           | 821           | 1,040         |
| 6.           | Goa               | 107           | -             | 107           |
| 7.           | Gujarat           | 4,644         | -             | 4,644         |
| 8.           | Himachal Pradesh  | 229           | 237           | 466           |
| 9.           | Jammu & Kashmir   | 302           | 1,075         | 1,377         |
| 10.          | Jharkhand         | 1,295         | 544           | 1,839         |
| 11.          | Karnataka         | 3,103         | 409           | 3,512         |
| 12.          | Kerala            | 15            | -             | 15            |
| 13.          | Madhya Pradesh    | 3,115         | 1,749         | 4,864         |
| 14.          | Maharashtra       | 5,230         | 723           | 5,953         |
| 15.          | Manipur           | 1,119         | 269           | 1,388         |
| 16.          | Meghalaya         | -             | 451           | 451           |
| 17.          | Mizoram           | -             | 182           | 182           |
| 18.          | Nagaland          | -             | 512           | 512           |
| 19.          | Odisha            | 3,376         | 93            | 3,469         |
| 20.          | Punjab            | 243           | -             | 243           |
| 21.          | Rajasthan         | 469           | 14            | 483           |
| 22.          | Sikkim            | -             | 60            | 60            |
| 23.          | Telangana         | 2,301         | -             | 2,301         |
| 24.          | Tripura           | 76            | 105           | 181           |
| 25.          | Uttar Pradesh     | 1,784         | -             | 1,784         |
| 26.          | Uttarakhand       | -             | 1,352         | 1,352         |
| 27.          | West Bengal       | 30            | 12            | 42            |
| <b>TOTAL</b> |                   | <b>28,334</b> | <b>12,809</b> | <b>41,143</b> |

Source: Ministry

**Annexure 1.4**  
**(Refer para 1.9)**

**State-wise details of MMI projects and MI schemes selected under Sample A, B and C**

| Sl. No.            | State             | Major and Medium Projects |           |          |           |           |          | Minor Schemes |            |
|--------------------|-------------------|---------------------------|-----------|----------|-----------|-----------|----------|---------------|------------|
|                    |                   | Sample A                  |           |          | Sample B  |           |          | Sample C      |            |
|                    |                   | Completed                 | Ongoing   | Deferred | Completed | Ongoing   | Deferred | Completed     | Ongoing    |
| 1.                 | Andhra Pradesh    | 0                         | 0         | 0        | 2         | 3         | 1        | 1             | 1          |
| 2.                 | Arunachal Pradesh | 0                         | 0         | 0        | 0         | 0         | 0        | 15            | 7          |
| 3.                 | Assam             | 0                         | 0         | 0        | 1         | 3         | 0        | 15            | 15         |
| 4.                 | Bihar             | 1                         | 0         | 0        | 0         | 2         | 0        | 11            | 3          |
| 5.                 | Chhattisgarh      | 1                         | 1         | 0        | 2         | 0         | 0        | 12            | 9          |
| 6.                 | Goa               | 0                         | 0         | 0        | 0         | 1         | 0        | 0             | 0          |
| 7.                 | Gujarat           | 0                         | 0         | 0        | 2         | 1         | 0        | 0             | 0          |
| 8.                 | Himachal Pradesh  | 0                         | 1         | 0        | 0         | 2         | 0        | 15            | 2          |
| 9.                 | Jammu & Kashmir   | 0                         | 2         | 0        | 0         | 7         | 0        | 15            | 15         |
| 10.                | Jharkhand         | 0                         | 1         | 0        | 0         | 4         | 0        | 15            | 5          |
| 11.                | Kerala            | 0                         | 1         | 0        | 0         | 1         | 0        | 0             | 0          |
| 12.                | Karnataka         | 1                         | 5         | 0        | 2         | 2         | 0        | 15            | 10         |
| 13.                | Madhya Pradesh    | 3                         | 4         | 0        | 0         | 4         | 0        | 15            | 8          |
| 14.                | Maharashtra       | 1                         | 5         | 0        | 13        | 10        | 0        | 4             | 4          |
| 15.                | Meghalaya         | 0                         | 0         | 0        | 0         | 0         | 1        | 11            | 6          |
| 16.                | Mizoram           | 0                         | 0         | 0        | 0         | 0         | 0        | 10            | 2          |
| 17.                | Nagaland          | 0                         | 0         | 0        | 0         | 0         | 0        | 15            | 8          |
| 18.                | Odisha            | 0                         | 1         | 0        | 0         | 6         | 0        | 1             | 2          |
| 19.                | Rajasthan         | 0                         | 0         | 0        | 0         | 3         | 0        | 1             | 1          |
| 20.                | Sikkim            | 0                         | 0         | 0        | 0         | 0         | 0        | 14            | 8          |
| 21.                | Telangana         | 0                         | 0         | 0        | 0         | 6         | 0        | 2             | 0          |
| 22.                | Tripura           | 0                         | 0         | 0        | 0         | 2         | 0        | 8             | 1          |
| 23.                | Uttar Pradesh     | 0                         | 2         | 0        | 1         | 3         | 0        | 0             | 0          |
| 24.                | Uttarakhand       | 0                         | 0         | 0        | 0         | 0         | 1        | 15            | 15         |
| 25.                | West Bengal       | 0                         | 0         | 0        | 0         | 2         | 0        | 3             | 0          |
| <b>Total</b>       |                   | <b>7</b>                  | <b>23</b> | <b>0</b> | <b>23</b> | <b>62</b> | <b>3</b> | <b>213</b>    | <b>122</b> |
| <b>Grand Total</b> |                   | <b>30</b>                 |           |          | <b>88</b> |           |          | <b>335</b>    |            |

**Annexure 1.5**  
**(Refer para 1.9)**

**State wise details of release and expenditure of sampled MMI projects and MI schemes**

(Amount in ₹ crore)

| Sl. No. | Name of the State | MMI projects    |                    |                     |                     | MI schemes     |                 |                     |
|---------|-------------------|-----------------|--------------------|---------------------|---------------------|----------------|-----------------|---------------------|
|         |                   | No. of projects | Sanctioned cost    | CA released 2008-17 | Expenditure 2008-17 | No. of schemes | Sanctioned cost | Expenditure 2008-17 |
| 1.      | Andhra Pradesh    | 6               | 1,998.63           | 0                   | 612                 | 2              | 29.80           | 17.30               |
| 2.      | Arunachal Pradesh | -               | -                  | -                   | -                   | 22             | 17.45           | 15.60               |
| 3.      | Assam             | 4               | 1,093.58           | 388                 | 455                 | 30             | 240.93          | 133.07              |
| 4.      | Bihar             | 3               | 1,726.87           | 143                 | 842                 | 14             | 54.63           | 55.13               |
| 5.      | Chhattisgarh      | 4               | 1,758.51           | 144                 | 703                 | 21             | 141.14          | 155.53              |
| 6.      | Goa               | 1               | 1,051.69           | 107                 | 545                 | -              | -               | -                   |
| 7.      | Gujarat           | 3               | 54,921.19          | 4,643               | 14,499              | -              | -               | -                   |
| 8.      | Himachal Pradesh  | 3               | 586.24             | 198                 | 329                 | 17             | 52.11           | 54.62               |
| 9.      | Jammu & Kashmir   | 9               | 679.60             | 261                 | 290                 | 30             | 220.08          | 128.25              |
| 10.     | Jharkhand         | 5               | 6,999.00           | 1,280               | 2,982               | 20             | 34.39           | 30.40               |
| 11.     | Karnataka         | 10              | 16,179.74          | 1,197               | 4,046               | 25             | 75.59           | 75.48               |
| 12.     | Kerala            | 2               | 594.57             | 6                   | 51                  | -              | -               | -                   |
| 13.     | Madhya Pradesh    | 11              | 10,483.03          | 1,790               | 5,599               | 23             | 165.25          | 188.66              |
| 14.     | Maharashtra       | 29              | 26,695.15          | 3,579               | 9,668               | 8              | 365.30          | 528.82              |
| 15.     | Meghalaya         | 1               | 16.30              | 0                   | 0                   | 17             | 94.45           | 41.52               |
| 16.     | Mizoram           | -               | -                  | -                   | -                   | 12             | 19.09           | 16.34               |
| 17.     | Nagaland          | -               | -                  | -                   | -                   | 23             | 29.38           | 28.56               |
| 18.     | Odisha            | 7               | 10,282.08          | 1,744               | 6,044               | 3              | 4.38            | 6.76                |
| 19.     | Rajasthan         | 3               | 10,024.23          | 469                 | 1,550               | 2              | 59.32           | 47.85               |
| 20.     | Sikkim            | -               | -                  | -                   | -                   | 22             | 6.86            | 4.32                |
| 21.     | Telangana         | 6               | 23,678.78          | 2,243               | 11,016              | 2              | 3.72            | 5.01                |
| 22.     | Tripura           | 2               | 190.35             | 50                  | 50                  | 9              | 12.34           | 9.70                |
| 23.     | Uttarakhand       | 1               | 1,446              | 0                   | 0                   | 30             | 53.03           | 47.52               |
| 24.     | Uttar Pradesh     | 6               | 7,687.70           | 938                 | 3,517               | -              | -               | -                   |
| 25.     | West Bengal       | 2               | 2,052.55           | 4                   | 3                   | 3              | 1.31            | 1.27                |
|         | <b>TOTAL</b>      | <b>118</b>      | <b>1,80,145.79</b> | <b>19,184</b>       | <b>62,801</b>       | <b>335</b>     | <b>1,680.55</b> | <b>1,591.71</b>     |

Source: Ministry and State authorities

**Annexure 1.6**  
**(Refer para 1.11)**

**Verification of Action Taken by the Ministry on the recommendations of the PAC**

| Recommendations of 68 <sup>th</sup> Report of PAC during Fifteenth Lok Sabha and Action Taken thereon |   |   |  |
|---|---|---|--|
| Sl. No.   | PAC (2012-2013)   | Action Taken by the Ministry  | Audit Comments   |
| 1.  | <ul style="list-style-type: none"> <li>Comprehensive survey and investigations should be initiated immediately in regard to all Preliminary Reports.</li> <li>DPRs must be insisted upon for all the projects.</li> <li>Ministry must ensure the BCRs for all projects are properly worked out, based on validated and verifiable data assumptions relating to costs, revenues and cropping patterns, etc.</li> </ul> | <ul style="list-style-type: none"> <li>No project is being cleared on the basis of preliminary report.</li> <li>State Governments are instructed to prepare DPRs as per Guidelines of Ministry.</li> <li>The Ministry would ensure that data related to cropping pattern, productivity, rate of produce etc. has to be duly vetted by State Agriculture Department for calculation of BCR.</li> </ul>                                     | <ul style="list-style-type: none"> <li>DPR was not prepared in case of one project. In 35 MMI projects, there were deficiencies in DPRs as compared to the stipulations in Ministry's guidelines.<br/>(Para 2.4)</li> <li>In 28 MMI projects and 82 MI schemes of nine States, uniform parameters for calculation of BCR were not adopted.<br/>(Para 2.5)</li> </ul> |
| 2.  | Ministry should treat projects, where the structures are completed but actual utilization of the targeted irrigation potential is not confirmed, as non-commissioned.   | MoWR has initiated action for taking up the project under CAD&WM <i>pari passu</i> with AIBP with a view to ensure early utilization of created irrigation potential.   | Cases of incomplete projects, treated as complete were noticed in case of nine MMI projects and 14 MI schemes.<br>(Para 4.2.1 and 4.3.1)   |
| 3.  | The field visits undertaken by the Ministry should invariably take due cognizance of the delays in project implementation and suggest all out concerted measures to obviate the same.   | <ul style="list-style-type: none"> <li>The process of monitoring by CWC and its field offices is being critically reviewed to put in place a revised process for monitoring with emphasis on identification of the bottlenecks and recommending measures for minimizing the delays.</li> <li>Further, to ensure adherence to prescribed frequency of monitoring, it is proposed to associate independent experts/organization.</li> </ul> | <ul style="list-style-type: none"> <li>There was persistent shortfall in monitoring by CWC.<br/>(Para 5.2.1)</li> </ul>  |
| 4.  | Ministry should initiate thorough probe into all such cases where the incomplete/ non-commissioned projects have been certified as completed projects by the State Government authorities   | Noted for compliance.   | <ul style="list-style-type: none"> <li>Out of 30 MMI projects reported as completed, nine were found incomplete. In case of MI schemes, 14 MI schemes were found incomplete and 41 MI schemes were found to be defunct.<br/>(Para 4.2.1, 4.3.1 and 4.3.2)</li> </ul>   |



| Recommendations of 68 <sup>th</sup> Report of PAC during Fifteenth Lok Sabha and Action Taken thereon |  |  |  |
|---|--|--|--|
| Sl. No.   | PAC (2012-2013)  | Action Taken by the Ministry   | Audit Comments   |
| 5.  | Ministry should persuade the State governments to resolve issues of land acquisition. Release of funds should invariably be linked with the satisfactory progress in land acquisition process. An effective institutional mechanism should be instituted to coordinate with various authorities concerned. | Release of funds for a particular year will be made only when land required for work of that year is in possession of the State Government. The States have been requested to form Project/State Level Committees to monitor the projects which would take care of coordination related issues. Further, it is also proposed to lay due emphasis on these issues during the process of monitoring. | <ul style="list-style-type: none"> <li>In case of 56 MMI projects, land acquisition had not been completed. (Para 4.6)</li> <li>There were clearance related issues in 22 MMI projects. (Para 4.8)</li> <li>Although CWC monitoring reports highlighted the issues of pending land acquisition in four cases, corrective action were yet to be completed by the States /Project Authorities. (Para 5.2.1.2)</li> </ul> |
| 6.  | The shortfall of Irrigation Potential should be addressed at the highest level so that optimum utilization of irrigation potential may be realized at the earliest under this programme.   | Ministry has initiated action for taking up the project under CAD&WM <i>pari passu</i> with AIBP. Further, State Governments will also be requested/advised not to divert irrigated agriculture land to non-agriculture purposes.  | There was overall gap of 35 <i>per cent</i> between IP created and IP utilized in 115 MMI projects. (Para 4.5.2)   |
| 7.  | Ministry should take immediate steps to ensure that the State Governments execute irrigation projects in phases in a synchronized manner, so that the benefits of irrigation water can flow to the farmer when one phase is fully completed.   | State Governments have been told to lay due emphasis on construction planning and strictly adhere to the approved Plan.  | Test check disclosed incorrect phasing of works in 10 MMI projects and four MI schemes pertaining to seven States. (Para 4.9.2)  |
| 8.  | Ministry should leave no stone unturned in ensuring that the potential created is gainfully utilized.  | MoWR has initiated action for taking up the project under CAD&WM <i>pari passu</i> with AIBP with a view to ensure early utilization of created irrigation potential.  | There was 35 <i>per cent</i> shortfall in IP utilization as compared to IP created. (Para 4.5.2)   |
| 9.  | Nodal Ministry had failed to enforce the provisions of the AIBP guidelines for converting the grant component into loan in cases of failure to complete the projects in time.  | The recommendations have been noted for strict compliance.   | Ministry did not convert Grant in to loan in any case out of 105 cases having time over run. (Para 3.10)   |
| 10.   | The Committee have learnt that Ministry of Water Resources have put in place a mechanism to check diversion of funds, unauthorized expenditure and other financial irregularities.   | The recommendations have been noted for strict compliance.   | There were instances of diversion of fund amounting to ₹ 1,578.55 crore. (Para 3.6)  |

| Recommendations of 68 <sup>th</sup> Report of PAC during Fifteenth Lok Sabha and Action Taken thereon |   |  |   |
|---|---|--|---|
| Sl. No.   | PAC (2012-2013)   | Action Taken by the Ministry   | Audit Comments  |
| 11.   | Committee recommended that the Ministry must ensure the equitable distribution of Central funds to the States based on the predefined criteria i.e. population dependent on agriculture, Ultimate irrigation Potential (UIP) yet to be fulfilled, the past performance of the States.<br>Ministry and CWC must release the AIBP funds well in time. | Efforts are made by MoWR to seek and obtain the proposals from State Governments and processing the same for forwarding to Ministry of Finance for release of funds in time.   | Ministry released (2008-17) an amount of ₹ 6,747.46 (35 per cent) for MMI projects and ₹ 2,725.55 crore to MI schemes at the fag end of the corresponding years, which includes 11 instances of release after close of FY.<br>(Para 3.2)  |
| 12.   | The Committee also noted that Water User Associations, was absent or practically non-functional in projects test checked in 21 States. The arrangements for handing over completed projects to farmers/water user associations had not been operationalized with respect to many projects.  | The Ministry has circulated (1976) a model bill to all the States for enactment of a law on Participatory Irrigation Management and constitution of Water Users Association.   | Eight States had not formed WUAs.<br>(Para 5.6.1)   |
| 13.   | Ministry should ensure that the State governments expedite setting up Water Resources Regulatory Authorities/ Commissions and make adequate provisions in their respective State budgets for the maintenance of infrastructural assets of the projects.   | The Ministry has circulated (1976) a model bill to all the States for enactment of a law on Participatory Irrigation Management and constitution of Water Users Association.   | Eight States had not enacted laws on Participatory Irrigation Management.<br>(Para 5.6.1)   |
| 14.   | Monitoring visits must be augmented suitably in consonance with the instant guidelines and the detailed inspection reports must be submitted to the Union as well as State Governments. Further, the Remote Sensing Technology needs to be harnessed and effectively used in 22 States.   | The process of monitoring by CWC and its field offices is being critically reviewed. Independent agencies like National Remote Sensing Centre (NRSC) and other agencies have been contacted for assistance in monitoring and evaluation. | There were persistent shortfall and deficiencies in monitoring by CWC and State Government.<br>(Para 5.2.1.1 and 5.5)<br><br>Use of remote sensing was very limited for monitoring under AIBP.<br>(Para 5.4)  |
| 15.   | The Committee note with concern that there is no institutional arrangement in place for coordination amongst the State Governments, Planning Commission, CWC etc. The Ministry has assured that compliance of the suggestions made in the monitoring reports will be pursued vigorously.  | The process of monitoring by CWC and its field offices is being critically reviewed. Independent agencies like National Remote Sensing Centre (NRSC) and other agencies have been contacted for assistance in monitoring and evaluation. | There was persistent shortfall in monitoring by CWC despite reduction in the number of visits to be undertaken after 2013 AIBP guidelines. Further, the role of independent agencies like NRSC and other agencies were very limited as their coverage was not comprehensive.<br>(Paras 5.2.1.1 and 5.4) |

| Recommendations of 68 <sup>th</sup> Report of PAC during Fifteenth Lok Sabha and Action Taken thereon |   |  |  |
|---|---|--|--|
| Sl. No.   | PAC (2012-2013)   | Action Taken by the Ministry   | Audit Comments   |
| 16.   | The Ministry should ensure rectification of gaps and deficiencies found by the National Remote Sensing Centre pursuing it vigorously with the State Governments.  | As submitted earlier, the reports in respect of 17 projects were conveyed to the respective State Governments.   | There were gaps in the data on IP given by the States and the Ministry.<br><i>(Para 5.3.2)</i><br><br>NRSC also reported gaps in the data provided by the State governments.<br><i>(Para 5.4)</i>  |
| 17.   | The Committee recommended in unequivocal terms that in all kinds of projects i.e. major/medium/minor irrigation projects, the availability of water should invariably be ensured till the tail end.   | The process of monitoring is being reviewed to effectively address quantitative as well as qualitative aspects.  | There were four cases of inaccurate assessment of water availability and variations in quantity of water available for projects.<br><i>(Para 2.4)</i>  |
| 18.   | Vigorous efforts should be made for creating irrigation potential for Drought prone areas and Desert prone areas in a time bound manner. This would in turn bring food security not only for these areas but also for the entire country as well. | Ministry moved a note for funding of ongoing as well as new projects under AIBP benefitting DDP areas on a par with DPAP areas i.e. 90 <i>per cent</i> central assistance to the eligible cost of works. | As per 2013 AIBP guidelines, a project benefiting Desert Development Programme (DDP) area/ Drought Prone Area were treated on a par with those benefiting DPAP areas and the new projects were eligible for CA at 90 <i>per cent</i> Grants. Under PMKSY, the proportion of Central share for AIBP from October 2015 onwards was revised to 60 <i>per cent</i> in case of Special Areas in non-SCSs.<br><i>(Para 1.5)</i><br><br>Six projects under DPAP were incomplete with time overrun ranging from two to six years.<br><i>(Para 4.2.1)</i> |

**Annexure 2.1**  
**(Refer para 2.3)**

**Irregular inclusion of MMI projects in AIBP**

(Amount in ₹ crore)

| Sl. No.  | Name of State    | Name of the project                              | Category of project | Year of inclusion in AIBP | Sanctioned cost (latest) | CLA/CA released | Remarks   |
|--|------------------|--|---------------------|---------------------------|--------------------------|-----------------|---|
|  |                  |  | A                   | B                         | C                        | D               |   |
| ERMs sanctioned in States already having projects under AIBP |                  |  |                     |                           |                          |                 |   |
| 1.   | Jammu & Kashmir  | Modernisation of Kandi canal                     | ERM                 | 2007-08                   | 53.70                    | 16.20           | Although the State already had MMI project and availing fund under AIBP, ERM was included under AIBP. |
| 2.   |                  | Modernisation of Dadi canal                      | ERM                 | 2006-07                   | 49.95                    | 34.50           |   |
| 3.   |                  | Restoration and modernization of Main Ravi Canal | Priority            | 2011-12                   | 66.67                    | 36.28           |   |
| 4.   |                  | Modernization of Ahji Canal                      | ERM                 | 2008-09                   | 20.51                    | 12.09           |   |
| 5.   | Karnataka        | Restoration of Bhimasamudra Tank                 | ERM                 | 2009-10                   | 9.38                     | 3.48            |   |
| 6.   | Kerala           | Chittoorpuzha                                    | ERM                 | 2010-11                   | 34.57                    | 5.85            |   |
| 7.   | Uttar Pradesh    | Modernisation of lahchura Dam                    | ERM                 | 2005-06                   | 328.82                   | 66.90           |   |
| 8.   |                  | Improving Irrigation Intensity of Hardoi Branch  | ERM                 | 2006-07                   | 135.17                   | 24.79           |   |
| 9.   |                  | Restoration of Sarda Sahayak Canal System        | ERM                 | 2009-10                   | 317.25                   | 39.37           |   |
| TOTAL  |                  |  |                     |                           | 1,016.02                 | 239.46          | -   |
| Projects Without clearance from Planning Commission          |                  |  |                     |                           |                          |                 |   |
| 10.  | Karnataka        | Varahi   | Major               | 2007-08                   | 569.53                   | 99.63           | Without the approval of PC.   |
| 11.  | Maharashtra      | Hetwane  | Medium              | 2002-03                   | 329.90                   | 50.50           |   |
| 12.  |                  | Aruna  | Medium              | 2009-10                   | 669.08                   | 70.54           |   |
| 13.  |                  | Arjuna   | Medium              | 2009-10                   | 476.49                   | 80.51           |   |
|  |                  | TOTAL  |                     |                           | 2,045.00                 | 301.18          |   |
| Projects not in advanced stage                               |                  |  |                     |                           |                          |                 |   |
| 14.  | Andhra Pradesh   | Swarnamukhi                                      | Medium              | 2005-06                   | 52.04                    | 11.86           | Expenditure (₹ 12.50 crore) was only 24 <i>per cent</i> against ₹ 52.04 crore.                        |
| 15.  |                  | Tadipudi LIS                                     | Major               | 2006-07                   | 467.70                   | 48.22           | Expenditure was only ₹ 91.22 (24.20 <i>per cent</i> ) as on March 2006.                               |
| 16.  |                  | Tarakarama Thirtha Sagaram                       | Medium              | 2005-06                   | 471.32                   | 33.00           | Expenditure was Nil up to March 2005.   |
| 17.  | Himachal Pradesh | Balh Valley Left Bank                            | Medium              | 2009-10                   | 103.78                   | 55.22           | Expenditure was only ₹ 10.52 (16.90 <i>per cent</i> ) as on March 2009 &                              |

| Sl. No. | Name of State   | Name of the project      | Category of project | Year of inclusion in AIBP | Sanctioned cost (latest) | CLA/CA released | Remarks  |
|---------|-----------------|--------------------------|---------------------|---------------------------|--------------------------|-----------------|--|
|         |                 |                          | A                   | B                         | C                        | D               |  |
|         |                 |                          |                     |                           |                          |                 | physical progress was 60 <i>per cent</i> of Item-1 (out of 10 items) of Head work component and less than five <i>per cent</i> of component-8 i.e. lift system from tube wells.                          |
| 18.     | Jammu & Kashmir | Prakachik Khows Canal    | Priority            | 2007-08                   | 53.32                    | 31.65           | Expenditure was ₹ five lakh (14 <i>per cent</i> ) only out of sanctioned cost of ₹ 35.43 crore and physical progress was Nil.  |
| 19.     | Karnataka       | Guddada Mallapura LIS    | Medium              | 2009-10                   | 115.40                   | 79.36           | Expenditure was only ₹ 16.36 crore (14 <i>per cent</i> ) as on March 2009  |
| 20.     | Maharashtra     | Lower Pedhi              | Major               | 2008-09                   | 594.75                   | 223.60          | Expenditure was ₹ 3.40 crore (1.20 <i>per cent</i> ) against estimated cost of ₹ 283.10 crore upto March 2008.   |
| 21.     |                 | Warna                    | Major               | 2005-06                   | 1,256.77                 | 48.37           | Expenditure was only ₹ 357.52 crore (28.44 <i>per cent</i> ) against estimated cost of ₹ 1,256.77 crore upto March 2005.   |
| 22.     |                 | Sangola Branch Canal     | Major               | 2007-08                   | 937.92                   | 140.37          | Expenditure was only ₹ 76.41 crore (26.55 <i>per cent</i> ) against estimated cost of ₹ 287.77 crore upto March 2007.  |
| 23.     | Odisha          | Rukura Tribal            | Medium              | 2009-10                   | 296.98                   | 70.92           | Expenditure was ₹ 42.84 crore (27.55 <i>per cent</i> ) upto March 2009 and Physical progress upto March 2010 was nil except land acquisition (97 <i>per cent</i> for dam, 47 <i>per cent</i> main canal) |
| 24.     | Telangana       | Flood flow canal of SRSP | ERM                 | 2005-06                   | 5,940.09                 | 382.40          | Expenditure was ₹ 451.45 crore (33.91 <i>per cent</i> ) of estimated cost of ₹ 1,331.30 crore at the time of inclusion. As on 08.12.05 Physical progress of headwork was nil and land                    |

| Sl. No.  | Name of State | Name of the project         | Category of project | Year of inclusion in AIBP | Sanctioned cost (latest) | CLA/CA released | Remarks  |
|--|---------------|-----------------------------|---------------------|---------------------------|--------------------------|-----------------|--|
|  |               |                             | A                   | B                         | C                        | D               |  |
|  |               |                             |                     |                           |                          |                 | acquisition and earthwork of main canal was 37 per cent and 27 per cent respectively.  |
| 25.  |               | Palemvagu                   | Medium              | 2005-06                   | 221.48                   | 9.54            | Expenditure was ₹ 7.42 crore (25.47 per cent) of estimated cost of ₹ 29.13 crore.  |
| 26.  |               | J. Chokka Rao, LIS          | Priority            | 2006-07                   | 13,445.44                | 1,787.69        | Expenditure was ₹ 972.18 crore (16.16 per cent) upto 31.3.06 and physical progress upto March 2006 range between 0.5 per cent and 16 per cent. |
| 27.  | Uttar Pradesh | Madhya Ganga Canal Phase-II | Major               | 2008-09                   | 2,865.11                 | 191.95          | Expenditure was ₹ 26.175 crore only which is insignificant (2.5 per cent) as compared to project cost of ₹ 1,060.76 crore (2008-15)            |
|  |               | <b>TOTAL</b>                |                     |                           | <b>26,822.10</b>         | <b>3,114.15</b> |  |
| <b>No assured water supply to one lakh hectare</b> |               |                             |                     |                           |                          |                 |  |
| 28.  | Jharkhand     | Gumani                      | Medium              | 1997-98                   | 185.76                   | 31.40           | The projected gross command area of three projects was less than one lakh hectare as required under provisions of the AIBP guidelines.         |
| 29.  |               | Sonua                       | Medium              | 1997-98                   | 82.65                    | 19.24           |  |
| 30.  |               | Surangi                     | Medium              | 1997-98                   | 41.17                    | 13.28           |  |
|  |               | <b>TOTAL</b>                |                     |                           | <b>309.58</b>            | <b>63.92</b>    |  |

**Annexure 2.2**  
**(Refer para 2.4)**

**Deficiencies in DPR**

| Sl. No.             | States           | Name of project               | Issues   |
|---------------------|------------------|-------------------------------|--|
| <b>MMI Projects</b> |                  |                               |  |
| 1.                  | Andhra Pradesh   | Tarakrama Thirthasagaram      | A diversion canal was included in the DPR (November 2003) after conducting departmental survey and investigation. During execution of work, the department noticed (March 2015) that there was an archaeological monument in the alignment of the canal necessitating the department to change the alignment indicating improper alignment of the canal in the DPR.  |
| 2.                  |                  | Gundlakamma Reservoir project | The envisaged IP creation from the project was 32,399 ha. Due to non-identification of land (August 2009) for creation of IP of 3,604 ha within the command area of the project, CE proposed to the State government (August 2009) to supply water to another project (Krishna Western Delta), where the IP was already created and localized. An Internal Bench Mark Committee appointed by the State government accepted (July 2010) the proposal and accordingly work was executed in Krishna Western Delta tail end area, which was not an identified one in the DPR involving cost of ₹ 7.63 crore. |
| 3.                  |                  | Velligallu                    | Delay of five years in approval of DPR.  |
| 4.                  |                  | Swarnamukhi                   | The EPC contract agency conducted a detailed investigation and identified IP of 4,648 ha. However, only 3,644 ha could be irrigated and there was no further ayacut available due to formation of fish ponds by Ayacutdars in the proposed ayacut and ayacuts converted into residential/commercial plots.   |
| 5.                  | Bihar            | Durgawati                     | DPR was devoid of construction plan (activity wise-technical break-up of the project) describing the phases of project and the expected time for completion.   |
| 6.                  |                  | Punpun                        |  |
| 7.                  | Goa              | Tillari                       | Overlapping of command area of 18.24 ha was also included in another Minor Irrigation scheme (Assonora Bandara).   |
| 8.                  | Himachal Pradesh | Sidhata                       | The project was revised (2011) due to enhancement of labour rates and change of geological strata in tunnel anticipated before floating the tender. However, the EE of division replied that no change in geological strata was effected in between the initial and final stage of project execution. The division also failed to provide the results of geological strata observed as part of survey and project investigations initially and/or during execution, etc. Thus, the increase in the project cost was unjustified in view of no change in geological strata of the project.                |
| 9.                  |                  | Shahnehar                     | The initial DPR of the project had inadequate provision for cross drainage works (Aqueducts) for distribution works. The construction of additional aqueducts in Distributary D1 and D2 necessitated additional expenditure of ₹ six crore for completion of the project.  |



| Sl. No. | States          | Name of project                  | Issues   |
|---------|-----------------|----------------------------------|--|
| 10.     | Jammu & Kashmir | Modernisation of Ranbir Canal    | Hydrological aspects such as catchment area, rainfall, and runoff flood, etc. were missing.  |
| 11.     |                 | Kandi Canal                      | Meteorological data such as soil survey, water logging, salinity, drainage was found missing.  |
| 12.     |                 | Modernisation of Main Ravi Canal | Hydrological as well as meteorological aspects were missing.   |
| 13.     | Karnataka       | Ghataprabha stage-III            | Command Area for the project (i.e. 1,77,822 ha) was assessed by including the atchkat area of 20,556 ha, which was covered under Sangam Branch Canal. Later, this area was reduced from the Ghataprabha Stage-III and as a result the ultimate irrigation potential area was reduced.  |
| 14.     |                 | Upper Tunga                      | <p>As per the original sanction, the main canal had to be constructed up to 270 km. However, it was decided by the Company to restrict the length of the main canal up to 258 km as the balance land was coming under urban development area. Approval of GoK and CWC had not been obtained for restricting the length of the main canal. The survey conducted for initial sanction for the work was defective as the canal passing through the city was apparently known. While reducing the length of the main canal to 258 km, the Company has not discussed the impact of this decision on the irrigation potential to be created.</p> <p>The alignment of Upper Tunga Project Main Canal from Km.212 to Km.217 initially proposed required controlled blasting. It was later modified (March 2012) at the time of sanction to the estimate to avoid canal running in deep cut and village limits of Somanakatte-Basavankatte. During execution of the work, the portion from Km.212 to Km.213.220 could not be tackled as the farmers demanded change of alignment in this reach. The contract was rescinded and a new tender notification was issued (22.02.2017) for the balance work. However, the land is yet to be acquired. Modifying the original alignment resulted in extra expenditure of ₹ 1.42 crore (as per the revised estimate).</p> |
| 15.     | Madhya Pradesh  | Sindh Phase-II                   | Assessment of command area with respect to data was not shown separately in DPR of any project.  |
| 16.     |                 | Bansagar Unit-II                 |  |
| 17.     | Maharashtra     | Arjuna                           | Due to higher water availability in the catchment area than the quantity assessed in original DPR, the height of earthen dam was increased from 61.20 m to 70.35 m to take the benefit of more water availability to create more storage involving cost implications of ₹ 29.99 crore in Arjuna project.   |
| 18.     |                 | Aruna                            | Height of earthen dam was increased from 70.41 m to 80.41 m to create more storage due to inadequate water availability in the catchment area, involving cost implication of ₹ 170.82 crore.   |
| 19.     |                 | Krishna Koyna LIS                | <p>Inadequate survey and investigation leading to change in design.</p> <p>Delay of four years in approval of DPR.</p>   |

| Sl. No. | States    | Name of project           | Issues   |
|---------|-----------|---------------------------|--|
| 20.     |           | Warna                     | Reduction in the length of Right Bank Canal up to 60 km from 117 km as per recommendations (June 2016) of the State Level Technical Advisory Committee (SLTAC), Nasik indicating improper assessment of the length of canal.   |
| 21.     |           | Hetwane                   | Inadequate survey and investigation leading to modifications of structural engineering.  |
| 22.     |           | Sangola Branch            | Inadequate survey and investigation leading to change in design.   |
| 23.     |           | Dhom Balakwadi            | Inadequate survey and investigation leading to change in design.   |
| 24.     |           | Lower Wardha              | Delay of 25 years in approval of DPR.  |
| 25.     |           | Wang                      | Delay of six years in approval of DPR.   |
| 26.     |           | Tillari                   | Deficiencies in surveys.   |
| 27.     | Telangana | J Chokha Rao (Priority-I) | Water at the intake point could be lifted for only 130 days instead of 170 days as planned, due to assessment of water availability at a distance of 13 km from the intake point.<br>Deletion of net CCA of 8,485.61 ha from the command area due to overlapping of the area with Indiramma Flood Flow Canal (IFFC) Phase-II ayacut indicating improper assessment of command area.  |
| 28.     |           | Palemvagu                 | A gated spillway was initially proposed in the river bed of Palvemvagu Project. The Technical Committee of Central Design Organisation, Hyderabad suggested (May 2005) ungated Spillway instead of gated spillway, owing to the fact that the project site was situated in a remote and disturbed area of Khammam District. Accordingly, ungated spillway on the right flank of Dam was constructed. Suggestion (November 1993) of the CWC at the time of vetting the proposal that the maximum flood discharge (MFD) needs to be reviewed again was not complied with by I&CAD Department. It was only after two breaches to the dam (August 2006 and August 2008) that the Chief Engineer, Hydrology re-examined the MFD and assessed it as 86,000 cusecs instead of 50,000 cusecs originally contemplated.<br>An Experts Committee constituted (December 2008) after the two breaches recommended to construct a gated spillway at a suitable location in the river bed to accommodate the increased MFD. State Government accorded (October 2010) administrative approval of ₹ 81.16 crore for construction of gated spillway in the gorge portion.<br>Accordingly, a gated spill was constructed (March 2017) with at a cost of ₹ 125.44 crore. Audit observed that the provision made in the original estimate for the gated spillway structure was only ₹ 15.54 crore. Further, audit also observed that the embankment of bund already executed with a cost of ₹ 10.10 crore <sup>1</sup> had to be dug up again for construction of spillway making the expenditure |

<sup>1</sup> (8,27,748.20 X 147 - tender percentage of 17.99 % = ₹ 10,10,05,725.78)

| Sl. No. | States        | Name of project   | Issues  |
|---------|---------------|---|---|
|         |               |   | wasteful. Moreover, due to washing out of the embankment already executed during the floods, the expenditure of ₹ 11.13 crore also became wasteful due to improper fixing MFD. The consequent construction of un-gated spillway structure for lesser MFD also resulted in avoidable extra expenditure of ₹ 109.90 crore (₹ 125.44 crore - ₹ 15.54 crore).   |
| 29.     | Telangana     | Sri Ram Sagar Stage Phase II                                    | <p>The water requirement for Stage I and Stage II was 163.69 Thousand Million Cubic (TMC) Feet. The estimated water availability for both SRSP-I and SRSP-II was 180.19 TMC from three reservoirs viz. SRSP-146.35 TMC, Kadam-23.41 TMC, Lower Manair Dam (LMD)-10.43 TMC. However, LMD reservoir did not have own catchment area since 1990 and could not provide water of 10.43 TMC to the project as envisaged. Besides, the Department abandoned (2002) the area to be served by Kadam reservoir due to problems in acquisition of forest land. As such, 23.41 TMC of water proposed from Kadam reservoir, was also not available for this project. This indicates lapses in assessment of water availability of the project thereby leading to gaps in IP.</p> <p>CCA of 17,018 ha was reduced as the area was also covered another project (Nagarjuna Sagar Left Canal Project, Musi and other distributaries).</p> <p>Construction/Re-construction of two balancing reservoirs was not indicated in the DPRs. As result, the issue of Project Displaced Families on account of re-construction of Mylarm balancing reservoir was not included in the Rehabilitation and Resettlement (R&amp;R) clearance and Environmental clearances.</p> |
| 30.     |               | Sri Komaram Bheem   | The project was included in 2006-07 as medium irrigation project with 9,915 ha irrigation potential under left main canal. The Government permitted (September 2005) creation of additional IP of 8,688.45 ha raising water requirement from 5.04 TMC to 8.68 TMC. Thus, the project which was started with an IP of 9,915 ha as a medium irrigation project was now revised to 18,618 ha which comes under Major project Category (initially it was medium project category).  |
| 31.     |               | Indiramma Flood Flow Canal                                      | CCA of 8,094 ha was reduced due to deletion of Combined Reservoir due to objection from villagers.  |
| 32.     |               | Rajiv bheema LIS (Major)  | Overlapping of ayacut in package 27 to an extent of 4,217 ha, which was already covered under Package 28 of the Mahatma Gandhi Kalwakurthy Lift Irrigation Scheme.  |
| 33.     | Uttar Pradesh | Modernisation of Lahchura Dam and Madhya Ganga Phase-II Project | Huge variations in quantities of items of works was found which indicated that detailed surveys and investigations was not carried out before preparing DPRs of these projects. Increase in item of works was upto 62 times whereas decrease in item of works was upto 99 per cent.   |
| 34.     |               | Madhya Ganga Phase-II   | Concrete lining in 66.20 km length was sanctioned in July 2007 for ₹ 117.87 crore. The lining work in canal's inner slopes and bed was executed upto 31.55 km only and after this point bed lining was stopped in the year 2016 for the   |

| Sl. No.           | States            | Name of project   | Issues   |
|-------------------|-------------------|---|--|
|                   |                   |   | reason that lining in canal's bed would restrict ground water recharge. Thus, the matter of whether lining in canal's bed was required, was not examined during preparation of DPR. If bed lining was not required to recharge ground water, the expenditure incurred on bed lining could have been avoided. This indicated lack of proper study before preparing DPR and execution of works.  |
| 35.               |                   | Bansagar Canal  | Water was to be fed from Bansagar Reservoir to Adwa Barrage through 71.494 km long feeder channel of 46.46 cumec capacity. The feeder channel was to pass through 35.90 km long existing Aad Nala. As the capacity of the feeder channel was 46.46 cumec, the hydrology of Aad Nala should have been assessed to know whether the feeder channel would be able to pass through the Nala in its full capacity. Audit noticed that the capacity of the Aad Nala was not assessed in DPR. Therefore, there was no assurance that Aad Nala had adequate carrying capacity to allow passage to the water of Bansagar Feeder Channel when the canal would run in its full capacity |
| <b>MI Schemes</b> |                   |   |  |
| 1.                | Arunachal Pradesh | Cluster of MI schemes under Bana Block  | Project proposal with estimated cost of ₹ 98.00 lakh contained only survey and estimates of sub MIPs. Important information such as BC ratio, salient features of the project, project phasing/ schedule, Index maps, etc. were not included in the project proposal.  |
| 2.                |                   | Cluster of MI schemes at Kukurjan, Old Ganga MI scheme, etc. under Itanagar Sub-Division  | It was approved for the cost of ₹ 1.43 crore with physical target of 79 ha. Audit scrutiny of the DPR revealed that the project consists of seven sub MI schemes whose total targeted area as per the survey reports was 270 ha. Thus, the information given in the DPR regarding the coverage of ha was not in line with the survey.  |
| 3.                | Madhya Pradesh    | Kachnari Diversion scheme   | The canal length of 3,420 m could not be constructed due to non-availability of actual command area (CCA of 220 ha) on site during execution. This showed that the availability of command area had not been correctly assessed in the DPR. Non-completion of canal rendered the expenditure amounting to ₹ 3.21 crore on the project wasteful.  |
| 4.                | Maharashtra       | Chandrabhaga barrage  | The work of construction of the barrage was completed in June 2015 at a cost of ₹ 188.96 crore but the canal could not be constructed due to location of command area at a higher level than the submergence area, indicating improper survey and planning and resulted in blocking of huge expenditure of ₹ 188.96 crore. Besides, the water could not be stored in the barrage due to non-rehabilitation of two villages coming under submergence.   |
| 5.                | Nagaland          | Alachila MI scheme (Mokokchung), Balijan MI scheme (Dimapur), Balughoki MI scheme (Dimapur), Cluster-II MI scheme (Dimapur), Khekiho RWH (Dimapur), | DPRs of 12 sampled MI schemes did not have meteorological data, soil surveys, hydrological aspects like monsoon rainfall, nature of catchment area, existing water availability of catchment area, ground water potential, etc. Although the independent monitoring team (NABCONS Pvt. Ltd.) pointed out these deficiencies in December 2016, STAC approved the DPRs without the   |

| Sl. No. | States  | Name of project  | Issues  |
|---------|---------|--|---|
|         |         | Upper Amaluma MI scheme (Dimapur), Ralan MI scheme (Wokha), Krazhol MI scheme (Kohima), Kiyeaki MI scheme (Kohima), Chenyak MI scheme (Tuensang), Choklotso (Tuensang) and Shopong MI scheme (Tuensang)                      | aforementioned vital data.  |
| 6.      | Tripura | Pratyekroycherra diversion scheme, Duraicherra diversion scheme, Chandukcherra diversion scheme, Purba Nadiapur LI scheme, Taltala LI scheme, Rabia drafida para LI scheme, Shankhola LI scheme and Kalashati para LI scheme | In case of eight out of the nine selected MI schemes, DPRs were not prepared. Instead of DPRs, the State Government submitted project proposals indicating the targeted CCA and estimated cost to the GoI for funding. The Department stated that preliminary survey and investigations were carried out, but these reports were not made available to audit. |

**Annexure 3.1**  
**(Refer para 3.1)**

**Salient features of new funding arrangement under Long Term Irrigation Fund (LTIF)**

To cater to the huge fund requirement and ensure completion of large number of major and medium irrigation projects, GoI announced (2016-17) for creation of dedicated Long Term Irrigation Fund (LTIF) in NABARD. The salient features are-

- Assessment of total requirement of ₹ 77,595 crore (as on 1 April 2012) for completion of 99 identified priority projects.
- Creation of dedicated LTIF in NABARD with an initial corpus of ₹ 20,000 crore for funding of Central and State Share for the identified projects under PMKSY.
- Prescribed sources for initial corpus were:
  - Budgetary Allocation from GoI, including additional share capital contribution by the Ministry of Finance (MoF), GoI to NABARD specifically on account of LTIF;
  - Direct market borrowings by NABARD; and
  - Bonds raised by NABARD, fully serviced for entire bond tenure by the MoF, GoI by making suitable provision in the budget for the respective years.
- The MoF, GoI and MoWR, RD&GR to decide about raising of cost free funds by NABARD for 2017-18 to 2019-20 at the time of budget.
- The Extra Budgetary Resources (EBR) through GoI service Bonds in required proportion blended with regular market borrowing to ensure lending rate of six *per cent* per annum.
- Approval of MoF (October 2016) for raising of EBR of ₹ 6,300 crore as GoI fully serviced bonds during 2016-17 for financing of prioritized projects under PMKSY.
- National Water Development Agency (NWDA), a society registered under Societies Registration Act, 1860 and functioning under MoWR, RD&GR to borrow resources under LTIF for Central share.
- The Ministry released ₹ 3,246 crore comprising ₹ 825 crore as CA and ₹ 2,413 crore through NABARD in 2016-17. An amount of ₹ 3,334 crore was released by NABARD to the State Governments.
- For lending of Central portion, Memorandum of Agreement (MoA) was signed in September 2016 amongst NWDA, MoWR, RD&GR and NABARD. In respect of loan for State share, a separate MoA to be signed by the respective State Government, MoWR, RD&GR, RBI/Principal Banker, NABARD and NWDA (as applicable).
- Repayment of principal loan amount by NWDA in quarterly instalments in 15 years and the quarterly payment of interest. During the moratorium period also, NWDA to service the interest. The interest rate to be six *per cent* for 2016-17 (inclusive 0.60 *per cent* margin of NABARD).
- LTIF Interest Fluctuation Reserve Fund (LIFRF) within NABARD to adjust the difference between the actual weighted average cost (including zero cost funds from GoI) of mobilization of funds plus a mark-up of 0.60 *per cent* and actual lending rate. An Annual Audited Statement of LIFRF to be provided to GoI by NABARD and balance in LIFRF to be passed on to GoI, after all the repayments of loan and interest under LTIF are received by NABARD.
- Social monitoring by making available basic details of projects in public domain and generate awareness among the ultimate beneficiaries.

**Annexure 3.2**  
**(Refer para 3.2.1)**

**Short release of Central Assistance**

(Amount in ₹ crore)

| Sl.No.              | Name of State  | No. of projects | Budget provision | CA to be released | CA released | Short release of CA | Remarks   |
|---------------------|----------------|-----------------|------------------|-------------------|-------------|---------------------|---|
| <b>MMI projects</b> |                |                 |                  |                   |             |                     |   |
| 1.                  | Andhra Pradesh | 3               | 677.38           | 232.51            | 143.55      | 88.96               | Gol released first instalment of central assistance during 2006 and 2007 to the projects. The State Government submitted the statement of expenditure belatedly resulting in non-release of the second instalment of central share.   |
| 2.                  | Assam          | 4               | 891.00           | 802.00            | 389.00      | 413.00              | Compared to the budgetary allocation, releases of funds were not adequate.  |
| 3.                  | Bihar          | 3               | 294.83           | 193.45            | 143.00      | 50.45               | -   |
| 4.                  | Chhattisgarh   | 4               | -                | 349.14            | 144.00      | 205.14              | The department did not make any efforts to get the outstanding CA.  |
| 5.                  | Gujarat        | 3               |                  | 7,052.78          | 4,655.00    | 2,397.78            | -   |
| 6.                  | Jharkhand      | 1               | -                | 4,624.00          | 1,279.00    | 3,345.00            | The State Government submitted (March 2013 and August 2015) utilisation of grants of ₹ 335.54 crore released during 2011-12 and ₹ 515.72 crore during 2012-13 to the Ministry with delays of 310 days and 832 days respectively which might have led to short release of CA during the said period.           |
| 7.                  | Karnataka      | 2               | -                | 1,187.00          | 78.00       | 1,109.00            | The proposal for CA for NLBC project amounting to ₹ 270 crore for the year 2014-15 was approved by CWC, but only ₹ 70 crore was released. Subsequently, in 2015-16, CA proposal amounting to ₹ 603.60 crore was rejected by the CWC for want of audited statement of expenditure and the discrepancies in the |



| Sl.No. | Name of State | No. of projects | Budget provision | CA to be released | CA released      | Short release of CA | Remarks   |
|--------|---------------|-----------------|------------------|-------------------|------------------|---------------------|---|
|        |               |                 |                  |                   |                  |                     | expenditure statement (2014-15) submitted to CWC regarding physical and financial progress amounting to ₹ 310 crore. The Dudhganga project achieved a financial progress of ₹ 51.13 crore as on 31.03.2012, the Company has been sending proposals for CA for the cost incurred even after 2011-12. However, no assurance from the CWC/Gol for continuation of the same has so far been received. |
| 8.     | Kerala        | 1               | -                | 13.49             | 2.70             | 10.79               | Since the department had not utilised even the first instalment (including the matching share of State) fully, GOI had not released the balance amount of CA.   |
| 9.     | Odisha        | 7               | 5,681.00         | 2,298.00          | 1,744.00         | 554.00              | The provisions made in the annual budget during 2009-17 were adequate in comparison to the expenditure.   |
| 10.    | Rajasthan     | 1               | 349.00           | 87.00             | 17.00            | 70.00               | -   |
| 11.    | Telangana     | 6               | -                | 4,337.00          | 3,702.00         | 635.00              | Delay in land acquisition, inter departmental issues and unforeseeable ground conditions for underground excavations.   |
| 12.    | Tripura       | 1               | -                | 4.76              | 0                | 4.76                | GOI did not release the central share due to non-submission of UCs for the already released central share, failure of the Department to complete the projects in time and non-execution of Command Area Development works.  |
| 13.    | Uttar Pradesh | 6               | 5,267.00         | 1,720.00          | 938.00           | 782.00              | Short release by GOI was due to the reasons like non-compliance of GOI instructions, non-furnishing of utilisation certificates, etc.   |
|        |               |                 | <b>Total</b>     | <b>22,901.13</b>  | <b>13,235.25</b> | <b>9,665.88</b>     |   |

| Sl.No.     | Name of State   | No. of projects | Budget provision | CA to be released | CA released     | Short release of CA | Remarks |
|------------|-----------------|-----------------|------------------|-------------------|-----------------|---------------------|---------|
| MI Schemes |                 |                 |                  |                   |                 |                     |         |
| 1.         | Assam           | 30 MI schemes   | 246.96           | 222.26            | 118.93          | 103.33              | -       |
| 2.         | Chhattisgarh    | 421 MI schemes  | -                | 1,427.62          | 882.92          | 544.70              | -       |
| 3.         | Jammu & Kashmir | Five MI schemes | 74.86            | 67.38             | 26.68           | 40.70               | -       |
| 4.         | Rajasthan       | Bhimni          | 44.00            | 15.00             | 8.00            | 7.00                | -       |
|            | <b>Total</b>    | 457 MI schemes  |                  | <b>1,732.26</b>   | <b>1,036.53</b> | <b>695.73</b>       |         |

**Annexure 3.3 A**  
**(Refer para 3.3)**

**Non-release/short release of State's share in MMI projects**

(Amount in ₹ crore)

| Sl no.                      | State           | Name of project                                 | Year    | State Matching share | Released | Short release |
|-----------------------------|-----------------|---|---------|----------------------|----------|---------------|
| 1.                          | Bihar           | Durgawati                                       | 2015-16 | 60.23                | 13.13    | 47.10         |
| 2.                          |                 | Punpun  | 2009-10 | 33.75                | 12.15    | 21.60         |
| 3.                          |                 | Restoration of Kosi Barrage                     | 2009-10 | 7.40                 | 5.86     | 1.54          |
| 4.                          | Gujarat         | Ahji IV   | 2008-09 | 6.75                 | 3.45     | 3.30          |
| 5.                          |                 | Bhadar II                                       | 2008-09 | 8.91                 | 3.95     | 4.96          |
|                             |                 |   | 2009-10 | 14.19                | 7.03     | 7.16          |
| 6.                          | Jammu & Kashmir | Tral LIS  | 2008-09 | 0.54                 | 0.15     | 0.39          |
|                             |                 |   | 2011-12 | 0.80                 | 0        | 0.80          |
|                             |                 |   | 2014-15 | 1.12                 | 0.05     | 1.07          |
|                             |                 |   | 2016-17 | 1.18                 | 0.05     | 1.13          |
| 7.                          |                 | Prakachik khawas                                | 2009-10 | 0.51                 | 0.30     | 0.21          |
|                             |                 |   | 2011-12 | 0.90                 | 0.40     | 0.50          |
|                             |                 |   | 2013-14 | 0.72                 | 0.24     | 0.48          |
| 8.                          |                 | Modernisation of Ahji Canal                     | 2012-13 | 0.56                 | 0        | 0.56          |
| Modernisation of Dadi Canal |                 |   | 2008-13 | 1.00                 | 0.48     | 0.52          |
| 10.                         | Jharkhand       | Subarnarekha Multipurpose Project               | 2011-17 | 1,990.06             | 1,750.40 | 239.66        |
| 11.                         | Uttar Pradesh   | Bansagar  | 2008-17 | 1,710.37             | 1,145.51 | 564.86        |
| 12.                         |                 | Restoration of ShardaSahayak Canal              | 2009-14 | 427.09               | 229.12   | 197.97        |
| 13.                         |                 | Madhya Ganga Phase II                           | 2008-16 | 1,156.95             | 788.35   | 368.60        |
| 14.                         |                 | Improving Irrigation Intensity of Hardoi Branch | 2008-13 | 86.90                | 69.76    | 17.14         |
| 15.                         |                 | Modernisation of Lachura Dam                    | 2008-13 | 197.02               | 162.23   | 34.79         |
| Total                       |                 |   |         | 5,706.95             | 4,192.61 | 1,514.34      |

**Annexure 3.3 B**  
**(Refer para 3.3)**

**Delay in release of CA by State governments**

**(Amount in ₹ crore)**

| Sl.No               | State             | Amount released<br>(₹ in crore) | Delay<br>(in days) |
|---------------------|-------------------|---------------------------------|--------------------|
| <b>MMI Projects</b> |                   |                                 |                    |
| 1.                  | Assam             | 338.95                          | 68 to 530          |
| 2.                  | Jammu & Kashmir   | 458.23                          | Three to 206       |
| 3.                  | Maharashtra       | 504.69                          | Three to 63        |
| 4.                  | West Bengal       | 1.42                            | 33 to 114 days     |
| <b>MI Schemes</b>   |                   |                                 |                    |
| 5.                  | Arunachal Pradesh | 232.40                          | 46 to 439          |
| 6.                  | Uttarakhand       | 584.06                          | Seven to 184 days  |
| 7.                  | Meghalaya         | 194.74                          | 18 to 300 days     |
|                     | <b>TOTAL</b>      | <b>2,314.49</b>                 |                    |

**Annexure 3.4**  
**(Refer para 3.4)**

**Non submission of Utilisation Certificates**

(Amount in ₹ crore)

| Sl.No.              | State            | Name of Project                 | CA released     | UCs furnished   | UCs to be furnished |
|---------------------|------------------|---------------------------------|-----------------|-----------------|---------------------|
| <b>MMI Projects</b> |                  |                                 |                 |                 |                     |
| 1.                  | Andhra Pradesh   | Tarakaram Tirtha Sagaram        | 33.00           | 6.19            | 26.81               |
| 2.                  | Assam            | Dhansiri                        | 383.97          | 179.22          | 204.75              |
| 3.                  |                  | Champamati                      |                 |                 |                     |
| 4.                  |                  | Borolia                         |                 |                 |                     |
| 5.                  |                  | Modernisation of Jamuna Canal   |                 |                 |                     |
| 6.                  | Goa              | Tillari                         | 59.23           | 24.12           | 35.11               |
| 7.                  | Himachal Pradesh | Sidhata                         | 163.45          | 96.50           | 66.95               |
| 8.                  |                  | Balh valley                     |                 |                 |                     |
| 9.                  | Jammu & Kashmir  | Modernisation of Ahji Canal     | 12.09           | 6.48            | 5.61                |
| 10.                 | Jharkhand        | Subarnarekha Project            | 1,278.63        | 1,132.88        | 145.75              |
| 11.                 | Karnataka        | Ghataprabha                     | 120.33          | 72.64           | 47.69               |
| 12.                 |                  | Sri Rameshwar                   | 62.74           | 10.82           | 51.92               |
| 13.                 |                  | Bheemasamudra Tank              | 3.48            | 0               | 3.48                |
| 14.                 |                  | Upper Krishna stage-I Phase III | 422.13          | 134.50          | 287.63              |
| 15.                 |                  | Guddada Mallapura               | 79.36           | 57.24           | 22.12               |
| 16.                 |                  | Varahi                          | 77.59           | 58.08           | 19.51               |
| 17.                 | Kerala           | Karapuzha                       | 8.57            | 0               | 8.57                |
| 18.                 |                  | Chitturapuzha                   |                 |                 |                     |
| 19.                 | Madhya Pradesh   | Mahuar                          | 8.55            | 0               | 8.55                |
| 20.                 |                  | Singhpur                        | 30.54           | 14.79           | 15.75               |
| 21.                 |                  | Sagad                           | 26.55           | 11.84           | 14.71               |
| 22.                 | Odisha           | Lower Indra Irrigation          | 645             | 626.86          | 18.14               |
| 23.                 | Telangana        | J.Chokka Rao                    | 1,084.56        | 613.96          | 470.60              |
| 24.                 | West Bengal      | Tatko                           | 3.73            | 1.67            | 2.06                |
| <b>Total</b>        |                  |                                 | <b>4,503.50</b> | <b>3,047.79</b> | <b>1,455.71</b>     |
| <b>MI Schemes</b>   |                  |                                 |                 |                 |                     |
| 1.                  | Chhattisgarh     | 421 MI schemes                  | 688.37          | 0               | 688.37              |
| 2.                  | Jharkhand        | 537 MI schemes                  | 538.64          | 526.54          | 12.10               |
| 3.                  | Maharashtra      | 2 MI schemes                    | 19.25           | 0               | 19.25               |
| 4.                  | Odisha           | 81 MI schemes                   | 150.55          | 138.58          | 11.97               |
| <b>Total</b>        |                  | <b>1,041 MI schemes</b>         | <b>1,396.81</b> | <b>665.12</b>   | <b>731.69</b>       |
| <b>Grand Total</b>  |                  |                                 | <b>5,900.31</b> | <b>3,712.91</b> | <b>2,187.40</b>     |

**Annexure 3.5**  
**(Refer para 3.7)**

**Unspent CA in MMI projects**

(Amount in ₹ crore)

| Sl. No. | State           | Name of the project          | Year of release | Amount of CA | Unspent CA | Period of unspent CA | Remarks  |
|---------|-----------------|------------------------------|-----------------|--------------|------------|----------------------|--|
| 1.      | Assam           | Champamati                   | 2015-16         | 58.07        | 25.23      | As on 31.03.2017     | No CA released in 2016-17  |
| 2.      | Bihar           | Durgawati                    | 2015-16         | 38.75        | 30.30      | -                    | No CA released in 2016-17  |
| 3.      |                 | Punpun                       | 2009-10         | 11.25        | 8.10       | -                    | Only ₹ 2.76 crore was released in 2015-16                                  |
| 4.      |                 | Restoration of Kosi          | 2009-10         | 66.66        | 13.94      | -                    | No CA was released from 2009-10 onwards                                    |
| 5.      | Goa             | Tillari                      | 2012-13         | 8.00         | 3.95       | Since 01.10.2014     | No CA was released from 2012-13 onwards                                    |
| 6.      | Jammu & Kashmir | Tral LIS                     | 2015-16         | 19.28        | 10.16      | As on March 2017     | -  |
| 7.      |                 | Modernisation of Kandi Canal | 2007-08         | 10.39        |            | Since March 2010     | No CA was released from 2008-09 onwards                                    |
|         |                 |                              | 2008-09         | 5.81         | 14.17      |                      |  |
| 8.      | Jharkhand       | Subarnarekha                 | 2016-17         | 145.75       | 145.75     | As on 31.03.2017     | -  |
| 9.      | Karnataka       | Bheema samudra Tank          | 2009-10         | 3.48         | 2.70       | As on 31.03.2010     | No CA was released from 2008-09 onwards                                    |
|         |                 |                              | 2010-11         | -            | 2.70       | As on 31.03.2011     | -  |
|         |                 |                              | 2011-12         | -            | 0.85       | As on 31.03.2012     | -  |
|         |                 |                              | 2012-13         | -            | 0.40       | As on 31.03.2013     | -  |
| 10.     |                 | Guddada Mallapura            | 2009-10         | 32.40        | 25.73      | As on 31.03.2010     | -  |
|         |                 |                              | 2010-11         | 24.84        | 18.98      | As on 31.03.2011     |  |
|         |                 |                              | 2013-14         | 22.11        | 8.90       | As on 31.03.2014     |  |
|         |                 |                              | 2014-15         | -            | 2.66       | As on 31.03.2015     |  |
| 11.     |                 | Ghataprabha                  | 2008-09         | 52.04        | 7.48       | As on 31.03.2009     | During 2009-10, ₹69.46 crore incurred against CA received of ₹56.16 crore. |
| 12.     |                 | Upper Krishna Stage-I        | 2009-10         | 152.98       | 95.47      | As on 31.03.2010     | -  |
|         |                 |                              | 2011-12         | 134.50       | 97.77      | As on 31.03.2012     |  |
| 13.     | Telangana       | J.Chokha Rao                 | 2006-07         | 298.13       | 130.72     | As on 31.03.2010     | -  |
|         |                 |                              | 2007-08         | 405.00       | 293.13     | As on 31.03.2008     | -  |
|         |                 |                              | 2008-09         | -            | 209.29     | As on 31.03.2009     | No CA released   |

| Sl. No. | State       | Name of the project | Year of release | Amount of CA | Unspent CA | Period of unspent CA | Remarks  |
|---------|-------------|---------------------|-----------------|--------------|------------|----------------------|--|
|         |             |                     |                 |              |            |                      | in 2008-09   |
|         |             |                     | 2009-10         | 180.00       | 138.16     | As on 31.03.2010     | ₹180 crore released in 2009-10 though there is unspent balance of ₹ 209.29 crore                       |
|         |             |                     | 2010-11         | -            | 176.48     | As on 31.03.2011     | -  |
|         |             |                     | 2011-12         | 256.13       | 29.70      | As on 31.03.2012     | During 2012-13, CA was not released  |
| 14.     |             | Rajiv Bheema LIS    | 2009-10         | 662.66       | 500.34     | As on 31.03.2010     | CA was not released after 2009-10 till adjustment of unspent CA ₹ 54.48 crore was released in 2016-17. |
|         |             |                     | 2010-11         | -            | 422.87     | As on 31.03.2011     | -  |
|         |             |                     | 2011-12         | -            | 300.94     | As on 31.03.2012     | -  |
|         |             |                     | 2012-13         | -            | 157.07     | As on 31.03.2013     | -  |
|         |             |                     | 2013-14         | -            | 53.30      | As on 31.03.2014     | -  |
|         |             |                     | 2014-15         | -            | 22.06      | As on 31.03.2015     | -  |
| 15.     |             | SRSP-II             | 2009-10         | 65.19        | 50.05      | As on 31.03.2010     | -  |
|         |             |                     | 2010-11         | -            | 42.37      | As on 31.03.2011     | -  |
|         |             |                     | 2011-12         | -            | 36.26      | As on 31.03.2012     | -  |
|         |             |                     | 2012-13         | -            | 21.71      | As on 31.03.2013     | -  |
|         |             |                     | 2013-14         | -            | 9.06       | As on 31.03.2014     | -  |
|         |             |                     | 2014-15         | -            | 6.19       | As on 31.03.2015     | -  |
| 16.     | Tripura     | Manu                | 2010-11         | 26.09        | 25.34      | As on 31.03.2011     | -  |
|         |             |                     | 2011-12         | -            | 19.94      | As on 31.03.2012     | -  |
|         |             |                     | 2012-13         | -            | 16.72      | As on 31.03.2013     | -  |
|         |             |                     | 2013-14         | -            | 12.76      | As on 31.03.2014     | -  |
|         |             |                     | 2014-15         | -            | 7.64       | As on 31.03.2015     | -  |
|         |             |                     | 2015-16         | -            | 3.12       | As on 31.03.2016     | -  |
| 17.     | West Bengal | Tatko               | 2011-12         | 3.72         | 2.76       | As on 31.03.2012     | -  |
|         |             |                     | 2012-13         | -            | 2.05       | As on 31.03.2013     | -  |



**Annexure 3.6**  
**(Refer para 3.9)**

**Rush of Expenditure in MMI projects**

(Amount in ₹ crore)

| Sl.no. | State         | Name of the project | Year    | Budget estimate | Expenditure incurred in March | Percentage of expenditure incurred in March |       |
|--------|---------------|---------------------|---------|-----------------|-------------------------------|---|-------|
| 1.     | Odisha        | Lower Suktel        | 2008-09 | 78.06           | 65.07                         | 83.36                                       |       |
|        |               |                     | 2009-10 | 22.59           | 14.79                         | 65.47                                       |       |
|        |               |                     | 2010-11 | 28.10           | 9.61                          | 34.20                                       |       |
|        |               |                     | 2011-12 | 20.40           | 3.78                          | 18.53                                       |       |
|        |               |                     | 2014-15 | 34.17           | 10.00                         | 29.27                                       |       |
|        |               |                     | 2016-17 | 243.94          | 99.13                         | 40.64                                       |       |
| 2.     |               | Kanupur             | 2008-09 | 125.20          | 59.75                         | 47.72                                       |       |
|        |               |                     | 2009-10 | 125.05          | 75.43                         | 60.32                                       |       |
|        |               |                     | 2010-11 | 165.05          | 36.59                         | 22.17                                       |       |
|        |               |                     | 2011-12 | 150.10          | 27.46                         | 18.29                                       |       |
|        |               |                     | 2012-13 | 150.00          | 24.00                         | 16.00                                       |       |
|        |               |                     | 2014-15 | 141.00          | 30.45                         | 21.69                                       |       |
| 3.     |               | Rukura              | 2016-17 | 165.00          | 26.76                         | 16.22                                       |       |
|        |               |                     | 2009-10 | 9.48            | 8.32                          | 87.76                                       |       |
|        |               |                     |         | 2010-11         | 19.53                         | 10.71                                       | 54.84 |
|        |               |                     |         | 2011-12         | 9.00                          | 1.56  | 17.33 |
|        |               |                     |         | 2013-14         | 28.64                         | 8.41  | 29.36 |
|        |               |                     |         | 2014-15         | 56.51                         | 21.43                                       | 37.92 |
| 4.     |               | Lower Indra         | 2011-12 | 144.00          | 34.02                         | 23.62                                       |       |
| 5.     | Rajasthan     | Narmada Canal       | 2009-10 | 144.27          | 29.00                         | 20.10                                       |       |
|        |               |                     | 2011-12 | 125.54          | 46.13                         | 36.74                                       |       |
|        |               |                     | 2012-13 | 175.96          | 48.31                         | 27.45                                       |       |
|        |               |                     | 2013-14 | 154.06          | 75.25                         | 48.84                                       |       |
|        |               |                     | 2014-15 | 158.99          | 42.61                         | 26.80                                       |       |
|        |               |                     | 2015-16 | 92.70           | 25.66                         | 27.68                                       |       |
|        |               |                     | 2016-17 | 125.43          | 39.82                         | 31.75                                       |       |
| 6.     | Uttar Pradesh | Bansagar            | 2008-09 | 368.36          | 75.49                         | 20.49                                       |       |
|        |               |                     | 2009-10 | 240.06          | 105.96                        | 44.14                                       |       |
|        |               |                     | 2013-14 | 137.42          | 74.50                         | 54.21                                       |       |
|        |               |                     | 2014-15 | 165.19          | 37.90                         | 22.94                                       |       |
|        |               |                     | 2015-16 | 110.00          | 33.95                         | 30.87                                       |       |
|        |               |                     | 2016-17 | 197.00          | 61.03                         | 30.98                                       |       |
| Total  |               |                     |         | 3,910.80        | 1,262.88                      |   |       |

**Annexure 3.7**  
**(Refer para 3.10)**

**Non conversion of Grant into Loan in MMI projects**

(Amount in ₹ crore)

| SL. No.      | State            | Number of projects | Total CLA/CA released upto March 2017 |
|--------------|------------------|--------------------|---------------------------------------|
| 1.           | Andhra Pradesh   | 4                  | 192.43                                |
| 2.           | Assam            | 4                  | 472.98                                |
| 3.           | Bihar            | 2                  | 150.49                                |
| 4.           | Chattisgarh      | 4                  | 179.22                                |
| 5.           | Goa              | 1                  | 255.42                                |
| 6.           | Gujarat          | 3                  | 9,777.38                              |
| 7.           | Himachal Pradesh | 3                  | 321.66                                |
| 8.           | Jammu & Kashmir  | 9                  | 403.44                                |
| 9.           | Jharkhand        | 5                  | 1,350.79                              |
| 10.          | Karnataka        | 9                  | 1,677.69                              |
| 11.          | Kerala           | 2                  | 8.57                                  |
| 12.          | Madhya Pradesh   | 9                  | 2,152.41                              |
| 13.          | Maharashtra      | 24                 | 4,518.61                              |
| 14.          | Odisha           | 7                  | 2,472.52                              |
| 15.          | Rajasthan        | 3                  | 1,930.39                              |
| 16.          | Telangana        | 6                  | 3,701.80                              |
| 17.          | Tripura          | 2                  | 85.64                                 |
| 18.          | Uttar Pradesh    | 6                  | 1,449.89                              |
| 19.          | West Bengal      | 2                  | 19.26                                 |
| <b>TOTAL</b> |                  | <b>105</b>         | <b>31,120.59</b>                      |

**Annexure 4.1**  
**(Refer para 4.2.2)**

**Time over run in MMI projects**

| Sl. no. | State            | Name of the project                              | Schedule date of completion | Actual date of completion/present status | Delay in completion (Years) |
|---------|------------------|--|-----------------------------|--|-----------------------------|
| 1.      | Andhra Pradesh   | Tadipudi LIS                                     | October 2006                | Ongoing                                  | 11                          |
| 2.      |                  | Tarakarama Thirtha Sagaram                       | May 2008                    | Ongoing                                  | 9                           |
| 3.      |                  | KOR Gundlakamma Reservoir Project                | May 2007                    | Ongoing                                  | 10                          |
| 4.      |                  | Swarnamukhi                                      | March 2007                  | May 2008                                 | 1                           |
| 5.      | Assam            | Dhansiri   | March 1999                  | Ongoing                                  | 18                          |
| 6.      |                  | Champamati                                       | March 1999                  | Ongoing                                  | 18                          |
| 7.      |                  | Modification of Jamuna Irrigation                | March 2005                  | March 2009                               | 4                           |
| 8.      |                  | Borolia  | March 1999                  | Ongoing                                  | 18                          |
| 9.      | Bihar            | Durgawati  | March 1999                  | Ongoing                                  | 18                          |
| 10.     |                  | Punpun   | March 2010                  | Ongoing                                  | 7                           |
| 11.     | Chhattisgarh     | Maniyari   | March 2013                  | March 2017                               | 4                           |
| 12.     |                  | Kelo Project                                     | March 2012                  | Ongoing                                  | 5                           |
| 13.     |                  | Kosarteda Project                                | March 2005                  | June 2013                                | 8                           |
| 14.     |                  | Mahanadi   | March 2010                  | 2010-11                                  | 1                           |
| 15.     | Goa              | Tillari irrigation Project                       | March 2003                  | Ongoing                                  | 14                          |
| 16.     | Gujarat          | Sardar Sarovar                                   | March 2001                  | Ongoing                                  | 16                          |
| 17.     |                  | Aji-IV   | March 2003                  | 2009-10                                  | 7                           |
| 18.     |                  | Bhadar-II  | March 2005                  | 2010-11                                  | 6                           |
| 19.     | Himachal Pradesh | Shahnehar  | March 2000                  | Ongoing                                  | 17                          |
| 20.     |                  | Sidhata  | March 2003                  | Ongoing                                  | 14                          |
| 21.     |                  | Balh Valley Left Bank                            | March 2010                  | Ongoing                                  | 7                           |
| 22.     | Jammu & Kashmir  | Tral LIS   | March 2004                  | Ongoing                                  | 13                          |
| 23.     |                  | Prakachik Khowas Canal                           | March 2011                  | Ongoing                                  | 6                           |
| 24.     |                  | Rajpora LIS                                      | March 2004                  | Ongoing                                  | 13                          |
| 25.     |                  | Modernization of Kandi canal                     | March 2012                  | Ongoing                                  | 5                           |
| 26.     |                  | Modernization of Dadi canal                      | March 2011                  | Ongoing                                  | 6                           |
| 27.     |                  | Modernization of Ranbir canal                    | March 2003                  | Ongoing                                  | 14                          |
| 28.     |                  | Modernization of new Pratap                      | March 2003                  | Ongoing                                  | 12                          |
| 29.     |                  | Restoration and modernization of Main Ravi Canal | March 2015                  | Ongoing                                  | 2                           |
| 30.     |                  | Modernization of Ahji Canal (ERM)                | March 2010                  | Ongoing                                  | 7                           |
| 31.     |                  | Subernrekha Multipurpose Project (SMP)           | March 2015                  | Ongoing                                  | 2                           |
| 32.     | Karnataka        | Gumani Barrage Scheme                            | March 2000                  | Ongoing                                  | 17                          |
| 33.     |                  | Sonua Reservoir Scheme                           | March 2000                  | Ongoing                                  | 17                          |
| 34.     |                  | Surangi Reservoir Scheme                         | March 2000                  | Ongoing                                  | 17                          |
| 35.     |                  | Panchkhero Reservoir Scheme                      | March 2009                  | Ongoing                                  | 8                           |
| 36.     |                  | Upper Tunga Irrigation Project                   | March 2015                  | Ongoing                                  | 2                           |
| 37.     |                  | Sri Rameshwar Irrigation                         | March 2015                  | March 2017                               | 2                           |
| 38.     |                  | Restoration-Bheemasamudra Tank                   | March 2012                  | Ongoing                                  | 5                           |
| 39.     |                  | Dudhganga  | March 2012                  | Ongoing                                  | 5                           |
| 40.     |                  | Guddada Mallapura LIS                            | March 2012                  | Ongoing                                  | 5                           |
| 41.     |                  | Ghataprabaha Stage-III                           | March 2000                  | 2010-11                                  | 11                          |
| 42.     |                  | Varahi   | March 2012                  | Ongoing                                  | 5                           |
| 43.     |                  | UKP stage-I                                      | March 2005                  | Ongoing                                  | 12                          |

| Sl. no. | State          | Name of the project                        | Schedule date of completion | Actual date of completion/present status | Delay in completion (Years) |
|---------|----------------|--|-----------------------------|--|-----------------------------|
| 44.     | Kerala         | Gandorinala                                | March 2005                  | March 2010                               | 5                           |
| 45.     |                | Karapuzha                                  | March 2009                  | Ongoing                                  | 8                           |
| 46.     |                | Chittoorpuzha                              | March 2012                  | Ongoing                                  | 5                           |
| 47.     | Madhya Pradesh | Sindh Project Phase-II                     | March 2001                  | Ongoing                                  | 16                          |
| 48.     |                | Indira Sagar Project Canal Phase-III       | March 2012                  | Ongoing                                  | 5                           |
| 49.     |                | Indira Sagar Project Canal Phase-I & II    | March 1999                  | Ongoing                                  | 18                          |
| 50.     |                | Bansagar Unit-II                           | March 2008                  | Ongoing                                  | 9                           |
| 51.     |                | Singhpur Project                           | March 2013                  | March 2017                               | 4                           |
| 52.     |                | Sanjay Sagar (Bah) Project                 | March 2014                  | Ongoing                                  | 3                           |
| 53.     |                | Mahuar Project                             | March 2015                  | March 2017                               | 2                           |
| 54.     |                | Sagar (Sagad) Project                      | March 2014                  | March 2017                               | 3                           |
| 55.     |                | Punasa Lift                                | March 2012                  | Ongoing                                  | 5                           |
| 56.     | Maharashtra    | Krishna Koyna Lift Irrigation project      | March 2014                  | Ongoing                                  | 3                           |
| 57.     |                | Wang Major Project                         | March 2011                  | Ongoing                                  | 6                           |
| 58.     |                | Aruna Medium Project                       | March 2012                  | Ongoing                                  | 5                           |
| 59.     |                | Lower Pedhi                                | March 2011                  | Ongoing                                  | 6                           |
| 60.     |                | Lower Panzara                              | March 2012                  | March 2017                               | 5                           |
| 61.     |                | Nandur Madhmeshwar Ph-2                    | March 2013                  | Ongoing                                  | 4                           |
| 62.     |                | Tillari Major Project                      | March 2008                  | Ongoing                                  | 9                           |
| 63.     |                | Krishna Major Project                      | April 2012                  | 2008-09                                  | 4                           |
| 64.     |                | Tarali                                     | March 2012                  | Ongoing                                  | 5                           |
| 65.     |                | Warna                                      | March 2009                  | March 2017                               | 8                           |
| 66.     |                | Hetwane Medium                             | March 2005                  | 2008-09                                  | 3                           |
| 67.     |                | Dhom Balakwadi                             | March 2012                  | Ongoing                                  | 5                           |
| 68.     |                | Sangola Branch Canal                       | March 2012                  | Ongoing                                  | 5                           |
| 69.     |                | Arjuna                                     | March 2010                  | Ongoing                                  | 7                           |
| 70.     |                | Bawanthadi                                 | March 2008                  | March 2017                               | 9                           |
| 71.     |                | Lower Dudhna                               | March 2009                  | Ongoing                                  | 8                           |
| 72.     |                | Lower Wardha                               | March 2009                  | Ongoing                                  | 8                           |
| 73.     |                | Waghur                                     | March 1999                  | Ongoing                                  | 18                          |
| 74.     |                | Gul medium                                 | March 2008                  | Ongoing                                  | 9                           |
| 75.     |                | Upper Wardha                               | March 2000                  | March 2009                               | 9                           |
| 76.     |                | Madan tank                                 | March 2008                  | 2008-09                                  | 1                           |
| 77.     |                | Pentakli                                   | March 2009                  | 2009-10                                  | 1                           |
| 78.     |                | Khadakpurna                                | March 2010                  | Ongoing                                  | 7                           |
| 79.     |                | Chandrabhaga                               | March 2009                  | 2009-10                                  | 1                           |
| 80.     | Odisha         | Anandpur barrage/Integrated (ERM)          | March 2010                  | Ongoing                                  | 7                           |
| 81.     |                | Telengiri (KBK)                            | March 2008                  | Ongoing                                  | 9                           |
| 82.     |                | Ret Irrigation (KBK)                       | March 2008                  | Ongoing                                  | 9                           |
| 83.     |                | Kanupur                                    | March 2008                  | Ongoing                                  | 9                           |
| 84.     |                | Lower Suktel (KBK)                         | March 2004                  | Ongoing                                  | 13                          |
| 85.     |                | Lower Indra (KBK)                          | March 2004                  | Ongoing                                  | 13                          |
| 86.     |                | Rukura Tribal                              | March 2014                  | Ongoing                                  | 3                           |
| 87.     | Rajasthan      | Narmada Canal project                      | March 2003                  | Ongoing                                  | 14                          |
| 88.     |                | Modernization of Gang canal                | March 2008                  | Ongoing                                  | 9                           |
| 89.     |                | Indira Gandhi Nahar project, Stage-II      | March 2006                  | Ongoing                                  | 11                          |
| 90.     | Telangana      | Rajiv bheema LIS- Major irrigation project | March 2012                  | Ongoing                                  | 5                           |
| 91.     |                | Indiramma Flood flow canal of SRSP         | March 2012                  | Ongoing                                  | 5                           |
| 92.     |                | SRSP Stage-II Major/ERM                    | March 2011                  | Ongoing                                  | 6                           |
| 93.     |                | Palemvagu                                  | March 2010                  | Ongoing                                  | 7                           |

| Sl. no. | State         | Name of the project   | Schedule date of completion | Actual date of completion/present status | Delay in completion (Years) |
|---------|---------------|---|-----------------------------|--|-----------------------------|
| 94.     | Tripura       | J. Chokka Rao, LIS  | March 2009                  | Ongoing                                  | 8                           |
| 95.     |               | Sri Komaram Bheem   | March 2009                  | Ongoing                                  | 8                           |
| 96.     |               | Manu medium irrigation project                                      | March 1999                  | Ongoing                                  | 18                          |
| 97.     |               | Khowai medium irrigation project                                    | March 1999                  | Ongoing                                  | 18                          |
| 98.     | Uttar Pradesh | Modernisation of lahchura Dam                                       | March 2009                  | Ongoing                                  | 8                           |
| 99.     |               | Improving Irrigation Intensity of Hardoi Branch                     | March 2009                  | Ongoing                                  | 8                           |
| 100.    |               | Bansagar Canal  | March 2004                  | Ongoing                                  | 13                          |
| 101.    |               | Eastern Ganga Canal   | March 2008                  | 2010-11                                  | 3                           |
| 102.    |               | Restoration of Sharda Sahayak Canal System                          | March 2014                  | Ongoing                                  | 3                           |
| 103.    |               | Madhya Ganga Canal Phase-II   | March 2013                  | Ongoing                                  | 4                           |
| 104.    | West Bengal   | Subarnarekha Barrage major irrigation project in Midnapore district | March 2002                  | Ongoing                                  | 15                          |
| 105.    |               | Tatko Medium Irrigation Project in Purulia district                 | March 2003                  | Ongoing                                  | 14                          |

**Annexure 4.2**  
**(Refer para 4.3.2)**

**State-wise list of Defunct MI schemes/ sub-schemes**

| Sl. No.                     | State             | Schemes   |
|-----------------------------|-------------------|---|
| <b>North Eastern States</b> |                   |   |
| 1.                          | Arunachal Pradesh | Singrihapa, Kukurjan, Chimpu, Old Ganga, Dariso, Pape, Upper Nallah at Peach, Budagaon, Wanghoo Nallah, Gipajang, Takhong Nallah, Gurungthanka, Khow-sirak, Sarshang, Donlok, Lalchung Nallah, Atorangok, Taho Nallah, Tari Pani, Kaling, Meka, Doimukh, Seppa East, Rupung Hissang, Sa Korong, Gobuk, Ragya Korong to Pillaklaruk, Gompak Korang to Modam and Ningmo |
| 2.                          | Nagaland          | Karzhol (Ph-II), Chenyak, Shopong, Phangtiyang, Alachila, Balughoki and Ralan   |
| 3.                          | Sikkim            | Pabongkhola to Middle Daring, Tumin Khola to Ralcy, Simuna Khola to Dochum Khet, Tari Paddy Field at Lower Jhoising, Kali Khola to Linsey Khet and Kali Khola to Middle Rateypani   |
| 4.                          | Tripura           | Prtyekroycherra diversion scheme, Rabiadra para LI scheme, Shankhola LI scheme, Kalashati para LI scheme  |
| <b>Other States</b>         |                   |   |
| 1.                          | Jammu & Kashmir   | Dathang Irrigation Canal and PondaKhul  |
| 2.                          | Jharkhand         | Check dam at Amgachi Nala, check dam at Rai Nala, Check dam at Biramkel Nala and Check dam to KhorhaNala  |
| 3.                          | Madhya Pradesh    | Berkhedi Weir and Bhitri Mutmurru Tank  |
| 4.                          | Uttarakhand       | Diyula-Khaira Katal, Diyula-Diyula, Sarai Akkar and Jamaru Kula   |
| 5.                          | West Bengal       | Paniha Major RLI  |

**Annexure 4.3**  
**(Refer para 4.4)**

**Cost over-run in MMI projects**

(Amount in ₹ crore)

| Sl. no. | Name of the State | Name of the Project                              | Original cost | Revised cost | Cost overrun (revised – original cost) | Percentage of cost overrun |
|---------|-------------------|--|---------------|--------------|--|----------------------------|
| 1.      | Andhra Pradesh    | Tadipudi LIS                                     | 376.96        | 568.00       | 191.04                                 | 51                         |
| 2.      |                   | Tarakarama Thirtha Sagaram                       | 220.11        | 471.31       | 251.20                                 | 114                        |
| 3.      |                   | KOR Gundlakamma Reservoir Project                | 165.22        | 753.83       | 588.61                                 | 356                        |
| 4.      | Assam             | Dhansiri   | 158.32        | 567.05       | 408.73                                 | 258                        |
| 5.      |                   | Borolia  | 33.37         | 157.04       | 123.67                                 | 371                        |
| 6.      |                   | Champamati                                       | 47.49         | 309.22       | 261.73                                 | 551                        |
| 7.      | Bihar             | Punpun   | 69.01         | 658.12       | 589.11                                 | 854                        |
| 8.      |                   | Durgawati  | 124.99        | 983.10       | 858.11                                 | 687                        |
| 9.      | Goa               | Tillari irrigation Project                       | 147.54        | 1,051.69     | 904.15                                 | 613                        |
| 10.     | Gujarat           | Sardar Sarovar                                   | 6,406.06      | 54,772.94    | 48,366.88                              | 755                        |
| 11.     | Himachal Pradesh  | Shahnehar  | 143.32        | 387.17       | 243.85                                 | 170                        |
| 12.     |                   | Sidhata  | 33.62         | 95.29        | 61.67                                  | 183                        |
| 13.     |                   | Balh Valley Left Bank                            | 41.64         | 103.78       | 62.14                                  | 149                        |
| 14.     | Jammu and Kashmir | Tral LIS   | 129.43        | 140.76       | 11.33                                  | 9                          |
| 15.     |                   | Parakachik Khows Canal                           | 35.43         | 53.32        | 17.89                                  | 50                         |
| 16.     |                   | Rajpora LIS                                      | 29.13         | 70.20        | 41.07                                  | 141                        |
| 17.     |                   | Modernisation of Ranbir canal                    | 84.4          | 176.89       | 92.49                                  | 110                        |
| 18.     |                   | Restoration and modernization of Main Ravi Canal | 62.27         | 66.67        | 4.40                                   | 7                          |
| 19.     | Jharkhand         | Gumani Barrage Scheme                            | 83.72         | 185.76       | 102.04                                 | 122                        |
| 20.     |                   | Sonua Reservoir Scheme                           | 48.98         | 82.65        | 33.67                                  | 69                         |
| 21.     |                   | Surangi Reservoir Scheme                         | 24.91         | 41.17        | 16.26                                  | 65                         |
| 22.     |                   | Panchkhero Reservoir Scheme                      | 54.73         | 75.68        | 20.95                                  | 38                         |
| 23.     | Karnataka         | NLBC System Tank                                 | 3,752.18      | 4,233.98     | 481.80                                 | 13                         |
| 24.     |                   | Ghataprabaha Stage-III (Completed)               | 90.54         | 1,210.51     | 1,119.97                               | 1237                       |
| 25.     |                   | UKP stage-I, phase III                           | 1,214.91      | 6,891.59     | 5,676.68                               | 467                        |
| 26.     |                   | Gandorinala (Completed)                          | 7.71          | 240.00       | 232.29                                 | 3013                       |
| 27.     | Kerala            | Karapuzha  | 7.60          | 560.00       | 552.40                                 | 7268                       |
| 28.     | Madhya Pradesh    | Sindh Project Phase-II                           | 607.67        | 2,045.74     | 1,438.07                               | 237                        |
| 29.     |                   | Indira Sagar Project Canal Phase-III             | 704.13        | 943.18       | 239.05                                 | 34                         |
| 30.     |                   | Indira Sagar Project Canal Phase-I & II          | 1,154.00      | 2,019.82     | 865.82                                 | 75                         |
| 31.     |                   | Bansagar Unit-II                                 | 610.33        | 2,143.65     | 1,533.32                               | 251                        |
| 32.     |                   | Omkareshwar Project Canal Phase IV (OSP Lift)    | 999.86        | 1,175.51     | 175.65                                 | 18                         |
| 33.     |                   | Punasa Lift                                      | 464.62        | 488.06       | 23.44                                  | 5                          |
| 34.     |                   | Singhpur (Completed)                             | 200.52        | 242.97       | 42.45                                  | 21                         |

| Sl. no. | Name of the State | Name of the Project                        | Original cost | Revised cost | Cost overrun (revised – original cost) | Percentage of cost overrun |
|---------|-------------------|--|---------------|--------------|--|----------------------------|
| 35.     | Maharashtra       | Indira Sagar Unit-V                        | 628.12        | 742.51       | 114.39                                 | 18                         |
| 36.     |                   | Krishna Koyna Lift Irrigation project      | 2,224.76      | 4,959.91     | 2,735.15                               | 123                        |
| 37.     |                   | Lower Pedhi                                | 283.10        | 594.75       | 311.65                                 | 110                        |
| 38.     |                   | Lower Panzara (Completed)                  | 132.44        | 556.29       | 423.85                                 | 320                        |
| 39.     |                   | Nandur Madhmeshwar Ph-II                   | 195.41        | 2,210.59     | 2,015.18                               | 1031                       |
| 40.     |                   | Bawanthadi (Completed)                     | 121.39        | 867.20       | 745.81                                 | 614                        |
| 41.     |                   | Lower Dudhna                               | 517.41        | 2,341.67     | 1,824.26                               | 353                        |
| 42.     |                   | Lower Wardha                               | 542.25        | 2,356.58     | 1,814.33                               | 335                        |
| 43.     |                   | Waghur                                     | 161.05        | 1,183.55     | 1,022.50                               | 635                        |
| 44.     |                   | Gul  | 63.25         | 96.61        | 33.36                                  | 53                         |
| 45.     |                   | Upper Wardha (Completed)                   | 26.95         | 951.33       | 924.38                                 | 3430                       |
| 46.     |                   | Pentakli (Completed)                       | 25.80         | 172.45       | 146.65                                 | 568                        |
| 47.     |                   | Khadakpurna                                | 497.32        | 1,095.92     | 598.60                                 | 120                        |
| 48.     |                   | Tillari Irrigation Project                 | 830.58        | 1,390.04     | 559.46                                 | 67                         |
| 49.     |                   | Tarali Irrigation Project                  | 795.67        | 1,057.63     | 261.96                                 | 33                         |
| 50.     |                   | Hetwane Project (Completed)                | 208.54        | 329.90       | 121.36                                 | 58                         |
| 51.     |                   | Dhom Balakwadi Project                     | 475.29        | 684.64       | 209.35                                 | 44                         |
| 52.     |                   | Sangola Branch Canal Project               | 287.77        | 937.92       | 650.15                                 | 226                        |
| 53.     |                   | Chandrabhaga                               | 28.86         | 200.29       | 171.43                                 | 594                        |
| 54.     |                   | Kar  | 78.80         | 170.04       | 91.24                                  | 116                        |
| 55.     |                   | Lal Nalla                                  | 39.08         | 202.51       | 163.43                                 | 418                        |
| 56.     |                   | Madan Tank                                 | 10.07         | 88.09        | 78.02                                  | 775                        |
| 57.     |                   | Prakasha                                   | 41.53         | 245.03       | 203.50                                 | 490                        |
| 58.     |                   | Sarangkheda                                | 57.70         | 276.49       | 218.79                                 | 379                        |
| 59.     |                   | Tajnapur                                   | 6.17          | 438.70       | 432.53                                 | 7010                       |
| 60.     | Odisha            | Anandpur Barrage/ Integrated               | 581.40        | 2,990.05     | 2,408.65                               | 414                        |
| 61.     |                   | Telengiri                                  | 106.18        | 992.85       | 886.67                                 | 835                        |
| 62.     |                   | Ret Irrigation                             | 86.14         | 768.46       | 682.32                                 | 792                        |
| 63.     |                   | Kanupur                                    | 428.32        | 2,438.29     | 2,009.97                               | 469                        |
| 64.     |                   | Lower Suktel                               | 217.13        | 1,041.81     | 824.68                                 | 380                        |
| 65.     |                   | Lower Indra                                | 211.70        | 1,753.64     | 1541.94                                | 728                        |
| 66.     |                   | Rukura Tribal                              | 155.48        | 296.98       | 141.50                                 | 91                         |
| 67.     | Rajasthan         | Narmada Canal                              | 467.53        | 2,481.49     | 2,013.96                               | 431                        |
| 68.     |                   | Modernization of Gang canal                | 445.79        | 621.42       | 175.63                                 | 39                         |
| 69.     |                   | Indira Gandhi Nahar project, Stage-II      | 89.12         | 6,921.32     | 6,832.20                               | 7,666                      |
| 70.     | Telangana         | Sri Komaram Bheem                          | 202.60        | 882.36       | 679.76                                 | 336                        |
| 71.     |                   | Rajiv Bheema LIS- Major irrigation project | 744.00        | 1,969.00     | 1,225.00                               | 165                        |
| 72.     |                   | Indiramma Flood flow canal of SRSP         | 1,331.00      | 5,940.09     | 4,609.09                               | 346                        |
| 73.     |                   | SRSP Stage-II                              | 1,043.14      | 1,220.41     | 177.27                                 | 17                         |
| 74.     |                   | Palemvagu                                  | 29.13         | 221.48       | 192.35                                 | 660                        |
| 75.     |                   | J. Chokka Rao LIS                          | 6,016.00      | 13,445.44    | 7,429.44                               | 123                        |



| Sl. no. | Name of the State | Name of the Project   | Original cost    | Revised cost       | Cost overrun (revised – original cost) | Percentage of cost overrun |
|---------|-------------------|---|------------------|--------------------|--|----------------------------|
| 76.     | Tripura           | Manu Medium Irrigation project                                      | 44.25            | 98.71              | 54.46                                  | 123                        |
| 77.     |                   | Khowai Medium Irrigation project                                    | 59.75            | 91.64              | 31.89                                  | 53                         |
| 78.     | Uttar Pradesh     | Modernisation of Lahchura Dam                                       | 99.66            | 328.82             | 229.16                                 | 230                        |
| 79.     |                   | Improving Irrigation Intensity of Hardoi Branch                     | 105.30           | 135.17             | 29.87                                  | 28                         |
| 80.     |                   | Bansagar Canal  | 330.19           | 3,148.91           | 2,818.72                               | 854                        |
| 81.     |                   | Eastern Ganga Canal (Completed)                                     | 258.48           | 892.44             | 633.96                                 | 245                        |
| 82.     |                   | Madhya Ganga Canal Phase-II   | 1,060.76         | 2,865.11           | 1,804.35                               | 170                        |
| 83.     | West Bengal       | Subarnarekha Barrage major irrigation project in Midnapore district | 215.61           | 2,032.79           | 1,817.18                               | 843                        |
| 84.     |                   | Tatko Medium Irrigation Project in Purulia district                 | 0.99             | 19.76              | 18.77                                  | 1,896                      |
|         |                   | <b>Total</b>  | <b>40,943.68</b> | <b>1,61,715.73</b> | <b>1,20,772.05</b>                     | <b>295</b>                 |

**Annexure 4.4**  
**(Refer para 4.4.1)**

**Cost overrun in Projects/schemes due to change in design and scope**

| Sl. No.            | Name of the State | Name of the Project                              | Increase in cost of Projects due to change in design and Scope (₹ in crore) |
|--------------------|-------------------|--|---|
| MMI projects       |                   |  |   |
| 1.                 | Bihar             | Durgawati  | 31.83   |
| 2.                 | Gujarat           | Sardar Sarovar Project                           | 2,339.65  |
| 3.                 | Goa               | Tillari  | 2.60  |
| 4.                 | Jharkhand         | Subarnarekha                                     | 116.07  |
| 5.                 | Maharashtra       | Krishna Koyna LIS                                | 41.51   |
| 6.                 |                   | Lower Wardha                                     | 6.43  |
| 7.                 |                   | Sangola Branch canal                             | 203.00  |
| 8.                 |                   | Dhom Balakwadi                                   | 24.11   |
| 9.                 |                   | Arjuna   | 44.01   |
| 10.                |                   | Tarali and Sangola Branch Canal                  | 40.53   |
| 11.                | Odisha            | Kanupur  | 111.50  |
| 12.                |                   | Lower Suktel                                     | 91.86   |
| TOTAL MMI projects |                   |  | 3,053.10  |
| MI Schemes         |                   |  |   |
| 1.                 | Andhra Pradesh    | Conversion of Bhavanasi Tank into Mini Reservoir | 20.73   |
| 2.                 | Chhattisgarh      | Gharjia Bathan Tank                              | 0.86  |
| 3.                 | Madhya Pradesh    | Barkheda Chajju Minor Tank                       | 7.67  |
| TOTAL MI Schemes   |                   |  | 29.26   |
| TOTAL              |                   |  | 3,082.36  |

**(Source: Information obtained from the State authorities)**

**Annexure 4.5**  
**(Refer para 4.5)**

**IP creation and utilization of Completed MMI Projects**

(Amount in ₹ crore)

| Sl. no. | State          | Name of the Project               | IP target (ha) | IP created (ha) | IP created (in per centage) | Gap in IP creation (ha) | IP utilized (ha) | Gap in IP utilization(ha) | Percentage of IP utilized vis a vis IP created | Expenditure 2008-17 |
|---------|----------------|-----------------------------------|----------------|-----------------|-----------------------------|-------------------------|------------------|---------------------------|--|---------------------|
| 1.      | Andhra Pradesh | Veligallu                         | 9,713          | 9,713           | 100                         | 0                       | 9,713            | 0                         | 100  | 15                  |
| 2.      |                | Swarnamukhi                       | 4,656          | 3,651           | 78                          | 1,005                   | 3,651            | 0                         | 100  | 0                   |
| 3.      | Assam          | Modification of Jamuna Irrigation | 42,014         | 41,014          | 98                          | 1,000                   | 24,284           | 16,730                    | 59   | 32                  |
| 4.      | Bihar          | Restoration of Koshi Barrage      | 8,14,510       | 8,14,510        | 100                         | 0                       | 4,99,540         | 3,14,970                  | 61   | 85                  |
| 5.      | Chhattisgarh   | Maniyari                          | 14,515         | 11,515          | 79                          | 3,000                   | 11,515           | 0                         | 100  | 93                  |
| 6.      |                | Mahanadi Project                  | 2,64,311       | 2,64,311        | 100                         | 0                       | 2,55,067         | 9,244                     | 97   | 32                  |
| 7.      |                | Kosarteda Project                 | 11,120         | 11,120          | 100                         | 0                       | 3,580            | 7,540                     | 32   | 57                  |
| 8.      | Gujarat        | Aji-IV                            | 3,750          | 3,338           | 89                          | 412                     | 466              | 2,872                     | 14   | 19                  |
| 9.      |                | Bhadar-II                         | 9,965          | 9,202           | 92                          | 763                     | 1,190            | 8,012                     | 13   | 19                  |
| 10.     | Karnataka      | Sri Rameshwar LIS                 | 1,240          | 1,240           | 100                         | 0                       | 1,240            | 0                         | 100  | 155                 |
| 11.     |                | Ghataprabaha Stage-III            | 9,963          | 5,344           | 54                          | 4,619                   | 5,344            | 0                         | 100  | 189                 |
| 12.     |                | Gandorinala                       | 1,115          | 964             | 86                          | 151                     | 964              | 0                         | 100  | 42                  |
| 13.     | Madhya Pradesh | Singhpur Project                  | 10,200         | 10,100          | 99                          | 100                     | 9,035            | 1,065                     | 89   | 107                 |
| 14.     |                | Mahuar Project                    | 9,500          | 9,500           | 100                         | 0                       | 9,500            | 0                         | 100  | 83                  |
| 15.     |                | Sagar (Sagad) Project             | 17,061         | 17,061          | 100                         | 0                       | 17,061           | 0                         | 100  | 158                 |
| 16.     | Maharashtra    | Lower Panzara                     | 6,785          | 5,881           | 87                          | 904                     | 1,228            | 4,653                     | 21   | 215                 |

| Sl. no.      | State         | Name of the Project | IP target (ha)   | IP created (ha)  | IP created (in per centage) | Gap in IP creation (ha) | IP utilized (ha) | Gap in IP utilization(ha) | Percentage of IP utilized vis a vis IP created | Expenditure 2008-17 |
|--------------|---------------|---------------------|------------------|------------------|-----------------------------|-------------------------|------------------|---------------------------|--|---------------------|
| 17.          |               | Krishna             | 19,588           | 18,816           | 96                          | 772                     | 17,601           | 1,215                     | 94   | 38                  |
| 18.          |               | Warna               | 87,792           | 3,678            | 4                           | 84,114                  | 3,678            | 0                         | 100  | 245                 |
| 19.          |               | Hetwane             | 6,168            | 1,101            | 18                          | 5,067                   | 1,042            | 59                        | 95   | 10                  |
| 20.          |               | Bawanthadi          | 27,708           | 24,170           | 87                          | 3,538                   | 14,822           | 9,348                     | 61   | 394                 |
| 21.          |               | Sarangkheda         | 11,519           | 11,519           | 100                         | 0                       | 7,832            | 3,687                     | 68   | 29                  |
| 22.          |               | Prakash Barrage     | 10,307           | 10,307           | 100                         | 0                       | 6,872            | 3,435                     | 67   | 30                  |
| 23.          |               | Upper Wardha        | 37,258           | 37,258           | 100                         | 0                       | 37,184           | 74                        | 100  | 93                  |
| 24.          |               | Kar                 | 3,244            | 1,880            | 58                          | 1,364                   | 1675             | 205                       | 89   | 39                  |
| 25.          |               | Madan Tank          | 3,270            | 3,270            | 100                         | 0                       | 2,241            | 1,029                     | 69   | 3                   |
| 26.          |               | Pentakli            | 3,220            | 2,700            | 84                          | 520                     | 985              | 1,715                     | 36   | 13                  |
| 27.          |               | Lal Nalla           | 7,144            | 3,421            | 48                          | 3,723                   | 1,934            | 1,487                     | 57   | 19                  |
| 28.          |               | Tajnapaur LIS       | 3,622            | 3,622            | 100                         | 0                       | 2,515            | 1,107                     | 69   | 6                   |
| 29.          |               | Chandrabhaga        | 1,924            | 1,924            | 100                         | 0                       | 1,374            | 550                       | 71   | 18                  |
| 30.          | Uttar Pradesh | Eastern Ganga Canal | 1,05,000         | 1,04,756         | 100                         | 244                     | 88,662           | 16,094                    | 85   | 115                 |
| <b>Total</b> |               |                     | <b>15,58,182</b> | <b>14,46,886</b> |                             | <b>1,11,296</b>         | <b>10,41,795</b> | <b>4,05,091</b>           |  | <b>2,353</b>        |

**Annexure 4.6**  
**(Refer para 4.5)**

**IP creation and utilization of ongoing MMI Projects**

(Amount in ₹ crore)

| Sl. no. | Name of the State | Name of the Project                              | IP target (ha) | IP created (ha) | IP created (in per centage) | Gap in IP creation (ha) | IP utilized (ha) | Gap in IP utilization (ha) | Percentage of IP utilized vis a vis IP created | Expenditure 2008-17 |
|---------|-------------------|--|----------------|-----------------|-----------------------------|-------------------------|------------------|----------------------------|--|---------------------|
| 1.      | Andhra Pradesh    | Tadipudi LIS                                     | 83,609         | 62,138          | 74                          | 21,471                  | 62,138           | 0                          | 100  | 182                 |
| 2.      |                   | Tarakarama Thirtha Sagaram                       | 10,000         | 0               | 0                           | 10,000                  | 0                | 0                          | 0  | 118                 |
| 3.      |                   | KOR Gundlakamma Reservoir Project                | 32,400         | 27,914          | 86                          | 4,486                   | 22,624           | 5,290                      | 81   | 297                 |
| 4.      | Assam             | Dhansiri   | 77,230         | 53,258          | 69                          | 23,972                  | 21,800           | 31,458                     | 41   | 236                 |
| 5.      |                   | Champamati                                       | 24,994         | 22,142          | 89                          | 2,852                   | 7,527            | 14,615                     | 34   | 167                 |
| 6.      |                   | Borolia  | 13,562         | 3,300           | 24                          | 10,262                  | 900              | 2,400                      | 27   | 20                  |
| 7.      | Bihar             | Durgawati  | 39,610         | 26,000          | 66                          | 13,610                  | 2,458            | 23,542                     | 9  | 470                 |
| 8.      |                   | Punpun   | 13,680         | 0               | 0                           | 13,680                  | 0                | 0                          | 0  | 287                 |
| 9.      | Chhattisgarh      | Kelo Project                                     | 22,810         | 16,815          | 74                          | 5,995                   | 0                | 16,815                     | 0  | 521                 |
| 10.     | Goa               | Tillari irrigation Project                       | 14,521         | 11,651          | 80                          | 2,870                   | 3,246            | 8,405                      | 28   | 545                 |
| 11.     | Gujarat           | Sardar Sarovar Project                           | 17,92,000      | 14,13,299       | 79                          | 3,78,701                | 6,28,011         | 7,85,288                   | 44   | 14,461              |
| 12.     | Himachal Pradesh  | Shahnehar  | 15,287         | 15,287          | 100                         | 0                       | 2,905            | 12,382                     | 19   | 184                 |
| 13.     |                   | Sidhata  | 3,150          | 3,150           | 100                         | 0                       | 225              | 2,925                      | 7  | 48                  |
| 14.     |                   | Balh Valley Left Bank                            | 2,780          | 2,780           | 100                         | 0                       | 1,291            | 1,489                      | 46   | 97                  |
| 15.     | Jammu and Kashmir | Tral LIS   | 5,122          | 4,440           | 87                          | 682                     | 1,200            | 3,240                      | 27   | 41                  |
| 16.     |                   | Prakachik Khows Canal                            | 2,262          | 1,250           | 55                          | 1,012                   | NF               | 0                          | 81   | 34                  |
| 17.     |                   | Rajpora LIS Medium                               | 2,429          | 2,114           | 87                          | 315                     | 1,035            | 1,079                      | 49   | 22                  |
| 18.     |                   | Modernisation of Kandi canal                     | 2,200          | 0               | 0                           | 2,200                   | 0                | 0                          | 0  | 6                   |
| 19.     |                   | Modernisation of Dadi canal                      | 3,889          | 3,889           | 100                         | 0                       | 3,889            | 0                          | 100  | 25                  |
| 20.     |                   | Modernisation of Ranbir canal                    | 55,418         | 54,713          | 99                          | 705                     | 54,675           | 38                         | 100  | 80                  |
| 21.     |                   | Modernisation of New Pratap                      | 13,309         | 12,325          | 93                          | 984                     | 9,206            | 3,119                      | 75   | 24                  |
| 22.     |                   | Restoration and modernization of Main Ravi Canal | 15,016         | 12,540          | 84                          | 2,476                   | 11,480           | 1,060                      | 92   | 45                  |
| 23.     |                   | Modernization of Ahji Canal                      | 8,316          | 8,166           | 98                          | 150                     | 8,166            | 0                          | 100  | 13                  |

| Sl. no. | Name of the State | Name of the Project                           | IP target (ha) | IP created (ha) | IP created (in per centage) | Gap in IP creation (ha) | IP utilized (ha) | Gap in IP utilization (ha) | Percentage of IP utilized vis a vis IP created | Expenditure 2008-17 |
|---------|-------------------|---|----------------|-----------------|-----------------------------|-------------------------|------------------|----------------------------|--|---------------------|
| 24.     | Jharkhand         | Subernarekha Multipurpose Project (SMP)       | 236846         | 107326          | 45                          | 129,520                 | 44,844           | 62,482                     | 42   | 2,875               |
| 25.     |                   | Gumani Barrage Scheme                         | 16,194         | 11,314          | 70                          | 4,880                   | 0                | 11,314                     | 0  | 50                  |
| 26.     |                   | Sonua Reservoir Scheme                        | 8008           | 3,000           | 37                          | 5008                    | 1,000            | 2,000                      | 33   | 16                  |
| 27.     |                   | Surangi Reservoir Scheme                      | 2,105          | 1,230           | 58                          | 875                     | 1,230            | 0                          | 100  | 8                   |
| 28.     |                   | Panchkhero Reservoir Scheme                   | 3,085          | 1,000           | 32                          | 2,085                   | 1,000            | 0                          | 100  | 33                  |
| 29.     | Karnataka         | Upper Tunga Irrigation Project                | 25,449         | 16,618          | 65                          | 8,831                   | 16,618           | 0                          | 100  | 740                 |
| 30.     |                   | NLBC System Project                           | 1,42,580       | 98,381          | 69                          | 44,199                  | 98,381           | 0                          | 100  | 1,685               |
| 31.     |                   | Restoration of Bheemasamudra Tank             | 800            | 800             | 100                         | 0                       | 800              | 0                          | 100  | 5                   |
| 32.     |                   | Dudhganga                                     | 11,367         | 1,000           | 9                           | 10,367                  | 0                | 1,000                      | 0  | 82                  |
| 33.     |                   | Guddada Mallapura LIS                         | 5,261          | 5,000           | 95                          | 261                     | 0                | 5,000                      | 0  | 96                  |
| 34.     |                   | Varahi  | 15,560         | 4,443           | 29                          | 11,117                  | 3,372            | 1,071                      | 76   | 469                 |
| 35.     |                   | UKP stage-I, Phase III                        | 1,505          | 1,505           | 100                         | 0                       | 1,505            | 0                          | 100  | 583                 |
| 36.     | Kerala            | Karapuzha                                     | 7,355          | 1,624           | 22                          | 5,731                   | 922              | 702                        | 57   | 9                   |
| 37.     |                   | Chitoorpuzha                                  | 4,964          | 4,820           | 97                          | 144                     | 4,820            | 0                          | 100  | 42                  |
| 38.     | Madhya Pradesh    | Sindh Project Phase-II                        | 98,250         | 95,970          | 98                          | 2,280                   | 73,604           | 22,366                     | 77   | 1,145               |
| 39.     |                   | Indira Sagar Project Canal Phase-III          | 20,700         | 6,000           | 29                          | 14,700                  | 5,608            | 392                        | 93   | 743                 |
| 40.     |                   | Indira Sagar Project Canal Phase-I & II       | 62,200         | 59,450          | 96                          | 2,750                   | 59,450           | 0                          | 100  | 630                 |
| 41.     |                   | Bansagar Unit-II                              | 1,23,634       | 1,17,634        | 95                          | 6,000                   | 1,17,634         | 0                          | 100  | 1,768               |
| 42.     |                   | Omkareshwar Project Canal Phase IV (OSP Lift) | 57,200         | 54,630          | 96                          | 2,570                   | 17,000           | 37,630                     | 31   | 313                 |
| 43.     |                   | Sanjay Sagar (Bah) Project                    | 17,807         | 17,807          | 100                         | 0                       | 17,807           | 0                          | 100  | 103                 |
| 44.     |                   | Punasa Lift                                   | 35,008         | 35,008          | 100                         | 0                       | 35,008           | 0                          | 100  | 466                 |
| 45.     |                   | Indira Sagar Unit-V                           | 33,140         | 32,000          | 97                          | 1,140                   | 20,500           | 11,500                     | 64   | 83                  |
| 46.     | Maharashtra       | Krishna Koyna Lift Irrigation project         | 1,11,988       | 44,770          | 40                          | 67,218                  | 9,492            | 35,278                     | 21   | 764                 |
| 47.     |                   | Wang  | 7,068          | 1,023           | 14                          | 6,045                   | 295              | 728                        | 29   | 100                 |
| 48.     |                   | Aruna   | 9,027          | 0               | 0                           | 9,027                   | 0                | 0                          | 0  | 519                 |
| 49.     |                   | Lower Pedhi                                   | 17,023         | 0               | 0                           | 17,023                  | 0                | 0                          | 0  | 748                 |

| Sl. no. | Name of the State | Name of the Project                   | IP target (ha) | IP created (ha) | IP created (in per centage) | Gap in IP creation (ha) | IP utilized (ha) | Gap in IP utilization (ha) | Percentage of IP utilized vis a vis IP created | Expenditure 2008-17 |
|---------|-------------------|---------------------------------------|----------------|-----------------|-----------------------------|-------------------------|------------------|----------------------------|--|---------------------|
| 50.     |                   | Nandur Madhmeshwar Ph-II              | 20,500         | 6,047           | 29                          | 14,453                  | 0                | 6,047                      | 0  | 559                 |
| 51.     |                   | Tillari Major Project                 | 9,754          | 5,073           | 52                          | 4,681                   | 2,618            | 2,455                      | 52   | 269                 |
| 52.     |                   | Tarali                                | 14,276         | 6,902           | 48                          | 7,374                   | 2,260            | 4,642                      | 33   | 477                 |
| 53.     |                   | Dhom Balakwadi                        | 18,100         | 10,153          | 56                          | 7,947                   | 4,942            | 5,211                      | 49   | 460                 |
| 54.     |                   | Sangola Branch Canal                  | 11,288         | 5,815           | 52                          | 5,473                   | 2,800            | 3,015                      | 48   | 207                 |
| 55.     |                   | Arjuna                                | 9,411          | 526             | 6                           | 8,885                   | 210              | 316                        | 40   | 398                 |
| 56.     |                   | Lower Dudhna                          | 44,482         | 35,983          | 81                          | 8,499                   | 4868             | 31,115                     | 14   | 1,125               |
| 57.     |                   | Lower Wardha                          | 63,333         | 24,674          | 39                          | 38,659                  | 6,572            | 18,102                     | 27   | 1,453               |
| 58.     |                   | Waghur                                | 38,570         | 15,992          | 41                          | 22,578                  | 9,122            | 6,870                      | 57   | 593                 |
| 59.     |                   | Gul                                   | 3,025          | 3,025           | 100                         | 0                       | 1125             | 1,900                      | 37   | 44                  |
| 60.     |                   | Khadakpurna                           | 24,864         | 20,818          | 84                          | 4,046                   | 4,373            | 16,445                     | 21   | 800                 |
| 61.     | Odisha            | Anandpur barrage/ Integrated          | 60,000         | 0               | 0                           | 60,000                  | 0                | 0                          | 0  | 942                 |
| 62.     |                   | Telengiri                             | 9,950          | 0               | 0                           | 9,950                   | 0                | 0                          | 0  | 687                 |
| 63.     |                   | Ret Irrigation                        | 8,500          | 0               | 0                           | 8,500                   | 0                | 0                          | 0  | 382                 |
| 64.     |                   | Kanupur                               | 29,580         | 0               | 0                           | 29,580                  | 0                | 0                          | 0  | 1,390               |
| 65.     |                   | Lower Suktel                          | 23,500         | 0               | 0                           | 23,500                  | 0                | 0                          | 0  | 869                 |
| 66.     |                   | Lower Indra                           | 29,900         | 18,550          | 62                          | 11,350                  | 7,000            | 11,550                     | 38   | 1,518               |
| 67.     |                   | Rukura                                | 5,750          | 2,000           | 35                          | 3,750                   | 1,500            | 500                        | 75   | 256                 |
| 68.     | Rajasthan         | Narmada Canal project                 | 2,46,000       | 2,46,000        | 100                         | 0                       | 1,80,000         | 66,000                     | 73   | 1,271               |
| 69.     |                   | Modernization of Gang canal           | 96,510         | 96,510          | 100                         | 0                       | 96,510           | 0                          | 100  | 279                 |
| 70.     |                   | Indira Gandhi Nahar project           | 9,01,397       | 5,89,308        | 65                          | 3,12,089                | 5,89,308         | 0                          | 100  | 0                   |
| 71.     | Telangana         | Sri Komaram Bhima                     | 9,915          | 6,094           | 61                          | 3,821                   | 5,544            | 550                        | 91   | 221                 |
| 72.     |                   | Rajiv Bheema LIS                      | 82,153         | 44,446          | 54                          | 37,707                  | 44,446           | 0                          | 100  | 1,198               |
| 73.     |                   | Indiramma Flood flow canal of SRSP-II | 93,587         | 0               | 0                           | 93,587                  | 0                | 0                          | 0  | 2,990               |
| 74.     |                   | SRSP Stage-II                         | 1,78,066       | 1,31,319        | 74                          | 46,747                  | 0                | 1,31,319                   | 0  | 532                 |
| 75.     |                   | Palemvagu                             | 4,100          | 2,023           | 49                          | 2,077                   | 2,023            | 0                          | 100  | 139                 |
| 76.     |                   | J. Chokka Rao, LIS                    | 2,48,685       | 1,00,494        | 40                          | 148,191                 | 18,487           | 82,007                     | 18   | 5,936               |
| 77.     | Tripura           | Manu Irrigation project               | 4,198          | 1,220           | 29                          | 2,978                   | 0                | 1,220                      | 0  | 32                  |
| 78.     |                   | Khowai Irrigation project             | 4,515          | 2,630           | 58                          | 1,885                   | 1,560            | 1,070                      | 59   | 18                  |

| Sl. no. | Name of the State | Name of the Project                             | IP target (ha) | IP created (ha) | IP created (in per centage) | Gap in IP creation (ha) | IP utilized (ha) | Gap in IP utilization (ha) | Percentage of IP utilized vis a vis IP created | Expenditure 2008-17 |
|---------|-------------------|---|----------------|-----------------|-----------------------------|-------------------------|------------------|----------------------------|--|---------------------|
| 79.     | Uttar Pradesh     | Modernisation of Lahchura Dam                   | 46,485         | 46,485          | 100                         | 0                       | 46,485           | 0                          | 100  | 329                 |
| 80.     |                   | Improving Irrigation Intensity of Hardoi Branch | 95,961         | 95,961          | 100                         | 0                       | 95,961           | 0                          | 100  | 127                 |
| 81.     |                   | Bansagar Canal                                  | 1,50,132       | 1,00,000        | 67                          | 50,132                  | 11,101           | 88,899                     | 11   | 1,737               |
| 82.     |                   | Restoration of Sarda Sahayak Canal System       | 7,90,000       | 2,50,000        | 32                          | 5,40,000                | 2,50,000         | 0                          | 100  | 229                 |
| 83.     |                   | Madhya Ganga Canal Phase-II                     | 1,46,132       | 41,319          | 28                          | 1,04,813                | 0                | 41,319                     | 0  | 980                 |
| 84.     | West Bengal       | Subarnarekha Barrage Irrigation project         | 130014         | 0               | 0                           | 130,014                 | 0                | 0                          | 0  | 0                   |
| 85.     |                   | Tatko Irrigation Project                        | 2,494          | 1,970           | 79                          | 524                     | 1,970            | 0                          | 100  | 3                   |
| Total   |                   |   | 69,82,845      | 43,90,861       |                             | 25,91,984               | 27,64,451        | 16,26,172                  |  | 60,448              |



**Annexure 4.7**  
**(Refer para 4.5)**

**IP Status of selected MI schemes (NE States)**

| State             | No. of MIS                 |                                      |                                    | Cost/ Expenditure<br>(₹ in crore) |                                    | Irrigation Potential (IP)     |   |   |                                      |  |
|-------------------|----------------------------|--------------------------------------|------------------------------------|-----------------------------------|------------------------------------|-------------------------------|---|---|--------------------------------------|--|
|                   | Nos. of sampled MI schemes | Nos. of sampled MI schemes completed | Nos. of sampled MI schemes ongoing | Sanctioned cost                   | Actual expenditure (up to 03/2017) | IP projected (in thousand ha) | IP creation till 03/2017 (in thousand ha) | Shortfall of IP creation vis a vis IP projected | IP utilized 03/2017 (in thousand ha) | Shortfall of IP utilized vis a vis IP creation |
| Arunachal Pradesh | 22                         | 15                                   | 7                                  | 17.45                             | 15.60                              | 1.360                         | 1.20                                      | 0.16  | Not furnished by State Agency        | -  |
| Assam             | 30                         | 17                                   | 13                                 | 240.93                            | 133.07                             | 15.55                         | 5.30                                      | 10.25   | 3.33                                 | 1.97   |
| Meghalaya         | 17                         | 11                                   | 6                                  | 94.45                             | 41.52                              | 6.61                          | 3.96                                      | 2.65  | 3.71                                 | 0.26   |
| Mizoram           | 12                         | 10                                   | 2                                  | 19.09                             | 16.34                              | 1.42                          | Not furnished by State Agency             |   |                                      |  |
| Nagaland          | 23                         | 15                                   | 8                                  | 29.38                             | 28.55                              | 2.096                         | 1.605                                     | 0.49  | 1.139                                | 0.47   |
| Sikkim            | 22                         | 14                                   | 8                                  | 6.86                              | 4.32                               | 0.691                         | 0.476                                     | 0.22  | 0.414                                | 0.06   |
| Tripura           | 9                          | 8                                    | 1                                  | 12.34                             | 9.70                               | 1.05                          | 0.46                                      | 0.59  | 0.46                                 | 0  |
| <b>Total</b>      | <b>135</b>                 | <b>90</b>                            | <b>45</b>                          | <b>420.50</b>                     | <b>249.10</b>                      | <b>28.78</b>                  | <b>13.00</b>                              | <b>14.36</b>                                    | <b>9.05</b>                          | <b>2.76</b>                                    |

**Source: State Level Agency**

**Annexure 4.8**  
**(Refer para 4.5)**

**IP Status of selected MI schemes (Other States)**

| Sl.No. | Name of the State | Selected MIS       |                             |                                      | Expenditure<br>(₹ in crore) |                                    | Irrigation Potential (IP)<br>(in thousand ha) |                          |   |                          |  |
|--------|-------------------|--------------------|-----------------------------|--------------------------------------|-----------------------------|------------------------------------|---|--------------------------|---|--------------------------|--|
|        |                   | Nos. of sampled MI | No. of sampled MI completed | No. of sampled MI ongoing/ abandoned | Sanctioned cost             | Actual expenditure (up to 03/2017) | IP projected                                  | IP creation till 03/2017 | Shortfall of IP creation vis a vis IP projected | IP utilized till 03/2017 | Shortfall of IP utilized vis a vis IP creation |
| 1.     | Andhra Pradesh    | 2                  | 1                           | 1                                    | 29.80                       | 17.30                              | 3.323   | 0.240                    | 3.08  | 0.240                    | Zero   |
| 2.     | Bihar             | 14                 | 11                          | 3                                    | 57.56                       | 55.13                              | 10.25   | 10.25                    | 0   | Not furnished            | -  |
| 3.     | Chhattisgarh      | 21                 | 12                          | 9                                    | 141.14                      | 155.53                             | 12.543  | 3.086                    | 9.46  | 0.140                    | 2.95   |
| 4.     | Himachal Pradesh  | 17                 | 15                          | 2                                    | 52.11                       | 54.62                              | 37.75   | 0.872                    | 36.88   | 0.114                    | 0.76   |
| 5.     | Jammu & Kashmir   | 30                 | 15                          | 15                                   | 220.08                      | 128.25                             | 21.318  | 8.110                    | 13.2  | 7.045                    | 1.06   |
| 6.     | Jharkhand         | 20                 | 15                          | 5                                    | 34.39                       | 30.40                              | 3.915   | 3.029                    | 0.88  | 2.342                    | 0.69   |
| 7.     | Karnataka         | 25                 | 15                          | 10                                   | 75.59                       | 75.48                              | 4.975   | 3.463                    | 1.51  | 3.463                    | Zero   |
| 8.     | Maharashtra       | 8                  | 4                           | 4                                    | 365.30                      | 528.82                             | 8.171   | 4.326                    | 3.84  | 0.684                    | 3.65   |
| 9.     | Madhya Pradesh    | 23                 | 15                          | 8                                    | 165.25                      | 188.66                             | 11.16   | 5.95                     | 5.21  | 4.59                     | 1.36   |
| 10.    | Odisha            | 3                  | 2                           | 1                                    | 4.38                        | 6.76                               | 0.24 <sup>2</sup>                             | 0.09                     | 0.15  | Not furnished            | -  |
| 11.    | Rajasthan         | 2                  | 1                           | 1                                    | 26.96                       | 47.85                              | 2.396   | 1.303                    | 1.10  | 1.303                    | Zero   |
| 12.    | Telangana         | 2                  | 2                           | 0                                    | 3.72                        | 5.01                               | 0.43  | 0.33                     | 0.10  | 0.33                     | 0  |
| 13.    | Uttarakhand       | 30                 | 17                          | 13                                   | 53.03                       | 47.52                              | 4.219   | 3.884                    | 0.34  | 3.83                     | 0.05   |
| 14.    | West Bengal       | 3                  | 3                           | 0                                    | 1.31                        | 1.27                               | 0.311   | 0.3111                   | 0   | Not furnished            | -  |
|        | <b>Total</b>      | <b>200</b>         | <b>128</b>                  | <b>72</b>                            | <b>1,230.62</b>             | <b>1,342.6</b>                     | <b>120.99</b>                                 | <b>45.24</b>             | <b>75.75</b>                                    | <b>24.07</b>             | <b>10.52</b>                                   |

**Source: State Level Agency**

<sup>2</sup> Information relating to IP Projected, Created and Utilized in respect of 'MIS Debljore' was not furnished

**Annexure 4.9**  
**(Refer para 4.6)**

**Incomplete acquisition of land in MMI projects**

| Sl. no. | State          | Name of the project        | Land required (ha) | Land in possession (Ha) | Land yet to be acquired (Ha) | % of shortfall | Reasons for delay in acquisition   |
|---------|----------------|----------------------------|--------------------|-------------------------|------------------------------|----------------|--|
| 1.      | Andhra Pradesh | Tarakarama Thirtha Sagaram | 1,334.71           | 1,227.18                | 107.53                       | 8              | -  |
| 2.      |                | Gundlakamma                | 3,805.49           | 3,784.43                | 21.06                        | 1              | -  |
| 3.      | Assam          | Dhansiri                   | 1,306.02           | 1,258.90                | 47.12                        | 4              | -  |
| 4.      |                | Borolia                    | 396.80             | 172.49                  | 224.31                       | 57             | -  |
| 5.      | Bihar          | Durgawati                  | 2,675.11           | 2,574.00                | 101.11                       | 4              | The assessment of land was not done properly and fresh requisition of 101.11 acres of land had to be done. There was opposition due to demand of higher compensation by the land owners. |
| 6.      |                | Punpun                     | 1,516.90           | 1,301.63                | 215.27                       | 14             | There was opposition due to demand of higher compensation by the land owners.  |
| 7.      | Chhattisgarh   | Kelo Project               | 1,734.95           | 1,450.21                | 284.74                       | 16             | --   |
| 8.      | Goa            | Tillari                    | 821.91             | 695.99                  | 125.92                       | 15             | -  |
| 9.      | Gujarat        | Sardar Sarovar             | 59,122.00          | 57,150.00               | 1,972.00                     | 3              | Demand of enhanced compensation, change of alignment, change of ownership, difference in area to be acquired, transfer of Government land to private land, land possession issue, etc.   |

| Sl. no. | State           | Name of the project                  | Land required (ha) | Land in possession (Ha) | Land yet to be acquired (Ha) | % of shortfall | Reasons for delay in acquisition   |
|---------|-----------------|--------------------------------------|--------------------|-------------------------|------------------------------|----------------|--|
| 10.     | Jammu & Kashmir | Tral LIS                             | 41.50              | 38.30                   | 3.20                         | 8              | -  |
| 11.     | Jharkhand       | Subernrekha                          | 54,558.00          | 34,002.00               | 20,556.00                    | 38             | -  |
| 12.     |                 | Gumani Barrage                       | 1,001.56           | 936.67                  | 64.89                        | 6              | -  |
| 13.     |                 | Sonua                                | 830.46             | 759.14                  | 71.32                        | 9              | -  |
| 14.     |                 | Surangi                              | 264.80             | 241.10                  | 23.70                        | 9              | -  |
| 15.     |                 | Panchkhero                           | 557.60             | 521.82                  | 35.78                        | 6              | -  |
| 16.     | Karnataka       | Upper Tunga                          | 4,761.29           | 4,053.78                | 707.51                       | 15             | Delay in sending proposals to the SLAO, delay in notifying the proposed land by SLAO, protest from the farmers for land acquisition and delayed payment of compensation to farm ers. |
| 17.     |                 | Sri Rameshwar                        | 698.90             | 250.07                  | 448.83                       | 64             |  |
| 18.     |                 | Bhimasamudra Tank                    | 33.50              | 3.50                    | 30.00                        | 90             |  |
| 19.     |                 | Dudhganga                            | 428.00             | 143.95                  | 284.05                       | 66             |  |
| 20.     | Kerala          | Karapuzha                            | 1,481.00           | 1,379.00                | 102.00                       | 7              | -  |
| 21.     | Maharashtra     | Aruna Medium                         | 714.26             | 490.06                  | 224.20                       | 31             | -  |
| 22.     |                 | Lower Pedhi                          | 3,446.00           | 3,066.00                | 380.00                       | 11             | -  |
| 23.     |                 | Hetwane (Completed in 2008-09)       | 1,147.97           | 1,074.05                | 73.92                        | 6              | -  |
| 24.     |                 | Lower Panzara                        | 2,027.45           | 1,578.33                | 449.12                       | 22             | -  |
| 25.     |                 | Nandur Madhmeshwar Ph-II             | 1,611.17           | 1,543.13                | 68.04                        | 4              | -  |
| 26.     |                 | Tarali                               | 1,215.55           | 797.00                  | 418.55                       | 34             | -  |
| 27.     |                 | Arjuna                               | 697.95             | 645.04                  | 52.91                        | 8              | -  |
| 28.     |                 | Bawanthadi                           | 4,481.78           | 4,416.15                | 65.63                        | 1              | -  |
| 29.     |                 | Lower Dudhna                         | 5,180.00           | 4,996.00                | 184.00                       | 4              | -  |
| 30.     |                 | Lower Wardha                         | 9,348.00           | 8,774.63                | 573.37                       | 6              | -  |
| 31.     |                 | Sarang Kheda (Completed in 2010-11)  | 108.25             | 103.93                  | 4.32                         | 4              | -  |
| 32.     |                 | Kar Medium (Completed in 2008-09)    | 645.36             | 469.66                  | 175.70                       | 27             | -  |
| 33.     |                 | Pentakali (Completed in 2009-10)     | 1,732.47           | 1,651.88                | 80.59                        | 5              | -  |
| 34.     |                 | Tajnapaur LIS (Completed in 2008-09) | 74.73              | 65.02                   | 9.71                         | 13             | -  |
| 35.     |                 | Khadakpurna                          | 4,669.13           | 4,508.09                | 161.04                       | 3              | -  |
| 36.     |                 | Wang                                 | 1,222.00           | 1,122.00                | 100.00                       | 8              | -  |
| 37.     |                 | Krishna Koyna                        | 6,305.87           | 2,112.24                | 4,193.63                     | 67             | -  |

| Sl. no. | State         | Name of the project                | Land required (ha) | Land in possession (Ha) | Land yet to be acquired (Ha) | % of shortfall | Reasons for delay in acquisition  |
|---------|---------------|------------------------------------|--------------------|-------------------------|------------------------------|----------------|---|
| 38.     | Odisha        | Anandpur barrage                   | 4,218.75           | 916.06                  | 3,302.69                     | 78             | Stiff resistance of the land holders  |
| 39.     |               | Telengiri                          | 1,037.17           | 956.31                  | 80.86                        | 8              | -   |
| 40.     |               | Ret Irrigation (KBK)               | 1,303.41           | 940.86                  | 362.55                       | 28             | -   |
| 41.     |               | Kanupur                            | 3,022.31           | 2,484.84                | 537.47                       | 18             | -   |
| 42.     |               | Lower Suktel (KBK)                 | 6,382.38           | 3,609.46                | 2,772.92                     | 43             | -   |
| 43.     |               | Lower Indra (KBK)                  | 4,755.39           | 4,135.46                | 619.93                       | 13             | -   |
| 44.     |               | Rukura Tribal                      | 412.93             | 395.73                  | 17.20                        | 4              | -   |
| 45.     | Telangana     | Rajiv Bheema LIS-                  | 11,886.80          | 11,444.82               | 441.98                       | 4              | -   |
| 46.     |               | Indiramma Flood flow canal of SRSP | 13,725.31          | 11,990.06               | 1,735.25                     | 13             | -   |
| 47.     |               | SRSP Stage-II                      | 7,579.00           | 7,319.00                | 260.00                       | 3              | -   |
| 48.     |               | Palemvagu                          | 331.00             | 329.67                  | 1.33                         | 0              | -   |
| 49.     |               | J. Chokka Rao, LIS                 | 14,695.00          | 12,212.00               | 2,483.00                     | 17             | -   |
| 50.     |               | Sri Komaram Bheem                  | 3,737.77           | 3,554.43                | 183.34                       | 5              | -   |
| 51.     | Tripura       | Manu                               | 184.00             | 116.00                  | 68.00                        | 37             | -   |
| 52.     |               | Khowai                             | 303.46             | 276.58                  | 26.88                        | 9              | -   |
| 53.     | Uttar Pradesh | Bansagar Canal                     | 1,347.68           | 883.511                 | 464.17                       | 34             | -   |
| 54.     |               | Madhya Ganga Canal Phase-II        | 5,053.02           | 1,243.23                | 3,809.79                     | 75             | -   |
| 55.     | West Bengal   | Subarnarekha Barrage               | 5,500.00           | 1,465.83                | 4,034.17                     | 73             | Land acquisition proposals of 862.30 ha were lying with Land Acquisition department |
| 56.     |               | Tatko                              | 442.16             | 403.70                  | 38.46                        | 9              | -   |
| Total   |               |                                    | 2,67,915.98        | 2,14,034.92             | 53,881.06                    |                |   |

**Annexure 4.10**  
**(Refer para 4.7)**

**Issues in Rehabilitation and Resettlement in MMI projects**

| State          | Project  | R&R Issues  |
|----------------|--|---|
| Andhra Pradesh | Gundlakamma Reservoir  | Due to incomplete R&R measures, ayacut was not completed leading to shortfall in IP creation.   |
|                | Tarakarama Teertha Sagaram   | R&R measures had not started as of March 2017.  |
| Bihar          | Durgawati Reservoir  | Provision for rehabilitation of displaced families was not made in the DPR. 32 ha land had been acquired in three villages affecting 276 families due to submergence of the dam area. However, the quality of R&R measures were deficient as basic amenities like schools, community centres, health centres, toilets, PCC roads, temple were not available or were in dilapidated condition.   |
| Goa            | Tilari project   | A total area of 695.99 ha was acquired for construction of canal network and residential building but the acquisition of 125.916 ha land was pending under TIP for Canal Network. Out of 947 Project Affected Persons (PAPs), One Time Settlement (OTS) amount has been disbursed to 432 PAPs and the remaining 515 PAPs are yet to be disbursed with OTS amount.   |
| Jharkhand      | Subarnarekha, Sonua, Surangi and Panchkhero Project  | In four projects, 15,878 families had been displaced. In Subarnarekha Multipurpose Project, out of the total 15,539 displaced families, 2,472 families were yet to be allotted residential plot or the equivalent amount.   |
| Kerala         | Karapuzha  | The rehabilitation of the PAPs were not completed as only 84 out of 161 evicted families were given 42 houses; 68 families were given 75 cents of land each but without construction of the houses; nine families were given neither houses nor land as their whereabouts were not known.   |
| Maharashtra    | Wang   | Even after 22 years of commencement of project, rehabilitation of only 913 out of 1,922 families could be done. Further, land distribution was not done in case of 882 families and partly done in case of 208 families.  |
|                | Aruna  | Delay in release of fund for timely disposal of R&R measures led to protests and demand for payment of compensation as per new rate prescribed under the Land Acquisition Act, 2013 affecting the gorge filling of the dam.   |
| Odisha         | Anandpur Barage, Telengiri, Ret Irrigation, Kanupur, Lower Suktel, Lower Indra and Rukura Tribal project | In seven projects, rehabilitation of only 10,336 out of 19,945 displaced families was done due to agitation of PAPs, shortage of staff and demands for assistance in the Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act (RFTLAR & R), 2013. In terms of percentage, the R&R measures were three <i>per cent</i> in case of Lower Indra project to 98 <i>per cent</i> in case of Lower Suktel project. In Kanupur and Lower Suktel Irrigation Projects, the works were reported to be affected due to agitation of the displaced people. |
| Telangana      | Indiramma Flood flow canal project   | The work of Thotapally Balancing Reservoir and R&R related issues affected the work of branch canals and distributaries, which led to non-creation of IP under the project.   |
|                | Rajeev Bhima LIS   | Due to non-completion of R&R measures and delay in evacuation of Kanaipally village, a portion of Sankara Samudram Balancing Reservoir bund remained incomplete and water could not be impounded to its full capacity of 1.82 TMC. As a result, IP creation was 54 <i>per cent</i> .  |

**Annexure 4.11**  
**(Refer para 4.8)**

**Deficiencies in obtaining Clearances in MMI projects**

| Sl. No. | State          | Project                    | Issues  |
|---------|----------------|----------------------------|---|
| 1.      | Bihar          | Durgawati                  | Forest clearance not obtained during inclusion under AIBP   |
| 2.      | Gujarat        | Aji-IV                     | Forest clearance not obtained during inclusion under AIBP   |
| 3.      |                | Bhadar-II                  |   |
| 4.      |                | SardarSarovar              | Forest clearance, Kachch Desert Wild Life Sanctuary and clearance from Ministry of Railways were not obtained |
| 5.      | Jharkhand      | Surangi                    | Environment clearance and clearance from National Highway Authority not obtained                              |
| 6.      |                | Sonua                      | Environment and forest clearance not obtained   |
| 7.      |                | Gumani                     | Clearance of Environment and Ministry of Railway not obtained   |
| 8.      |                | Panchkhedo                 | Environment clearance not obtained  |
| 9.      | Karnataka      | Ghataprabha Stage-III      | Forest clearance not obtained during inclusion under AIBP   |
| 10.     | Madhya Pradesh | Sindh Phase-II             | Forest clearance was obtained in February 2000, though it was included under AIBP in 1998-99                  |
| 11.     |                | Mahuar                     | Environment clearance was obtained in May 2014 where as the project was included under AIBP in 2013-14        |
| 12.     | Maharashtra    | Warna                      | Forest clearance not obtained during inclusion under AIBP   |
| 13.     |                | Tarali                     | Clearance not obtained from Ministry of Railways and National Highway Authority                               |
| 14.     | Odisha         | Anandpur Barrage           | Environment and forest clearance not obtained   |
| 15.     |                | Lower Indra                | Environment and forest clearance not obtained   |
| 16.     |                | Lower Suktel               | Environment and forest clearance not obtained   |
| 17.     |                | Ret Irrigation             | Forest clearance not obtained   |
| 18.     |                | Telingiri                  | Environment and forest clearance not obtained   |
| 19.     |                | Kanupur                    | Environment and forest clearance and clearance from NHAI not obtained   |
| 20.     | Telangana      | Indiramma Flood Flow Canal | Environment and forest clearance not obtained   |
| 21.     |                | Sri KomaramBheem           | Clearance not obtained from Ministry of Railways  |
| 22.     | West Bengal    | Tatko                      | Forest clearance not obtained   |

**Annexure 4.12**  
**(Refer para 4.9.4)**

**Irregularities and deficiencies in award of works**

| State                 | Project                             | Observation   |
|-----------------------|-------------------------------------|---|
| <b>MMI Projects</b>   |                                     |   |
| <b>Assam</b>          | Dhansiri Irrigation Project         | Three works valuing ₹ 77.41 lakh were awarded in March 2014 to a single bidder without exercising option of retendering, citing time constraints, at a contract value of ₹ 76.63 lakh with the stipulation to complete the works within 30 days of issue of the work order. While a total amount of ₹ 54.26 lakh was paid to the contractor up to March 2017, the works were incomplete as of July 2017, which indicates that the decision to allot work without re-tendering on the grounds of urgency was not justified.  |
| <b>Gujarat</b>        | Sardar Sarovar Project              | <ul style="list-style-type: none"> <li>• Tender documents provided for increase in the amount of performance guarantee/security if the quoted rate of successful bidders are significantly lower than the estimated cost of work. Audit noted that out of 53 works awarded between April 2016 and March 2017, in 12 works the tendered rates were 30 to 40 <i>per cent</i> below the estimated cost. However, project authorities did not take any additional guarantee or security as provided for in the tender documents.</li> <li>• There was delay in award of works of Kachh Branch Canal with estimated cost of ₹ 4,053.81 crore by four to nine years after completion of the work of Narmada Main Canal due to issues related to land acquisition and design and alignment of the canal. This ultimately caused delays in creation of CCA of 25,761 ha.</li> </ul>   |
| <b>Jharkhand</b>      | Subernarekha Multipurpose Project   | <ul style="list-style-type: none"> <li>• According to Jharkhand Public Works Department Code, in case of single tender, the tender process should be cancelled and re-tendered. If in re-tender a single bid is again received, approval for accepting the same may be obtained from the next higher authority.</li> </ul> <p>In pre-qualification bid for the work of "Construction of Kharkai Barrage with gates etc." four bidders were found to have qualified. However, during technical evaluation only one bidder was found to be technically suitable. The work was awarded (July 2013) to the single bidder by the Departmental Tender Committee for ₹ 257.98 crore without going into re-tendering process in violation of codal provisions.</p> <ul style="list-style-type: none"> <li>• Jharkhand PWD Code provides for finalization of tender within three to 15 days. However, in 62 out of 70 test-checked works amounting to ₹ 981.45 crore, there were delays in award of works ranging between three and 241 days.</li> </ul> |
| <b>Madhya Pradesh</b> | Sindh, Bansagar and Mahuar Projects | As per provisions of MPWD manual, works of a value exceeding ₹ two lakh are required to be awarded through widely publicized open tenders. MP Store Purchase Rules also provide for invitation of tenders for all work of value above ₹ 25,000.00. Further, as per these purchase rules purchases through Madhya Pradesh Laghu Udyog Nigam (MPLUN) be made of reserved items. However, in connection with the above projects the concerned Department awarded works of supply and installation of gates, MS steel Aqueducts, Foot Bridge, Pipe line, Hume Pipe, Canal Railing and Sign Board etc, amounting to ₹ 129.58 crore through direct supply order to the two agencies mentioned above in contravention of codal provisions. The procurements with regard to Sindh and Bansagar Projects are reported to be under investigation of Economic Offence Wing of the State.   |



| State          | Project  | Observation  |
|----------------|--|--|
| Madhya Pradesh | Mahuar   | <p>As per contract terms and conditions, the contractor shall not be assigned or sublet the work without written approval of Divisional Officer, who can make the payment only to agreed contractor and not directly to sub-letter. Further, as per MP store purchase rules of MPWD manual, all the works of value above ₹ 25,000 shall be awarded only through open tender by advertising in news paper in a transparent manner. All measureable works shall be recorded and paid only after its proper recording and checking by SDO and EE in measurement book and check measurement register.</p> <p>It was however observed that work valuing ₹ 21.39 crore in Headwork and ₹ 2.10 crore in canal were got executed through petty vouchers by subletters irregularly, without inviting tenders during the currency of original agreement of works. All the payments were made without recording of measurement of work and consequent checking by SDO/EE i.e. without ensuring the quantity and quality of work. Further, the payments were directly made to subletter/petty contractors which was also irregular.</p>  |
| Maharashtra    | Tarali, Arjuna, and Krishna Koyna LIS          | <ul style="list-style-type: none"> <li>• Maharashtra Public Works (MPW) Manual provides that tenders should invariably be invited publicly for all works given out on contract except for extra items which are to be executed as part of a scheme and are inseparable from the original contract and cannot be executed by a different agency. Audit noted that in contravention of these provisions in Tarali and Arjuna projects, works amounting to ₹ 171.63 crore, which were separate and entirely different from the original work (amounting to ₹ 220.64 crore), were allotted to contractors without tendering and competitive bidding. Similarly in Krishan Koyna LIS additional works amounting to ₹ 19.46 crore which were separate from original work (₹ 22.02 crore) was allotted to the contractor without tendering.</li> <li>• Additionally, in the case of Krishna Koyna LIS in 2006-07, Government of Maharashtra (GoM) gave approval for award of works to co-operative sugar factories due to urgency. However, 29 works costing ₹ 43.34 crore were allotted to the co-operatives without any tendering two to five years of GoM's approval. Award of work to sugar co-operatives was violative of codal provisions and their nomination on grounds of urgency lacked justification as the works were awarded after a delay of two to five years.</li> </ul>  |
| Odisha         | Lower Suktel and Telangiri Irrigation Projects | <ul style="list-style-type: none"> <li>• Under the Lower Suktel Irrigation Project, bid for construction of Earth Dam from 490 M to 1,410 M with an estimated cost of ₹ 44.00 crore was invited through e-tender in January 2011. As the tender was not finalised within 90 days, bidders were asked to extend their bid validity twice. The Tender Committee (TC) recommended (September 2011) award of the work to Firm X with a condition that the bidder would deposit additional performance security ₹ 5.82 crore before drawal of agreement. Two months after approval of the TC Firm X was asked to execute agreement by 30 November 2011. The firm requested for 30 days to execute the agreement and furnish additional performance security which was not accepted and its EMD was forfeited. Subsequently after 16 months, the work was awarded to M/s OCC Ltd, a State PSU, in April 2013 at their offered rate of ₹ 59.90 crore. Insisting on deposit of additional performance security and refusing to allow extension of time to a qualified bidder when the bid validity had been extended twice on the request of the project authorities and awarding the work to a PSU lacked prudence as it resulted in extra cost of ₹ 26.12 crore.</li> <li>• As per Central Vigilance Commission, works are to be awarded based on open tenders and award on nomination basis is a contravention of codal provisions. In the Lower Suktel Irrigation Project, the balance work of 'Construction of Spillway' and work of 'Earth Dam' with a total sanctioned</li> </ul> |

| State         | Project   | Observation   |
|---------------|---|---|
|               |   | <p>cost of ₹ 164.74 crore was awarded at a cost of ₹ 200.64 crore including 10 <i>per cent</i> overhead charges, to OCC Limited a PSU without any tendering process.</p> <ul style="list-style-type: none"> <li>For excavation of Telangiri Main Canal, Chief Construction Engineer (CCE), Upper Kolab Project (UKP) invited (March 2012) tender for four works through a common tender Call Notice at an estimated cost of ₹ 26.62 crore. The Tender Committee cancelled the tender as combined evaluation criteria was not incorporated in the bid document. Subsequently, CCE invited fresh bid (October 2012) for three works after incorporating the relevant criteria with revised estimated cost of ₹ 26.34 crore (cost of three works in earlier tender was ₹ 23.51 crore) due to revision of SoR. Thus, failure of the authorities to incorporate combined evaluation criteria in the initial tender document resulted in extra cost of ₹ 2.83 crore at the tender stage itself.</li> </ul>  |
| Rajasthan     | Modernization of Gang Canal                           | <p>The work of PCC block lining on Modernization of Gang Canal (including the cost of manufacturing of PCC blocks) was allotted at 4.74 <i>per cent</i> to 5.80 <i>per cent</i> below tender cost. Audit scrutiny revealed that the department issued a separate work order to another contractor for manufacturing and supply of PCC blocks at five <i>per cent</i> above tender premium even though this work was included in the PCC Block lining work. As a result an excess expenditure of ₹ 30 lakh was incurred due to the difference in tender rates for PCC block lining and rates allowed for PCC Block manufacture ranging from 9.74 <i>per cent</i> to 10.80 <i>per cent</i>.</p>   |
| Uttar Pradesh | Bansagar Canal Project and Madhya Ganga Canal Project | <ul style="list-style-type: none"> <li>In Bansagar Canal Project, against the provision of 30 days for NIT prescribed in the Financial Handbook Vol. VI the division invited (September 2012) tender with notice of 15 days for construction of balance work of the project at an estimated cost of ₹ 403.46 crore. Four bidders sought additional time of 15 days for submitting their bids which was not allowed and as a result could not participate in the tender. Finally, the bid was awarded to another firm in January 2013 i.e. after a delay of over four months. Hence, limiting tender notice period to 15 days of a large contract was not only in violation of codal provisions but also lacked justification as it reduced competition.</li> <li>In one contract of Bansagar Canal Project and five contracts of Madhya Ganga Canal Project phase II valuing ₹ 23.68 crore, time allowed for submission of bids was not adequate and ranged from 15 to 23 days in violation of codal provisions.</li> <li>Scrutiny of eight contracts in Bansagar and Madhya Ganga Projects revealed that two contracts of ₹ seven crore were awarded on the basis of single tender. Re-tendering was not done in any case and the agreements were signed without competitive bidding.</li> </ul> |
| MI Schemes    |   |   |
| Maharashtra   | Unkeshwar KT  | <p>The scheme was included in AIBP in 2007-08 with original approved cost of ₹ 2.07 crore. GoI released ₹ 1.12 crore to the project in 2008-09. The work for construction of Unkeshwar KT weir was awarded (March 2008) to a contractor for ₹ two crore with stipulated date of completion as September 2010. Prior to commencement of work, a decision was taken to convert Unkeshwar KT Weir to High Level Barrage (August 2009) by the project authority leading to an increase in cost to ₹ 89.76 crore. However, despite the massive change both in the scope and cost of work, the project authorities got the work done from the same contractor instead of inviting fresh tenders for the work. A proposal was also made in August 2009 to exclude the work from AIBP on which a decision was still awaited. It was seen that in the meantime a payment of ₹ 59.86 crore</p>  |

| State     | Project   | Observation   |
|-----------|---|---|
|           |   | was made to the contractor and AIBP funds to the extent of ₹ 2.07 crore were utilized till September 2014 after which the work had been stopped.  |
| Mizoram   | Zlingdai, Buhchangdil, Tuikual, Mat and Tlabung   | In the case of five MI schemes costing ₹ 5.66 crore, wide publicity was not given for tenders and lowest bidders were not selected.   |
|           | Awmpuiphai, Buhchandil, Changte, Fuanlui, Lower Tuimuk, Mat, Midumphai, Thangpuilui, Tuikual and Zilngai  | Ten other schemes were undertaken departmentally but in deviation of GFR provisions and construction materials worth ₹ 4.57 crore were procured without calling of tenders.   |
| Meghalaya | Ringdee FIP, Lapdkoh FIP, Kolaigoan FIP, Sarikhushi FIP, Bakanda FIP, Jajil FIP, Amsohkhri FIP, Nengja Bolchugre FIP, Thepdiengngan FIP, Umsophria FIP and MarmainKhuswai FIP | In the case of 11 schemes, there were delays in issue of work order by periods ranging from one month to nearly two years from the date of receipt of administrative approval and financial sanction. The delay was due to delay in provision of funds. |

**Annexure 4.13**  
**(Refer para 4.9.5.1)**

**Irregular expenditure**

(Amount in ₹ crore)

| State                 | Amount | Project                               | Audit Findings  |
|-----------------------|--------|---------------------------------------|---|
| <b>MMI projects</b>   |        |                                       |   |
| <b>Andhra Pradesh</b> | 3.27   | Gundlakamma project                   | <ul style="list-style-type: none"> <li>Project authorities paid ₹ 1.78 crore to the contractor separately towards the work of diversion channel and restoration of road treating the work as additional items even though this work was included in the agreement for the work itself.</li> <li>State Government increased the rate payable for distributaries network from ₹ 9,000 per acre to ₹ 10,500 per acre in June 2015 without applying tender discount or premium<sup>3</sup> in the ongoing contracts with effect from April 2013.</li> </ul> <p>The Department entered into a supplementary agreement in June 2016 for ₹ 3.21 crore for creation of the balance ayacut of 32,333 acres by incorrectly applying tender discount of 5.13 <i>per cent</i> on old rate and arrived at differential rate of ₹ 1,962 per acre<sup>4</sup>, instead of ₹ 1,500 per acre. This resulted in an extra commitment of ₹ 1.49 crore. Department stated that the supplementary agreement would be modified after calculating the differential rate without applying tender discount.</p> |
| <b>Assam</b>          | 9.80   | Champamati Project                    | Expenditure of ₹ 9.80 crore was incurred towards items of work beyond the scope of the approved DPR, without obtaining the approval of the GOI.   |
|                       | 2.06   | Dhansiri Irrigation Project           | <p>As per CWC guidelines, revision of estimate can be done only in case of change in scope of work. The work of construction of Aqueduct over river Khowrang at Ch. 45,250 ft was awarded (April 2000) to a contractor at a tendered value of ₹ 1.85 crore with the stipulation to complete the work within April 2002. The contractor was unable to complete the work within the stipulated duration and the Division granted several extensions of time up to June 2009 without imposing penalty. Instead, the Division enhanced (February 2009) the tender value to ₹ 4.30 crore which included ₹ 2.08 crore due to price escalation and made payment of ₹ 5.10 crore, which included this amount of ₹ 2.06 crore.</p> <p>Allowing price escalation in a contract without any provision for the same and in the case where delay was attributable to the contractor resulted in irregular expenditure.</p>   |
| <b>Bihar</b>          | 1.45   | Durgawati and Punpun Barrage projects | Bihar Mineral Concession Rules stipulates that works divisions should obtain Form M & N and challan from contractors and get the same verified from the District  |

<sup>3</sup> 'Tender discount' is the percentage of the price quoted by the bidder below the estimated cost of the work. 'Tender premium' is the percentage quoted in excess of the estimated cost.

<sup>4</sup> ₹ 10,500 – (9,000 - 5.13 *per cent* of 9,000)

| State        | Amount | Project      | Audit Findings   |
|--------------|--------|--------------|--|
|              |        |              | <p>Mining Officer before making payment for cost of minor minerals and their carriage.</p> <ul style="list-style-type: none"> <li>Records of five agreements executed under Durgawati Right main canal division and Durgawati Left main canal division disclosed that the concerned divisions made payment of ₹ 91.88 lakh irregularly to the contractors for consumption of 2,037.39 cum of sand, 2,378.24 cum of stone chips, 2,643.90 cum metal and 34.20 cum of boulders; without verification of form M and N.</li> <li>Similarly, in the case of Punpun Barrage project, payment of ₹ 53 lakh was made for use of 10,092.89 cum of stone metal without verification of form M&amp;N and challan from the District Mining Officer was irregular.</li> </ul>   |
| Chhattisgarh | 0.36   | Kelo         | <p>The work of construction of head regulator structures of Dhangaon distributary of Kelo project was awarded to the contractor for ₹ 95.18 lakh. The contractor did not execute the work and the EE terminated the contract under risk and cost clause. However, based on representations of the contractor, a decision was subsequently taken in the favour of the contractor to restrict recovery of extra cost of ₹ 35.57 lakh from the contractor. The decision was on the grounds of delay in LA cases. However, as per facts submitted by EE, the LA case at seven out of 11 sites were finalised prior to issue of work order to the contractor. As such, restricting the recovery of payment from the contractor was irregular.</p>   |
| Jharkhand    | 42.20  | Subarnarekha | <p>According to Rule 55 of the Jharkhand Minor Mineral Concession (JMMC) Rules 2004, purchase of minor minerals can be made from lessee's/permit holders and authorised dealers only for which submission of Transport Challan along with affidavits in form 'O' and particulars (sources from where materials were procured, quantity and prices of materials) in form 'P' is required. Genuineness of particulars given in forms O and P were to be examined by District Mining Officers concerned before making payments to contractors. Further, as per instructions contained in Schedule of Rates (SoR), steel of TATA TISCON and Steel Authority of India Limited (SAIL), Bokaro only was to be used in construction works.</p> <p>Audit observed that in 49 out of 70 test-checked agreements, payment of ₹ 42.20 crore on account of carriage of construction materials was made to the contractors by the divisional officers without obtaining required forms "O" and "P" from the contractors. In absence of required forms/challans, verification with the Mining Department could not be done. Besides, sales invoices in support of procurement of steel were also not submitted by the contractors. As such, payments on carriage were made without examination of specified places from where materials were procured. Hence, payment of ₹ 42.20 crore was irregular.</p> |

| State       | Amount | Project      | Audit Findings  |
|-------------|--------|--------------|---|
| Karnataka   | 1.40   | NLBC         | In the work of Km 0.00 to 50.87 of the Canal, a provision was made in the estimate for providing and fixing LDPE sheets for bed and sides of canal including cost of material, labour, laying, jointing, etc. with all leads and lift (Item No 13). The Division had considered ₹ 223.60/sqm for providing and fixing LDPE sheets having thickness of 750 micron as per WRD SR 2012-13. Subsequently, the estimate was revised based on WRD SR 2013-14 and the rate worked out to ₹ 299/sqm by considering thickness of 1,000 micron thick LDPE sheet. Due to wrong adoption of specification of thickness (1,000 micron instead of 750 micron LDPE sheets), there was an extra expenditure of ₹ 1.40 crore.  |
| Maharashtra | 67.40  | Lower Wardha | <p>The work of construction of Cement Concrete lining to Main Canal, Giroli and Deoli branch canal was awarded to M/s Srinivas Construction. During the execution of the work, the contractor consumed 17 lakh cum of Cohesive Non Swelling (CNS) material at the rate of ₹ 468.55 per cum. which included cost of transportation of material from 30 km at the rate of ₹ 362.50 per cum. The project authorities failed to produce any evidence of the quarry from which the material was extracted. The District Mining Office of Wardha district had confirmed that no permission was granted to the contractor for extraction of the material.</p> <p>Thus, loading of the estimate with lead of 30 km without ensuring the actual location of the quarry resulted in irregular payment of ₹ 67.40 crore to the contractor.</p> |
|             | 0.55   | Taralli      | The work of preparation of design, drawing and vetting of the same from CDO Nashik which was responsibility of department was included in the tender. Since this will be an extra effort for contractor, the contractor will load the cost of such work in his bid. This has resulted in loading of administrative and establishment expenditure on works expenditure. Further, in Koparde approach canal, Khatab LBC, Bambavade & Tarali LIS and Pal & Indoli LIS, contractor started work without any approved design. Not only were there delays in works due to time taken in preparing design and getting these approved from CDO, Nashik but also it resulted in EIRL and excess quantities due to change in design of works after approval of modified design by CDO.  |
|             | 8.79   | Hetwane      | <p>Government of Maharashtra issued Government Resolution (GR) in January 1992 sanctioning a special relief in addition to price escalation for all works ongoing as on October 1990 due to unprecedented increase in the cost of construction materials due to gulf war. The said GR also prescribed the formula for calculation of special relief. Para 2 (vii) of the guidelines issued under Government Resolution (GR) (1992) stipulates that the special relief was allowable till all the works under the contracts are complete.</p> <p>The work was allotted in 1985 hence it was eligible for special relief and the contractor was paid ₹ 8.95 crore as special relief for the period from October 1990 to June 2008 (₹ 15.68 lakh between October 1990 and September 1994</p>   |

| State         | Amount | Project                | Audit Findings  |
|---------------|--------|------------------------|---|
|               |        |                        | and ₹ 8.79 crore between October 1994 and June 2008) in addition to the price escalation.<br><br>The effect of unprecedented increase in the cost of materials due to gulf war was over by 1994, however, due to non-revision of the said GR, the contractor continued to get benefit of the same till 2008. This amounts to undue benefit of ₹ 8.79 crore (between October 1994 and June 2008) to contractor.  |
| Telangana     | 4.79   | Palemvagu Project      | As per clause 46 of General Conditions of Contract, escalation on prices on cement, steel and fuel are allowed, if prices increase by more than five <i>per cent</i> over the prevailing market rates. Any hike beyond five <i>per cent</i> over the base rates were to be compensated. However, the Department allowed price escalation towards cement, steel and fuel including the initial five <i>per cent</i> increase.<br><br>The incorrect payment of price escalation resulted in excess payment of ₹ 4.79 crore.   |
| Odisha        | 2.53   | Lower Suktel project   | In December 2003, the State government issued notification for acquiring 476.90 ha land in the village Chudapali submergence area of the project and sanctioned an amount of ₹ 12.88 crore. Subsequently in January 2010 the Special Land Acquisition Officer (SLAO) unauthorisedly revised the classification of land and the estimate to ₹ 15.41 crore. This led to irregular sanction of ₹ 2.53 crore towards cost of land.  |
| Uttar Pradesh | 21.85  | Bansagar Canal Project | In Irrigation Department, contracts are awarded on fixed item rates and there are no provisions of price adjustment. In Bansagar Canal Project, the contract bond was signed with a firm for ₹ 402.52 crore and an amount of ₹ 21.85 crore was paid by two test-checked Divisions on account of price adjustment. Audit observed that the contractor claimed the price adjustment without mentioning any justification regarding changes in price indices. Divisional Officer also did not verify the contractor's claim and paid the amount. Hence, undue benefit of ₹ 21.85 crore was given to contractor.  |
|               | 99.56  | Bansagar Canal Project | Estimate of a project should be prepared after detailed survey so that the works may be executed as per the approved specification and variation and deviation from the technical sanction could be minimised.<br><br>In nine out of 14 test-checked bills of quantities of Bansagar Canal Project awarded to the firm, extra items amounting to ₹ 99.56 crore were added. Thus, works amounting to ₹ 99.56 crore were kept out of bidding process and were belatedly added in the scope of the work to be executed by the firm and, therefore, got executed at non-competitive rates. This was irregular and extended undue benefit to the contractor. |
| Sub Total     | 266.01 |                        |   |



| State                 | Amount        | Project   | Audit Findings   |
|-----------------------|---------------|---|--|
| <b>MI Schemes</b>     |               |   |  |
| <b>Madhya Pradesh</b> | 0.32          | Jhara Minor   | No provision for providing and placing CNS layer below CC lining was made whereas the same was included in Pathakhai Minor Project in selected reaches of canal. The Department executed CNS below CC lining in both schemes without conducting the test for ascertaining the requirement of CNS. This resulted in irregular expenditure of ₹ 32.04 lakh.  |
| <b>Mizoram</b>        | 0.86          | Khawnuai, Zilngai, Changte, Fuanlui, Mat, Buhchangdil, Tuikual, Midun Phai, Lower Tuimuk, Awmpui Phai | Expenditure of ₹ 86 lakh was incurred over and above the estimated cost for hiring of excavator in excess of requirement, Repair and Maintenance during construction included in the DPRs without administrative approval and expenditure sanction, materials for construction and execution of item of work which were not included in the DPR and payment of wages for laying & fitting of GI pipes in March 2017 even before construction of any structural components. |
| <b>Nagaland</b>       | 4.07          | Pangba, Aoyung, Tipfeko-PfeleKalu, Balijan and Khekiho  | During joint physical verification of four MI schemes, it was noticed that works amounting to ₹ 4.07 crore were not executed in accordance with the scope of work approved in the DPR. The deviation from approved scope of work resulted in irregular expenditure of ₹ 4.07 crore.  |
|                       | 0.32          | Diphupani MI scheme   | A standalone MI scheme was taken up (2014-15) for which ₹ 31.50 lakh was released as the work was reported to be completed as per the specification. But during joint physical verification (July 2017) it was noticed that work has not been executed. Hence, undue payment of ₹ 31.50 lakh was made to contractor.   |
|                       | 0.15          | Pangtiyang MI scheme  | Payment of ₹ 17.13 lakh was released under the Pangtiyang MI scheme (2014-15) as the related work was reported to be completed. However, during joint physical verification (July 2017), it was noticed that work has not been executed. Hence, undue payment of ₹ 17.13 lakh was made to contractor.  |
| <b>Odisha</b>         | 0.83          | Tiljodi   | Expenditure of ₹ 83 lakh was incurred without Administrative approval.   |
|                       | 1.45          | Dablojore scheme  | Expenditure of ₹ 1.45 crore was incurred without Administrative approval.  |
| <b>Sub Total</b>      | <b>8.00</b>   |   |  |
| <b>Grand Total</b>    | <b>274.01</b> |   |  |



**Annexure 4.14**  
**(Refer para. 4.9.5.2)**

**Wasteful and Unproductive/idle Expenditure**

(Amount in ₹ crore)

| State               | Amount | Project                     | Audit Findings   |
|---------------------|--------|-----------------------------|--|
| <b>MMI projects</b> |        |                             |  |
| <b>Assam</b>        | 17.79  | Dhansiri Irrigation Project | <p>The work of construction of a silt ejector at chainage 80 M of the Main Canal of the project was awarded (November 2003) to a contractor. The work was not completed as of July 2017, even after incurring expenditure of ₹ 17.79 crore, as the construction of power station work was abandoned due to withdrawal of the interest of APDCL. Meanwhile, during physical verification, heavy siltation was noticed in the Main Canal.</p> <p>The Division stated (July 2017) that a new proposal was in process with APPCL, another power sector company, to complete the work. The fact remained that expenditure of ₹ 17.79 crore already incurred on the project remained unproductive.</p>   |
|                     | 0.10   | Dhansiri Irrigation Project | In the Branch Canal B3M, repair works costing ₹ 9.91 lakh were shown executed between chainage 15,606 m and 17,374 m, which was either lying abandoned (chainage 15,606 m to 16,760 m) or idle (chainage 16,760 m to 17,374 m).  |
|                     | 2.25   | Dhansiri Irrigation Project | In view of the damaged chainage 15,606 m to 16,760 m in Branch canal B3M, the work of construction of a 'Gated Spillway' at the Ch. 16,760 M of the canal to enable supply of water through the canal was allotted (February 2014) to a contractor with the tender value of ₹ 1.91 crore and subsequently revised (January 2015) to ₹ 5.70 crore through the supplementary tender due to increase in scope of work. After executing work valued ₹ 2.25 crore, the contractor discontinued the work since April 2015 for reasons not on record. Till July 2017 the work remained incomplete. The contractor was paid ₹ 1.93 crore, with remaining liability of ₹ 32 lakh, which became unproductive as neither the contractor resumed the work nor did the Division take any initiative to complete the balance work. |
|                     | 1.75   | Dhansiri Irrigation Project | The work of construction of a 'Gated Spillway' along with other ancillary works at Ch 17,932 m of the branch canal No. D2B1M across rivulet Sonai was awarded (March 2010) to a contractor for ₹ 2.80 crore for completion within August 2010. The contractor executed work valued ₹ 2.33 crore but failed to complete the work and discontinued the same since November 2013 for reasons not on record. The work was terminated in December 2015 and the contractor was paid ₹ 1.75 crore. For execution of the balance work and additional work of   |

| State   | Amount | Project                   | Audit Findings   |
|---------|--------|---------------------------|--|
|         |        |                           | ₹ 57 lakh, a fresh work order was issued (March 2016) to another contractor at the tender value of ₹ 1.04 crore for completion within May 2016. This contractor also failed to complete (July 2017) the work.<br><br>Thus, non-completion of the work for more than seven years from the date of issuing the original work order resulted in unproductive expenditure of ₹ 1.75 crore.   |
|         | 0.16   | Jamuna Irrigation Project | Five sheds for Gate Operators were constructed at the discharge point of Head Regulators under the Modernisation of Jamuna Irrigation Project with a total expenditure of ₹ 16.45 lakh. Physical verification of two sheds at Kasimari and Bokolia (D1 and D3 Canal) revealed that the sheds were lying in barren and damaged condition. The expenditure of ₹ 16.45 lakh was rendered unproductive.  |
| Bihar   | 12.23  | Kosi Barrage Project      | One of the main components of the project was construction of pilot channel in the upstream and downstream of Kosi Barrage. Work was awarded for construction of Pilot Channel for ₹ 13.98 crore in March 2009 to be completed by June 2009. Subsequently, the work was stopped after incurring expenditure of ₹ 12.23 crore as it was not considered useful. The expenditure of ₹ 12.23 crore was rendered wasteful as the channel got silted up during the flood. In its place, another channel had to be constructed in the same stretch during 2010-11 in the downstream of barrage at a cost of ₹ 7.38 crore which was avoidable. |
|         | 1.02   | Durgawati Project         | Under Durgawati Left main canal project, two agreements for construction work in Belon Distributary were executed in October 2014 at a cost of ₹ 4.57 crore for completion within six months. The work was incomplete till January 2016 due to which it was decided to stop any further work due to change of alignment of the canal and work was abandoned. As a result, expenditure of ₹ 1.02 crore was rendered wasteful.   |
| Goa     | 10.25  | Tillari Project           | After executing work to the extent of ₹ 10.25 crore on three works of B6 Distributary of Right Bank Main Canal, the work was terminated and it was proposed to adopt the option of Lift Irrigation scheme. The expenditure of ₹ 10.25 crore incurred on the works in the area where the Lift Irrigation scheme has been proposed may be rendered wasteful.   |
| Gujarat | 40.09  | Sardar Sarovar Project    | Though Narmada Main Canal and Branch Canals (except Kutch Branch Canal) were completed, the canal automation system has not been implemented even after incurring an expenditure of ₹ 40.09 crore. The amount includes cost of construction of 428 Control Cabins (CCs) amounting to ₹ 29.77 crore   |

| State     | Amount | Project                | Audit Findings  |
|-----------|--------|------------------------|---|
|           |        |                        | <p>constructed between the period 1993 to 2014. Audit further noticed that planning for canal automation was yet to be finalized and estimates were not yet prepared. As such, the expenditure of ₹ 29.77 crore incurred in construction of CCs when even the plan for canal automation system was not drawn up resulted in idle investment.</p> <p>Expenditure of ₹ 9.92 crore was incurred on availing consultancy services for installing computer aided Remote Monitoring and Control System (RMCS) which remained unfruitful due to deferment in implementation of the project.</p> <p>SSNNL awarded consultancy work (July 2012) for reviewing detailed design and bid documents for automation pilot project for ₹18 lakh for which the Company paid ₹ 40 lakh.</p>  |
| Gujarat   | 1.14   | Sardar Sarovar Project | <p>An escape in case of canal overflow already existed at Ch. 63.072 km of Vallabhipur Branch Canal (VBC) and was considered as the safety valve for drinking water outlet and railway line. However, this escape remained non operational since its inception because of absence of tail channel (drainage line) for discharge of water due to non acquisition of land and UGPL not found feasible. Further, there was GWIL drinking water pipeline in vicinity of the tail channel and escape was prepared against the natural flow (opposite direction) of river (Bhadar) and water could not be diverted from the escape.</p> <p>Estimate of ₹ 1.54 crore for additional escape at Ch. 64.875 km on VBC was approved and lowest quoted rate for the work was ₹ 1.14 crore. Hence the original escape at Ch. 63.072 remained idle since its construction.</p> <p>Due to faulty survey and planning at the time of construction of structures, the escapes was constructed at inappropriate location without completing tail channel and without acquiring sufficient land for tail channel resulting in creation of wasteful asset and extra cost of ₹ 1.14 crore on the new escape.</p> |
| Jharkhand | 12.95  | Gumani Barrage Scheme  | <p>Five agreements of ₹ 13.27 crore were executed during 2015-17 for strengthening of banks, construction of service roads and major repairs of Gumani Main Canal between chainage 0 to 234 and between 629 to 1,083 under jurisdiction of Irrigation Divisions, Barhet and Pakur and ₹ 12.95 crore were paid to the contractors. No work of repair of main canal was executed under jurisdiction of Irrigation Division, Barharwa since work of Gumani Barrage was incomplete due to non-construction of afflux bund. Hence, possibility of releasing water into the Main Canal from Gumani Barrage in the near future is</p>  |

| State          | Amount | Project   | Audit Findings   |
|----------------|--------|---|--|
|                |        |   | remote due to non-acquisition of land for construction of afflux bund. As such, expenditure of ₹ 12.95 crore on repairs of canals/embankments was rendered unfruitful.   |
| Madhya Pradesh | 0.62   | Sagad Medium Project                                | Work on earthen dam, spill way, deck bridge and sluice was executed on the downstream though it was not required resulting in wasteful expenditure of ₹ 62.34 lakh.  |
|                | 0.15   | Sindh   | In agreement of RBC Division Narwar that for metal, a lead of 4 km was included and payment of ₹ 15.30 lakh made with concrete and other items though lead for metal was neither required nor payable.   |
| Maharashtra    | 2.31   | Lower Pedhi   | <p>An amount of ₹ 3.19 crore was paid to the Contractor in February 2010 against 1,210 MT of TMT Steel brought to site, however, the Contractor could not consume the material for more than seven years and the advance was outstanding. Despite the fact that land was not in possession and work could not be executed, the EE granted secured advance to the Contractor. In February 2017, the EE pointed out that the material at site was short by 136 MT and recovered ₹ 51.68 lakh. Till March 2017 i.e., after seven years, the Contractor could use only 198.77 MT of steel leaving balance quantity of 875.234 MT costing ₹ 2.31 crore which was still (July 2017) pending against the Contractor.</p> <p>The Executive Engineer, Amravati Project Construction Division No.1 Amravati stated that after giving the work order, it was expected that the contractor would start the work. However, only 198.77 MT steel out of 1,200 MT could be utilized in the structures during seven years due to non availability of land.</p> |
| Odisha         | 14.82  | Lower Indira, Kanupur and Rukura Irrigation Project | State Schedule of Rate (SoR) of PWD fixed the hire charges of Dozer for spreading 300 cum of earth at ₹ 2,190.00 to ₹ 2,519 per hour. However, while preparing the estimates for compaction of earth dam and canal embankments, the department adopted hire charges ranging from ₹ 2,177.43 to ₹ 2,519 per hour for spreading 100 cum instead of 300 cum. Scrutiny of estimates of 13 works in the three projects revealed that the estimates were inflated by ₹ 14.82 crore out of which ₹ 12.12 crore had already been passed on to contractors.   |
|                | 4.30   | Rukura and Lower Indira Irrigation Project          | Against the requirement of 75 mm thick CC M15 lining, 100 mm thick CC M15 lining was included in the estimate for 37,456.98 cum leading to excess provision of 9,364.25 cum of CC M15 in six concrete lining works of the two projects which resulted in extra avoidable expenditure of ₹ 4.30 crore.  |

| State          | Amount | Project   | Audit Findings   |
|----------------|--------|---|--|
| Telangana      | 7.96   | Indiramma Flood Flow Canal project              | <ul style="list-style-type: none"> <li>In September 2008, the Department entrusted the work of "Thotapally Balancing Reservoir" (TBR) at a cost of ₹ 131.68 crore without ensuring completion of the R&amp;R activities. In January 2016 the Government instructed deletion of TBR from the Project due to increasing cost of R&amp;R. As a result, the expenditure of ₹ 1.24 crore incurred on TBR remained wasteful. Further a bund in the project could not be constructed up to the required height due to objections from villagers as R&amp;R activities had not been completed. As a result, the left side of earth bund was breached during the heavy rains (September 2016) in the catchment areas of Manar River. The failure to construct the bund upto the required height rendered expenditure of ₹ 5.50 crore on the breached bund wasteful.</li> <li>The work of Mothe Reservoir under the project was also not started due to obstruction caused by villagers as R&amp;R issues had not been settled. As a result the amount of ₹ 1.22 crore spent up to April 2011 on Survey &amp; Investigation became unfruitful as of March 2017.</li> </ul> |
|                | 46.64  | Rajiv Bhima Lift Irrigation Scheme              | The work of conversion of existing Shankara Samudram tank into Shankara Samudram Balancing Reservoir (SSBR) under Rajiv Bhima Lift Irrigation Scheme (RBLIS) in Telangana was scheduled to be completed in two years as per agreement (March 2005). However, the work remained incomplete (as of March 2017) due to non-evacuation of villages coming under the submergence of Kanaiahpally village. The work is delayed by 10 years and the expenditure of ₹ 46.64 crore on the construction of SSBR remained idle.   |
| Sub Total      | 176.53 |   |  |
| MI schemes     |        |   |  |
| Andhra Pradesh | 25.88  | Bhavanasi Tank                                  | The Department awarded the works for conversion of Bhavanasi Tank into Mini-Reservoir in Addanki Mandal of Prakasam District without acquiring lands necessary for smooth execution of works. As of December 2016, the Department had acquired only 190.29 acres (40.85 per cent). Consequently, the work was not completed resulting in time over run of six years, non-creation of targeted ayacut, and unfruitful expenditure of ₹ 25.88 crore already incurred on the project.   |
| Bihar          | 6.57   | Hadsa Barhauna Ahar Pyne and Bhaluki Aahar Pyne | These two schemes were approved in 2011-12 at an overall estimated cost of ₹ 10.48 crore. Though the works were not completed the schemes were declared as closed after incurring expenditure of ₹ five crore.   |

| State             | Amount | Project  | Audit Findings   |
|-------------------|--------|--|--|
|                   |        | Jamua & Karua, Rangaheer, Rajala Karrahi and Kakaraka Bandh Saagi  | Four schemes which envisaged IP of 1,040 ha were taken up during 2013-15. Four different agreements were executed at a combined cost of ₹ 3.21 crore with different agencies. The schemes were scheduled to be completed in nine months. However, the contractors had abandoned the works without completing and they remained incomplete even after expenditure of ₹ 1.57 crore.  |
| Chhattisgarh      | 13.21  | Bhanupuri Diversion, Mahadev Dand Tank, Mainalaranga Diversion, Cherama Tank, Anandpur Tank, Pondum Tank, Bohardih Tank, Chikhalkasa Tank, Bharritola Anicut, BoregaonAnicut, Dabripara Stopdam, Phoolnadi Anicut, Makdi Diversion, Panidobir Anicut, Telgara Diversion, Geruanalla Diversion, Gharhari Diversion, Bhelwatoli Tank, Kekrajhariya Tank, Jaitpuri Diversion, Jhirana Tank, Gattam Diversion and Gamhariya Tank | The 23 MI schemes to irrigate 7,540 ha command area with sanctioned cost of ₹ 56.11 crore were closed by the department after inclusion under AIBP and after incurring expenditure of ₹ 13.21 crore, considering them unviable due to agitation by local people, non-receipt of clearance, etc. Thus, the expenditure to the tune of ₹ 13.21 crore on these projects was rendered unfruitful.  |
| Jammu and Kashmir | 1.20   | Lift Irrigation Scheme Dulanja   | The scheme having canal length of 1,800 meters was taken up for execution during 2010-11 with estimated cost of ₹ 1.80 crore. The scheme remained incomplete due to change in site of the pump house and allied civil works viz. rising main, delivery tank, etc. The material for mechanical portion of the work had already been procured which also could not be installed. As a result, expenditure of ₹ 1.20 crore (as of March 2017) incurred on the scheme was rendered unfruitful. |
| Madhya Pradesh    | 1.62   | Berkhedi weir MI scheme  | It was observed that right flank of weir with part of CC work of key, body and toe wall were washed away, which could not be repaired even after incurring additional expenditure of ₹ 12.88 lakh. The scheme was declared completed without finishing the repair work. The weir remained incapable of storing water and therefore, in creation of CCA. As a result, expenditure of ₹ 1.62 crore incurred on the project was rendered unfruitful.  |
| Maharashtra       | 2.99   | Jadhavwadi MI Tank   | The scheme consists of head works, Irrigation cum Power Outlet (ICPO), un-gated spillway etc, but does not have any canal or distribution network. An expenditure of ₹ 2.99 crore incurred towards construction of non-functional ICPO was rendered wasteful.  |

| State     | Amount | Project                   | Audit Findings  |
|-----------|--------|---------------------------|---|
| Odisha    | 5.25   | Dablajore and Temurapalli | The Dablajore and Temurapalli MIPs were sanctioned during 2007-09 at a cost of ₹ 3.78 crore. The head works of the both the projects were completed at a cost of ₹ 5.25 crore. The distribution system to carry water for irrigation purpose could not be completed due non-acquisition of land. This led to not only blocking of ₹ 5.25 crore but also remained as idle inventory for more than six to seven years. This deprived the benefit of irrigation. |
| Sub Total | 56.72  |                           |   |
| TOTAL     | 233.25 |                           |   |

**Annexure 4.15**  
**(Refer para 4.9.5.3)**

**Excess and Avoidable Expenditure**

(Amount in ₹ crore)

| State               | Project                     | Amount | Audit findings  |
|---------------------|-----------------------------|--------|---|
| <b>MMI projects</b> |                             |        |   |
| Assam               | Dhansiri Irrigation Project | 10.34  | <p>Based on the request of the contractor, the department revised rates of Earthwork, RCC and CC works by changing the nomenclature of these items as follows:</p> <ul style="list-style-type: none"> <li>The rates of earthwork in excavation was initially analysed irrespective of lead and lift, the change of nomenclature was made in the estimate restricting the lead and lift to 30 m and 7 m respectively.</li> <li>Revision of rates of RCC and CC works was also done on the basis of extra lift though item rate of RCC/CC was derived on the basis of quantity (volume with length, breadth and depth) per cum irrespective of lift. Further, no provision was made in the PWD schedules/norms for analysis of rates of the said item of works depending on the depth of the work.</li> </ul> <p>Payments made on revised rates resulted in extra expenditure. The Division accepted the observation.</p> |
|                     |                             | 1.45   | <p>Based on discrepancies pointed out by the contractor, the Division prepared a revised estimate including a new item of "Refilling the sides of the structures after its completion with soil/soil mixed with sand, gravel and small size boulders". However, this item was already included in the analysis of rates. The payment of ₹ 1.45 crore on this item resulted in extra expenditure. The Division accepted the observation.</p>   |
|                     |                             | 0.71   | <p>Dhansiri Project Division, Canal-II Irrigation, Udalguri framed an estimate of ₹ 8.65 crore for construction of Aqueduct over river Lakhi. However, the contractors were paid ₹ 71.23 lakh extra for allowance of enhanced rate allowed by way of inclusion 30 per cent incidental charges on labour cost.</p> <p>As such, the enhancement of the tendered rates subsequently without any supplementary tender and that too after the commencement of work cannot be justified at all and is a clear violation/manipulation of the extant CWC guidelines. The provision for inclusion of incidental/hidden cost on labour has been made in the CWC guidelines only for preparation of estimate/DPR for ascertaining the actual cost of the work and for sanction of fund.</p>  |
|                     |                             | 0.56   | <p>Test-check of records of the Executive Engineer, Dhansiri Project Division, Canal-II (Irrigation), Udalguri revealed that the Division included the item "Carriage of cement/reinforcement bars/steel plates/steel materials, etc. by truck carriage from Guwahati to work site including loading and unloading" at the time of preparing revised estimate and accordingly the contractor was paid an amount of ₹ 55.73 lakh for carriage of 3,310.60 MT of the said materials. As the carriage cost of the materials was already included in the item rates of the RCC/CC works, allowance of additional carriage cost of ₹ 55.73 lakh over and above the item resulted in avoidable extra expenditure.</p>   |



| State          | Project                      | Amount | Audit findings   |
|----------------|------------------------------|--------|--|
| Bihar          | Punpun                       | 0.67   | <ul style="list-style-type: none"> <li>• Additional payment of ₹ 26 lakh towards excavation of earth from the foundation of the Barrage was found to be a case of double payment to the contractor.</li> <li>• Under a supplementary agreement for the work of providing and laying of 810.00 MT sheet pile, the Division made payment at higher rates than as per the original agreement, resulting in excess payment of ₹ 41 lakh to the contractor.</li> </ul>  |
| Karnataka      | Narayanapura Left Bank Canal | 187.19 | As per the departmental rules the 25 <i>per cent</i> of weightage over the rates in the SR, was payable only with the final payment bill of the work. But the department paid ₹ 187.19 crore of weightage with running accounts bill for payments made upto 90 <i>per cent</i> of the work completion. Thus, undue benefit of over-payment /pre-payment of ₹ 187.19 crore was extended to contractor.  |
| Madhya Pradesh | Bansagar                     | 0.31   | In the agreement for Keoti canal Rewa Division, item of watering and compaction was applied/clubbed for whole quantity of excavation in hard soil/hard moorum instead of only for quantity of filling/earthwork. It was observed that 1,48,251.30 cum quantity was used in filling/earthwork, however, watering and compaction was not executed, which resulted in excess payment of ₹ 31.37 lakh.   |
|                |                              | 0.61   | The shrinkage allowance was to be deducted at the rate of two <i>per cent</i> in earthwork of embankment. However, in agreement of Keoti Canal Division, Rewa in earthwork of canal in filling section the shrinkage allowance was deducted at the rate of 10 and 20 <i>per cent</i> resulting in excess payment of ₹ 61.14 lakh to contractor.  |
|                |                              | 0.29   | In the agreement of Keoti canal, Rewa, payment of ₹ 9.53 crore was made to the contractor in the 42 <sup>nd</sup> RA bill but in 43 <sup>rd</sup> and final bill prepared by division, actual total amount of value of work done was ₹ 9.25 crore. This resulted in excess payment of ₹ 29 lakh to contractor due to inflated measurement.   |
|                |                              | 0.24   | As per provisions, construction of haul road is to be done by contractor at his own cost by using excavated and available hard moorum. In two agreements of Keoti Canal Division, Rewa, the Division made payment of ₹ 23.98 lakh to the contractor for collection and spreading of hard moorum resulting in excess payment.   |
|                |                              | 0.11   | The Department withheld the quantity of 5,033.70 cu m in excavation for canal for non-execution of work of dressing from contractor's running bill but it was released in final bill without execution of dressing work on record. This resulted in excess payment of ₹ 10.98 lakh to contractor.  |
|                | Mahuar                       | 2.27   | As per provisions, item of cement concrete (CC) is a complete item, thus collection rate of metal is not payable for it separately. In the agreement of WRD Division, Shivpuri, a lead of 15 km for metal was added in estimated rate on which tender percentage was paid. Further, though Shivpuri district did not contain BT or granite metal, payment for BT metal/granite in CC was added and paid for. In addition, despite complete item of CC extra rate of collection of metal for CC was also added to arrive at estimated rate and paid. This resulted in excess payment of ₹ 2.27 crore to contractor. |
|                |                              | 5.85   | As per provision of agreement for construction of RBC canal with its minors, sub-minors and structure with minors, main canal of RBC was to be constructed in a length of 25.20 km. It was observed that main canal of RBC was constructed only in the length of 21.09 km against the approved length of 25.20 km but division paid full   |

| State       | Project                           | Amount | Audit findings   |
|-------------|-----------------------------------|--------|--|
|             |                                   |        | amount to contractor, which resulted in excess payment of ₹ 4.25 crore. Further, according to the Payment Schedule annexed with agreement, percentage payment for commissioning and trial of the constructed system and after defect liability period (three years) was 3.80 <i>per cent</i> . But as per final bill paid to the contractor, division paid full contract amount to the contractor resulting in excess payment of ₹ 1.61 crore.   |
|             | Singhpur                          | 0.25   | It was noticed that estimated rates for excavation was ₹ 30.13 per cum but in the balance work, rates of excavation was taken as ₹ 90.99 per cum. Thus due to incorrect increase in rate in balance work, extra payment of ₹ 24.48 lakh was made to contractor.  |
|             |                                   | 0.16   | In the agreement of "Construction of main canal, distribution, minor and sub minor with distribution system with all respect of Singhpur Barrage Project", cost of laying of CNS layer in entire length was included in fixed cost of work. It was observed that CNS layer was not laid in initial reach of main canal from 0 to 5 km but recovery for same was not made, which led to excess payment of ₹ 16.11 lakh.   |
|             | Sagad                             | 1.01   | As per agreement provision and estimated rate of CC items in the work of construction of earthen dam, spill way, deck bridge and sluice, Narmada sand was to be used for cement concrete work for which a lead of 180 km was provided. It was observed that during execution, contractor used 14,205.12 cum of local sand in place of Narmada sand but no recovery for the same was made from contractor's payment. This led to excess payment of ₹ 1.01 crore.  |
| Maharashtra | Lower Panjara and Waghur projects | 3.01   | As per para 28 and 34 of the Land Acquisition Act, 1894 interest at nine <i>per cent</i> for one year and thereafter at 15 <i>per cent</i> per annum on the compensation amount shall be paid from the date of taking possession of the land to the date of final payment of compensation. In case the farmer is not satisfied with the amount of compensation paid to him, he may approach the court of law for enhanced compensation. If the court decides in favour of the farmer, the enhanced compensation should be paid to the farmer immediately and in case of any delay penal interest at the rate of 15 <i>per cent</i> shall be paid to the contractor till the date the compensation is paid to the farmer.<br><br>Audit observed that there was delay in payment of the enhanced compensation to 134 farmers from the date of award (2010-2015) for period ranging from two to 70 months which resulted in payment of interest of ₹ 3.01 crore for the delayed period. |
|             | Lower Pedhi                       | 1.05   | As per the Central Excise Tariff, the gates of irrigation projects manufactured at site are exempted from payment of excise duty. Also, the pipes required for supplying water for irrigation or drinking purpose are exempted from payment of Central Excise duty (CED). Cost estimates of 2,082.93 MTs Gates/ Pipes component of CED was loaded despite the fact that the contractor was not liable to pay any CED.  |
|             | Lal Nalla                         | 0.65   | Cost estimates of 1,855.43 MTs Gates/Pipes component of CED was loaded despite the fact that the contractor was not liable to pay any CED.   |
|             | Nandur Madhmeshwar Ph-II          | 0.37   | Cost estimates of MTs Gates/Pipes component of CED was loaded despite the fact that the contractor was not liable to pay any CED.  |

| State     | Project                               | Amount | Audit findings   |
|-----------|---------------------------------------|--------|--|
| Odisha    | Lower Suktel project                  | 58.28  | <ul style="list-style-type: none"> <li>The works of spillway and earth dam of the project were awarded to OCC at their offered rates of ₹ 140.74 crore and ₹ 59.90 crore in December 2011 and April 2013 respectively. Scrutiny of offered rates of OCC revealed that rates adopted by OCC for stone, chips and sand were more than the departmental rates. Sanction of higher rates of ignoring the departmental rates was not as per the financial propriety. This resulted in extra cost of ₹ 12.82 crore for the project.</li> <li>Vibratory roller was used instead of the more economical Sheep Foot Roller for compaction of earth of 8,21,651.67 Cum in construction Earth Dam which led to extra cost of ₹ 1.60 crore.</li> <li>There was excess establishment expenditure of ₹ 43.86 crore which was avoidable.</li> </ul> |
|           | Rukura and Kanupur Irrigation Project | 3.40   | Three works (two under Rukura and one under Kanupur project) were awarded with agreement value of ₹ 97.87 crore for completion between July 2012 to March 2016. Supplementary agreements were drawn with the agency for execution of all works with extra items at a cost of ₹ 38.58 crore. Supplementary agreements were concluded for execution of extra item at current SoR as per agreement condition. Had these items been included in agreements at initial stage and works awarded after detailed survey and investigation, extra items for ₹ 38.58 crore could have been included in the agreements and executed at lesser rate of ₹ 3.40 crore as per agreement rate. Thus, execution of works through supplementary agreements resulted in extra cost of ₹ 3.40 crore.   |
|           | Kanupur Irrigation Project            | 22.04  | <ul style="list-style-type: none"> <li>Works under six packages having value of ₹ 112.07 crore were executed under the Kanupur canal division. The works included provision for excavation of 18.11 lakh cum of earth, at the rate of ₹ 45.00 to ₹ 53.60 per cum. Audit observed that despite availability of earth of above quantity, a provision was made for obtaining earth of 10.54 lakh cum from borrow area at a cost ₹ 15.63 crore could have been avoided.</li> <li>For a contract of cement work, cost was inflated to ₹ 6.50 crore by adding re-handling charges of ₹ 3.85 lakh cum of minor coarse aggregates in the estimate. Hence, undue benefit of ₹ 6.41 crore was passed on to the contractor for execution of 3.76 lakh cum of cement work.</li> </ul>  |
|           | Telingiri Irrigation Project          | 2.50   | For fabrication, erection and transportation of radial gates of spillway, OCC gave a rate of ₹ 20.38 crore in May 2010. As the offered rate was inclusive of drawing and design charges, the same was not accepted by the project authorities. Subsequently, OCC offered a rate of ₹ 22.88 crore in February 2012 for the work excluding drawing and design charges and the same was accepted. Acceptance of tender at a later date resulted in extra cost of ₹ 2.50 crore.  |
| Telangana | J.Chokha Rao                          | 524.82 | The alignment of a tunnel in Package-II under Phase-III costing ₹ 531.71 crore was proposed along an ancient heritage temple. During the execution of the work, the local people objected to the blasting of the tunnel. Alternate tunnel arrangement suggested by the State Level Standing Committee (SLSC) for additional expenditure of ₹ 44.64 crore was not taken up and instead the  |

| State          | Project              | Amount | Audit findings   |
|----------------|----------------------|--------|--|
|                |                      |        | Government decided in March 2015 in favour of laying a pipeline instead of tunnel at a revised cost of ₹ 1,101.17 crore. This resulted in additional commitment of ₹ 524.82 crore of which ₹ 214.21 crore was incurred.  |
|                | Palemvagu            | 0.75   | On a scrutiny of data relating to the additional work of the project, it was noticed that 14 <i>per cent</i> was loaded in the estimates towards Contractor's profit which inter-alia, includes provision towards insurance premium for the work. Despite inclusion of insurance premium in the estimates under Contractor's profit, an amount of ₹ 75 lakh was reimbursed to the contractor for the additional works resulting in excess payment.   |
|                | SRSP Stage-II        | 0.28   | In Package-53 of SRSP-II, the Department noticed (November 2012) that the contractor was paid an amount of ₹ 1.36 crore towards investigation, designs of minors, sub-minors and structures of field channels. However, the agency did not actually submit the field channel investigation and survey reports. The Department assessed the excess payment as ₹ 91 lakh towards investigation and survey of field channels. Out of this, an amount of ₹ 62 lakh was recovered (March 2013), leaving a balance of ₹ 28 lakh to be recovered.   |
| Sub total      |                      | 829.19 |  |
| MI Schemes     |                      |        |  |
| Assam          | Subura               | 0.63   | The works were awarded to contractors during 2011-12 and 2012-13 based on erroneously prepared item rates, allowing extra quantity of material and labour for different items in contravention of Divisional Schedule of Rates (DSR), causing thereby excess expenditure of ₹ 63 lakh as well as undue benefit to the contractors to that extent.  |
| Madhya Pradesh | Barkheda Chajju Tank | 0.40   | As per provisions, the quantity of utilizable rock to be recorded in the Material-at-Site account shall be 1.3 times of the quantity paid in excavation, which will be issued to contractor at site for utilization in work. In one agreement, the contractor excavated 2,915.87 cum hard rock, thus 1.3 times of it i.e. 3,790.63 cum metal was available at site for utilization in work. Despite that a lead of boulder/ metal of minimum 2 km was included in estimated rates and paid to contractor, resulting in excess payment of ₹ 4.29 lakh.<br><br>It was further observed that contractor utilised stone dust in concrete in place of Karera sand, as stipulated, which resulted in excess payment of ₹ 36.10 lakh.   |
|                | Barkheda Chajju      | 0.19   | <ul style="list-style-type: none"> <li>As per Irrigation Specifications, temping is to be provided in locations where compaction of the earth fill material by means of roller is impracticable or undesirable. Though the schedule of quantities did not include the work of temping, it was also paid without execution and requirement resulting in excess payment of ₹ 2.62 lakh.</li> <li>As per irrigation specification, CNS layer is to be provided after testing the sub-grade if swelling pressure of sub-grade is above 0.50 kg/sq cm i.e. in black cotton or expensive soil, which was reiterated by department time to time. Though the canal excavation had negligible swelling pressure, the Department provided and measured CNS in entire canal length without even testing the sub-grade, resulting in extra expenditure of ₹ 16.33 lakh.</li> </ul> |

| State     | Project   | Amount | Audit findings  |
|-----------|-----------|--------|---|
|           | Mirahasan | 0.14   | <ul style="list-style-type: none"> <li>Though in schedule of items, the rates for providing and fixing 25 mm dia steel was calculated per bar, the same was paid for at per metre rates which resulted in excess payment of ₹ 8.43 lakh.</li> <li>Although trimming charges were not payable where payment for dressing in earth work/excavation has already been made, the Department paid ₹ 5.57 lakh for trimming for excavation of soil in a quantity of 2,02,111.38 sq m.</li> </ul> |
| Sub total |           | 1.36   |   |
| TOTAL     |           | 830.55 |   |

**Annexure 4.16**  
**(Refer para 4.9.6)**

**Undue benefit to the Contractors**

**A: MMI projects**

| State   | Project Name        | Amount<br>(₹ crore) | Nature  |
|---|---------------------|---------------------|---|
| <b>Termination of contracts without invoking risk and cost clause</b> |                     |                     |   |
| Chhattisgarh  | Mahanadi            | 19.35               | <ul style="list-style-type: none"> <li>The work of construction of Balance Cement Concrete lining by Paver machine in selected reaches from Km.102.10 to 113.33 of Mahanadi Main Canal was awarded (September 2007) to a contractor under two contracts for a total cost of ₹ 14.01 crore. As per the terms and conditions of the contracts, the works would remain at the risk and cost of the contractor till complete work was delivered. The contractor did not complete the work as stipulated in the contract. Instead of terminating the contracts at the risk and cost of the contractor, the EE paid dues of ₹ 1.10 crore and closed the contracts without invoking the risk and cost clause. The department entered into a fresh contract for the remaining work only in February 2015 for an amount of ₹ 28.66 crore, which further resulted in extra cost of ₹ 17.70 crore to the Government.</li> <li>Similarly, another contract for cement concrete lining from RD 0 to 1920 mt, 2,550 to 3,200 mt and 6,660 to 17,525 m of Kanwarhat branch canal, awarded at a cost of ₹ 2.20 crore which was not fulfilled by the contractor, was also closed without invoking the risk and cost clause. The balance work valuing ₹ 1.34 crore was awarded to another contractor at a cost of ₹ 2.99 crore, resulting in extra cost of ₹ 1.65 crore.</li> </ul> |
| Jammu and Kashmir   | Kandi Canal Project | 3.37                | <p>Mobilization advance of ₹ 3.55 crore for construction of canal was paid to the contractor (2007-08) against hypothecation of machinery, but the Department failed to register the same in the name of the Executive Engineer as per the terms of the hypothecation deed. The contractor abandoned the work in January 2010. At that time, an amount of ₹ 3.37 crore towards mobilisation advance was recoverable from the contractor. However, as the hypothecation deed was not registered in the name of the Department, it was unable to forfeit the machinery upon abandonment of work by the contractor.</p> <p>Subsequently, the contractor was granted stay order by Hon'ble High Court of Jammu and Kashmir against recovery of mobilization advance in November 2010. Thus, the outstanding mobilization advance of ₹ 3.37 crore remained unrecovered and machinery hypothecated to the Department against the said advance also could not be claimed as of September 2017. Further, the department advanced ₹ 65 lakh to the Stores Procurement Department, Jammu for procurement of construction material between December 2006 and May 2008, but the material was not received as of September 2017, due to which the amount also remained unadjusted.</p>   |

| State                 | Project Name                              | Amount<br>(₹ crore) | Nature   |
|-----------------------|---|---------------------|--|
|                       |   |                     | The Department stated (September 2017) that the matter regarding allotment of work afresh shall be considered as per the decision taken by the higher authorities and State Level Contract Committee.  |
| <b>Jharkhand</b>      | Subernarekha                              | 1.88                | <p>In the case of termination of contract due to fundamental breach of contract by the contractor, the Engineer shall issue a certificate for the value of work done after deducting advance payments, other recoveries due, taxes at source and 20 <i>per cent</i> of the value of the work not completed.</p> <p>Under the agreement for Construction of Earthwork and lining from Km 0.00 to 4.56 and Km 6.03 to 6.39 of Icha Right Main Canal, the Engineer terminated the contract due to fundamental breach of contract by the contractor but did not raise certificate of payment for a demand of ₹ 1.88 crore.</p> |
| <b>Karnataka</b>      | Guddada Mallapura                         | 50.60               | The work valued ₹ 35.87 crore related to lift irrigation system was taken back from first contractor on account of slow progress and given to another contractor at the cost of ₹ 86.47 crore. The extra cost of ₹ 50.60 crore was not recovered from first contractor by invoking risk and cost clause. Hence, an undue benefit of ₹ 50.60 crore was extended to the first contractor.  |
|                       | Ghataprabha                               | 0.68                | The contractor was able to do work of ₹ 21.77 lakh out of work of ₹ 69.57 lakh even after extension 10 times the original period of execution. Hence, the work was rescinded and reallocated to another contractor who completed it in ₹ 1.16 crore. The department did not recover the additional cost caused due to undue delay from first contractor by invoking risk and cost clause. Hence, an undue benefit of ₹ 67.80 lakh was extended to the first contractor.  |
| <b>Kerala</b>         | Karapuzha                                 | 1.14                | On the downstream of the spillway channel, an incomplete structure of a Bridge Proper without approach road and handrails was constructed using AIBP fund. The agreement was executed on 29.03.2005. In spite of granting several extensions, the contractor failed to complete the work. The work was terminated in May 2014 at the risk and cost of the contractor. The contractor has completed only the work of the bridge proper for which an expenditure incurred was ₹ 1.14 crore. The risk and cost liability was yet to be recovered from the contractor. Balance work has not been arranged so far.              |
| <b>Madhya Pradesh</b> | Sindh Project, Ph-II and Singhpur project | 36.08               | In nine agreements of Sindh Project Phase-II and one agreement of Singhpur Medium Project, works were rescinded due to delay or non-execution of work by contractor and balance works were executed through other agreements at higher rates under debit clause but recovery of the debit cost of ₹ 36.08 crore was not done from the contractor.  |
| <b>Telangana</b>      | Indiramma Flood flow                      | 23.74               | The work of formation of Thotapally Reservoir <sup>5</sup> under Indiramma Flood Flow Canal (IFFC) project was awarded (September 2008) for  |

<sup>5</sup> Investigation, design and execution of Ogulapur (Thotapally) Balancing Reservoir to store 1.70 TMC of water near Thotapally village in Karimnagar District under Flood Flow Canal project of SriramSagar Project (Reservoir work)



| State   | Project Name  | Amount<br>(₹ crore) | Nature   |
|---|---|---------------------|--|
|   | canal of SRSP                                       |                     | an amount of ₹ 131.68 crore with a stipulation to complete the work within 36 months (September 2011). The contracting agency completed (August 2010) investigations and designs of reservoir work and an amount of ₹ 1.24 crore was paid for. Thereafter the agency stopped (December 2013) the work due to non-completion of Rehabilitation and Resettlement (R&R) activities and land acquisition. The contract was terminated in June 2015. Out of the total amount of ₹ 28.35 crore <sup>6</sup> to be recovered from the agency on termination, the Department recovered (March 2017) only ₹ 4.61 crore and the Department was yet to recover another ₹ 23.74 crore from the agency. |
| <b>Sub Total</b>  |   | <b>136.84</b>       |  |
| <b>Non-levy of Liquidated Damages and other penalties</b> |   |                     |  |
| <b>Bihar</b>  | Durgawati   | 1.29                | Three agreements viz. Construction of Durgawati Right main canal, Construction of Belon distributory of Durgawati left main canal and Construction of Bhoraiya Minor distributor of Durgawati left main canal were closed without work being completed and final payment was made without deducting LD of ₹ 84 lakh, ₹ 29 lakh and ₹ 16 lakh respectively.   |
| <b>Gujarat</b>  | Sardar Sarover Project                              | 11.89               | The work for providing and constructing service road was awarded in January 2017 at a cost of ₹ 95.68 crore with stipulated completion by July 2017. As of September 2017, the contractors could only complete works valued at ₹ 37.47 crore, but liquidated damages amounting ₹ 11.89 crore was not recovered as per terms of contract.   |
| <b>Jharkhand</b>  | Subernarekha, Gumani, Sonua, Surangi and Panchkhero | 58.38               | 66 works under five projects (Subernarekha Multipurpose: 46; Gumani: 9; Sonua: 9; Surangi: 1; Panchkhero: 1) were found delayed for periods ranging between 23 and 1,467 days. Out of applicable LD of ₹ 78.55 crore, amount of ₹ 58.38 crore was not deducted.  |
| <b>Karnataka</b>  | Upper Tunga   | 6.47                | Liquidated damages of 7.5 per cent was to be charged from contractor incase of delay of more than 90 days. But the contractors were charged only ₹ 0.59 lakh as penalty instead of ₹ 6.47 crore as liquidated damage for more than 90 days of delay in 16 works related to Upper Tunga Project.  |
| <b>Madhya Pradesh</b>                                     | Bansagar and Mahuar projects                        | 5.95                | It was observed in three agreements of Bansagar Unit-II and one agreement of Mahuar Medium Project that the contractor did not execute or complete the work in stipulated period of completion, but Department did not levy penalty for same which resulted in undue financial benefit to contractors of ₹ 5.95 crore.   |
| <b>Rajasthan</b>  | Narmada Canal                                       | 4.20                | Due to non-completion of work at stipulated time, penalty of ₹ 4.28 crore (₹ 1.25 crore under clause 2 and ₹ 3.03 crore under clause 3C) was imposed on the contractor, out of which, ₹ 7.65 lakh only was recovered and the remaining amount of ₹ 4.20 crore was yet to be recovered.   |
| <b>Sub Total</b>  |   | <b>88.18</b>        |  |

<sup>6</sup> including forfeiture of Performance Bank Guarantee, non-recovery of 20 per cent on balance value of work and non-recovery of mobilization advance



| State   | Project Name                | Amount<br>(₹ crore) | Nature   |
|---|-----------------------------|---------------------|--|
| <b>Non/Short recovery of advances and insurance cover</b> |                             |                     |  |
| Andhra Pradesh  | Kanupur                     | 0.42                | Government awarded (October 2002) the work of lining from Km 0.00 to Km 7.20 of Kanupur Canal project with a cost of ₹ 9.78 crore under AIBP. The scheduled date of completion of work was March 2003. Vigilance and Enforcement Department pointed out that the department selected the contractor without proper verification of genuineness of experience certificates enclosed to tender documents. Accordingly, the department determined (April 2003) the work. The Department took up (June 2008) the work under Package-4 of Modernisation of Kanupur Canal System with State funds. The total expenditure from AIBP fund up to the date of termination of contract (April 2003) was ₹ 71 lakh. This amount included mobilization advance of ₹ 42 lakh paid to the contractor which was yet to be recovered. The remaining expenditure of ₹ 29 lakh was incurred on departmental charges on tender schedules, etc. Thus, the whole expenditure became wasteful and was a loss to the Government. |
| Assam   | Dhansiri Irrigation Project | 0.17                | While making payment, statutory deduction towards security deposit of ₹ 17 lakh at the rate of 10 <i>per cent</i> of payment was not made from the contractor's bills, while making payment for the work of construction of Gated Spillway at the Ch. 16,760 m of the B3M canal.   |
| Bihar   | Punpun                      | 7.22                | <ul style="list-style-type: none"> <li>Though the agreement did not provide for grant of Plant and Machinery advance, the Executive Engineer of Punpun Barrage Division-1, Goh paid such advances of ₹ 13.44 crore, out of which amount of ₹ 6.92 crore was not recovered from the contractor. The work remained closed since 2013.</li> <li>Agreement entered for construction of main canal of the Punpun Barrage Scheme had to be cancelled due to land acquisition issues, however, mobilization advance of ₹ 30 lakh given to the contractor was not recovered.</li> </ul>  |
| Gujarat   | Sardar Sarovar project      | 12.96               | Miscellaneous Public Works advances amounting to ₹ 11.16 crore given to various agencies between 2011 and 2016 were outstanding from these agencies, as of March 2017. Similarly, mobilization advance (MA) of ₹ 1.80 crore was not recovered from the contractor as of July 2017. Out of MA ₹ 17.26 crore given to the agency in February and April 2011.   |
| Jharkhand   | Subernarekha                | 8.60                | As per the agreement, the contractor was to provide insurance cover for any loss or damage or personal injury or death, before start date of the work. The minimum insurance cover should have been ₹ five lakh per occurrence limited to four occurrences. In case of failure, the Employer was to recover the premium from any payment due to the contractor. In 43 agreements, neither the contractors submitted insurance cover of ₹ 8.60 crore nor the employer recovered premium for insurance cover.  |
| Maharashtra   | Warna                       | 2.89                | The work of Kadavi Aqueduct was awarded in December 2007 at tendered cost of ₹ 32.58 crore. Up to 6 <sup>th</sup> RA bill (July 2010), payment of ₹ 14.17 crore was made to contractor including secured advance of ₹ 4.41 crore out of which only ₹ 1.52 crore was recovered. Instead of recovering the balance amount of secured advance, payment of ₹ 60.12 lakh was made vide this Bill. As such, an amount of ₹ 2.89 crore was not recovered since 2009.  |

| State  | Project Name                       | Amount<br>(₹ crore) | Nature  |
|--|------------------------------------|---------------------|---|
|  | Lower Pedhi                        | 3.91                | The contract agreement did not have any provision for payment of mobilization advance to contractor. However, the Executive Engineer paid (April 2010) Mobilisation advance of ₹ 7.50 crore to the Contractor. Moreover, the land required for the project was also not in possession of the Project Authorities. In such case the purpose of payment of mobilization advance to achieve the progress of work was not possible. Despite the advance being granted in April 2010, the mobilization advance was not completely recovered even after seven years from the date of payment despite the fact that the contractor had executed work costing ₹ 12.36 crore till March 2017 (11th RA bill paid in February 2017). As of August 2017, principal amount of ₹ 5.10 crore and interest of ₹ 4.09 crore could be recovered and ₹ 2.40 crore of principal and ₹ 1.51 crore of interest amount was outstanding for recovery. |
|  | Sangola Branch Canal               | 2.27                | As per para 213 (1) of MPW manual, security should, in all cases, be taken for the due fulfilment of a contract.<br><br>SD was not recovered in case of award of EIRL and excess quantities under clause 38 as seen from last RA bill of Man Aqueduct and latest RA bill of other works of lining of canals and strengthening of aqueducts under this project. The total of such EIRL and excess quantities was ₹ 30.97 crore and ₹ 14.51 crore respectively. As the rate of SD is five <i>per cent</i> , it means that an amount of ₹ 2.27 crore was not recovered from contractor.  |
| Telangana  | Indiramma Flood flow canal of SRSP | 4.42                | Contractors were eligible for mobilization advance which was recoverable from the running account bills. On Mid Manair Reservoir work of IFFC, the contractor was paid (March 2010) mobilization advance of ₹ 16.97 crore (five <i>per cent</i> of the contract value). The scope of work was reduced (November 2010) by ₹ 255.95 crore due to entrustment of certain portion to other agencies. An amount of ₹ 12.55 crore, was recovered (April 2010) out of the mobilization of ₹ 16.97 crore. The balance of ₹ 4.42 crore was not recovered though more than seven years had elapsed.   |
| <b>Sub Total</b>                                       |                                    | <b>42.86</b>        |   |
| <b>Short recovery of dues towards excavation works</b> |                                    |                     |   |
| Gujarat  | Sardar Sarovar Project             | 20.74               | Hard rock and Soft rock excavated were neither accounted for nor disposed. Further, no deduction were made from the item rates for excavation of the rocks from the contractor's bill on the ground that there was no such provision in the contract which led to non-realization of cost of hard rock of ₹ 20.74 crore.  |
| Madhya Pradesh   | Mahuar Project                     | 0.15                | In one agreement of Mahuar Right Bank Canal and three agreements of Mahuar Left Bank Canal total 1,13,999.30 cu m hard rock was excavated which should be issued to contractor and for which an amount of ₹ 74.86 lakh was recoverable from contractor's payment. But Department recovered only ₹ 59.56 lakh resulting in undue benefit of ₹ 15.30 lakh to the contractor.  |
| Odisha   | Lower Suktel                       | 1.24                | The cost of hard stone as per offer price of OCC with lead charges arrived at ₹ 344.20 per cum. But the department had finalized the rate of ₹ 230.20 per cum recoverable from OCC towards retrieval of hard stone for Spillway, LSIP. There was less recovery of   |

| State                     | Project Name | Amount<br>(₹ crore) | Nature  |
|---------------------------|--------------|---------------------|---|
|                           |              |                     | ₹ 114.00 per cum of hard stone. Hence, Undue financial benefit of ₹ 1.24 crore was passed on to the contractor for as short recovery for 1.09 lakh cum of retrievable hard rock.  |
| Telangana                 | Palemvagu    | 1.67                | As per agreement conditions for Palemvagu Project, seigniorage charges were to be recovered on use of earth by the contractor on the work. The recoveries were to be made from the running account bills of the contractors at rates as prescribed in the agreement.<br><br>The contractor executed bund work utilising quantity of 7,86,545 cubic metres (cum) of earth for additional spillway work and was paid (March 2017) an amount of ₹ 11.64 crore. However, seigniorage charges were recovered for a quantity of 25,888 cum only, resulting in short recovery of ₹ 1.67 crore and undue benefit to the contractor.   |
| Uttar Pradesh             | Lachura Dam  | 9.22                | Indian Standard Code IS-1200 Part-I prescribe that in the excavation of canals where soft soil, hard soil, soft or disintegrated rock and hard rock are mixed, quantity of soil should be deducted from the total excavated quantity to arrive at the total quantity of excavated rock.<br><br>As per the terms of contract, the excavated stones were to be utilised on the construction of the dam as per requirement and the cost of the remaining stones was to be recovered from the contractor. As per records, the Division utilized 1,46,953.25 m <sup>3</sup> stones for pitching works on the dam as of March 2017. However, remaining 2,09,657.87 m <sup>3</sup> stones valuing ₹ 9.22 crore were in possession of the contractor and the recovery cost of these stones from the contractor was pending as of July 2017. |
| <b>Sub Total</b>          |              | <b>33.02</b>        |   |
| <b>TOTAL MMI projects</b> |              | <b>300.90</b>       |   |

**B: MI Schemes**

| State   | Project Name                                       | Amount<br>(₹ crore) | Nature   |
|---|--|---------------------|--|
| <b>Termination of contracts without invoking risk and cost clause</b> |  |                     |  |
| Madhya Pradesh  | Berkheda Chajju, Parsatola, Chandwahi and Mirhasan | 0.28                | It was observed that the original agreements were rescinded due to delay or non-execution of work by contractor and balance works were executed through other agreements at higher rates under debit clause, but no recovery/short recovery was made for the same which resulted in undue financial benefit to contractors of ₹ 2.79 lakh. |
| <b>Sub Total</b>  |  | <b>0.28</b>         |  |
| <b>Non-levy of Liquidated Damages and other penalties</b>             |  |                     |  |
| Assam   | Hatigudi FIS                                       | 0.13                | The work awarded in June 2010 at a cost of ₹ 1.27 crore, for completion within 12 months. The work was completed in January 2014 after delay of 32 months but the required liquidated damages at the rate of 10 <i>per cent</i> of tendered value amounting to ₹ 12.75 lakh was not recovered from the contractor.                         |
| Jharkhand   | 15 MI schemes                                      | 1.16                | The works for 15 MI Schemes were delayed and an amount of ₹ 1.16 crore recoverable from the contractor towards LD was not done.  |

| State  | Project Name                              | Amount (₹crore) | Nature  |
|--|---|-----------------|---|
| Madhya Pradesh   | Kachanari Diversion Scheme and Sawli Tank | 0.51            | The contractor did not execute or complete the work within stipulated period of completion but Department did not levy penalty for same and granted time extension. This resulted in undue financial benefit to contractors of ₹ 50.92 lakh   |
|  | Barkheda Chajju                           | 0.09            | As per standard tender document, contractor has to establish field laboratory for testing, failing which a recovery of ₹ 50,000 per month will be made from contractor's payment till the establishment of laboratory. It was observed that contractor did not establish field laboratory but the Department did not recover the penalty for the same of ₹ nine lakh.   |
| <b>Sub Total</b>                                       |   | <b>1.89</b>     |   |
| <b>Short recovery of dues towards excavation works</b> |   |                 |   |
| Madhya Pradesh   | Mirahasan                                 | 0.10            | In one agreement, a quantity of 16,688.18 cum hard rock was issued to the contractor but recovery for only 5,988.16 cum was made which resulted in undue benefit of ₹ 10.05 lakh to the contractor for short recovery of balance quantity.  |
|  | Barkheda Chajju                           | 0.19            | <ul style="list-style-type: none"> <li>As per provisions, approach and spill channel shall be given as quarry for utilization in embankment and payment is to be made after deduction of utilizable quantity obtained from spill. It was observed that a quantity of 1,54,073.61 cu m was paid under excavation of hard soil and moorum with a lead of 1 km for disposal of excavated material, while full quantity of construction of embankment in 11,328.95 cu m and 3,229.46 cum was paid for material from borrow area without deduction of utilizable excavated material. This resulted in excess payment of ₹ 15.38 lakh.</li> <li>As per provisions, approach and spill channel shall be given as quarry for utilization in embankment and payment is to be made after deduction of utilizable quantity obtained from spill. It was observed that a quantity of 1,81,878 cum of soil was excavated and a quantity of 89,527.62 cum was paid for embankment, but no deduction for utilizable quantity was made. Further, a quantity of 7,446.52 cum of different items (Filter sand, stone pitching, stone chips and Rock) were also paid but not deducted from total embankment quantity to work out net payable quantity. This resulted in short recovery of ₹ 4.43 lakh.</li> </ul> |
| <b>Sub Total</b>                                       |   | <b>0.29</b>     |   |
| <b>Total MI schemes</b>                                |   | <b>2.46</b>     |   |



## Glossary

| Abbreviation | Full Form  |
|--------------|--|
| AA           | Administrative Approval                                |
| AIBP         | Accelerated Irrigation Benefits Programme              |
| ATN          | Action Taken Note                                      |
| AUDA         | Ahmadabad Urban Development Authority                  |
| BCR          | Benefit Cost Ratio                                     |
| BM           | Bituminous Macadam                                     |
| CA           | Central Assistance                                     |
| CAD          | Command Area Development                               |
| CADWM        | Command Area Development & Water Management            |
| C&AG         | Comptroller & Auditor General of India                 |
| CC           | Cement Concrete  |
| CCs          | Control Cabins   |
| CCA          | Culturable Command Area                                |
| CD           | Cross Drainage   |
| CLA          | Central Loan Assistance                                |
| CWC          | Central Water Commission                               |
| DDPA         | Desert Development Programme Area                      |
| DTPs         | Draft Tender Papers                                    |
| DPA          | Draught Prone Area                                     |
| DPR          | Detail Project Report                                  |
| EE           | Executive Engineer                                     |
| EFI          | Extra Financial Implication                            |
| E-in-C       | Engineer-in-Chief                                      |
| EMD          | Earnest Money Deposit                                  |
| ERM          | Extension, Renovation & Modernisation                  |
| FIC          | Field Irrigation Channels                              |
| FIS          | Flow Irrigation Scheme                                 |
| FTP          | Fast Track Project                                     |
| FTL          | Full Tank Level  |
| FY           | Financial Year   |
| GAD          | General Agreement Drawing                              |
| GCS          | General Category States                                |
| GFR          | General Financial Rules                                |
| GMIDC        | Godavari Marathwada Irrigation Development Corporation |
| GOG          | Government of Gujarat                                  |
| GoI          | Government of India                                    |
| GSCSC        | Gujarat State Civil Supply Corporation                 |
| GTIDC        | Goa Tillari Irrigation Development Corporation         |
| GWIL         | Gujarat Water Infrastructure Limited                   |
| Ha           | Hectare  |
| ICPO         | Irrigation Cum Power Outlet                            |
| IDCs         | Irrigation Development Corporations                    |

| Abbreviation | Full Form  |
|--------------|--|
| IFFC         | Indiramma Flood Flow Canal   |
| IP           | Irrigation Potential   |
| IPU          | Irrigation Potential Utilization   |
| JMMC         | Jharkhand Minor Mineral Concession                                       |
| KBK          | Areas falling within Koraput, Bolangir and Kalahandi districts of Odisha |
| KCADA        | Kosi Command Area Development Agency                                     |
| LAOs         | Land Acquisition Officers  |
| LIS          | Lift Irrigation Scheme   |
| LMC          | Left Main Canal  |
| MCM          | Million Cubic Meter  |
| MI           | Minor Irrigation   |
| MIS          | Minor Irrigation Scheme  |
| MMI          | Major and Medium Irrigation  |
| MoEF&CC      | Ministry of Environment Forest & Climate Change                          |
| MoF          | Ministry of Finance  |
| MoU          | Memorandum of Understanding  |
| MoWR,RD&GR   | Ministry of Water Resource, River Development & Ganga Rejuvenation       |
| MPW          | Miscellaneous Public Works   |
| NHAI         | National Highway Authority of India                                      |
| NITs         | Notice Inviting Tenders  |
| OCCL         | Odisha Construction Company Limited                                      |
| PAC          | Public Accounts Committee  |
| PAF          | Project Affected Familiy   |
| PAP          | Project Affected Persons   |
| PC           | Planning Commission  |
| PCPIR        | Petroleum, Chemical and Petrochemicals Special Investment Region         |
| PERT         | Programme Evaluation Review Technique                                    |
| PLA          | Personal Ledger Account  |
| PLTC         | Project Level Technical Committee  |
| PMC          | Project Management Consultancy   |
| PMKSY        | Pradhan Mantri Krishi Sinchayee Yojana                                   |
| PPS          | Probability Proportionate to Size  |
| PWD          | Public Works Department  |
| QCC          | Quality Control Circle   |
| RMCS         | Remote Monitoring and Control System                                     |
| R&R          | Resettlement & Rehabilitation  |
| RST          | Remote Sensing Technology  |
| SA           | Supplementary Agreements   |
| SAIL         | Steel Authority of India Limited   |
| SBD          | Standard Bidding Document  |
| SCS          | Special Category States  |
| SDGs         | Sustainable Development Goals  |

| Abbreviation | Full Form                                    |
|--------------|--|
| SIR          | Special Investment Region                    |
| SLAOs        | Special Land Acquisition Officers            |
| SLCC         | State Level Contract Committee               |
| SoE          | Statement of Expenditure                     |
| SoR          | Schedule of Rates                            |
| SRSP         | Sri Ram Sagar Project                        |
| SRSWOR       | Simple Random Sampling Without Replacement   |
| SSBR         | Shankara Samudram Balancing Reservoir        |
| SSNNL        | Sardar Sarovar Narmada Nigam Limited         |
| TAC          | Technical Advisory Committee                 |
| TC           | Tender Committee                             |
| TCIL         | Telecommunication Consultant (India) Limited |
| TIDC         | Tapi Irrigation Development Corporation      |
| TS           | Technical Sanction                           |
| UCs          | Utilisation Certificates                     |
| UGPL         | Underground Pipeline                         |
| UIP          | Ultimate Irrigation Potential                |
| VIDC         | Vidarbha Irrigation Development Corporation  |
| WAR          | Weighted Average Rate                        |
| WRD          | Water Resource Department                    |
| WUAs         | Water User Associations                      |
| ZP           | Zilla Parishad                               |





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