

**Report of the
Comptroller and Auditor General of India
on
Economic Sector
for the year ended March 2013**

Government of Andhra Pradesh
Report No. 3 of 2014

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Preface

- 1. This Audit Report on the Government of Andhra Pradesh, covering the activities of the Economic Sector (excluding State Government Companies and Statutory Corporations), has been prepared for submission to the Governor under Article 151 of the Constitution of India.*
- 2. The Comptroller and Auditor General of India's Audit Reports relating to General and Social Sectors, Revenue Sector and Public Sector Undertakings are presented separately.*
- 3. This Report contains the results of three Performance Audits viz., (i) 'State Horticulture Mission Programme', (ii) 'Minor Irrigation' and (iii) 'Creation of Infrastructure for National E-Governance Plan (NeGP) and delivery of services to common citizens through Common Service Centers' (Chapter-2); and results of Compliance Audit (Chapter-3).*
- 4. The cases mentioned in this Report are those which came to notice in the course of audit during the year 2012-13, as well as those which had come to notice in earlier years but could not be dealt with in the previous Reports. Matters relating to the period subsequent to 2012-13 have also been included, wherever necessary.*
- 5. Audit has been conducted in conformity with the Auditing Standards issued by the Comptroller and Auditor General of India.*

Chapter - 1

Overview of Economic Sector

Chapter - 1

Overview of Economic Sector

1.1 Introduction

Andhra Pradesh is one of the largest States of India with a population of 8.46 crore and a geographical area of 2,74,400 sq.kms. For purpose of Administration there are 33 Departments at the Secretariat level headed by Principal Secretaries/Secretaries who are assisted by Directors/Commissioners and Sub-ordinate officers under them.

Government functioning is broadly classified as General Services, Social Services and Economic Services. This report covers the functioning of 10 Departments of Economic Sector listed in the table given below.

Of the 10 Departments, with a total expenditure of ₹35958.48 crore, covered in this Report, a major portion of the expenditure was incurred by Irrigation & Command Area Development (54.80 *per cent*), Energy (17.38 *per cent*), Roads and Buildings and Infrastructure and Investment (11.65 *per cent*) and Agriculture and Cooperation (10.10 *per cent*) Departments during 2012-13.

1.2 Trend of expenditure

Comparative position of expenditure incurred by the Departments during the period 2008-13 is given in Table 1.1.

Table-1.1 - Table showing the trend of expenditure during 2008-13

(₹ in crore)						
Sl. No.	Name of the Department	2008-09	2009-10	2010-11	2011-12	2012-13
1	Agriculture & Co-operation	2994.73	1803.82	2270.40	3334.54	3633.36
2	Animal Husbandry & Fisheries	536.56	503.31	567.70	729.58	830.61
3	Energy	3659.38	3259.28	3696.98	4367.68	6249.03
4	Environment, Forests, Science and Technology	305.40	266.47	277.56	343.01	391.25
5	Industries and Commerce	350.03	297.62	448.45	380.74	760.53
6	Information Technology and Communications	331.68	18.92	24.53	57.72	199.37
7	Irrigation & Command Area Development	12635.25	16712.71	15710.87	17787.39	19704.27
8	Public Enterprises	0.90	1.04	1.28	1.46	1.40
9	Roads & Buildings ¹	2698.66	2634.37	2272.95	3043.04	4188.66
10	Infrastructure & Investment ¹					
Total		23512.59	25497.54	25270.72	30045.16	35958.48

(Source : Appropriation Accounts of Government of Andhra Pradesh for the relevant years)

¹ Both departments are covered under Grant No. XI – Roads, Buildings and Ports

1.3 About this Report

This Report of the Comptroller and Auditor General of India (CAG) relates to matters arising from audit of 10 Government Departments (*Appendix-1.1*) and 28 Autonomous Bodies under the Economic Sector (*Appendix-1.2*). Compliance Audit covers examination of the transactions relating to expenditure of the audited entities to ascertain whether the provisions of the Constitution of India, applicable laws, rules, regulations and various orders and instructions issued by the competent authorities are being complied with. Performance Audit also examines whether the objectives of the programme/activity/department are achieved economically, efficiently and effectively.

1.4 Authority for Audit

The authority for audit by the CAG is derived from Articles 149 and 151 of the Constitution of India and the Comptroller and Auditor General's (Duties, Powers and Conditions of Service) Act, 1971 (DPC Act). CAG conducts audit of expenditure of the economic sector departments of the Government of Andhra Pradesh under Section 13² of the DPC Act. CAG is the sole auditor in respect of four³ autonomous bodies which are audited under Sections 19(2)⁴ 19(3)⁵ and 20(1)⁶ of the DPC Act. In addition, CAG also conducts audit of 24 other autonomous bodies under Section 14⁷ of DPC Act which are substantially funded by the Government. Principles and methodologies for various audits are prescribed in the Auditing Standards and the Regulations on Audit and Accounts, 2007 issued by the CAG.

1.5 Planning and conduct of Audit

The primary purpose of this Report is to bring to the notice of the State Legislature, important results of Audit. Auditing Standards require that the materiality level for reporting should be commensurate with the nature, volume and magnitude of transactions. Findings of Audit are expected to

² Audit of (i) all transactions from the Consolidated Fund of the State, (ii) all transactions relating to the Contingency Fund and Public Accounts and (iii) all trading, manufacturing, profit and loss accounts, balance sheets and other subsidiary accounts kept in any department of a State

³ AP Electricity Regulatory Corporation (APERC) under Section 19(2), AP Khadi and Village Industries Board (APKVIB) under Section 19(3), Environment Protection Training and Research Institute (EPTRI) under Section 20(1) and AP Compensatory Afforestation Fund Management and Planning Authority (AP State CAMPA) under Section 20(1) of DPC Act

⁴ Audit of the accounts of Corporations (not being Companies) established by or under law made by the Parliament in accordance with the provisions of the respective legislations.

⁵ Audit of accounts of Corporations (not being companies) established by or under law made by the State Legislature in accordance with the provisions of respective legislations.

⁶ Audit of accounts of any body or authority on the request of the Governor, on such terms and conditions as may be agreed upon between the CAG and the Government.

⁷ Audit of all receipts and expenditure of (i) any body or authority substantially financed by grants or loans from the Consolidated Fund and (ii) any body or authority where the grants or loans to such body or authority from the Consolidated fund in a financial year is not less than ₹one crore

enable the Executive to take corrective action as also to frame policies and directives that will lead to improved Financial Management of the Organizations, thus contributing to better governance.

Audit process starts with the assessment of risks faced by various Departments of Government based on expenditure incurred, criticality/complexity of activities, level of delegated financial powers, assessment of overall internal controls and concerns of stakeholders. Previous Audit findings are also considered in this exercise. Based on this risk assessment, the frequency and extent of Audit are decided.

After completion of Audit, Inspection Reports containing Audit findings are issued to the heads of Departments. Departments are requested to furnish replies to the Audit findings within one month of receipt of the Inspection Reports. Whenever replies are received, Audit findings are either settled or further action for compliance is advised. Important Audit observations arising out of these Inspection Reports are processed for inclusion in the Audit Reports which are submitted to the Governor of the State under Article 151 of the Constitution of India.

1.6 Response to Audit

1.6.1 Performance Audit and Compliance Audit observations

Three Performance Audit reports and four Compliance Audit Paragraphs were forwarded demi-officially to the Principal Secretaries/Secretaries of the Departments concerned between February and October 2013 with a request to send their responses. Replies were received from Government in respect of two Performance Audits and two Compliance Audit observations. In respect of one Performance Audit and two Compliance Audit observations, replies were received from Departments. Government/Departments replies have been incorporated in the Audit Report at appropriate places. In respect of two Performance Audits, Exit Conferences were held with representatives of Government between June 2013 and February 2014 and views expressed in the conference have been included in the Report, wherever applicable.

1.6.2 Follow-up on Audit Reports

Finance and Planning Department issued (May 1995) instructions to all administrative departments to submit Action Taken Notes (ATNs) on the recommendations of the Public Accounts Committee (PAC) relating to the paragraphs contained in Audit Reports within six months. Audit reviewed the outstanding ATNs as of 31 December 2013 on the paragraphs included in the Reports of the Comptroller and Auditor General of India, Economic Sector, Government of Andhra Pradesh, and found that departments did not submit ATNs for 70 recommendations pertaining to the audit paragraphs discussed by PAC.

1.6.3 Outstanding replies to Inspection Reports

The Accountant General (E&RSA), Andhra Pradesh (AG) arranges to conduct periodical inspections of the Government Departments to test check transactions and verify maintenance of important accounts and other records as prescribed in the rules and procedures. These inspections are followed up with Inspection Reports (IRs) incorporating irregularities detected during the inspection and not settled on the spot, which are issued to the heads of the offices inspected with copies to the next higher Authorities for taking prompt corrective action. The heads of the offices/Government are required to promptly comply with the observations contained in the IRs, rectify the defects and omissions and report compliance through replies. Serious financial irregularities are reported to the heads of Departments and Government.

Three thousand eight hundred and seven IRs containing 11439 paragraphs issued upto March 2013 were pending settlement as of 30 September 2013. The department wise details are given in *Appendix-1.3*. This large pendency of IRs, due to non-receipt of replies, was indicative of the fact that heads of offices and heads of Departments did not initiate appropriate and adequate action to rectify the defects, omissions and irregularities pointed out by audit in the IRs.

1.7 Significant audit findings

Performance Audit

State Horticulture Mission Programme

The State Horticulture Mission (SHM) was launched in 2005-06 to give new momentum to the development of horticulture, generate employment and enhance farm income through holistic growth of horticulture sector, with 100 *per cent* assistance from Government of India (GoI) up to 2006-07 and with 85:15 sharing between GoI and GoAP from 2007-08. SHM was implemented in 18 focused districts in the State.

Major audit findings on implementation of SHM are as follows:

- *Annual Action Plans (AAPs) for 2005-06 to 2010-11 were prepared without conducting Base Line Survey contrary to GoI guidelines.*
- *While funds requirement for the programme as per AAPs for the period from 2008-09 to 2012-13 was ₹776.18 crore, GoI and GoAP together released only ₹602.03 crore.*
- *Audit noticed shortfall in establishment of nurseries, non-functioning of nurseries, low production, non-production of required plant material and absence of control mechanism to ensure quality of plant material produced by nurseries.*

- *While there was shortfall in establishment of new gardens, survival of plants in new perennial fruit gardens at the end of third year was only 78 per cent as against stipulated 90 per cent.*
- *In rejuvenation of old and senile orchards, Audit noticed several deficiencies like, selection of beneficiaries without required data, sanction of assistance to ineligible farmers, non-collection of yield data for impact assessment, etc.*
- *Audit also noticed deficiencies like sanction of community farm ponds to individual farmers without identifying co-beneficiaries, non-completion of ponds, delayed/ non-establishment and non-operation of laboratories, non-conducting of technology dissemination trainings to farmers, low coverage of SC/ST farmers under the programme and shortfall in capacity building training programmes to staff.*
- *Initiatives under post harvest management were insufficient as creation of storage facilities was not commensurate with horticulture production in the State, and there was substantial shortfall in creation of market yards, etc.*

(Paragraph 2.1)

Minor Irrigation

Minor Irrigation (MI) sector in Andhra Pradesh consists of 76,465 tanks and 1209 other sources with a total irrigation potential of 45.49 lakh acres. MI wing of Irrigation and Command Area Development Department deals with conceptualization, investigation, execution, maintenance, revival and restoration of MI schemes. The Andhra Pradesh State Irrigation Development Corporation (APSIDC) deals with execution of lift irrigation schemes (LISs) in areas that cannot be irrigated by gravity flow. Performance Audit was conducted on activities relating to MI during 2008-09 to 2012-13.

Major audit findings are summarized below:

- *Department does not have a comprehensive database of tank wise information on their physical, technical and functional aspects, essential for planning its activities, and preparation of tank memoirs and development of Tank Information System, though initiated, was not completed.*
- *No shelf of works was maintained; there was no assurance that all necessary works are identified, prioritized and high priority works are sanctioned and taken up for execution; deficiencies in selection of works were noticed.*
- *Progress of implementation of various schemes lagged behind as works were delayed due to improper selection/planning, land acquisition, forest clearance problems, etc., resulting in non/partial achievement of intended objective of providing irrigation to targeted beneficiaries. Loan assistance of ₹114.94 crore under RIDF was foregone due to non-completion of works within stipulated loan period.*

- *Out of 1876 Lift Irrigation Schemes (LISs) commissioned by APSIDC, 235 LISs were partially functional, 380 defunct and 185 were abandoned and there was shortfall ranged between 37.17 per cent and 54.85 per cent in utilization of irrigation potential during last five years. In test checked districts, 37 LISs remained defunct for want of repairs depriving irrigation benefits to an ayacut of 17410 acres.*
- *AP Farmers' Management of Irrigation Systems Act-1997 was not fully implemented as Water Users Associations (WUAs) were formed in respect of only 8012 out of 11479 MI tanks; elections to WUAs were not held since 2008; and there were deficiencies in departmental monitoring over the functioning of WUAs.*
- *Performance of department is affected due to shortage of man power. The man power requirement was neither re-assessed nor increased even after eight years since taking over nearly 66000 tanks from Panchayat Raj Department.*
- *Efforts for prevention, detection and eviction of encroachments in MI systems were deficient.*

(Paragraph 2.2)

Creation of Infrastructure for National e-Governance Plan (NeGP) and delivery of services to common citizens through Common Service Centers

National e-Governance Plan (NeGP) was approved by Government of India in 2003 with a primary vision to make all Government services accessible to the common man in his locality, through common service delivery outlets at affordable costs. Implementation of NeGP in the State involved creation of Core infrastructure consisting of State Wide Area Network (SWAN), State Data Centre (SDC) and State Service Delivery Gateway (SSDG); and establishment of Common Service Centres (CSCs) in rural areas covering all Districts/ Mandals in the State to provide intended services to citizens.

Audit findings are summarized below:

- *Partial Acceptance Test of SWAN was delayed by more than seven months and GoAP did not declare completion of Final Acceptance Test for SWAN, resulting in non-levy of penalty.*
- *Non-connectivity (downtime) penalty of ₹5.76 crore was not levied on SWAN operator, though connectivity was below prescribed levels.*
- *Though GoAP planned to roll out 4687 CSCs, actual number of CSCs rolled out was only 2416 (52 per cent).*
- *Failure of Service Centre Agencies (SCAs) in sharing capital/revenue expenditure in CSC as required under agreement resulted in financial burden on Village Level Entrepreneurs making the CSCs unviable and thus adversely affected the objective of scheme.*

(Paragraph 2.3)

Compliance Audit

Public Private Partnership (PPP) projects in Roads Sector

Public Private Partnerships (PPPs) are aimed at involving the private sector in raising capital required for public sector projects, build the projects and deliver quality goods/services. Transport, Roads and Buildings (TR&B) Department was to implement 33 PPP projects in roads sector with an estimated project cost of ₹8349.73 crore. Out of these, nine projects with a total project cost of ₹5379.63 crore were test checked in audit.

Major audit findings are summarized below:

- *Department did not have a standard policy / procedure for identification of Projects to be taken up under PPP mode and those to be taken up with budgetary support.*
- *Widening of Kadapa-Pulivendula road to four lanes was taken up though traffic on this road was low and would reach the prescribed design volume only in the year 2026.*
- *Hyderabad-Karimnagar-Ramagundam (HKR) road and Narketpally-Addanki-Medarmetla (NAM) road projects were awarded though Grants quoted by lowest bidders were ₹362 crore and ₹204.02 crore higher than reasonable Grants, resulting in additional financial burden on Government.*
- *Change in design from well foundation to pile foundation in major bridge across river Godavari near Rajahmundry and under-projection of toll revenues in high level bridge across river Musi on Miryalguda – Kodad Road resulted in additional toll burden of ₹2519.55 crore and ₹69.09 crore respectively, on road users.*
- *In the absence of suitable mechanism in agreements, Concessionaires obtained large amounts of loans by projecting high project costs to banks and awarded project works to inexperienced agencies.*
- *HKR road, NAM road and Kadapa-Pulivendula road projects were not completed on time due to non-handing over of the lands and non-shifting of utilities resulting in non-achievement of intended objective.*

(Paragraph 3.1)

Diversion of Forest land for non-forest purposes, Compensatory Afforestation and CAMPA

Forest (Conservation) Act, 1980 (Act) enacted by GoI and Forest (Conservation) Rules, 2003 (Rules) issued thereunder prohibit diversion of forest land for non-forest purposes, except with prior approval of GoI. Such approvals are granted in two stages after fulfilment of various conditions including (i) providing non-forest land for Compensatory Afforestation (CA)

in lieu of the forest land diverted and (ii) payment of Net Present Value (NPV) of forest land diverted, cost of CA, etc. by user agency. Ad-hoc Compensatory Afforestation Fund Management and Planning Authority (Ad-hoc CAMPA) was created (May 2006) at Central level into which the amounts paid by user agencies towards CA and NPV of the forest land being diverted are to be deposited. Funds received by Ad-Hoc CAMPA are released to State CAMPA for utilization as per approved Annual Plan of Operations (APOs).

Major audit findings are as follows:

- *CA land of 339.34 Ha accepted by department in lieu of diverted forest land was found to be an un-notified forest land already in possession of Forest Department, resulting in diversion of forest land without obtaining equivalent non-forest land.*
- *Cases of unauthorised diversion of 102.80 Ha of forest land (non-collection of NPV of ₹7.2 crore), non/short collection of NPV of ₹41.82 crore, acceptance of disputed/ encroached lands (45.75 Ha) in lieu of forest land diverted, non/partial afforestation in the CA lands obtained by department, non-fulfilment of project specific conditions stipulated by GoI, etc. were noticed.*
- *Non-forest lands accepted for CA were not notified as Reserve/Protected Forest even after delays ranging upto 20 years though the Act stipulates such notification within six months, thereby denying intended higher protection to these lands.*
- *Delays in remittance of amounts received from user agencies into Ad-Hoc CAMPA resulted in loss of interest of ₹2.64 crore.*

(Paragraph 3.2)

Modernization of Irrigation Systems

Government of Andhra Pradesh (GoAP) accorded administrative approval (May 2006 to May 2009) for modernization of eight irrigation systems in the State to stabilize 55.76 lakh acres of ayacut under these systems at a cost of ₹15,001 crore.

Major audit findings are as follows:

- *Progress of works was poor mainly due to department's inability to provide sufficient working period to contractors and only four modernization works were completed even though agreement period was over in 87 packages, resulting in non-achievement of objectives despite spending ₹2528.66 crore.*
- *GoAP took up widening of Tungabhadra Project High Level Canal (TBPHLC) on one side of border at a cost of ₹463.50 crore, without obtaining acceptance from neighbouring State for widening of the canal on other side and even after more than six years, no agreement is*

reached and the utility of the expenditure of ₹161.62 crore already incurred is doubtful.

- *Due to delayed taking up of modernization of Krishna Delta System and its non-completion, the objective of saving 20 TMC of water has not been achieved and this would have an adverse impact on availability of water for Rajiv Bhima Lift Irrigation Scheme and Pulichintala project and put strain on other projects in Krishna Basin.*

(Paragraph 3.3)

Flood Banks

Government of Andhra Pradesh (GoAP) took up restoration of existing flood banks on five rivers and formation of two new flood banks in order to minimize the damages to human lives, property and crops and have safe disposal of flood waters. During January 2007 to July 2008, 1322.34 kilometres of flood bank works at a cost of ₹2312.77 crore were taken up. Out of flood bank 85 packages proposed, 66 were awarded, out of which 39 packages were test checked in audit.

Major audit findings are as follows:

- *Though Government sent proposals for Central assistance (to the tune of ₹844.35 crore) for Godavari, Vamsadhara and Nagavali flood banks, department's failure to furnish replies to comments of Central Water Commission resulted in non-availing of Central assistance.*
- *Despite completion of agreement period on or before December 2012, 48 out of 66 flood bank works were not completed, due to delay in land acquisition, non-finalization of designs, non-eviction of encroachments/utilities, etc. and the main objective of providing protection from submergence and inundation with flood waters was not achieved despite expenditure of ₹927.53 crore on these projects.*
- *In respect of Vamsadhara Flood Banks, though contractors suspended the works during June 2010 – March 2011 due to ambiguity in the maximum flood discharge to be adopted for designs, department had not yet taken any decision in the matter.*

(Paragraph 3.4)

Chapter - 2

Performance Audit

Chapter - 2

Performance Audit

Agriculture and Co-operation Department (Horticulture)

2.1 State Horticulture Mission Programme

2.1.1 Introduction

National Horticulture Mission (NHM) Programme was launched in 2005-06 by Government of India (GoI), Ministry of Agriculture, Department of Agriculture and Co-operation, as a centrally sponsored scheme to promote holistic growth in horticulture through research, technology promotion, extension, processing and marketing. Government of AP constituted (November 2005)¹ a State Horticulture Mission (SHM) to take up the NHM Programme in the State. The programme was implemented in 18 focused districts² and two agency areas³ (Rampachodavaram and Paderu).

Objectives of SHM were:

- To enhance horticulture production, improve nutritional security and support to farm households;
- To establish convergence and synergy among various on-going and planned programs in the field of horticulture development;
- To promote the development and dissemination of technologies by blending traditional wisdom and frontier knowledge;
- To convert wastelands for producing fruits and vegetables;
- To plug wastages of horticulture produce; and
- To create facilities for marketing and processing.

SHM implemented the programme under broad heads of

- i) Research;
- ii) Plantation infrastructure and development;
- iii) Post Harvest Management;
- iv) Processing and value addition; and
- v) Mission Management.

¹ GO.Ms.No.417 of Agriculture and Cooperation (Horticulture) Department dated 09 November 2005

² Out of the 23 districts in the State, the scheme was implemented in 18 districts, termed as 'focused districts' – Adilabad, Ananthapuramu, Chittoor, Guntur, YSR (Kadapa), Karimnagar, Khammam, Kurnool, Mahaboobnagar, Medak, Nalgonda, Nellore, Nizamabad, Prakasam, Rangareddy, Srikakulam, Warangal, West Godavari

³ Agency area is a tribal area which was part of Scheduled Area as per Fifth Schedule to the Constitution

Plantation infrastructure and development comprises different components:

- a) Production of planting material i.e., establishment of nurseries;
- b) Establishment of new gardens i.e., area expansion;
- c) Rejuvenation/replacement of senile plantation;
- d) Creation of water resources;
- e) Protected cultivation;
- f) Promotion of Integrated Nutrient Management (INM)/ Integrated Pest Management (IPM);
- g) Organic farming including Good Agricultural Practices;
- h) Human Resource Development;
- i) Pollination support through beekeeping; and
- j) Technology dissemination through demonstration/ front line demonstration.

2.1.2 Financial assistance under the Mission

Under the programme, assistance in the form of subsidy ranging from 25 *per cent* to 100 *per cent* of the total cost of a component is given to the farmers for focused crops viz., fruit crops (Mango, Sweet Orange, Sapota, Pomegranate, Guava, Acid lime, Banana, Papaya); plantation crops (Cashew, Cocoa); and flower crops (Chrysanthemum, Crossandra, Tube rose). Credit linked back ended subsidy⁴ is given for nurseries, post harvest management, establishment of bio-control labs.

2.1.3 Mission structure

SHM works under the Chairmanship of Agricultural Production Commissioner (APC) cum Principal Secretary, Agriculture and Cooperation Department. Commissioner of Horticulture is the Mission Director who is assisted by one Executive Director and other staff.

In 18 districts, District Horticulture Mission (DHM) is the implementing agency. DHM is headed by District Collector as Chairman, assisted by Deputy/Assistant Director of Horticulture (DDH/ADH). In agency areas, Project Officer, Integrated Tribal Development Agency (ITDA) implements the programme.

2.1.4 Audit objectives

Performance Audit was conducted to examine whether:

- planning for SHM (including preparation of Annual Action Plans) was timely, adequate and effective;

⁴ Credit linked back-ended subsidy means the beneficiary should avail a loan from a nationalized bank. After completion of Project and inspection by officers of SHM, the subsidy portion will be released to bank

- GoI and State Government released funds as per the approved Annual Action Plans and the utilization of funds was effective;
- schemes were implemented in consonance with Mission guidelines so that targets were individually and collectively achieved; and
- adequate monitoring existed at various levels to ensure effective implementation of schemes.

2.1.5 Audit criteria

Audit findings were benchmarked against the following sources of criteria:

- Operational guidelines issued by GoI/ NHM and budget release orders;
- Guidelines and instructions issued by SHM from time to time;
- Targets and Achievements as per Perspective Plan and Annual Action Plans (AAP); and
- Cost norms prescribed by NHM for providing assistance under various components.

2.1.6 Scope and methodology of Audit

Performance Audit covered all components (except horticultural research component⁵) implemented by SHM during the period 2008-13. Entry conference was held (June 2012) with Joint Commissioner, Horticulture department wherein audit objectives, scope, criteria and methodology of Performance Audit were discussed. Relevant records were test-checked during audit (October 2012 to March 2013 and September 2013 to November 2013) in SHM at State level, offices of DHMs in ten⁶ districts, selected using Simple Random Statistical Sampling method, and Dr. YSR Horticultural University (HU), West Godavari district. Exit conference was held with Principal Secretary to Government and Commissioner of SHM in January 2014 and audit findings discussed. Replies (February 2014) of Commissioner, Horticulture and Mission Director and views expressed during Exit Conference have been incorporated in the report at appropriate places.

Audit observations in implementation of various components by the Mission are discussed below.

⁵ Activities under horticulture research were implemented by Indian Council of Agricultural Research (ICAR) and Council of Scientific and Industrial Research (CSIR). All other components were implemented by SHM.

⁶ Adilabad, Ananthapuramu, Chittoor, Guntur, YSR, Mahabubnagar, Medak, Nalgonda, Prakasam and Rangareddy

Audit findings

2.1.7 Mission achievements

As per the information furnished to Audit by SHM, the physical and financial targets and achievements under various components of SHM from inception i.e., 2005-06 to 2012-13 are as follows:

Table-2.1 – Position of Mission Target and achievement

S. No.	Component	Unit	Physical		Percentage of		Financial (₹ in crore)		Percentage of	
			T	A	A	Short fall	T	A	A	Short fall
1	Establishment of nurseries	No	149	151	101	0	10	8	80	20
2	Establishment of new gardens	Ha	212824	214276	101	0	216	228	106	0
3	Maintenance of gardens	Ha	274838	262924	96	4	126	127	101	0
4	Rejuvenation	Ha	115933	125508	108	0	120	111	93	7
5	Creation of water sources	No	1565	1245	80	20	39	37	95	5
6	Protected cultivation	Ha	4478	2569	57	43	35	29	83	17
7	IPM / INM	Ha	127568	102736	81	19	11	11	100	0
8	Organic farming	Ha	10650	9815	92	8	9	5	56	44
9	Vermi compost unit	No	8605	22000	256	0	13	17	131	0
10	Pollination support through Bee keeping	No	150	0	0	100	0.12	0	0	100
11	Farm mechanization	No	454	241219	53132	0	2	16	800	0
12	Market yards	No	66	11	17	83	6	0.5	8	92
13	Post Harvest Management	No	1679	2463	147	0	71	71	100	0
14	Labs	No	73	10	14	86	12	5	42	58
15	Mission Management		-	-	-	-	32.44	46.84		

(No: Number; Ha: Hectares; T: Target; A: Achievement)

(Source : Information furnished by SHM)

It can be seen from the above table that while achievements were more than 100 per cent in components like establishment of new nurseries, establishment of new gardens (area expansion), vermi compost units, PHM, etc., it was meagre in respect of creation of marketing facilities and establishment of various laboratories. Achievement was nil in respect of 'Pollination through bee keeping'.

2.1.8 Planning

As per NHM guidelines, SHM shall prepare perspective/strategic plan and road map for overall development of horticulture in the State, which will form the basis for preparing annual action plans and organize baseline survey in districts to determine status of horticulture production, potential and demand, so as to arrive at the assistance required and incorporate the same in the action plans. Audit noticed the following deficiencies in planning for implementation of the programme:

2.1.8.1 Perspective Plan

NHM guidelines (Para 4.8(a)) stipulate that State level agency shall prepare Strategic/Perspective and annual State Level Action Plan (SLAP) in consonance with Mission's goals and objectives in close co-ordination with Technical Support Group (TSG), State Agriculture Universities (SAUs), ICAR institutes and oversee its implementation.

Department stated that Perspective Plan for the period from 2005-06 to 2007-08 and strategic road map up to 2012-13 was prepared and submitted to NHM. However, the Perspective Plan was not made available to audit in the absence of which, audit could not secure assurance that strategies adopted by SHM were in accordance with the main objective of overall development of horticulture sector in the State.

2.1.8.2 Annual Action Plans (AAPs)

Para 4.8 (b) of NHM's guidelines stipulated that SHM was to conduct a Base Line Survey (BLS) and feasibility study to determine status of horticulture production, potential and demand to form the basis for preparation of AAP.

Though scheme implementation began in 2005-06, the Base Line Survey work was entrusted in 2010-11. Thus, AAPs for the period from 2005-06 to 2010-11 were prepared without field data based on survey and assessing the preparedness of the District Missions to absorb funds received from NHM/GoAP.

Department replied that prior to conducting survey, the data available with Directorate of Economics and Statistics, Ministry of Agriculture and National Horticulture Mission was utilized for preparation of action plans. In Exit Conference, it was stated that BLS was conducted after receipt of funds in 2011. However, the fact is that Base Line Survey is a detailed field level survey to collect village wise and farmer wise details and preparation of AAPs without survey was contrary to guidelines and there was no assurance that initiatives proposed in AAPs and selection of beneficiaries were realistic based on ground realities.

2.1.9 Financial Management

2.1.9.1 Release and utilization of Central and State share

Programme was implemented with 100 *per cent* central assistance during the years 2005-06 and 2006-07. Thereafter, GoAP was to contribute 15 *per cent* and the remaining 85 *per cent* to be contributed by GoI. Requirement of funds as per the approved AAPs, funds released by GoI and GoAP, interest earned on funds kept in banks and expenditure incurred by SHM during the period from 2008-09 to 2012-13 are as follows:

Table-2.2 – Requirement of funds, releases and utilization

(₹ in crore)

Year	Amount required as per AAP	Share of		Releases		Total release	Interest earned	Expenditure incurred	Percentage of expenditure vis-à-vis AAP
		NHM	GoAP	NHM	GoAP				
2008-09	231.69	196.94	34.75	129.68	10.69	140.37	3.26	127.70	55
2009-10	157.71	134.05	23.66	95.67	0.80	96.47	0.79	105.57	67
2010-11	123.75	105.19	18.56	105.18	15.79	120.97	1.37	119.60	97
2011-12	123.34	105.69	18.65	92.70	26.43	119.13	3.41	121.27	98
2012-13	139.69	118.73	20.96	87.33	37.76	125.09	4.19	144.33	105
Total	776.18	660.60	116.58	510.56	91.47	602.03	13.02	618.47	80

(Source : AAPs, Sanction orders and information furnished by SHM)

It can be seen from the above table that requirement of funds from 2008-09 to 2012-13 as per AAPs was ₹776.18 crore where as NHM and GoAP released ₹602.03 crore. SHM also earned interest of ₹13.02 crore taking the total available funds to ₹615.05 crore. Thus, there was short release of ₹161.13 crore (20 per cent) vis-a-vis AAPs. There was 21 per cent shortfall in release of share by GoAP. Against the available funds, total expenditure was ₹618.47 crore.

Department accepted that funds allocated by GoI/GoAP were based on the availability of funds and not on the basis of approved outlay.

2.1.9.2 Utilization of available funds

An amount of ₹303.12 crore was released to DHMs of test-checked districts during 2008-09 to 2012-13. DHMs utilized ₹289.41 crore (95 per cent), leaving ₹13.71 crore unspent. Test check of records revealed the following deficiencies:

- Target (2008-09) for DHM, Nalgonda for area expansion of mango, sweet orange, etc., was 1,940 Ha. Though ₹2.16 crore only was required for this, SHM released ₹2.82 crore, whereas DHM could spend only ₹1.87 crore on this component leaving the balance amount of ₹0.95 crore in savings bank account. In Exit Conference, department stated that excess release of funds was due to increased targets. However, funds requirement mentioned above was as per revised targets only. Regarding shortfall, no reply was given by department.
- Procurement season for turmeric seed was January to March and its sowing season May to June, thus release of subsidy for the next financial year shall be made before January to enable DHM to arrange for procurement of seeds and supply to beneficiaries in time. However, for implementation of area expansion of turmeric (100 Ha) in Adilabad district during 2011-12, SHM released ₹11 lakh after the sowing season, in two instalments (₹6.60 lakh in July 2011 and ₹4.40 lakh in December 2011). As a result, DHM did not implement area expansion of turmeric crop during 2011-12 and parked the funds in savings bank account. In Exit Conference, Government accepted the audit finding and emphasised the need to prepare annual calendar for seeds, etc. to synchronize with cropping season.

- An amount of ₹5.64 crore was released by SHM to Dr.YSR Horticultural University, Venkataramanna Gudem, West Godavari district from 2008-09 to 2011-12 for establishment of various infrastructure facilities. Of this, the University utilized only ₹3.66 crore leaving a balance of ₹1.98 crore unutilized and deprived the beneficiaries of the facilities of infrastructure. Department stated (February 2014) that the funds would be either spent or returned to SHM.

Implementation of various components of SHM

2.1.10 Plantation infrastructure and development

2.1.10.1 Establishment of nurseries

NHM guidelines (Para 8.6) envisage production and distribution of good quality seeds and planting material as an important component of SHM. For this purpose, financial assistance was given to establish small and model nurseries in public and private sectors. Assistance to be given for public sector was 100 per cent and 50 per cent for private sector. SHM was required to assess the area-wise requirement of planting material taking into account the availability, additional requirement in view of area expansion, rejuvenation etc., and sanction new nurseries. SHM established 63 nurseries in focused districts with a subsidy of ₹5.68 crore, during 2008-13, as against a target of 13 nurseries.

Audit noticed that SHM reported, in its progress report, a target of 13 nurseries for this period, whereas DHMs of 10 test checked districts reported a target of 76 nurseries, in their progress reports.

Status of targets and achievements in test checked districts during the period 2008-13 is shown in Table-2.3:

Table-2.3 – Targets and achievements of nurseries by DHMs

District	Nurseries target fixed by SHM (small and model)	Amount required (₹ in lakh)	Nurseries sanctioned by DHM	Amount spent by DHM (₹ in lakh)
Adilabad	6	57.00	2	3.00
Ananthapuramu	13	69.26	7	29.09
Chittoor	11	60.25	11	12.00
Guntur	3	17.13	1	3.59
YSR (Kadapa)	6	28.75	7	8.83
Mahabubnagar	4	13.50	1	1.50
Medak	22	91.62	9	10.43
Nalgonda	6	36.25	1	1.50
Prakasam	2	37.50	0	0.69
Rangareddy	3	6.13	2	1.50
Total	76	417.39	41	72.13

(Source : AAPs and progress reports of DHMs)

It can be seen from the above table that SHM fixed a target of 76 nurseries in test checked districts at a subsidy of ₹4.17 crore. DHMs, however, sanctioned

only 41 nurseries, resulting in a short fall of 35 nurseries (46 per cent) and also reported to SHM that 28 nurseries were completed (March 2013).

Department attributed poor progress to lack of consent of bankers in financing the non subsidy portion, difficulties of farmers in marketing the produce and acute shortage of labour consequent on implementation of Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS). Further, in Exit Conference, it was stated that targets set were not realistic.

2.1.10.2 Unfruitful expenditure on nurseries

(i) Nine nurseries sanctioned by DHM, Medak included one nursery to be developed by department itself in its own plot. Cost of establishment of this nursery was ₹15 lakh out of which SHM released (August 2008) ₹7.50 lakh. DHM utilized ₹5.85 lakh for levelling the land, erecting fencing around the plot and to dig a bore well. Nursery is not yet established (February 2014) rendering the expenditure unfruitful.

Department replied that nursery was not established due to lack of electricity to run the bore well. However, the fact remains that electricity supply was essential for providing water to plants in any nursery and taking up the nursery without ensuring availability of this basic requirement indicates improper planning.

(ii) As per SHM guidelines, soil suitability and availability of quality water was to be ensured before sanctioning nurseries. However, ADH, Chittoor sanctioned a Model Nursery⁷ for mango grafts (estimated cost ₹21.62 lakh) in Ramakrishna Puram village of Penumur mandal, Chittoor district and released (11 May 2007) ₹13 lakh without obtaining project report, water and soil testing reports, etc. Though, subsequent water analysis reports (28 May 2007) revealed that water was not suitable for growing mango grafts, etc., due to presence of excessive salts and electrical conductivity, nursery was established at a cost of ₹13 lakh without considering these reports. After producing 1.35 lakh plants for two years (2007-08 and 2008-09) as against the stipulated eight lakh plants (up to 2011-12), nursery stopped production citing unsuitability of water and soil. Thus, failure to follow guidelines resulted in wasteful expenditure of ₹13 lakh.

Department accepted that production of mango grafts was stopped due to unsuitable water.

2.1.10.3 Production by nurseries

Audit also noticed following deficiencies in implementation of 'nurseries' component:

Non-Production of required plant varieties: With a view to cater to plant requirement needs of Ananthapuramu district, SHM established (2008-09) a model nursery in already existing departmental farm at Chigicherla. Audit

⁷ to be set up by District Water Management Authority (DWMA)

observed that the nursery produced only 5.83 lakh plants during 2008-09 to 2012-13 as against expected production of 10 lakh plants.

Though major plant requirement for area expansion in the district was banana (282.56 lakh), papaya (29.80 lakh) and sweet orange (16.44 lakh), production was nil for banana and papaya and production of sweet orange plants was only 1.50 lakh, as against a requirement of 16.44 lakh plants. As a result, farmers had to procure these major varieties from other sources. Audit also noticed that the nursery produced 4.33 lakh plants of other varieties such as mango, sapota, seethaphal, etc. whose area expansion was meagre in the district. Further, the nursery could sell only 3.03 lakh plants leaving 2.80 lakh plants unsold.

Department attributed short production to low rain fall, drought, shortened power supply and shortage of water. Department also stated that efforts were made to sell the available plants by informing the authorities of MGNREGS and ITDA, but farmers did not come forward to lift the plants. Department did not give specific reply on non/short production of major plant varieties.

Meagre production: SHM sanctioned (2007-08) ₹1.08 crore to Dr. YSR Horticulture University (HU) for establishment of six nurseries. Nurseries were established (2009-10) in the premises of its Horticulture Research Stations (HRS) and Citrus Research Stations (CRS) located in different districts at an expenditure of ₹90.57 lakh. Audit noticed that as against a target of 48 lakh plants fixed (during 2009-13) for these six nurseries, actual production was only 4.84 lakh plants (10 per cent). Ninety per cent shortfall in production led to non-achievement of intended objective.

Department replied that lack of sufficient funds for the University under contingencies to meet production expenses led to meagre production. In Exit Conference, it was also stated that revolving fund was being established in universities for this purpose. It was further stated that targets fixed were not in accordance with field conditions. It is evident that establishment of nurseries in anticipation of high production without scientific assessment of ground realities defeated the intended objective of production and distribution of good quality seeds/planting material to horticulture farmers.

2.1.10.4 Quality control of planting material produced by nurseries

(i) **Accreditation of nurseries:** NHM Guidelines stipulated that, in order to ensure quality planting material, nurseries should get accredited within a period of one year through designated agencies like National Horticulture Board, State Agricultural Universities, ICAR institutes etc. Further, planting material for area expansion programme shall be procured from accredited nurseries. However, none of the nurseries established under SHM in test checked districts (except the nursery in Fruit Research Station, Sangareddy) was accredited. Thus, quality of planting material procured from them could not be assured. Department replied that evaluation of nurseries by District Level Committees was under progress.

(ii) Regulation of nurseries: As per 'Andhra Pradesh Registration of Horticulture Nurseries (Regulation) Act 2010', the nursery owner, who obtains a licence from Government, is required to ensure production and supply of genuine and good quality plant material, multiplication of recommended varieties of horticulture plants for propagation and maintain requisite records. However, it was observed in audit that SHM did not put in place proper mechanism to ensure that nurseries established under SHM obtain licence from Government. As a result, none of the nurseries under SHM (public as well as private) obtained licences in the absence of which, there was no assurance on the quality of seeds/planting material produced by nurseries.

Department replied that efforts were being made to register all nurseries.

(iii) Insufficient Quality testing of trees and mother plants: With a view to detect various diseases in sweet orange trees and bud stick material, a 'Sanitary and Phyto Sanitary Laboratory' was established (2008-09) at a cost of ₹19.04 lakh at Tirupati under HU. Though approximately 2.42 crore sweet orange trees were grown in 0.87 lakh Ha in the State under area expansion component of SHM, disease detection studies were conducted on a meagre 2,210 trees and in mother plants of only two⁸ out of 151 nurseries established under SHM.

Department accepted the observation and further added that bud wood indexing was done by the laboratory in respect of two departmental nurseries that had approached them and not in commercial nurseries and orchards run by farmers.

Thus, neither were the nurseries accredited to ensure quality nor were extensive disease detection studies conducted, which is essential since sweet orange trees are prone to various diseases.

Audit further noticed that area of sweet orange gardens decreased by 20 *per cent* during 2004-05 (1.09 lakh Ha) to 2011-12 (0.87 lakh Ha) despite Mission interventions. Department stated that high incidence of diseases was one of the reasons for decline of sweet orange gardens.

2.1.11 Establishment of new gardens (Area expansion)

In order to bring large areas under improved varieties of horticultural crops by encouraging farmers to establish new gardens, the component of 'establishment of new gardens' was implemented as a major program of NHM. The subsidy for cultivation (for a maximum area of four Ha per beneficiary) was paid in three years in the ratio prescribed from time to time, quantum of which depends upon the nature of crop. Assistance for second and third years shall be subject to condition that plant survival rate should be 75 *per cent* and 90 *per cent*, respectively. During 2008-09 to 2012-13, a total subsidy of ₹129.67 crore was given and an extent of 1,06,594 Ha of land was

⁸ Horticulture Department nursery, Chigicherla, Ananthapuramu and a private nursery in Railway Kodur, YSR district

brought under horticulture fold in the State. Target and achievement of various crops was as mentioned in Table 2.4 below:

Table-2.4 – Target and achievement of new garden

Name of crop	Subsidy given (₹ in crore)	Physical (Hectares)		Percentage of achievement
		Target	Achievement	
Fruits-perennial	81.38	76530	66424	87
Fruits- non perennial	38.83	33340	27894	84
Flowers	2.37	2871	1787	62
Spices	2.37	4286	2416	56
Aromatic plants	0.06	432	28	6
Medicinal Plants	0.60	614	919	150
Plantation crops	4.06	9030	7125	79
Total	129.67	127103	106593	84

(Source : Progress reports of SHM)

Achievement was maximum in respect of perennial fruit gardens, medicinal plants and minimum in respect of aromatic plant gardens. There was shortfall in survival rate of gardens as they did not survive fully due to non availability of water or unsuitable soil/water conditions, as discussed below.

2.1.11.1 Low Survival of perennial fruit gardens

NHM guidelines (para 8.16) stipulated maintenance of minimum survival rate at the end of 2nd and 3rd year⁹ (by doing substitute plantation if necessary) for release of subsequent instalments of subsidy to nurseries. SHM guidelines stipulated that DHMs should take proactive steps to motivate the beneficiaries to take up gap filling on their own to maintain minimum survival rate. Table-2.5 below shows the area of perennial fruit gardens established in the State during 2008-09 to 2010-11 and the extent of area in which the stipulated 90 per cent survival rate was achieved at the end of 3rd year:

Table-2.5 – Status of survival of perennial fruit gardens

Year	Plantation		Garden area where 90 per cent survival rate was achieved at the end of 3 rd year (percentage of area)
	Garden area established	Subsidy paid	
2008-09	31333	45.49	25152 (80.27%)
2009-10	19730	27.09	15043 (76.24%)
2010-11	7332	14.53	5419 (73.91%)
Total	58395	87.11	45614 (78.11%)

(Source : Progress reports of SHM)

⁹ including the year of plantation. No targets were fixed for subsequent years, i.e. after release of last instalment of subsidy

As against 58,395 Ha of new perennial fruit gardens established under SHM during 2008-09 to 2010-11 in focused districts, stipulated minimum survival rate of 90 *per cent* at the end of 3rd year was achieved in only 45614 Ha (i.e. in 78 *per cent* of total area). Minimum survival rate was not achieved in the remaining 12781 Ha (i.e. in 22 *per cent* of total area).

In test checked districts, 40,195 Ha were taken up for cultivation of perennial fruit gardens from 2008-09 to 2010-11 at a subsidy of ₹57.61 crore. However, prescribed minimum survival rate was achieved in only 33477 Ha (83 *per cent* of total area). Percentage of area achieving minimum survival rate was particularly low in Guntur (53 *per cent* of area), Medak (55 *per cent*), Rangareddy (59 *per cent*) and Prakasam (64 *per cent*) districts.

As per SHM Guidelines, department was required to obtain soil and water suitability reports along with the applications seeking subsidy so as to regulate sanction of subsidy for farms having sustainable water and land sources. In Ananthapuramu district, Audit conducted a test check of 30 sanctions (out of a total of 321) of subsidy under area expansion and found that none of the applicants had submitted these reports yet, subsidy was, however, sanctioned to them.

Department stated that gardens were damaged due to depletion of water table consequent on severe drought conditions and assured it would take action against erring officials.

2.1.11.2 Wasteful expenditure of ₹2.43 crore on unsuccessful plantations

Percentage survival in respect of 1726 Ha of perennial/non-perennial gardens like sweet orange, sapota and pomegranate gardens, etc. sanctioned in Ananthapuramu district at a cost of ₹2.43 crore during 2006-07 to 2010-11 was found 'nil' at the end of second/ third years due to non-availability of dependable water, sanction of new gardens on land under acquisition for irrigation project, etc. Thus, the expenditure of ₹2.43 crore was wasteful. Department accepted the above observation.

2.1.11.3 Delay in supply of inputs

Input package for area expansion includes reimbursement of cost of plants, supply of nutrients and pesticides, secateurs, cost for inter cropping and irrigation expenses. As per NHM guidelines, nutrients and pesticides are required to be applied to the newly planted plants during the month of September and indents for supply of the same shall be sent to supplier¹⁰ by ADH latest by July, to enable timely supplies. However, in the following instances, indents and supplies for the year 2011-12 were made belatedly, rendering the fertilizers unusable for that year.

¹⁰ AP State Agro Industries Development Corporation Ltd. (AP Agros)

Table-2.6 – Delay in supply of inputs

District	Date of indent by ADH	Date of supply
Prakasam	September 2011 (ADH-1) July and October 2011 (ADH-2)	November 2011 to March 2012 December 2011 and March 2012
Nalgonda	July 2011 and January 2012	January 2012 and March 2012
Guntur	For papaya gardens: indents not made during the year. For TC banana: November 2011 and February 2012	For papaya gardens: not supplied during the year. For TC banana: November 2011 and February 2012

(Source : Indents of department and invoices of supplier)

Department replied that delay in placing indents on supplier and supply of inputs to farmers was due to delay in tendering process and finalization of rates of inputs. Department also assured that supplies would be made in time in future.

In Guntur district, pesticides and insecticides were not supplied to 50 Ha of papaya garden. Audit noticed that 25.91 Ha recorded 'zero' per cent survival (subsidy paid in 1st year ₹5.82 lakh) and another 7.09 Ha recorded survival of less than prescribed rate of 90 per cent and pest attack was stated to be one of the reasons for low production.

2.1.11.4 Impact of area expansion scheme

Areas of major crops under cultivation assisted by SHM and productivity¹¹ prior to commencement of the Scheme (2004-05) and in 2011-12 are shown in Table-2.7 below:

Table-2.7 – Production and productivity

Crop	Area under cultivation (hectares)			Production (MT)		Productivity (MT per hectare)	
	2004-05	2011-12	Percentage of increase/decrease	2004-05	2011-12	2004-05	2011-12
Mango	391896	408692	4.29	3135168	3514753	8.00	8.60
Sweet Orange	109316	86619	(-) 20.76	1421108	1169358	13.00	13.50
Banana	53465	82847	54.96	1229695	2899629	23.00	35.00
Papaya	11438	14874	30.04	875007	1189927	76.50	80.00
Guava	10064	8933	(-) 11.24	120763	133989	12.00	15.00
Grape	3000	1300	(-) 56.67	62200	27600	20.73	21.23

(Source : AAPs, Information available on the official website of SHM)

It can be seen from the above table that, area under cultivation of sweet orange and guava declined considerably despite intervention of the Mission. Though mango is a major crop in the State, Mission intervention could bring only four per cent increase in new area.

¹¹ Productivity is average production for one hectare

Department stated that frequent disease attacks slowed down the production.

Further, Andhra Pradesh was one of the five grape producing States (Andhra Pradesh, Maharashtra, Karnataka, Tamilnadu and Mizoram) in India. However, area under grape cultivation in the State during 2008-09 to 2010-11 decreased from 3,000 Ha to 1,300 Ha and correspondingly, production also decreased from 62,200 MT to 27,600 MT. Grape belts in the State were in Rangareddy district, but this crop was included neither in the focused crops nor in the Annual Action Plans of that district.

Department stated that grape requires high initial cost of establishment and is prone to diseases. Reply is contrary to the fact that the Mission includes all the required initiatives like providing subsidy for establishment of new gardens, supply of disease free/quality plant materials and inputs, nutrient/pest management, etc.

2.1.12 Rejuvenation/replacement of old and senile orchards

To increase production and productivity of orchards, Para 8.19 of NHM guidelines envisaged taking up productivity improvement of more than 20 years old orchards through removal of senile plantations, rejuvenating old and senile orchards by re-plantation with fresh stock supported with appropriate and integrated combination of inputs, pruning and grafting techniques. Assistance for rejuvenation was fixed as 50 *per cent* of cost subject to a maximum ceiling of ₹15,000 per Ha, limited to two Ha area per beneficiary. An amount of ₹110.77 crore was spent by the Mission in focused districts to rejuvenate 1.26 lakh Ha upto 2012-13. Audit observations in selected districts, where ₹56.28 crore was spent on rejuvenation of 0.55 lakh Ha, are discussed below.

2.1.12.1 Selection of gardens without survey

Mango and cashew trees of more than 20 years age and citrus and guava trees of more than eight years age shall be considered for selection of gardens under rejuvenation program. For this purpose, the BLS was to record age and present condition of the orchard. However, since BLS was conducted only in 2010-11, whereas the scheme was being implemented from the year 2005-06, selection of beneficiaries and preparation of AAPs was done without survey.

2.1.12.2 Discrepancies in BLS and sanctioned data

The gardens eligible for assistance under the component 'rejuvenation' were required to be identified from the data contained in Base Line Survey.

- DHMs Ananthapuramu and Chittoor Districts had sanctioned financial assistance under rejuvenation for the crops to ineligible farmers during the year 2011-12. Audit noticed that while BLS indicated that these farmers were growing crops like chillies, tomato, cucumber, banana, flowers, vegetables etc., the department sanctioned assistance for these farmers under rejuvenation of 'mango/sweet orange'. Thus, information contained in BLS and in the applications for subsidy collected by department are contradictory.

- As per the pattadar pass books enclosed to sanctioned applications, the applicants were land holders, but according to BLS they were not horticulture farmers. Thus, sanction and payment of rejuvenation assistance to farmers who were not horticulture farmers was not in order.

Department replied that the reasons for not reflecting the correct data in BLS data were not known. Reply was silent as to why the discrepancies were not sorted out and status of applicants confirmed before sanctioning assistance to them.

2.1.12.3 Non-observance of Guidelines/Requirements for rejuvenation

Audit observed the following in Ananthapuramu and Chittoor districts:

- Guidelines of SHM stipulated that Horticulture Officer (HO) should take photographs of the gardens to be rejuvenated at three stages (before taking up the rejuvenation; during rejuvenation and orchards in bearing conditions after rejuvenation). However, the HOs did not take photographs as required.
- Guidelines also stipulated that yield data and the impact of the programme should be collected and kept on record. However, the same was not done.
- Though age of the garden was the criteria for selection of gardens to render assistance, none of the applicants revealed the age of gardens and number of trees requiring rejuvenation in their application forms. HOs also did not certify the same.

Department stated that photographs were being taken in two stages, yield data and age of trees was collected by Chief Planning Officers and TSG members. However, the same were not made available to Audit by DHMs.

2.1.12.4 Canopy management

Activity of canopy management was taken up in SHM with a view to maximize productivity by regulating the shape and growth of tree and to reduce the pest incidence. As per SHM norms, assistance shall be given for plants in age group from 5 to 20 years. Selection of beneficiaries shall be made in the months of June-July as pruning can only be taken up in rainy season. Estimated cost of canopy management was ₹12,000 per Ha and assistance would be 50 *per cent* i.e., ₹6,000 per Ha towards inputs (fertilizers and pesticides) and pruning equipment.

In Medak district, where canopy management was implemented in 350 Ha (247 beneficiaries) during 2010-11, following deficiencies were noticed.

- Though scheme guidelines mandated formation of a Committee¹² to identify villages where old and unproductive/ senile orchards existed,

¹² consisting of ADH, HO and Scientist from local Agricultural Research Station/ Krishi Vigyan Kendra

no such committee was formed. Applications collected by field staff, based on which assistance was sanctioned, did not contain critical data like, age of garden, number of trees requiring canopy, etc., rendering the beneficiary selection unscientific and discretionary.

- Beneficiary selection shall be made in the months of June/ July so that pruning which is the vital element of canopy management can be taken up during rainy season. However, in the above cases the assistance was given partly in the months of October 2011 and March 2012. Pruning in non-season may endanger or kill the trees.
- Non-subsidy portion was not collected along with applications which help in eliminating non-serious farmers, which the SHM guidelines have been emphatic about.
- Photographs of three stages (before and after implementation and at fruit bearing stage), were not taken and kept on record, as required under the scheme.

Department did not furnish reply on the above issues.

2.1.13 Creation of water sources

To ensure uninterrupted physiological activities in horticulture, NHM guidelines provide for rendering assistance for creating water sources through construction of community tanks, farm ponds/ reservoirs with plastic/ RCC lining to ensure life saving irrigation to horticulture crops. Cost of pond was estimated at ₹15 lakh per unit for a command area of 10 Ha, to be owned and managed by community/farmers group for which 100 *per cent* subsidy was admissible. The Mission spent ₹36.92 crore in focused districts to construct 1,245 ponds since inception of programme upto 2012-13. In selected districts, the following deficiencies were noticed:

- In five districts (Ananthapuramu, Chittoor, YSR Kadapa, Mahabubnagar and Medak), 1073 ponds were sanctioned between 2009-10 and 2012-13. Of these, only 893 ponds were completed (January 2013) leaving 180 ponds incomplete¹³, with delays ranging from 7 to 43 months. Delays were attributed by department to continuous rains, non-completion of repairs by some beneficiaries, non-submission of non-subsidy portion by farmers in time, etc.
- Farm pond was a community based activity and as per NHM guidelines, two or more beneficiaries had to be identified for each pond before sanctioning financial assistance. However, it was seen that DHM, Medak sanctioned (2010-12) all 32 ponds and ADH-II, Ananthapuramu sanctioned 82 out of 85 ponds (2010-11) and 135 out of 139 ponds (2011-12) to individual farmers without identifying co-beneficiaries, making it individual oriented rather than community based as envisaged.

Department replied (February 2014) that instructions were being issued to identify co-beneficiaries whose lands were adjoining to the ponds and that

¹³ Ananthapuramu:131; Chittoor:17; YSR Kadapa:27; Mahabubnagar:4; Medak:1; Total=180

documentation is now done by keeping photographs with HOs. However, beneficiary was to be identified before implementing the scheme rather than as a formality.

2.1.14 Protected cultivation

Para 8.22 of NHM Guidelines envisages promotion of activities like construction of shade net house, green houses, mulching and plastic tunnels, anti-bird/hail nets to increase the productivity. SHM subsidized 2,566 structures in the State at a cost of ₹29 crore up to 2012-13. Audit observed that DHMs in selected districts did not collect the production particulars from the beneficiaries to establish proper utilization of subsidy and increase in production and productivity after implementation.

Department stated that Statistics Department would collect the data of production and productivity of certain crops every year. Department did not furnish any reply regarding assurance on proper utilization of subsidy and impact assessment of the component in the absence of production data of individual cases.

2.1.15 Promotion of Integrated Nutrient Management (INM) and Integrated Pest Management (IPM)

With a view to discourage indiscriminate use of nutrients and pesticides by farmers, component of 'promotion of INM and IPM' was implemented through technology dissemination. Assistance was also given for developing facilities like disease forecasting units, bio control labs, Plant Health clinics and Leaf/ Tissue Analysis labs.

The Mission spent ₹16.31 crore from inception to implement INM/IPM in 1.03 lakh Ha and to establish one disease forecasting unit; six bio-control laboratories; one plant health clinic; two leaf tissue analysis laboratories, Bacterial Blight Disease. Following deficiencies in implementation of this component were noticed:

- Four cases of delay/ non-establishment/ non-operation of laboratories were noticed (*Appendix-2.1*) resulting in expenditure of ₹1.49 crore incurred thereon not yielding desired results, besides denial of scientific diagnosis of plant health and non-availability of bio-agents to farmers.
- Out of five Bio Control Laboratories sanctioned (2007-08) in the Horticultural/ Fruit/ Vegetable Research stations of Dr.YSR Horticultural University for isolation of Trichoderma¹⁴ from soil samples (for internal usage and selling to needy farmers), three laboratories (Anantharajupet of YSR district, Mallepally of Nalgonda district and Sangareddy of Medak district) started isolation/ production and labeling of 'Trichoderma spp', without obtaining any licence, which is in violation of the provisions of Insecticide Act 1968.

Department stated that process of obtaining licence was under progress.

¹⁴ Trichoderma is a genus of fungi that is present in all soils

2.1.16 Good Agricultural Practices

With a view to encourage farmers to adopt Good Agricultural Practices (GAP) in line with global GAP, so as to enable the farmers get better prices for their produce in domestic as well as international market, a subsidy of ₹10,000 per Ha towards application of inputs with a ceiling of maximum four Ha and another ₹5,000 per Ha for certification is being given under SHM. Certification agencies to be involved for this were as per approved list accredited by Agricultural and Processed Food Products Exports Authority (APEDA). Department was required to nominate a certifying agency before commencement of crop operations, so as to enable the agency to observe the practices continuously for three years and certify.

- Without nominating the certifying agency, DHM, Chittoor paid ₹7.07 lakh to 93 farmers for cultural operations during 2011-12 and inputs were supplied (through AP Agros) to 69 farmers. As a result, farmers could not obtain the certification for their produce, defeating the intended objective of this component.

Department replied that due to seizure of inputs by Vigilance Department, the same were not supplied to remaining farmers simultaneously.

- In Medak district, DHM incurred ₹3.70 lakh on GAP during 2011-12. However, the inputs required to be supplied during the month of June/ July 2011 (i.e rainy season) were supplied only during November and next March. As a result, farmers could not use the inputs and register themselves for certification.

In reply, department accepted that some suppliers made belated supply of inputs and assured prompt supply in future.

2.1.17 Dissemination of technology and knowledge

NHM guidelines stipulate that appropriate training to farmers for adoption of high yielding varieties of crops and farming systems shall be taken up at district level, State level and outside the State.

a) DHM, Ongole paid subsidy of ₹5.68 lakh to 44 farmers of papaya plantation during the year 2010-11, but not a single farmer was given any training in cultivation of high yielding papaya plantation. In the absence of proper training of pest management, 23 farmers removed their plantations because of virus in plants which resulted in zero survival and non achievement of targets in the area expansion despite extending subsidy.

b) During 2008-09, a target of 25 demonstrations was fixed for DHM, Ananthapuramu under 'Technology Dissemination' at a cost of ₹4.49 lakh. This comprised of five demonstrations each in (i) IPM- Vegetables-chillies, (ii) organic farming in vegetables/ spices and (iii) fruits and another 10 frontline demonstrations on Public Sector Farms. But, no demonstrations were given. Thereafter, no targets under 'Technology Dissemination' were

fixed for DHM in any of the subsequent years and no demonstrations were conducted.

DHM, Ananthapuramu replied that demonstrations were not conducted since there were no government nurseries for the crops specified in the targets (chillies and spices) in the district. Department also gave the same reply. This indicates that SHM fixed the targets without considering feasibility.

2.1.18 Post harvest management and minimizing post harvest losses

With a view to reduce post harvest losses and increase marketability of horticulture produce, NHM has been implementing 'Post Harvest Management' component which envisages creation of a net work of infrastructural facilities for storage, transportation, packaging and marketing of horticulture produce. Under this component, SHM established 314 Pack houses, 53 cold storage units, 28 processing units, 40 ripening chambers and 10 reefer vans in the State up to 2012-13, by incurring an expenditure of ₹70.06 crore. Audit observed the following:

The State produces 485.32 lakh MT of fruits and 396.19 lakh MT of vegetables (total: 881.51 lakh MT) at an average in respective seasons. As against this, the storage capacity created under SHM was only 4.12 lakh MT, covering a meagre 0.47 *per cent* of total production in the State.

As per the 'Impact evaluation study on the project of SHM' conducted by Indian Institute of Economics (report submitted to SHM in January 2012), 25 to 30 *per cent* of the crop gets damaged every year, on an average, due to lack of adequate grading/ packing/cold storage facilities. The report pointed out that lack of storage facilities at farm level compelled 90 *per cent* of farmers to dispose off their entire produce immediately on harvesting and enabling higher margins for wholesalers and retailers; farmers were keeping their produce in their houses, shops and even in their farms; and farmers expressed inability in arranging transport facility to markets located at distant places.

Thus, the objectives of reduction of post harvest losses under the component remained largely unfulfilled. Department accepted that the infrastructure created was not sufficient and that there was a need to create more infrastructure to reduce post harvest losses.

In Medak district, 31 pack houses were sanctioned between 2006-07 and 2011-12 but subsidy was not paid and none were established due to bankers not coming forward to release loan amount to entrepreneurs as the subsidy was a back ended one. Department accepted that beneficiaries could not establish pack houses due to financial problems.

2.1.19 Creation of infrastructure for marketing of horticultural produces

Apart from providing post harvest facilities, creation of market linkage is crucial in reducing post harvest losses. The component of “creation of market infrastructure” was implemented in NHM programme. Assistance under this component was project based and credit linked back ended subsidy. The component was to be implemented in co-ordination with the Marketing Department.

Against a target of nine wholesale markets and 57 rural markets up to 2012-13, SHM extended subsidy to only one wholesale and 10 rural markets at a cost of ₹55 lakh. Thus, the objectives of this component were not fully achieved. Department did not furnish specific reply on this issue.

A test check of records of DHM, Ananthapuramu revealed that the DHM failed to implement the target fixed for 2008-09 to develop 10 Rural markets/ Rytu bazaars/ Apni mandies; preparation of feasibility report for setting up of one wholesale market; and creation/ strengthening of additional infrastructure to the new/ existing market yards with an outlay of ₹1.98 crore. SHM did not fix any target for the DHM thereafter and the component was not implemented in the district thereafter.

Department replied that market yards were not taken up and subsidy was not released due to lack of funds from the Marketing Department.

Thus, non-establishment of market linkage crippled the farmers in selling their produce for a fair value.

2.1.20 Other deficiencies in implementation of Mission

2.1.20.1 Low-representation of under-privileged sections

As per guidelines of NHM, Mission Directors are to ensure that 16 *per cent* and eight *per cent* of the funds are targeted for SC and ST farmers respectively. However, in eight test checked districts, while an amount of ₹159.47 crore was spent during 2009-10 to 2012-13, amount spent for SC and ST beneficiaries was only ₹18.44 crore and ₹8.49 crore respectively. Thus, the percentage of representation of SC and ST farmers was only 12 and five, as against the stipulated 16 and eight.

Department replied that representation of SC/ ST farmers was less due to involvement of huge investment by farmers, lack of exposure to high technology, etc. It was also stated that farmers are being motivated in this regard.

2.1.20.2 Selection of beneficiaries and payment of subsidy

Implementation guidelines stipulate that selection of beneficiary should be in transparent manner and by giving due publicity. Though scheme guidelines stipulate that beneficiaries should be approved in Gram Sabhas, beneficiaries

were selected by Horticulture Officers. There was no record with department indicating that beneficiaries were approved by Gram Sabhas.

2.1.20.3 Capacity building

SHM did not utilize funds allotted for training of departmental officials during 2008-09 to 2012-13. Out of ₹1.27 crore contemplated to be utilized for training of staff, an amount of only ₹4.93 lakh was spent. As against a target of 1700 members (supervisors: 930 and field staff: 770) to be trained, SHM imparted training to only 5.6 *per cent* members (supervisors: nil and field staff: 95), indicating lack of focus on training of staff.

In respect of training of farmers, utilization of funds was ₹9.78 crore against the target of ₹10.56 crore. As against a target of 1.88 lakh farmers and gardeners, training was provided to 1.6 lakh farmers/gardeners. There was substantial shortfall in training of farmers outside State (80 *per cent*) and in conducting exposure visits (59 *per cent*).

Department replied that training to supervisors and entrepreneurs was not conducted due to insufficient turn out of candidates and lack of interest due to long term duration (three months) of the course.

2.1.21 Internal Audit and evaluation

2.1.21.1 Internal Audit

Although the program was implemented in 18 focused districts and two agency areas, SHM had not established any Internal Audit (IA) wing to provide assurance to management that departmental rules, regulations and procedures were being complied with.

Department accepted that there was no internal audit system and stated that matter would be placed before next State Level Executive Committee meeting.

2.1.21.2 Evaluation

SHM entrusted evaluation of implementation of Mission program to a third party viz., Andhra Pradesh Productivity Council. Third party evaluation reports relating to year 2009-10 furnished to Audit revealed following deficiencies in implementation of the programme in 10 selected districts:

- i) In selected districts, third party visited 3,913 beneficiaries of ‘establishment of new gardens’ and found that:
 - In 139 cases plantations were not taken up, yet assistance was released;
 - 246 farm holds recorded nil survival;
 - In 83 cases the officials extended subsidy to already existing old gardens instead of new gardens;
 - In 32 cases discrepancies were found between sanctioned area of the garden and actual area on ground; and

- ii) In respect of ‘rejuvenation’, the third party visited 1,563 farm holds and found that garden did not exist in 38 cases though assistance was given;
- iii) In respect of ‘vermi compost units’ under organic farming, the third party visited 562 beneficiary units in ten test-checked districts and found that:
 - 34 units does not exist;
 - 222 units are found non performing; and
 - Four units were converted into cattle sheds.

The irregularities were reported to SHM by evaluating agency in 2009-10 and SHM communicated the same to DHMs. However, rectification action was not taken as of February 2014. Department assured to take corrective action after receipt of explanations from DHMs.

This shows lack of response and absence of suitable mechanism to closely monitor the programme and take timely action.

2.1.22 Conclusion

State Horticulture Mission (SHM) programme has been implemented in the State from 2005-06. However, Annual Action Plans (AAPs) for 2005-06 to 2010-11 were prepared without conducting Base Line Survey contrary to GoI guidelines. Beneficiary selection was not based on baseline survey. Release of funds for the period 2008-13 was not commensurate with the requirements under AAPs. Subsidy for establishment of nurseries and area expansion of new gardens was sanctioned without proper examination or evaluation of proposals. While there was substantial shortfall in establishment of nurseries, instances of non-functioning of nurseries, low production, non-production of required plant material were also noticed. There was no control mechanism to ensure quality of plant material produced by nurseries established under SHM. Survival of plants in new perennial fruit gardens established was only 78 per cent as against stipulated 90 per cent. Rejuvenation of old and senile orchards was plagued with deficiencies like, selection of beneficiaries without required data, sanction of assistance to ineligible farmers and non-collection of yield data for impact assessment. Initiatives under post harvest management aimed at reducing post harvesting losses and improving marketability of horticulture produce were insufficient as creation of storage facilities and market yards, etc. was not commensurate with horticulture production in the State. Remedial action was lacking on issues pointed out in third party evaluation reports.

2.1.23 Recommendations

- ***Government should ensure that funds for the programme are released as per requirements under Annual Action Plans.***
- ***Government should ensure that subsidy under various components of SHM are sanctioned only after proper identification of beneficiaries and scientific evaluation of proposals, so as to achieve intended results.***

- *Government should put in place suitable control mechanism to ensure quality of plant material produced by nurseries established under SHM.*
- *Government should take immediate steps to review cases of subsidy sanctioned under rejuvenation of old and senile orchards and collect the data required for impact assessment, to ensure fruitful utilization of subsidy.*
- *Government should give thrust to post harvest management initiatives like establishment of storage facilities and market yards, etc., commensurate with horticulture production in the State.*
- *SHM should put in place proper mechanism to ensure prompt action by lower formations on deficiencies pointed out in third party evaluation reports.*

Irrigation and Command Area Development Department (Irrigation Wing)

2.2 Minor Irrigation

2.2.1 Introduction

Minor Irrigation (MI) plays an important role in development of agriculture and livelihood particularly in drought prone areas not covered under Major and Medium Irrigation Projects. Its advantages include smaller capital outlays, favourable benefit cost ratios and shorter gestation periods.

MI wing of Irrigation and Command Area Development (I&CAD) Department deals with conceptualization, investigation, execution, maintenance, revival and restoration of MI schemes¹⁵. As per the information furnished by the department, MI sector in Andhra Pradesh consists of 76,465 tanks¹⁶ and 1209 anicuts¹⁷/other sources with a total ayacut¹⁸ of 45.49 lakh acres. The Andhra Pradesh State Irrigation Development Corporation (APSIDC) deals with execution of lift irrigation schemes (LISs) in areas that cannot be irrigated by gravity flow. There are 1876 LISs covering an ayacut of 10.52 lakh acres under APSIDC. There is a Command Area Development Authority (CADA) for monitoring CAD activities in the State.

2.2.2 Organizational setup

Special Chief Secretary/Secretary heads the MI wing of I&CAD Department, assisted by a Special Secretary, two Chief Engineers (one for Telangana region and one for Andhra and Rayalaseema regions), 18 Superintending Engineers (SEs) and 67 Executive Engineers (EEs) who monitor field level activities. Special Chief Secretary/Secretary is also the Ex-officio Commissioner of CADA. Vice Chairman and Managing Director (VC&MD) looks after the affairs of APSIDC. He is supported by three SEs and 14 EEs.

2.2.3 Audit Objectives

Objectives of the performance audit were to ascertain whether:

- Projects/works are taken up after scientific assessment and with proper planning so as to achieve optimum results;
- Entrustment of works and contract management was as per the prescribed norms and transparent;
- Implementation of various schemes/programmes and execution of projects and works, including lift irrigation schemes by APSIDC, was as envisaged and delivered the intended results in a timely manner;

¹⁵ Irrigation sources having a command area up to 2000 hectares (about 4942 acres) are treated as Minor Irrigation schemes.

¹⁶ includes 66,195 tanks transferred from Panchayat Raj Department in June 2005

¹⁷ A small dam built in the course of a stream for retaining/regulating water for irrigation

¹⁸ Command area

- Participatory irrigation management initiatives in the department was able to achieve the objectives of AP Farmers' Management of Irrigation Systems Act-1997;
- Manpower management in MI wing is effective; and
- Adequate internal control and coordination mechanism was instituted and complied with.

2.2.4 Audit scope and methodology

Performance Audit, conducted from April – July 2013, covered eight selected districts¹⁹. Records of MI Wing in AP State Secretariat and offices of Commissioner (CADA), two Chief Engineers (Minor Irrigation), seven SEs²⁰, 21 EEs²¹, Registered Office of APSIDC, six APSIDC Divisions²² and one Project Office²³ were scrutinized. Activities relating to minor irrigation including implementation of various schemes in selected districts during the five year period from 2008-09 to 2012-13 were covered in this audit. Entry Conference was held (April 2013) with Special Chief Secretary, I&CAD Department and other senior officers wherein the audit objectives, criteria, scope and methodology of the Performance Audit were explained. Exit Conference was held (February 2014) with departmental officers wherein the audit observations and recommendations were discussed. Replies (November 2013) of Government and views expressed in Exit Conference have been incorporated at appropriate places in the report.

2.2.5 Audit criteria

Audit findings were benchmarked against the criteria sourced from the following:

- State Government orders and departmental instructions issued from time to time;
- Guidelines issued by GoI/State Government and Implementation Plans of the respective programmes/schemes; and
- Andhra Pradesh Farmers' Management of Irrigation Systems Act – 1997, Rules made there under and relevant Government orders.

¹⁹ Adilabad, Ananthapuramu, Chittoor, Mahabubnagar, Medak, Nalgonda, Nellore and Srikakulam

²⁰ Irrigation Circles at Ananthapuramu, Bobbili, Chittoor, Hyderabad, Nellore, Nirmal and Sangareddy

²¹ Irrigation/Minor Irrigation Divisions at Bellampally, Dharmavaram, Gudur, Kavali, Mahabubnagar, Madanapally, Mancherial, Nalgonda, Nellore (Central), Nellore (SI), Nirmal, Penukonda, Sangareddy (IB), Sangareddy (SI), Seethampet, Siddipet, Srikakulam, Srikakulam (SI), Tirupathi, Utnoor and Wanaparthy

²² Mahabubnagar district (Mahabubnagar), Nellore district (Ongole), Ananthapuramu district (Kurnool), Srikakulam district (Srikakulam), Adilabad district (Nirmal), Nalgonda district (Miryalaguda)

²³ Medak district (Sangareddy)

2.2.6 Financial performance

Year wise budget allotment and expenditure on Minor Irrigation (excluding CADA) is as follows:

Table-2.8 – Budget and expenditure on Minor Irrigation

(₹ in crore)

Year	Budget allocated	Expenditure (percentage)
2008-09	1299.08	562.37 (43)
2009-10	1242.50	797.17 (64)
2010-11	1679.56	799.96 (48)
2011-12	2079.92	848.46 (41)
2012-13	2380.11	1323.16 (56)

(Source : Information furnished by I&CAD Department)

Expenditure ranged from 41 to 64 *per cent* of budget allocations in last five years due to (i) non-sanctioning of works under SCP²⁴ and TSP²⁵ after mandatory budget allocations, (ii) holding up of several projects due to land acquisition and forest land alienation problems, and (iii) shortage of field staff.

Audit findings

2.2.7 Planning

In order to achieve the objective of providing irrigation through sustained development and maintenance of MI projects, scientific assessment of the functioning of existing MI sources, proper identification of works based on field requirements and clearance of bottlenecks while planning the projects/works was essential, so as to enable timely delivery of irrigation benefits to beneficiaries. Audit observed following deficiencies in planning:

2.2.7.1 Basic database of MI tanks

Department needs a comprehensive database of MI tanks under its control in order to plan and prioritize its activities and achieve optimum results. It was noticed in audit that department had not compiled the tank wise physical, technical and functional details like hydraulic particulars of tanks; contour maps; ayacut created; year wise hydrological particulars like rainfall, water levels, amount of water received, water released for irrigation; year wise details of ayacut utilized under each tank, water cess demanded, collected and apportioned; history of works taken up on each tank; etc.

Government replied that the above information was being maintained in divisions. However, test check of sampled divisions revealed that the divisions were maintaining only a list of tanks without any data on technical and functional aspects of each tank. During Exit Conference, department accepted that a comprehensive database was not totally built up and that efforts are being made in this regard.

²⁴ Special Component Plan for Scheduled Castes

²⁵ Tribal Area Sub Plan

2.2.7.2 Preparation of tank memoirs for tanks taken over from PR Department

In June 2005, Government ordered that 66195 tanks, under the control of Panchayat Raj (PR) Department covering a total ayacut of 14.7 lakh acres (each having ayacut of less than 100 acres), be transferred to Irrigation Department for their revitalization, better management and effective utilization of irrigation resources.

Even after eight years since taking over the PR tanks, the Irrigation Department, does not have the details of exact number of PR tanks under its control and their status. Audit observed that only district wise number of tanks was handed over to MI Wing. These tanks were not physically verified by MI wing before taking possession to ascertain their status.

In absence of basic information on PR tanks, Government accorded (July 2009 and March 2013) administrative approval for preparation of tank memoirs²⁶ in respect of 21527 PR tanks²⁷ in Phase-I (cost: ₹24.80 crore) and 31,395 PR tanks²⁸ in Phase-II (cost: ₹36.02 crore). Phase-I work was divided into 22 packages and entrusted to 17 different agencies during November 2009 – June 2010 for completion within six months. However, even after more than three years, preparation of memoirs for only 19327 tanks was completed so far (June 2013), with an expenditure of ₹20.24 crore. Phase-II works were yet to be taken up. Audit also observed that no proposals were initiated for preparation of tank memoirs in respect of MI tanks and remaining PR tanks.

Government replied that tank memoirs are being prepared to ascertain the final number and status of PR tanks. As regards the remaining PR tanks, Government replied that these are either abandoned or percolation tanks which do not have any ayacut and a decision on preparation of tank memoirs in respect of them is yet to be taken. In the absence of basic information on PR tanks, which was basis for planning, there is no assurance that the objective of effective utilization of smaller tanks by transferring from PR Department to MI wing was achieved.

2.2.7.3 Preparation of Tank Information System

Department entered into (March 2012) a Memorandum of Understanding (MoU) with Andhra Pradesh State Remote Sensing Applications Center (APRSAC), Hyderabad for development of Tank Information System (TIS)²⁹ for the State, using satellite remote sensing techniques at a cost of ₹5.99 crore. For preparation of TIS, the department was to provide data relating to MI

²⁶ Recorded hydrological and functional data of each tank including location, index/contour maps, tank levels, rainfall data, maximum flood discharge calculations, ayacut maps, photographs, etc.

²⁷ having an ayacut of more than 10 Ha (24.71 acres) each

²⁸ having an ayacut of less than 10 Ha (24.71 acres) each

²⁹ TIS will (a) generate satellite data and Survey of India (SI) toposheets; (b) delineate catchment area/drainage of tanks and cascades; (c) prepare land cover and land use maps; (d) prepare slope maps using toposheets; and (e) facilitate identification of potential new tank sites and new cascades

tanks to APSRSAC and in respect of PR tanks, tank memoir data prepared by private agencies was to be used. As per MoU, APSRSAC had to complete TIS for eight districts³⁰ initially in Phase-I, within eight months from payment of first instalment of advance and for the remaining 14 districts within six months after receipt of final payment for Phase-I. Though first instalment of ₹1.50 crore was paid to APSRSAC in April 2012, even data collection for eight districts (Phase-I) was not completed and TIS is yet to be developed (July 2013), despite a lapse of more than 15 months since payment of advance.

Government replied that data relating to 20,728 tanks (i.e. 1940 out of about 10259 MI tanks and 18788 out of 52922 PR tanks) was submitted to APSRSAC so far and collection of data for balance tanks was under progress. It is clear from the reply that absence of database of MI tanks/non-completion of tank memoirs for PR tanks adversely affected the progress of TIS.

2.2.7.4 Selection of works

It was observed that no long term/comprehensive tank wise plans were prepared and no shelf of works was being maintained by department to ensure that all necessary works were identified, prioritized and high priority works were sanctioned first for execution. A large number of agreements valuing less than ₹10 lakh each, including flood damage repair (FDR) works, were being concluded at divisional level, with no recorded supervision of Superintending Engineers (SEs). No returns on status of these small works were prescribed either by Chief Engineer or respective SEs. History of works taken up on each tank was not being maintained.

During Exit Conference, department accepted that there should be a mechanism to identify and prioritize works on need basis after periodical physical inspection of tanks by engineers.

2.2.7.5 Deficiencies in planning the works

Audit noticed deficiencies in planning of works. Illustrative cases are mentioned below:

(i) Taking up work without finalizing drawings: The work of 'Construction of check dam across Swarnamukhi river near Doruvukatta (V), Kota (M), Nellore district' was taken up with the objectives of (a) arresting intrusion of salt water into the river, (b) recharging ground water and serve an indirect ayacut of 3078 acres and (c) providing drinking water facility.

Audit observed that no project report or benefit-cost ratio for the project was prepared to establish its necessity and techno-economic feasibility. Further, no proposal for any drinking water scheme was forthcoming from the records.

The work was awarded to a contractor for ₹3.27 crore in June 2010 without finalizing designs/drawings and estimates were prepared considering designs of another work (check dam across Musi river in Prakasam district). Later,

³⁰ Adilabad, Ananthapuramu, Chittoor, Medak, Rangareddy, Srikakulam, Visakhapatnam and Vizianagaram districts

when designs were finalized (August 2010), the scope of work increased by 292.6 per cent³¹. Though Government directed (December 2010) the CE to close the contract and call for fresh tenders, department continued correspondence with contractor and insisted on continuing the work as per revised designs. Government, later changed its stance and permitted (February 2013) the department to continue with same contractor and to pay latest rates (SSR 2012-13). A supplemental agreement was concluded (March 2013) taking the total value of work to ₹13.83 crore as against the original contract value of ₹3.27 crore. The work had not yet started as of July 2013.

Government replied that the check dam was essential to recharge ground water on the downstream side of Swarnamukhi barrage; that administrative approval for the work was given based on designs and drawing submitted by field officers; and that the work had been commenced and in progress. However, the fact remains that no project report was prepared to establish technical viability of the project. Further, the haste shown in award of work without even finalizing designs ultimately did not result in timely achievement of intended objective even after more than two years after completion of original stipulated period of 12 months.

(ii) Emergent repair works: In MI division, Uttoor of Adilabad district, department sanctioned an amount of ₹1.95 crore during 2011-12 for taking up emergent repair works to 42 tanks damaged due to floods. When Audit pointed out non-completion of these works even after more than one year, Government replied that 29 out of the 42 works are now completed, remaining works were cancelled as they were not taken up within one year and that these works would be reviewed and taken up depending on their necessity. From the reply it is evident that these works were approved as emergent works without assessing their actual requirement, indicating improper planning.

(iii) Improper assessment of work: Work of 'Improvements and flood damage repairs to Nagasamudram tank, Kamaluddinpur (V), Ghanpur (M), Mahabubnagar district' was sanctioned under Andhra Pradesh Community Based Tank Management Project (APCBTMP)³² for ₹0.60 crore in June 2010. Subsequently, a revised administrative approval was accorded in November 2010 for ₹0.95 crore by including additional amount required towards damages caused due to floods occurred in September / October 2009 and the work was awarded in August 2011. Again, after award of work, another revised estimate was proposed for ₹1.57 crore. It can be seen that the original sanction was given in June 2010, i.e. after occurrence of floods and that the actual extent of improvements/ repairs required was not assessed properly while sanctioning the work initially.

Government replied that initial estimate was prepared for comprehensive improvement of the tank including breach filling as per MI guidelines, but the World Bank Consultant's advice (June 2010) was that the bund suffered

³¹ As per original estimate, cost of work was ₹3.54 crore. After finalization of designs, the cost was revised to ₹13.90 crore. The increase of ₹10.36 crore works out to 292.6 per cent

³² Andhra Pradesh Community Based Tank Management Project taken up with financial assistance from World Bank and GoI

serious damages at four locations and advised that the CE, CDO inspect the tank and suggest appropriate designs for foolproof rehabilitation of the tank and accordingly the working drawings were finalized and the estimate revised. Reply indicates that sufficient care was not taken to ensure foolproof rehabilitation of the tank initially, which necessitated subsequent revisions.

(iv) Works taken up without baseline survey: As per guidelines of RRR³³ scheme, a baseline survey was to be conducted before commencement of project execution. Accordingly, Water and Land Management Training and Research Institute (WALAMTARI) conducted a baseline survey, as required under scheme guidelines, for Phase-II, covering 239 tanks (out of 1029 proposed under the programme) in 171 mandals of 12 districts and submitted a report in December 2012 to Commissioner (CADA). The report identified that bunds of 41 tanks, sluices of 65 tanks, surplus weirs of 32 tanks, canal linings of 29 tanks and canal structures of 24 tanks were 'badly damaged' and recommended various measures to be taken for (i) Institutional strengthening, (ii) Tank systems improvement and (iii) Agricultural and allied services.

When action taken on the recommendations was called for, department replied that by the time survey report was received most of the works were already taken up. Government replied that 134 out of 191 damaged tanks identified in baseline survey report were fully covered in the works already taken up under the scheme and special permission was sought from Commissioner, CADA for taking up additional items of work in 52 ongoing and 7 completed works. Reply itself indicates that projects were commenced without conducting baseline survey, contrary to scheme guidelines.

2.2.8 Entrustment of works and contract management

Tendering and contract management are processes which ensure economy in procurement and protect Government interest. Audit observed following deficiencies in tendering and contract management in selected districts:

2.2.8.1 Relaxation of tender conditions

Tender conditions of works on Thummedipalli and Inagaluru MI tanks in Ananthapuramu District (taken up under APCBTMP) stipulated that bidder had to satisfactorily complete one similar nature of work during last three financial years prior to the year in which bid was invited.

Audit observed that, bids for these works were initially rejected for non-fulfilment of this condition. Again tenders were invited and works were awarded to another contractor by relaxing above tender condition after opening of bids. Similarly, works on (1) Setturu, (2) Pekkala, (3) Kokkanti, (4) Chilamaturu, (5) Gollapalli and (6) Akkampalli MI Tanks in the same district were awarded though bidders did not satisfy such tender condition.

³³ 'Repair, Renovation and Restoration (RRR) of water bodies' – a Centrally Sponsored Scheme

Government replied that tender conditions were relaxed as lowest bidders executed sufficient quantities of main work items in other departments/incomplete works and since APCBTMP was a time bound scheme. However, post tender relaxation only to participative bidders was against the spirit of fair competition.

2.2.8.2 Assessment of bidders' capacity

Works on 36 out of 136 tanks in Nalgonda District and 41 out of 82 tanks in Srikakulam District were entrusted (during 2008-09 to 2011-12) to five and six contractors respectively (four to nine works to each contractor) without assessing their technical/bid capacities. No mechanism existed to limit number of works to be allotted to a particular contractor to ensure timely completion of work. Out of 41 works in Srikakulam district, only two were completed, 11 works were not started and 28 works were in progress as of June 2013. Similarly, out of 36 works in Nalgonda district, only one work was completed and remaining 35 works were in progress. Delays in these works ranged between four to 52 months beyond agreement period.

Government replied that a number of these works were costing less than ₹20 lakh and hence were awarded as per existing rules without assessing the bid capacity. Awarding large number of smaller works to one contractor is fraught with the risk of overload of work on one contractor beyond capacity which results in delays.

2.2.8.3 Synchronization in award of works

As per instructions issued by Government, works costing less than ₹5 lakh are entrusted to the respective Water Users Associations (WUAs) and works costing more than ₹5 lakh to contractors through tender process.

Audit observed that there was no synchronization between the works entrusted to contractors and to the WUAs, under the same tank. Works were entrusted to WUAs and contractors in different spells. Consequently, in 36 (Srikakulam - 12 and Nalgonda - 24) projects, WUA component work was completed (during 2009-10 to 2012-13) and tender component works were still in progress. Similarly, in 44 (Srikakulam - 11 and Nalgonda - 33) projects, tender component works were completed (during 2008-09 to 2012-13) and WUA works were still in progress. As a result, achievement of overall improvement/renovation of these tank systems was delayed.

Government replied that agreements with WUAs were concluded early as the works involved clearing light jungle, Juliflora, etc., after completion of which only the tender component works could be started. Reply is contrary to the fact that many of the WUAs works were not completed though tender component works were completed and vice-versa.

2.2.8.4 Undue benefit to contractors

As per terms and conditions of the agreements concluded for preparation of tank memoirs (Phase-I) for PR tanks, the agreed price is inclusive of all

incidental charges and taxes required to be paid by the agency. Audit noticed that, GoAP later issued orders (September 2010) for making additional payments towards Service Tax (ST) at 10.33 *per cent* over and above agreed rates. Accordingly, supplemental agreements were concluded to this effect, resulting in undue benefit to contractors to a tune of ₹2.56 crore (calculated at 10.33 *per cent* on ₹24.80 crore).

Government replied that ST component was not included in the estimates and that proposal to reimburse ST was accepted after repeated requests of the agencies. However, the fact remains that this is a post tender change since as per the initial agreement, liability of all taxes was on part of the agencies.

2.2.9 Execution of projects/works

Having selected projects/works for execution, timely execution of construction works in full shape was key to ensure timely provision of irrigation benefits to targeted farmers. Audit observed the following deficiencies in execution of projects/works:

2.2.9.1 Non-completion of projects

Audit noticed in the selected districts that department was not able to complete eight MI projects taken up (*Appendix-2.2*), due to failure of the department in assessing the actual land requirement, taking advance action for land acquisition/ rehabilitation of project affected families before award of work, depositing land compensation amount with Revenue Department, etc. Non-completion of these projects deprived irrigation benefits to the targeted 20613 acres and blocked up funds of ₹37.52 crore.

Further, progress of 19 MI projects, taken up under APILIP³⁴ in Adilabad district during September 2008 to December 2011, was adversely affected due to delays in land acquisition (*Appendix-2.3*). As a result, inspite of incurring an expenditure of ₹37.17 crore, intended objective of providing irrigation facilities to 11857 acres has not been achieved.

Government replied that land acquisition under MI Sector was delayed due to taking up of large number of projects under Jalayagnam programme and if projects are taken up after completion of land acquisition, the cost would be more than the present cost. The fact remains that non-acquisition of lands results in blocking up of funds in incomplete works and the opportunity cost lost on such unproductive investments would be more than the cost escalation.

2.2.9.2 Non-execution of field channels

In irrigation projects, field channels are the last level of distribution system which deliver water to fields. However, Audit observed that department was not taking up excavation of field channels in new MI tanks constructed under

³⁴ 'Andhra Pradesh Irrigation and Livelihood Project' taken up with the loan assistance from Japan Bank for International Cooperation (JBIC)

normal State Plan, RIDF³⁵, AIBP³⁶ and SCP, whereas field channels were being executed in projects taken up under APILIP.

Government replied that as per general practice, field channels in MI are executed by farmers. During Exit Conference, the department accepted that there should be a uniform mechanism in the department in respect of field channels, to ensure reaping of full irrigation benefits from the tanks formed.

2.2.9.3 Coordination with Major Irrigation wing

Formation of new MI tank near Kondapally (V), Bejjur (M), Adilabad District under APILIP Scheme was awarded (July 2009) to a contractor for ₹1.62 crore for completion in nine months. The work was executed through Executive Engineer, Special MI Division, Utnoor (EE-SMI). While work was under execution, Executive Engineer, PPRP Division, Bellampally (EE-PCSS) informed (July 2010) EE-SMI that proposed alignment of a canal of Pranahita Chevella Sujala Sravanthi (PCSS) project was passing through Kondapally MI tank, and requested to stop new tank formation. However, MI wing continued work and completed the MI tank on an expenditure of ₹1.9 crore.

As seen from departmental records, entire catchment area and ayacut of Kondapally MI tank comes under PCSS canal, shifting of which was also not possible as there was a village on right side of proposed canal and hillock and forest on left side. Thus, lack of coordination between two wings of same department resulted in wasteful expenditure of ₹1.9 crore.

Government replied that efforts would be made to resolve the problem by coordinating among the CEs of PCSS, CDO and MI.

2.2.10 Implementation of Schemes

In addition to normal State Plan works, GoAP was implementing various schemes/ programmes for developing, sustaining and stabilizing irrigation potential. Audit observations on implementation of these schemes are as follows :

2.2.10.1 Andhra Pradesh Community Based Tank Management Project (APCBTMP)

GoAP took up (2007) this project with assistance of GoI and World Bank, to strengthen community management of selected tank systems and rehabilitation of 3000 MI tanks (later reduced to 2157) each having an ayacut of more than 100 acres. A total ayacut of 6.18 lakh acres (2.5 lakh Ha) was proposed to be stabilized (by December 2012) in 499 mandals of 21 districts. Total project cost was ₹1044.99 crore (₹906.70 crore World Bank loan + ₹104.43 crore GoI contribution + ₹33.86 crore beneficiary contribution). Project period had been extended upto September 2014. Shortcomings observed in audit are as under:

³⁵ Rural Infrastructure Development Fund of National Bank for Agriculture and Rural Development

³⁶ Accelerated Irrigation Benefit Programme – a centrally sponsored programme

(i) There was short fall in utilization of funds under APCBTMP as given in Table 2.9 below:

Table-2.9 – Utilization of funds under APCBTMP

(₹ in crore)

Year	Budget Estimate	Releases by Government	Expenditure incurred	Short fall in utilization
2007-08	57.44	44.79	9.52	35.27
2008-09	165.88	73.54	43.49	30.05
2009-10	203.00	116.75	91.04	25.71
2010-11	212.00	169.76	105.05	64.71
2011-12	312.00	236.99	151.71	85.28
2012-13	275.00	207.83	171.75	36.08
Total	1225.32	849.66	572.56	277.10

(Source : Information furnished by I&CAD Department)

Government attributed shortfall to delay in signing tri-partite agreement during first two years of the Project, shortage of engineers, freezing of funds at fag end of financial year, unrest and disruption of works due to unpredictable climate conditions. Audit, however, observed that there was shortfall consistently in all the years.

(ii) Though 2157 tanks were proposed to be rehabilitated under APCBTMP, only 1207 tanks were rehabilitated by the end of original implementation period (July 2012). As of July 2013, 1538 tanks were rehabilitated and an ayacut of 3.76 lakh acres (1.52 lakh Ha) was stabilized.

In test checked districts, only 1746 (72.06 per cent) out of 2423 works were completed (*Appendix-2.4*). Physical execution did not even commence in ten works in Srikakulam and one work in Nalgonda district, even after completion of original agreement period (details in *Appendix-2.5*).

Government replied that all the works are programmed to be completed by September 2014 and action would be taken against contractors who did not start the works.

2.2.10.2 Repair, Renovation and Restoration (RRR)

GoI released (2010-11) a total amount of ₹189 crore and GoAP released ₹21 crore under Phase-II of Repair, Renovation and Restoration (RRR) scheme³⁷ for taking up works in 1029 water bodies³⁸, to bridge the gap ayacut of 0.84 lakh acres in 12 districts³⁹ in the State. Entire amount of ₹210 crore was released to District Level Implementation Committees (DLICs) in 2011-12 and 2012-13.

³⁷ Implemented with GoI share of 90 per cent and GoAP share of 10 per cent

³⁸ Cost: ₹339.70 crore (GoI share: ₹305.73 crore and State share: ₹33.97 crore)

³⁹ Adilabad, Ananthapuramu, Chittoor, Kadapa, Kurnool, Mahabubnagar, Medak, Nalgonda, Nizamabad, Ranga Reddy, Srikakulam and Warangal districts

Audit observed that despite availability of funds, progress of implementation of scheme was poor. Out of 1029 projects approved under the scheme, 33 were taken to other programmes and out of the remaining 996 projects only 203 were completed and ayacut created was 4953 Ha as against the target of 34138 Ha, as of July 2013. Works in respect of 149 water bodies are yet to be entrusted and were in different stages of estimation and sanctioning.

Expenditure incurred on RRR up to March 2013 was only ₹41.07 crore and balance amount was in savings bank accounts/fixed deposits of DLICs. Moreover, an amount of ₹5.21 crore, being unspent balance of funds released (2004-07) by GoI under phase-I, also was (July 2013) in a saving bank account.

Government replied that recent unrest in State delayed the process of approvals and that jungle clearance⁴⁰ was not permissible under RRR scheme and taking up the same under other programmes like MGNREGS⁴¹ caused delays in commencement of works due to lack of coordination. Regarding financial progress, it was replied that there were delays in clearance of work bills by respective District Collectors. As regards the unspent amount of Phase-I, Government stated that GoI was addressed over the process of its remittance.

2.2.10.3 Andhra Pradesh Irrigation and Livelihood Improvement Project (APILIP)

GoAP took up (April 2007) Andhra Pradesh Irrigation and Livelihood Project (APILIP) with loan assistance from JBIC with a cost of ₹1137.74 crore (JBIC loan: ₹951.31 crore and GoAP share: ₹186.43 crore) with an objective of increasing agricultural production in the State by constructing 59 new MI tanks in eight districts, with an irrigation potential of 75419 acres (30521 Ha).

Audit noticed that implementation of the project suffered due to improper selection of tanks proposed, forest clearance related issues and repeated changes in proposed tanks. Out of 59 tanks⁴² originally proposed, 29 were transferred to other schemes⁴³, 17 were dropped from the scheme on the grounds of non-feasibility, forest related problem and resistance from public and 40 tanks were newly included, taking total tanks to 53. Again three tanks were deleted due to forest/land related problems, taking final number of tanks under the scheme to 50⁴⁴ (total ayacut: 40757 acres). Out of these, 14 tanks were completed (ayacut: 9392 acres), construction of four tanks was held up due to non-receipt of Forest clearance and works in remaining 32 tanks were still in progress (November 2013), even though original project implementation period was March 2013. As a result, department could utilize only ₹457.42 crore out of ₹951.31 crore of JBIC loan as of March 2013.

⁴⁰ Clearance of bushes and juliflora from the work site

⁴¹ Centrally sponsored 'Mahatma Gandhi National Rural Employment Guarantee Scheme'

⁴² Adilabad-51, Chittoor-1, Khammam-2, Prakasam-1, Srikakulam-1, Visakhapatnam-1, Vizianagaram-1 and West Godavari-1

⁴³ AIBP: 21; NABARD: 7; and TSP: 1

⁴⁴ Adilabad-47, Khammam-1, Prakasam-1, Ranga Reddy-1

Government replied that proposals were submitted to different funding agencies and some of the tanks proposed under this loan assistance scheme were already sanctioned and ongoing under other schemes and hence were deleted from this scheme. It was further replied that 18 projects were dropped due to non-feasibility/site conditions and that in some cases forest related problems had arisen during execution hampering progress of works. Reply confirms that there were gaps in initial identification and planning of projects.

2.2.10.4 Rural Infrastructure Development Fund (RIDF)

NABARD⁴⁵ is providing assistance in construction of new tanks and revival of long abandoned tanks under tranches starting from RIDF-I to RIDF-XVII. Status of MI schemes taken up with NABARD loan was as under:-

Table-2.10 – MI schemes taken up with NABARD loan

Tranche(s)	No. of MI Schemes sanctioned	No. of Schemes completed	No. of Schemes deleted/dropped	No. of Schemes in progress
I to XIV (closed)	468	319	31	118
XV	26	4	18	4
XVI	11	NIL	2	9
XVII	16	NIL	13	3

(Source : Information furnished by I & CAD Department)

319 schemes under tranches I to XIV were completed incurring an expenditure of ₹472.05 crore and creating/stabilizing 2.16 lakh acres (87312 Ha) ayacut. It was observed that 7 out these 319 schemes were completed with State funds because of their extension beyond the period stipulated as per NABARD loan. As the Department failed to complete 118 works within stipulated loan period, loan amount of ₹114.94 crore was foregone, necessitating State funds for their completion.

Out of 53 schemes sanctioned under tranches XV, XVI and XVII, 33 non-commenced schemes (ayacut: 5828 Ha) were dropped due to non fulfilment of the conditions of NABARD loan policy (2012-13), foregoing NABARD loan assistance amounting to ₹53.05 crore.

Government replied that non-completion of works within the stipulated loan period was due to land acquisition problems.

2.2.10.5 Accelerated Irrigation Benefit Programme (AIBP)

Government of India (GoI) had extended (since 1996-97) AIBP grant for MI schemes in tribal and drought prone areas with 90 *per cent* Central grant and 10 *per cent* State share. Accordingly, 61 schemes under Phase-I and 6 MI schemes under Phase-II were contemplated with an estimated cost of ₹168.72 crore and ₹56.82 crore respectively. GoI released ₹161.46 crore during 2006-07 and 2008-09. An amount of ₹182.70 crore was spent (including GoAP share) under the programme as of March 2013. So far 28 schemes had been completed, 16 schemes were in progress, 16 schemes held up and 7 schemes dropped.

⁴⁵ National Bank for Agriculture and Rural Development

Audit observed the following:

- Seven schemes costing ₹16.03 crore (contemplated ayacut: 1790 Ha) were dropped from AIBP due to objections from the local villagers (4), land acquisition problems (1), submergence of forest areas (1) and abnormal increase in cost (1).
- Against the targeted 69276 acres (28035 Ha) an ayacut of 17764 acres (7189 Ha) only (25.64 per cent) was created vide 28 schemes.
- Sixteen schemes with a targeted ayacut of 26341 acres, on which an expenditure of ₹50.76 crore has been incurred, were held up for want of land acquisition.
- In respect of four completed MI schemes in Adilabad district, the ayacut actually developed (351 Ha) was short of the targeted ayacut (605 Ha).

Thus, intended objective of AIBP were not fully achieved.

Government replied that non-completion of the projects was due to delays in land acquisition/finalization of designs/approval of revised cost of schemes, heavy floods and disturbances in the State.

2.2.11 Implementation of Lift Irrigation Schemes through APSIDC

APSIDC was responsible for construction of LISs having ayacut upto 10,000 acres, with GoAP's budgetary support. After execution, commissioning and completion of the mandatory maintenance period of one year, LISs were handed over to beneficiary committees⁴⁶ for future operation and maintenance.

2.2.11.1 Physical Performance

Performance of LISs in the last five years is shown in Table 2.11 below:

Table-2.11 – Performance of LISs commissioned by APSIDC

Year	Number of LISs commissioned by end of year	Designed IP (in lakh acres)	IP utilized (in lakh acres)	Shortfall	
				(in lakh acres)	(per cent)
2008-09	1655	8.68	4.76	3.92	45.16
2009-10	1706	9.11	4.80	4.31	47.31
2010-11	1734	9.39	5.90	3.49	37.17
2011-12	1826	10.04	5.57	4.47	44.52
2012-13	1876	10.52	4.75	5.77	54.85

(Source : Information furnished by APSIDC)

As seen from the above table, there were shortfalls in utilization of irrigation potential ranging from 37.17 per cent to 54.85 per cent during last five years.

⁴⁶ Farmers' associations registered under the AP Mutually Aided Co-operative Societies (AP MACS) Act, 1995 and AP Societies Registration Act, 2001

Out of 1876 LISs commissioned by APSIDC, 235 LISs were partially functional, 380 defunct and 185 were abandoned. Thus, only 1076 LISs were fully operational. In selected districts, Audit observed that even in respect of 180 (out of 217) fully functional LISs, as against designed irrigation potential of 2.28 lakh acres, achievement was only 1.59 lakh acres leaving a shortfall of 0.69 lakh acres.

Government while accepting shortfall, stated that reasons for shortfall were drought conditions/lack of rainfall, non-availability of water in reservoirs, non-development of ayacut fully under new LISs commissioned in 2012-13, raising of wet crops instead of dry crops by farmers, power supply of seven hours against designed 12-16 hours, non-levelling of lands by farmers due to financial problems, non-taking up repairs in time due to disputes among beneficiaries, etc.

2.2.11.2 Financial Performance

Audit observed that there was consistent shortfall in expenditure against budget allocations to APSIDC during last five years, as detailed in table below:

Table-2.12 – Budget and expenditure on LISs

(₹ in crore)			
Year	Budget allocation	Expenditure	Shortfall (Percentage)
2008-09	577.67	264.98	312.69 (54)
2009-10	552.99	299.51	253.48 (46)
2010-11	642.00	320.90	321.10 (50)
2011-12	801.92	506.45	295.47 (37)
2012-13	732.00	435.04	296.96 (41)
Total	3306.58	1826.88	1479.70 (45)

(Source : Information furnished by APSIDC)

Government stated that shortfall in expenditure was mainly due to non-availability of schemes satisfying the norms of Special Component Plan for Scheduled Castes (SCP)/Tribal Area Sub-Plan (TSP). However, budget provision under SCP and TSP constitutes only 22.8 per cent⁴⁷ of budget whereas shortfall in expenditure ranged from 37 per cent to 54 per cent.

2.2.11.3 Defunct LISs

In selected districts, 70 out of 380 commissioned LISs were defunct. Out of these, 57 LISs⁴⁸ were defunct for want of repairs to electrical and mechanical equipment and civil structures, etc. It was further noticed that 37 defunct LISs were not operated for a period ranging from 1 to 19 years due to non-taking up repairs, thereby depriving irrigation benefits to an ayacut of 17410 acres under these schemes.

⁴⁷ SCP: 16.2 per cent and TSP: 6.6 per cent

⁴⁸ Adilabad district: 18; Nalgonda: 16; Nellore: 9; Srikakulam: 8; Mahabubnagar: 5; Medak: 1

Government replied that most of the Beneficiary Committees were financially weak and no corpus fund was maintained for any major repairs, and unattended repairs to motors and equipments eventually rendered the LISs defunct. It was further replied that on requests from the farmers and public representatives, proposals for renovation and revival of 569 LISs at a cost of ₹246.30 crore were submitted to Government in March/April 2013.

2.2.11.4 Abandoned LISs

There were 185 abandoned LISs with an ayacut of 0.46 lakh acres. In seven test-checked districts, 31 LISs with a designed ayacut of 8714 acres were abandoned due to non-availability of water, lack of interest from beneficiaries, etc. Nearly half (15) of schemes were abandoned within seven years from their commissioning, though Benefit Cost ratio was calculated taking the life of LIS as 25 years.

Government replied that the LISs were taken up after thorough investigation and assessing techno-economic viability and abandonment of LISs was due to natural calamities, natural topographic changes, etc.

2.2.11.5 Avoidable expenditure on reimbursement of Central Excise Duty

Government of India exempted (January 2004) Central Excise Duty (CED) on all items of machineries and equipment required for setting up of water supply plants and delivery of water for irrigation and drinking purpose. However, in contracts for construction of LISs, APSIDC incorporated a clause to the effect that CED paid would be reimbursed and accordingly, an amount of ₹16.71 crore was reimbursed to contractors during 2008-09 to 2012-13 towards CED on machinery/equipment in 10 divisions. Non-availing of CED exemption resulted in additional financial burden of ₹16.71 crore on the State exchequer.

Department replied that no specific instructions were received from Government not to include CED in irrigation projects and hence the CED was allowed. However, exemption notification was issued by GoI as early as in 2004 and there was no justification for department to wait for specific instructions from State Government to avail this benefit, which is a saving to Government.

2.2.11.6 Beneficiary Committees

Once LISs are handed over to beneficiary committees, APSIDC or Government had no control over their functioning. There was no mechanism to ensure that beneficiary committees were functioning properly, relevant records were maintained and proper accounts prepared and submitted regularly to members and to APSIDC.

Audit observed that no database was being maintained by the APSIDC in respect of assets like civil structures and electrical/ mechanical equipment

under the control of beneficiary committees and there was no watch in case of any theft or misappropriation of assets.

Most of beneficiary committees were financially weak and no corpus fund was being maintained for meeting any major repairs. As a result, unattended repairs to electrical motors and electrical equipment were rendering schemes eventually defunct. In Exit Conference, department accepted audit observation and stated that efforts were being made to put in place suitable monitoring mechanism.

2.2.12 Participatory Irrigation Management initiatives

With a view to involve farming community in management and maintenance of irrigation systems, GoAP enacted AP Farmers' Management of Irrigation Systems Act-1997 (APFMIS Act). As per policy of GoAP⁴⁹, tanks having ayacut of more than 100 acres shall have to be brought under the maintenance by WUAs.

2.2.12.1 Formation of WUAs

There were about 11479 MI tanks (having more than 100 acres ayacut) in State. However, WUAs were formed (July 2013) in respect of 8012 MI tanks and WUAs were not yet formed for remaining 3467 tanks.

Government replied that District Collectors who were competent authorities and ENC/CEs were requested every year to take steps to form WUAs for all MI tanks. Non-formation of WUAs was in violation of participatory irrigation management advocated by APFMIS Act and policies of GoI and GoAP.

2.2.12.2 Elections to WUAs

As per Section 4 of APFMIS Act, term of office of members of WUAs shall be six years from the date of first meeting of managing committee. One third members shall retire on completion of every two years in office, requiring elections for new incumbents. Section 6 of the Act specifies that Government may postpone elections, by recording the reasons in writing.

Audit observed that elections were last conducted in 2008 for 8007 WUAs (out of 8012) and elections were not held since then for reasons not on record. Term of two thirds of members in these WUAs expired and new members were not elected. In-charge arrangements were made by nominating departmental engineers in place of Presidents of WUAs.

Department replied that decision on conducting elections to WUAs was with Government. Non-conducting of elections to WUAs was a violation of APFMIS Act and results in non-achievement of the objective of involving farmers in water management by inculcating a sense of ownership of irrigation systems.

⁴⁹ G.O.Ms.No.42 of I&CAD (CAD-IV) Department, dated 31 March 2003

2.2.12.3 Functioning of WUAs

Section 17 of APFMIS Act and Rules made there under, inter alia, stipulated that WUAs shall prepare an agricultural and water use plan (Warabandi schedule) for each crop season. WUAs were also required to maintain certain records/registers/ accounts⁵⁰. Audit scrutiny revealed the following:

- There was no record in any of the test checked divisions that Warabandi schedules were prepared by WUAs and submitted to department indicating lack of departmental monitoring on irrigation management by WUAs.

Government replied that Warabandi is generally not followed in MI where ayacut was less and in respect of WUAs having ayacut of more than 500 acres, decisions were taken in Irrigation Development Board meetings, depending on necessity. However, Warabandi schedules were critical in ensuring equitable distribution, efficiency and economy in water use by ayacutdars and APFMIS Act and Government policy/orders/rules on participatory irrigation management did not exempt WUAs from submitting Warabandi schedules.

- There was no mechanism in the department and no orders/ guidelines were issued for periodical verification of such records, registers, bank accounts etc. of WUAs by department. Government did not offer any remarks on this issue.

2.2.12.4 Collection of Water Tax

As per APFMIS Act, WUAs have to assist Revenue Department in demand and collection of water tax. As per Government orders⁵¹, 90 per cent of water tax collected from MI sources had to be apportioned to WUA concerned for operation and maintenance of MI systems.

Department could not furnish details of water tax demanded and collected exclusively from MI sources. As a result, Audit could not ascertain whether water tax was collected fully in respect of MI sources and ploughed back to WUAs or not.

Government replied that as MI sources were scattered all over State, results of efforts to collect water tax were little. However, fact remains that collection of water tax and its apportionment to WUAs was a very important element in participatory management and maintenance of irrigation systems. Absence of this vital information indicates lack of monitoring by Irrigation Department, which had adverse impact on functioning of WUAs and upkeep of MI systems.

⁵⁰ Cash Book, Bill Register, Amanath Register, Receipt Book, Cheque Register, Property Register, Membership Register, Area and Crop Register, Works Register, Minutes Register, etc.

⁵¹ GO.Ms.No. 96, I&CAD Department dated 08 June 2007 and GO. Ms. No. 170, I&CAD (Gen.IV) Department, dated 14 October 2008

2.2.13 Manpower management

Functioning of MI wing was affected as there were huge vacancies ranging from 36 per cent to 47 per cent in field staff (Assistant Executive Engineers / Assistant Engineers), as shown below:

Table-2.13 – Shortage of field staff in MI wing

Year	Sanctioned Strength	Working Strength	Vacancies (Percentage)
2008-09	1008	643	365 (36)
2009-10	1008	619	389 (39)
2010-11	1008	565	443 (44)
2011-12	1008	565	443 (44)
2012-13	1008	533	475 (47)

(Source : Information furnished by Chief Engineer, Minor Irrigation)

Stop gap arrangements were made during 2007-08 to 2012-13 (except in 2011-12) by appointing 200 retired engineers on contract basis and 262 AEEs were appointed on regular basis in September 2012. This still leaves more than 200 vacancies in the field. Further, staff requirements had not been re-assessed after transfer of PR tanks to MI Wing and no additional staff allotted since then for upkeep of PR tanks. If actual working strength is taken into account, each field officer has to supervise about 144 tanks (including PR tanks).

Audit scrutiny also revealed that distribution of work amongst the divisions was not equitable, as evident from following examples:

Table-2.14 – Example of inequitable distribution of work among divisions

Name of the Division	No. of Sub-divisions in the Division	Number of tanks under the Division		
		MI Tanks	PR tanks	Total
IB Division, Nalgonda	5	556	4076	4632
Irrigation Division, Srikakulam	4	905	6936	7841
SMI Division, Seethampet	3	535	--	535

(Source : Information furnished by the department)

While accepting audit observations, Government stated that at least 200 new posts of AEEs/AEs and a proportionate number of EEs and Deputy EEs were required apart from filling the existing vacancies to cope with work load and that measures would be taken for equitable distribution of work among divisions.

2.2.14 Internal control and coordination

Audit noticed internal control and coordination mechanism was deficient in dealing with encroachment of MI sources and in some cases of maintenance of accounts in selected districts, as discussed below:

2.2.14.1 Encroachments

Government in July 2011 entrusted⁵² the responsibility of protecting MI tanks to the Gram Panchayats and Revenue Department. As per the information furnished by Chief Engineer, MI, there were encroachments in 595 tanks in nine districts⁵³. The CE could not furnish details of encroachments in respect of remaining districts. It is worth mentioning here that baseline study report conducted for the purpose of RRR scheme by WALAMTARI had pointed out that only 35 *per cent* of test checked tanks had boundary stones and that non-demarcation of boundaries was one of the main reasons for encroachments.

When the action taken for eviction of encroachments was called for by Audit, Chief Engineer, MI (Andhra & Rayalaseema) gave a general reply stating that excavation of peripheral trenches and bund plantation along the boundary of MI tanks and erection of FTL⁵⁴ pillars was done in respect of some tanks in and around cities, District/Mandal headquarters and major villages which were prone to encroachments and that similar measures would be taken in the remaining tanks also. CE did not have the tank wise details of action taken in this regard.

In test checked districts, Audit observed the following:

(i) In Ananthapuramu district, 25 tanks under Penukonda Division and 2 tanks (Ammagaricheruvu at Palavenkatapuram and Dharmavaram MI tanks) under Dharmavaram Division were encroached to an extent of 689.19 acres and 151.19 acres respectively by construction of private houses, brick industry, office buildings, shops, temples and for agriculture purposes. In Ananthapuram town, two surplus courses (*viz.*, Maruva vanka and Nadimi vanka) of Ananthapuram Tank were encroached, houses constructed and Pattas were issued to encroachers by Revenue Department.

(ii) As per the information furnished by the EE, Tirupati division, there were 21 cases of encroachments of MI tanks under its jurisdiction. On the contrary, Superintending Engineer, Irrigation Circle, Chittoor stated that there were no encroachments in that Circle, indicating inadequate monitoring.

(iii) In Srikakulam District, to an audit enquiry, the SE, Irrigation Circle, Bobbili and EE, Irrigation Division, Srikakulam replied that no tanks were encroached in their jurisdiction. However, during the field visit by the Audit team alongwith departmental staff, it was found that the Masabu Cheruvu, Singapuram (V), Srikakulam (M) was encroached and being used for commercial activities (a cement pipe manufacturing and a dairy farm, as informed by the beneficiaries).

It is clear from above cases that encroachments were not prevented, not detected early and timely action was not taken. Further, the fact that

⁵² GO. Ms. No. 188 dated 21 July 2011 of PR&RD Department

⁵³ Adilabad (3), Chittoor (43), Hyderabad (27), Krishna (24), Mahabubnagar (1), Medak (10), Nalgonda (184), Ranga Reddy (221) and YSR Kadapa (82)

⁵⁴ Full Tank Level

department did not have even the district wise details of encroached tanks and tank wise details of action taken, indicates lack of monitoring at higher level.

During Exit Conference, department stated that there is a need for conducting joint inspection of water bodies by Irrigation and Revenue departments and to put in place a mechanism in Irrigation Department regarding watch over encroachments.

2.2.14.2 Accounting Issues

Audit noticed improper maintenance of cash books in respect of RRR scheme funds in Nalgonda and Chittoor districts :

- In Nalgonda district, cash book was not maintained in the prescribed format (Form PWA-1). Payments made to contractors only were recorded and receipts on account of EMD/FSD⁵⁵, interest on deposits, etc. were not being entered in the cash book. DDs received towards EMD/FSD valuing ₹16.94 lakh were stated to be credited to bank account were not routed through cash book. Rupees thirteen crore converted (December 2012) into fixed deposits and FDs encashed (January 2013) amounting to ₹one crore were not accounted for in cash book.
- In circle office in Chittoor district, receipts such as deposits and bank interest were not shown in the cash book. There was no reconciliation of cash book with bank statement. Discrepancies were noticed in the balances between cash book (₹9.52 crore), cheque memo register (₹9.73 crore) and bank pass book (₹10.25 crore) as on 20 May 2013.

Government replied that in Nalgonda, cash book was maintained in prescribed format from May 2013 onwards. In respect of Chittoor district, Government replied that EMDs and accrued interest are taken to cash book from August 2013 onwards and reconciliation of cash book is done and discrepancies corrected. Department needs to review all the transactions from the beginning of the scheme and ensure that all receipts and payments are properly accounted for in the cash book and that the closing cash/bank balances depict accurate figures.

2.2.15 Conclusion

Department is yet to build a comprehensive database of tank wise information on their physical, technical and functional aspects. Preparation of tank memoirs and development of Tank Information System was not completed. There was no long term planning for comprehensive development of tanks and no shelf of works was maintained to ensure that all works deserving priority are identified and taken up. Progress of implementation of various schemes (APCBTMP, RRR, APILIP, RIDF and AIBP) lagged behind. Works were delayed due to land acquisition/forest related problems. As a result, the intended objective of providing irrigation facilities to targeted groups had not been fully achieved. In addition, Department had foregone loan assistance

⁵⁵ Earnest Money Deposit/Further Security Deposit

under RIDF due to non completion of works within stipulated loan period. Lift Irrigation Schemes commissioned by APSIDC were not utilized to full potential. There was no departmental monitoring over LISs handed over to Beneficiary Committees after commissioning. Even after more than 15 years since enactment of the AP Farmers' Management of Irrigation Systems Act-1997, participatory irrigation management had not been streamlined fully. Water Users Associations (WUAs) were formed in respect of only 8012 out of 11479 MI tanks. Elections to WUAs were not conducted since 2008, leaving a two-thirds membership in these WUAs vacant. There were gaps in departmental monitoring over the functioning of WUAs including their water regulation schedules and records/accounts. Performance of department is affected due to shortage of man power. Man power requirement was neither re-assessed nor increased even after eight years since taking over nearly 66000 tanks from Panchayat Raj Department. Efforts for prevention and eviction of encroachments in MI systems were deficient.

2.2.16 Recommendations

- ***Department should expedite building up of comprehensive data base of all the tanks under its control for better management and planning.***
- ***Department should put in place a mechanism to prepare a shelf of works after identifying the needs of each MI system through periodical physical inspections and assign priorities before approving the works.***
- ***Steps need to be taken to utilize the lift irrigation schemes to their full potential by addressing specific problems and reviving defunct schemes.***
- ***Government may look into the issue of conducting election to WUAs and improve upon their functioning in tune with APFMIS Act.***
- ***Government may reassess the manpower requirements of MI sector in view of addition of tanks from PR department and strengthen men in position.***
- ***Government should put in place a foolproof mechanism with greater coordination between Irrigation and Revenue departments for prevention/ detection/eviction of encroachments in MI systems.***

During Exit Conference, department accepted above recommendations.

Information Technology and Communications Department

2.3 Creation of Infrastructure for National E-Governance Plan (NeGP) and delivery of services to common citizens through Common Service Centers

2.3.1 Introduction

The centrally sponsored scheme of National e-Governance Plan (NeGP), was approved by Government of India in 2003. Primary vision of NeGP was 'to make all Government services accessible to the common man in his locality, through common service delivery outlets and ensure efficiency, transparency and reliability of such services at affordable costs to realize the basic needs of the common man'.

2.3.2 Basic Components of the Programme

The e-governance scheme broadly consists of the following three major components:

1. Core infrastructure consisting of State Wide Area Network (SWAN), State Data Center (SDC) and State Service Delivery Gateway (SSDG)
2. Mission Mode Projects (MMPs),
3. Common Service Centers (CSCs) at the front end

State Wide Area Network (SWAN): NeGP SWAN scheme was proposed to connect the State Head Quarter (SHQ) with all District and Mandal Headquarters (DHQs/MHQs) with minimum 2 Mbps leased line. The objective was to create a secure Government network for the purpose of delivering G2G⁵⁶ and G2C⁵⁷ services through CSCs at front end.

GoAP had chosen Public Private Partnership (PPP) Model for implementation of SWAN in State. Department of Electronics and Information Technology (DEITY), GoI accorded approval (August 2008) for a total outlay of ₹249.76 crore with DEITY share of ₹168.99 crore and State share of ₹80.77 crore for establishing SWAN. GoAP constituted a SWAN Implementation Committee with the Secretary, Information Technology and Communications (IT&C) Department as Chairman. State Government appointed Andhra Pradesh Technology Services Limited (APTSL) as the State Designated Agency for implementation of SWAN, SDC and SSDG schemes of NeGP. Telecommunications Consultants India Ltd (TCIL) was selected as consultant for APSWAN Project.

State Data Center (SDC): SDC is an important element of core infrastructure of NeGP. SDC hosts services, applications and infrastructure to provide efficient electronic delivery of G2G, G2C and G2B⁵⁸ services. Some of the

⁵⁶ Government to Government

⁵⁷ Government to Citizen

⁵⁸ Government to Business

key functions of SDC are Central Repository of the State, Secure Data Storage and Online Delivery of Services, etc.

State Service Delivery Gateway (SSDG): SSDG was conceptualized to act as a standards-based messaging switch and provide seamless interoperability and exchange of data across departments. Gateway acts as single point of access to backend departments for all external entities. All State services shall be listed on this directory.

Mission Mode Projects (MMPs): MMPs are owned and spearheaded by various line ministries of Central Government, State Government or both.

Common Service Centers (CSCs) – Front end: CSCs are the last level of NeGP, which provide citizen centric services of the State and Central Governments (G2C) in a convenient and efficient manner across rural India. CSC component in the State involves setting up of 4,687 Information and Communications Technology (ICT) enabled centers in rural areas covering all Districts/ Mandals in the State.

GoAP had designated Directorate of Electronically Deliverable Services (EDS) as State Designated Agency (SDA) for implementation of CSC scheme in the State. The State is divided into six Zones⁵⁹ consisting of three to four districts in each Zone for implementation of CSC scheme.

Service Center Agency (SCA): SCA is the prime driver in implementation of the PPP model. SCA is responsible for building, operating and managing the village network and business. SCAs have to identify Village Level Entrepreneurs (VLEs), train them and establish CSCs. Each SCA would be responsible for a division of 500-1000 CSCs. SCAs would coordinate, manage and monitor the receipt and utilization of financial support from GoI/GoAP.

2.3.3 Organizational set up

Information Technology and Communications (IT&C) Department, GoAP, headed by a Secretary is in overall charge of ICT initiatives in AP. The Secretary is assisted by a Special Secretary in charge of the CSC programmes, who is in turn assisted by Director, Electronically Deliverable Services (EDS). IT&C Department also has a Joint Secretary in charge of e-governance initiatives and a Director in charge of Communications including APSWAN. Further, Andhra Pradesh Technology Services Limited (APTSL), which is a wholly owned Government corporation focusing on e-Governance, provides consultancy, procurement services and implementation support to the Government entities for their ICT initiatives.

⁵⁹ Zone I: Vishakapatnam, Vijayanagaram, East Godavari and Srikakulam; Zone II: West Godavari, Krishna and Khammam; Zone III: Nizamabad, Adilabad, Karimnagar and Warangal; Zone IV: Rangareddy, Mahabubnagar, Medak and Nalgonda; Zone V: Guntur, Kurnool and Prakasam; Zone VI: YSR Kadapa, Ananthapuramu, Chittoor and Sri Potti Sreeramulu Nellore

2.3.4 Audit Objectives

Objectives of the Performance Audit were to examine whether:

- Planning, coordination and programme formulation for creation of infrastructure for NeGP were in line with the Government's approach to e-governance;
- Core infrastructure (SWAN, SDC and SSDG) was planned and created in a coordinated manner to facilitate effective implementation of NeGP;
- Support infrastructure (CSCs and capacity building) was planned and implemented to promote NeGP effectively; and
- Delivery of services at the CSCs was citizen-centric and whether the user departments delivered the services by effectively utilizing the common infrastructure created under NeGP.

2.3.5 Audit criteria

Implementation of NeGP was evaluated with reference to the following sources of criteria:

- Guidelines issued by DEITY and GoI, and
- Guidelines and orders issued by GoAP.

2.3.6 Audit scope and methodology

Field audit was conducted between November 2012 and July 2013, covering the activities of the IT&C Department of AP, APTSL and EDS in implementing the NeGP schemes during the period from 2006-07 to 2012-13. Information, records and data as well as the minutes of meetings of various Committees formed for implementation of NeGP at IT&C department, APTSL and EDS were scrutinized, and a field survey was conducted in 40⁶⁰ CSCs based in rural and remote areas from six districts⁶¹ to evaluate the performance of CSCs. CSCs were selected ensuring coverage of two districts from each region (Andhra, Telangana and Rayalaseema) and one district from each zone and also covering all Service Center Agencies (SCAs).

⁶⁰ Rangareddy (Keesara, Nagaram, Rampally, Yadgarpally, Jawahar Nagar, Shameerpet, Thumkunta), Warangal (Bhimaram, Madharam, Sidhapur, Vangapahad, Chilpur, Devannapet, Hasanparthy), East Godavari (Komaripalem, Divili, Konkuduru, VK Rayapuram, Kandrakota, Jaggammagaripeta, G Medapadu), Kurnool (Nandikotkuru, Gadivemula, Nehrunagar, Brahmanakotkuru, Thimmapuram, Konidela), Krishna (Kunderu, Uppaluru, Edupugallu, Penamaluru, Poranki, Tadigadapa, Yenamalakuduru), Chittoor (Chandragiri, Narayanavanam, Jeevakona, Padmavathipuram, Vedanthapuram, Pudipatla)

⁶¹ Rangareddy, East Godavari, Chittoor, Kurnool, Warangal and Krishna

Audit findings

2.3.7 Andhra Pradesh State Wide Area Network (APSWAN)

Implementation of APSWAN network in State were reviewed in audit and findings are discussed as under:

2.3.7.1 Utilization of Funds

Department of Electronics and Information Technology (DEITY), GoI released a total amount of ₹64.13 crore and Planning Commission released Additional Central Assistance (ACA) of ₹28.13 crore so far (March 2013). Expenditure incurred up to March 2013 was ₹78.97 crore and balance of ₹13.29 crore was unutilized.

Review of utilization of funds revealed the following:

- Utilization certificate (UC) was submitted (January 2009) by APTSL to GoAP stating that entire amount received as ACA fund was utilized. However, an amount of ₹4.96 crore was left unutilized at the end of March 2009. Thus, UC furnished to GoAP was not accurate.
- As per DEITY guidelines, implementing agency was entitled for one *per cent* of overall project outlay towards administrative expenditure for the total project period of five years. However, APTSL claimed ₹0.41 crore as service charges in addition to administrative charges of ₹1.40 crore.

GoAP replied (May 2013) that an amount of ₹0.41 crore was incurred from ACA funds towards APTSL's service charges for site preparation works at APSWAN Points of Presence (PoPs) in addition to ₹1.40 crore. This however was violation of APSWAN scheme conditions laid down by DEITY.

2.3.7.2 Penalties for delay in implementation of APSWAN

APSWAN proposed to connect the State Headquarters (SHQ) with 23 District Headquarters (DHQs) and 1088 Mandal Headquarters (MHQs).

APTSL called for tenders (October 2008) for Supply, implementation and operation of APSWAN for a period of five years on Build Own Operate and Transfer (BOOT) model and allotted contract to lowest bidder at a cost of ₹138.92 crore inclusive of all taxes and agreement to this effect was signed on 23 September 2009.

As per agreement, if operator fails to complete pre-requisites for Partial Acceptance Test (PAT) / Final Acceptance Test (FAT) within time periods specified in implementation plan, APTSL may, without prejudice to its other remedies under Agreement, levy penalties at specified rates⁶².

As per agreement, 80 *per cent* of Points of Presence (PoPs) were to be completed by 21 April 2010. But, actual completion (26 November 2010) was delayed by more than seven months.

⁶² Penalty of 0.25 *per cent* of arithmetic sum of the guaranteed revenue for 80 *per cent* of overall site for five years payable under the agreement for each week.

State Level SWAN Implementation Committee declared that Partial Acceptance Test for one SHQ, 23 DHQs and 793 MHQs was completed on 26 November 2010. The committee concluded that out of delay of 218, delay of 90 days was attributable to SWAN operator.

Penalty of ₹3.49 crore was calculated by APTSL at the rate of ₹27.18 lakh per week for 90 days. It was decided (March 2012) in first State Level Dispute Resolution Committee that in lieu of penalty of ₹3.49 crore, company offer to extend the contract by six months and it was decided to sign an amendment agreement in this regard. The agreement was not made (July 2013) even though decision in this regard was taken in March 2012. Thus, interests of Government during the extended period were not safeguarded.

Further, out of 1,112 envisaged PoPs, 1,110 PoPs were connected (i.e. One SHQ, 23 DHQs and 1086 MHQs) to APSWAN and were operational. Two MHQs could not be provided connectivity as they were not technically feasible. GoAP did not declare FAT on the ground of non-connectivity of remaining two PoPs. In absence of FAT, extent of delay in completion and penalty to be levied cannot be worked out.

GoAP stated (May 2013) that amendment agreement would be signed once FAT is completed, i.e. after commencement of remaining two PoPs.

However, fact remains that signing of amendment agreement relates to penalty for delay in completion of PAT and commencement of remaining two PoPs relate to completion of FAT and as such it has no relation with signing of agreement.

2.3.7.3 Monitoring of APSWAN and role of Third Party Auditor (TPA)

SWAN Connectivity between SHQ, DHQs and MHQs is a primary necessity for providing uninterrupted services to citizens by Common Service Centers (CSCs). If a DHQ/MHQ loses connectivity, all CSCs in the District/Mandal will not be able to render services.

As per DEITY guidelines and SLA⁶³, connectivity level for SHQ-DHQ and DHQ-MHQ was prescribed as 99.5 *per cent* and 99 *per cent* respectively and any shortfall in connectivity below these levels attracts penalty. If connectivity level falls below 79.5 *per cent* and 79 *per cent*, respectively, no payment would be made to operator (i.e. 100 *per cent* penalty) for that PoP. As per Contract, SWAN Operator had to provide generator sets at all locations (SHQ, DHQs and MHQs) to avoid non-availability of connectivity due to power failure. Further, independent auditing and performance monitoring of SWAN network was to be done by a Third Party Audit (TPA) agency⁶⁴. Payments to SWAN operator were subject to certification by TPA. Audit observed the following:

⁶³ Service Level Agreement (SLA) is an agreement between the APTSL and the Network operator to maintain a specific percentage of connectivity. Different levels of connectivity are prescribed between SHQ and DHQ (99.5 *per cent*), and DHQ and MHQ (99 *per cent*)

⁶⁴ State Government had selected a private company as TPA for APSWAN project at a total cost of ₹4.19 crore for a period of five years

- Actual connectivity between SHQ-DHQs ranged from 23.64 *per cent* to 85.88 *per cent* during October and November 2012. The connectivity of DHQ - MHQ ranged from 0 to 100 *per cent* during prime business hours.
- It was observed that though availability of network was less than 79.5 *per cent*/79 *per cent*, TPA did not recommend any penalty citing reasons like power cut, MRO staff switching off the site, high voltage, BSNL issues, etc., without giving particulars of dates on which problems were encountered and specific reasons for downtime.
- Payments made to company revealed that apart from penalty exemption for BSNL issues, non-connectivity (downtime) penalty of ₹5.76 crore was not levied on the operator, though the connectivity was below the SLA prescribed levels due to power outage.

GoAP replied (May 2013) that there was lack of awareness about APSWAN project among the staff at MHQs and there were many instances of staff switching off the site. It further replied that a decision of non levy of penalty was taken for non-availability of link due to power failure during stabilization period.

However, contract provides for deputation of an employee of SWAN operator for every four mandals to address operational issues. Non-levy of penalty for non-availability of link due to power failure is an extension of undue benefit as operator was to provide a generator for ensuring uninterrupted power supply.

2.3.8 State Service Delivery Gateway (SSDG)

An amount of ₹5.87 crore was received from GoI in 2009-10 for implementation of SSDG in the State. Actual expenditure was incurred from 2010-11 onwards. It was observed that funds were kept in current account instead of investing in fixed deposits to earn interest. Keeping funds idle in current account for two years has resulted in loss of interest ₹1.15 crore (calculated at the rate of eight *per cent* per annum).

2.3.9 Selection of SCAs for establishing Common Service Centers (CSCs)

Work of establishing CSCs in Zone-IV and VI was awarded to a private company and Bharat Electronics Limited (BEL) on nomination basis as they were partners in RAJiv⁶⁵ project. However, the private company backed out of contract and BEL did not show any interest in taking up work. On retender, these zones were awarded (March 2012) to a private company with a revenue support of ₹5826 and ₹7323 per quarter respectively. Selection of SCAs on nomination basis was contrary to Government Order and resulted in disputes and avoidable delay of more than three years (from August 2008 to March 2012) in final selection of SCAs.

⁶⁵ Rajiv Internet Village, a State Government's project for establishing ICT based kiosks in rural areas similar to CSCs

Work of Zone I, III and V were allotted (August 2008) to a private company with zero revenue support.

Work of Zone-II was awarded (August 2008) to a private company with negative revenue support of ₹351 per CSC per month. However, the contract was cancelled (October 2009) as the company failed to rollout CSCs as per stipulated timelines. Though, Bank Guarantee of the company amounting to ₹100.90 lakh was encashed, the amount was kept idle in a current account resulting in loss of interest of ₹24.22 lakh⁶⁶ for three years. On retender, the Zone was allotted (January 2011) to another private company with zero revenue support.

Government replied (May 2013) that approval was obtained from GoI for awarding the contract on nomination basis. However, Government did not obtain any commitment (Security deposit/ bank guarantee) from these firms. Regarding keeping funds idle, Government replied that the amount was kept idle as there were no specific guidelines to invest the amount in fixed deposit. However, it was noticed that unspent balance of funds received from DEITY were being kept in fixed deposits while this encashed amount was kept in current account.

2.3.9.1 Delay in rollout of CSCs – non levy of penalty on SCAs

As per the terms of the agreement, for any delay in making any CSC operational within stipulated time, SCA will be liable for penalty at a rate of ₹50 per CSC per day. Details of CSCs envisaged, rolled out and actually operational are given in *Appendix-2.6*.

It can be seen from Appendix that none of the SCAs achieved 100 *per cent* rollout as per agreement. While SCAs for Zone I, III & V and Zone II rolled out 55 *per cent*, SCA for Zone IV & VI rolled out 46 *per cent* of the CSCs allotted. Overall percentage of completion was only 52 *per cent*. Delay in conversion of existing RSDP⁶⁷ and RAJiv into CSCs and delays on part of district administration in approving the centers, technical issues like lack of BSNL connectivity, frequent power failures, delay in CSC application integration and zero revenue support quoted by the SCAs etc., were stated to be reasons for delay in roll out of CSCs.

Audit observed that no action was taken to determine delays in roll out of CSCs and levy of penalty on SCAs as per terms of agreement.

Government replied (May 2013) that 3833 out of 4687 CSCs were operational as on 18 March 2013 and that notices were being issued to SCAs from time to time on delay in roll out of centers. On imposition of penalty, Government stated that matter would be referred to High Level Committee.

⁶⁶ at eight *per cent* per annum (i.e. average rate earned during the period)

⁶⁷ Rural Service Delivery Points

2.3.9.2 Violation of Request For Proposal (RFP) conditions by SCA and SDA resulting in financial burden on the Village Level Entrepreneurs (VLEs)

CSC scheme envisages that Service Center Agency (SCA) would be the prime driver of CSC scheme and owner of CSC business. VLE is key to success of CSC operations and would manage CSC business at ground level. VLEs would report to SCA. In order to safeguard the interests of citizens participating in the scheme as VLEs, specific guidelines were issued in RFP for selection of SCA to set up, manage and operate CSCs. These guidelines include conditions to protect VLEs interest whose sustainability is the key to success of CSC scheme.

Audit team accompanied by representatives of SCA conducted field visits to 40 CSCs in rural and remote areas and observed that:

- All the SCAs adopted a franchiser-franchisee model with VLEs.
- Agreements stipulated that SCAs should bear 75 per cent / 50 per cent in CSC infrastructure cost and 50 per cent in recurring expenditure. However, in all CSCs surveyed, SCAs made VLEs invest entire capital investment in CSC infrastructure in addition to total monthly revenue expenditure. SDA also did not ensure adherence of these agreement conditions by SCAs. VLEs of all CSCs surveyed expressed that they did not receive any support from SCA. Thus, CSCs are becoming financially unviable, adversely affecting the objective of CSC scheme. This may be an important factor leading to non-achievement of complete rollout of CSCs.
- As per the RFP, SCA was required to give reasonable share of its revenue from transaction charges to VLE based on the investment and efforts being put in by VLE. However, SDA failed to ensure fair share of revenue due to VLE.

Government replied that pursuing the audit observation explanation was called for from all SCAs and stated that it planned to verify CAPEX support to CSCs from SCA by obtaining detailed report.

2.3.9.3 Deviation of agreement conditions by SCA in respect of revenue support to VLE

As per the terms and conditions of the agreement between SDA and SCA:

- The SDA will pay SCA a revenue support of ₹1942 and ₹2441 per CSC per month in respect of Zone-IV and Zone-VI respectively on a quarterly basis. While releasing quarterly payments, revenues actually generated through delivery of Government services by SCAs would be deducted.
- SCA shall ensure a minimum of ₹1000 per month financial support to each VLE. Out of this, ₹500 shall be payable to the VLEs who record a minimum of 60 per cent uptime and an additional ₹500 shall be payable to those VLEs who have done a minimum of 50 transactions in a month.

SCA of Zones-IV and VI in their agreements with VLEs had imposed following conditions regarding revenue support contrary to agreement made between SDA and SCA:

- Revenue Support will be given by SCA, subject to receipt from SDA, to CSCs to sustain its existence.
- CSC will be eligible for an amount of Revenue support on establishment of center as per norms laid out in this document or specified by SDA from time to time and installation/registration of DEITY's Online Monitoring tool/SMART tool and ensuring minimum of 70 *per cent* uptime performance.
- CSC is eligible for revenue support from SCA only if a VLE logs in to SCAs Portal at least 63 Days in a Quarter and VLE should do a minimum of 100 transactions in a month.
- Revenue Support will be given to CSC upon sole discretion of SCA.
- SCA may change the above criterion/guidelines from time to time.

These additional conditions imposed by SCA on VLE may deprive them of revenue support and result in non-achievement of targets.

GoAP replied (May 2013) that SCA was ordered to release revenue support as per MOU conditions without imposing additional conditions on VLEs. SDA assured that due care would be taken in protecting interest of VLEs.

2.3.9.4 Reduction in share of the SDA in transaction charges

As per the approved RFP for selection of SCAs, transaction charges to be charged on citizens for rendering G2C services would be decided by Government. These charges were to be uniform across the State throughout agreement period. SCA was free to decide transaction charges for other than G2C services. Transaction charges on G2C services shall be shared between SCA and SDA in 80:20 ratio.

Audit observed that while agreements entered into for Zones I, III and V in 2008 provided sharing of transaction charges between SCA and SDA at a ratio of 80:20, sharing ratio in case of Zone II was 95:5 and in case of Zone IV and VI it was 85:15. Though transaction charges to citizens were to be uniform throughout the State, reasons for adopting different sharing pattern with different SCAs was not on record. Reducing share of SDA in the transaction charges from 20 *per cent* to 5 *per cent* in case of Zone II and to 15 *per cent* in case of Zone IV and VI resulted in providing undue advantage to these SCAs.

GoAP replied (May 2013) that share of SDA was reduced from 20 *per cent* to 5 *per cent* in Zone-II to compensate SCA as there were not many G2C services on offer and that share of SDA was increased to 15 *per cent* from 5 *per cent* for Zone IV and VI in view of launching of "mee-seva" services. It was further replied that sharing pattern was not a bid criterion.

However, since one SCA who was awarded three zones with zero support could establish and operate CSCs with a revenue sharing of 80:20, reduction of Government share in other cases is not understandable. Further, reply of Government that sharing ratio was not a bid criterion is not appreciated as this has revenue implications for bidders.

2.3.9.5 Functioning of CSCs

Forty out of 2,416 CSCs being operated by three SCAs in six zones were selected and surveyed by audit team accompanied by representatives of SCA.

Audit findings are as under:

1. Out of the 40 selected CSCs, 5⁶⁸ CSCs of Zone I, III & V were not operational.
2. Online Monitoring Tool (OMT) was installed in 13 CSCs in Zones IV and VI out of 40 CSCs surveyed. OMT was not installed in any CSCs in other Zones on the plea that SCAs had not quoted for revenue support.

GoAP replied that proper monitoring of CSCs would be ensured and SCAs would be instructed to install OMT Tool in all CSCs.

2.3.10 Conclusion

Excess Service charges were paid to APTSL in violation of scheme guidelines. APTSL submitted inaccurate Utilization Certificates to the Government. Non-connectivity penalty was not levied on the operator as per terms of the agreement. Selection of Service Center Agencies (SCAs) on nomination basis led to delays in roll out of Common Service Centers (CSCs) and non achievement of objective of providing services to citizens. Failure to monitor sharing capital/revenue expenditure in CSCs as required under agreement resulted in financial burden on Village Level Entrepreneurs making CSCs unviable and thus adversely affected the objective of scheme.

2.3.11 Recommendations

- *Department should ensure that all agreement conditions are invariably adhered to and protect Government interest.*
- *Government should take steps to roll out the targeted Common Service Centers (CSCs) as per plan.*
- *Government should take immediate steps to make all CSCs fully functional by ensuring revenue support to Village Level Entrepreneurs as originally contemplated.*
- *Government should ensure that State Designated Agency monitors the Service Center Agencies' performance and protect Village Level Entrepreneurs from exploitation.*

⁶⁸ Kurnool (Nehrunagar), East Godavari (Konkuduru, Jaggammagarijeta), Warangal (Chilpur, Vangapahad)

Chapter - 3

Compliance Audit

Chapter - 3

Compliance Audit

Transport, Roads and Buildings Department

3.1 Public Private Partnership (PPP) Projects in Road Sector

3.1.1 Introduction

Public Private Partnerships (PPPs) are aimed at involving private sector in raising capital required for public sector projects, build the projects and deliver quality goods and services at competitive costs. In road sector, there are two variants of PPP projects – (i) Build, Operate and Transfer (BOT) – Toll and (ii) BOT-Annuity.

BOT-Toll: The concessionaire or private partner finances, constructs, operates the project and recovers its investment by collecting toll fees from road users during concession period. Concessionaire offering highest premium or seeking lowest grant is selected through competitive bidding. In this mode, commercial risks are generally borne by concessionaire.

BOT-Annuity: In this mode also, private partner finances, constructs and operates the project during concession period. However, concessionaire receives a fixed sum of annuity payments (determined through competitive bidding) from employer.

3.1.2 Audit scope and objectives

In Andhra Pradesh, there were 33 PPP projects¹ in roads sector being implemented by Transport, Roads and Buildings (TR&B) Department with an estimated project cost of ₹8349.73 crore. Out of these, nine projects² with a total project cost of ₹5379.63 crore were test checked (during July 2012 - January 2013) in audit.

Implementation of these projects was examined in audit by scrutinizing records in Secretariat and offices of Chief Engineer (PPP), Andhra Pradesh Road Development Corporation (APRDC)³ and Divisions concerned. Audit objective was to assess whether (i) selection of projects for PPP was based on proper techno-economic assessment; (ii) procurement process was transparent and ensured economy; (iii) contract management was sound and safeguarded public/Government interest; and (iv) project execution was effective and achieved timely completion of projects and delivery of services to public. Brief profile of test checked projects is given in *Appendix-3.1*. Audit findings were communicated (July 2013) to Government and replies received were taken into account while finalizing this report.

¹ **Source:** Official website of PPP Cell of Finance Department, GoAP

² BOT-Toll projects : 7 and BOT-Annuity projects : 2;
Projects costing more than ₹100 crore : 8 and Project costing less than ₹100 crore : 1;
Road projects : 5 and Bridge projects : 4;
Under operation : 2, Under construction : 3, Partially operational : 1 and Yet to commence : 3

³ A Government Corporation

Audit findings

3.1.3 Contemplation and formulation of PPP road projects

It was observed that there was no standard policy / procedure for identification of Projects to be taken up under PPP mode and those to be taken up with budgetary support. There were cases of taking up projects without establishing their technical requirement and financial viability; changed decisions like switching from BOT mode to conventional mode, Toll mode to Annuity mode and vice versa; revision in scope of project during tender process; unexplained cancellation of tenders; subsequent shelving of projects completely; etc., as discussed below:

3.1.3.1 Taking up project without requirement

‘Indian Road Congress (IRC) code: 64-1990 - Capacity of Roads in Rural Areas’ prescribes the corresponding traffic capacities for upgradation of roads in rural areas. Audit observed that as per traffic studies conducted on Kadapa-Pulivendula Road in July 2007 for preparation of Detailed Feasibility Report (DFR), average daily traffic was about 4,594 passenger car units (PCUs)⁴ per day. Considering the annual traffic growth rate of 7.5 per cent projected in DFR, traffic on this road would reach the corresponding volume of more than 17250 PCUs prescribed in IRC Code⁵ for four-lane roads, only in the year 2026, as shown below :

Table-3.1 – Design service volumes prescribed in IRC Code for two/four lane roads

Type of Road	Design Service Volume (PCUs/day) stipulated in IRC code	Year in which traffic on KP road will reach this volume
2 lane with earthen shoulders	15000	2024
2 lane with paved shoulders	17250	2026
4 lane with earthen shoulders	35000	2036
4 lane with paved shoulders	40000	2037

(Source : IRC code: 64-1990 and traffic data available in DFR)

However, four laning works were taken up and awarded on BOT-Annuity basis with a total financial commitment of ₹812.60 crore⁶, though the existing two-lane road (with earthen shoulders) would be sufficient till 2024.

Government replied (November 2013) that growth rate around Kadapa district would be high due to establishment of industries like Uranium Processing Unit and educational institutions like Yogi Vemana University and hence four laning was taken up. However, reply was not backed by any recorded projections.

⁴ Passenger Car Units

⁵ IRC codes are followed all over the country

⁶ As per agreements the department has to pay an amount of ₹40.63 crore at six monthly intervals for 10 years

3.1.3.2 Non-preparation of project report

Audit observed that no DFR was prepared for 'Two lane bridge across river Musi on Miryalguda – Kodad Road'. Department prepared a cost estimate of bridge work and conducted traffic census to assess expected toll revenues. No financial analysis was conducted to weigh the different options available to department before deciding to entrust the work on BOT-Toll basis. Government did not furnish any reply on this issue.

3.1.3.3 Taking up project without project report and administrative approval

Department entrusted (July 2008) preparation of Detailed Feasibility Report for (i) four-laning of 'Nellore – Gorantla' road (connecting NH-5 with NH-7 via Atmakur, Badvel, Kamalapuram) and (ii) up-gradation of road from Jammalamadugu to Gooty, to a consultant, to develop road from Nellore to Gooty (295 Km). Audit noticed the following:

- Department invited (May 2008) Request for qualification (RFQ)⁷ bids for 'Nellore-Gooty' road even without getting feasibility report and without obtaining administrative approval from Government.
- RFQ bids tenders were again invited (February 2009) and though 12 firms submitted (August 2009) bids, department did not finalize tenders.
- Traffic surveys conducted later (in October 2010 between Marrisipadu in Nellore district and Proddatur in Kadapa district) showed that traffic on this road came down due to ban on export of iron ore and the project was ultimately not taken up (October 2013).
- There were several changes in the scope of project. While the initial tender notice was for 'Nellore-Gooty' road, RFQ was later amended (July 2008) by deleting 40 Km stretch (Mydukuru to Jammalamadugu) from scope of work. When pre-qualification bids were invited in second call (February 2009) the stretch from Jammalamadugu to Gooty was also deleted. This indicates that tenders were invited without firming up scope of work.
- Though viability of the project was not established after reduction in traffic, widening of the stretch from Mydukuru to Jammalamadugu (a part of Nellore - Gooty road) was awarded (January/ April 2012) under World Bank assisted AP Road Sector Project at a cost of ₹118.78 crore.

Government replied that tenders for four laning of Nellore-Gooty road were cancelled due to considerable changes in scope of work based on DFR submitted by consultant and that project was now unviable due to decrease in traffic. Reply was silent on invitation of tenders without preparation of DFR and without administrative approval. Government accepted that there was no standard policy/procedure for identifying Projects to be taken up under PPP mode or with external aid.

⁷ An invitation for pre-qualification of prospective bidders

3.1.3.4 Projects planned but not taken up

(i) Government accorded (February 2007) Administrative Approval for 'construction of High Level Bridge (HLB) across river Krishna in Mahabubnagar district', which was proposed to reduce distance between Kollapur (Mahabubnagar district) and Atmakur (Kurnool district) by 127 km. Tenders were invited (RFQ in November 2007 and RFP⁸ in May 2008) to take up bridge work under BOT-Annuity basis, but lowest bidder did not come forward for concluding agreement. Government later ordered (December 2009) to convert the project as a Plan work instead of PPP basis. However, even after more than six years since administrative approval, bridge work had not been taken up even under plan funds and objective of reducing travel distance between Kollapur and Atmakur was not achieved.

Government did not offer any reply in this regard.

(ii) Tenders for "Four laning of Puthalapattu – Naidupeta Road from km 0.000 to km 41.700 and from km 59.000 to km 116.830" were invited (RFQ in April 2008 and RFP in March 2009) for taking up this project under BOT-Toll basis. However, Government cancelled (June 2010) tenders as the stretch from km 0.000 to km 59.000 of Puthalapattu to Tirupathi road was converted as National Highway (NH-18A) and handed over to National Highways authorities. Widening work of remaining stretch from Tirupathi to Naidupeta had not been taken up so far.

Government replied that DFR for widening of balance stretch from Tirupathi to Naidupeta was got prepared but tenders were stalled as this stretch had now been declared as a National Highway. It is evident from reply that some BOT proposals were being processed even for roads which were under consideration for conversion as NH.

3.1.4 Cost estimations

In PPP projects, accurate assessment of cost of construction and toll revenue projections play a crucial role in assessing the financial viability of projects, fixing the concession period, evaluation of bids and taking informed decisions about taking up projects. Audit noticed the following deficiencies in selected projects :

3.1.4.1 Under projection of traffic

Construction of major four lane bridge across river Godavari connecting National Highway (NH) -5) at Km 197/4 and a two-lane State Highway called Eluru-Gundugolanu-Kovvur (EGK) road at Km 82/4 was taken up under BOT toll system for reducing the distance between Eluru and Rajahmundry by 40 km. While preparing the DFR, the Average Annual Daily Traffic of tollable vehicles was worked out as 11317, based on traffic counts taken at km 197/4 of NH-5 in December 2005. However, for computation of toll revenue projections, only 8320 tollable vehicles were considered without any recorded justification/computations for such reduction, resulting in under projection of revenues.

⁸ Request for Proposal (RFP) - An invitation for obtaining financial proposals from bidders

Government replied that (i) consultant considered certain percentages for assessing tollable traffic and (ii) all the traffic would not go through this bridge alone, as there are so many other towns en-route to Eluru. However, no documentation was available on record. Under projection of toll revenue resulted in longer concession period and consequent extra toll burden on road users.

3.1.4.2 Additional toll burden on road users due to under projection of toll revenues

In respect of the project - 'High level bridge across river Musi', as per departmental records, traffic counts were taken thrice - in November 2006, May 2007 and July 2007, according to which the toll revenue works out to ₹4.15 crore, ₹4.26 crore and ₹3.44 crore, respectively. However, for assessing toll revenues projections in its financial analysis, department adopted traffic data of July 2007 which gives the least toll revenue.

While assessing future toll revenues, department adopted toll revenue of 2007 as the projected toll revenue for 2011, ignoring the inevitable increase in traffic and toll fee rates (annual growth of 7.5 per cent and 5 per cent respectively, as per department's projections) in the intervening four years. This resulted in under-projection of revenues.

As per Concession Agreement, the total concession period was 15 years including the construction period of 18 months. After completion of bridge, the concessionaire would collect toll for the remaining concession period. If construction of bridge is completed earlier, concessionaire would collect toll for longer period, since the total concession period is constant. Audit noticed that in earlier tender calls for the project, department stipulated the construction period as one year. However, in latest tender notice and agreement, longer construction period of 18 months was specified without any recorded justification for the increase. In fact, bridge was completed and opened for traffic within one year only and the concessionaire started toll collection from users six months in advance (from 19 February 2010).

By using the same financial model which was used by department for evaluation of lowest bid, Audit re-computed the cash flows of the project, duly taking into account the actual construction period of 12 months and correct toll revenues. As per Audit calculations, duration of concession period for the project works out to only nine years, as against the stipulated concession period of 15 years. Extra toll burden on road users during excess concession period works out to ₹69.09 crore.

Government did not offer any remarks on the above observations.

3.1.4.3 Provision of lumpsum amounts in estimates without details

As per the Rule 129 of General Financial Rules, detailed estimates should be prepared for all the items of work. Audit noticed that in the cost estimates of 'Kadapa-Pulivendula road' project, taken up under BOT-Annuity basis, lump-sum provisions aggregating ₹70.05 crore were made towards various work items. Of this, ₹56.43 crore was provided towards cross drainage works and cement concrete drains. Neither details of structures and basis for arriving at these costs nor details of structures actually executed/ being executed were on record. Government did not offer any remarks.

3.1.4.4 Incorrect assessment of utilities to be shifted

Scope of services of Transaction Advisor (TA) appointed for ‘Hyderabad-Karimnagar-Ramagundam (HKR) Road’ project included identification of all existing utilities like electrical lines, cables, water supply lines, etc. and plans for their relocation. However, Audit noticed that the Techno-Economic Feasibility Report (TEFR) prepared by TA did not indicate these details, but provided only a lump-sum cost of ₹24.26 crore for shifting utilities. However, during execution, underground water pipelines belonging to Hyderabad Metropolitan Water Supply and Sewerage Board and Rural Water Supply Department were encountered. Cost of relocation of these two pipelines was later assessed (2011) at ₹73.50 crore and works were entrusted to concessionaire with additional cost on nomination basis. This indicates that project was taken up *ab-initio* without accurate assessment of costs involved. Government did not furnish specific reply on this.

3.1.5 Tendering and contract management

In PPP projects, tendering is normally done in two stages – (i) Request for qualification (RFQ) stage in which bidders are shortlisted based on their financial and technical capacity and past experience and (ii) Request for proposal (RFP) stage in which the financial bids are received. In case of PPP-Toll projects, the concession period is fixed by department before tender process and price bids are finalized and awarded to the bidder who offers to pay highest amount to Government or who seeks lowest amount of Grant from Government. During financial evaluation of price bids, department (either independently or through consultant appointed for the purpose) assesses the reasonableness of lowest bid by conducting a financial analysis of lowest bid, duly considering the concessionaire’s investment, future toll revenues and recurring costs of concessionaires during concession period. Audit observed the following deficiencies in selected projects:

3.1.5.1 Acceptance of high bids

Tenders for (i) Hyderabad-Karimnagar-Ramagundam (HKR) road, (ii) Narketpally-Addanki-Medarmetla (NAM) road and (iii) Puthalapattu-Naidupeta (PN) road were invited simultaneously (RFQ: March-April 2008 and RFP: February-April 2009).

Audit observed that 10 bidders were short listed⁹ for each project. However, firms which had ranked high (some of them purchased RFP documents) in RFQ stage did not participate in financial bidding. Only three bidders (ranked among the last four in RFQ) participated in financial bidding, each emerging lowest in one project. Grants sought by them were close to maximum permissible grant of 40 *per cent* of Total Project Costs (TPCs) in all three projects.

⁹ As per initial RFQ conditions, six bidders were to be shortlisted for RFP stage bidding. This was increased to 10 on request of prospective bidders

Table-3.2 – Details of bids received for HKR road, NAM road and PN road

Bidder	'Grant sought' (₹ in crore) and 'percentage of Grant to TPC'		
	HKR Road (TPC: ₹1358.19 crore)	NAM Road (TPC: ₹1196.84 crore)	PN Road (TPC: ₹528.50 crore)
'A'	₹529.00 crore (38.95 per cent) (L-1)	₹476.00 crore (39.77 per cent)	₹210.00 crore (39.74 per cent)
'B'	₹536.50 crore (39.50 per cent)	₹473.95 crore (39.60 per cent) (L-1)	₹208.76 crore (39.50 per cent)
'C'	₹540.00 crore (39.76 per cent)	--	₹203.49 crore (38.50 per cent) (L-1)

(Source : Information as per departmental records)

In bid evaluation report, Transaction Advisor (TA) opined (September 2009) that considering a reasonable Equity IRR¹⁰ of 20.61 per cent, grants sought by L1 bidders in all three projects were in excess over reasonable grants.

Technical Evaluation Committee (TEC) held (December 2009 / February 2010) negotiations with lowest bidders and the firms reduced grants to ₹454 crore, ₹467.02 crore and ₹189.27 crore¹¹ respectively. It was noticed that final negotiated offers were still excess by ₹362 crore, ₹204.02 crore and ₹47.27 crore respectively, over reasonable grants¹² worked out by TA. Government accepted (May 2010) these higher offers for HKR road and NAM road. Bids of PN road were cancelled (June 2010) due to conversion of some portion of road as a National Highway.

Further, during bid evaluation, department asked the TA for revised financial analysis for extreme worst case scenarios (i.e., 15 per cent increase in project cost and 15 per cent decline in traffic). While furnishing revised financial analysis, the TA clarified (December 2009) that scenarios mentioned in revised analysis were presented as per explicit instructions of department and did not represent Consultant's view. TA stated that the bids were still on high side. Finally, department asked (December 2009) another consultant to examine the financial analysis done by TA. The other consultant, while agreeing (16th/17th December 2009) with financial analysis done by TA, stated that Equity IRR of 22 to 25 per cent for such long term projects was reasonable, based on which bids were accepted.

Government replied that TA was asked to furnish revised financial analysis since Financial Evaluation Committee did not agree with the increase in TPC by the TA after opening of price bids based on the justifications given by bidders. However, even in the financial evaluation of second consultant, higher TPCs were considered and projects were awarded with higher grants.

¹⁰ Internal rate of return (IRR)

¹¹ Equity IRR works out to 29.6 per cent, 24.7 per cent and 22.6 per cent respectively (with sensitivity analysis of 10 per cent increase in project cost and 10 per cent decline in traffic)

¹² HKR road: ₹92 crore; NAM road: ₹263 crore; and PN road: ₹142 crore

3.1.5.2 Post tender change in Target Traffic

Target Date (TD) and Target Traffic (TT)¹³ are very important parameters in risk sharing arrangements. On the TD, actual average traffic count would be taken and in case of increases/decreases of actual traffic over TT, concession period would be adjusted as per concession agreement. Thus, TD and TT have a direct bearing on the rates quoted by bidders.

In pre-bid meeting in respect of 'Godavari Bridge' project, prospective bidders pointed out that TD and TT were not stated in tender document. Department replied that probable TD was 2019 and probable TT was 37489 PCUs. This means that if actual traffic on TD exceeds 37489 PCUs, concession period would be reduced. Audit observed that Concession agreement specified TD as 2018 and TT as 49868 PCUs, which was against Government interest.

Government replied that lower TT communicated to bidders was due to arithmetical error and that increase in TT in the agreement was beneficial to Government. Audit however observed that, post tender increase in TT is detrimental to Government interest since if actual traffic on TD is found to be between 37489 PCUs and 49868 PCUs, the concession period would have to be increased rather than reduction.

3.1.5.3 Short collection of performance security and success fee

In the DFR of 'Godavari Bridge' project, TPC was worked out as ₹593 crore. RFP document communicated to bidders also mentioned this TPC. However, after completion of bidding process, department increased the TPC to ₹808.78 crore, which was also mentioned in concession agreement. However, department collected Performance security of five *per cent* and Success fee of one *per cent* on original TPC (₹593 crore) instead of on ₹808.78 crore.

Government replied that modified project cost of ₹808.78 crore was used for evaluation purpose only and collection of performance security and success fee of original TPC was in order. However, Audit noticed that increased TPC was mentioned in the agreement also.

3.1.5.4 Additional toll burden on road users due to reduction in construction cost

After opening of bids in respect of 'Godavari Bridge', for the purpose of bid evaluation, department prepared a revised TPC (₹808.78 crore), which included ₹273.77 crore for 'Well' type foundations for the bridge. Drawings appended to concession agreement also specified well type foundations.

Audit observed that, in execution, concessionaire adopted 'Cast in-situ Bored Concrete Pile' foundation instead of 'Well' foundation. As per rates available

¹³ TD is the date acknowledged by the client and the concessionaire for review of concession period. TT is the traffic estimated to reach on TD. As per agreement, when the actual average traffic on TD exceeds TT, for every one *per cent* of such increase, the concession period shall be reduced by 0.75 *per cent*, subject to a maximum of 10 *per cent*

in department's own estimates, cost of pile foundation in this project¹⁴ works out to ₹70.03 crore. Thus, there was a reduction of ₹203.74 crore in construction cost.

Considering this reduction in construction cost, Audit recomputed cash flows of the project using the same cash flow model adopted by department during bid evaluation. As per Audit computations, concessionaire would get back its investment in just 18 years (with 18 *per cent* return¹⁵ on Equity), as against 25 years concession period allowed in agreement. Thus, concession period was excess by seven years, during which the additional burden on road users by way of toll fee works out to ₹2519.55 crore.

Government replied that consultants proposed well foundations based on Geo-technical investigations and economical consideration as the likely cost of pile foundations was higher than well foundations and accordingly procurement was taken up with well foundations. Audit however noticed that the consultant worked out the cost of pile foundation at ₹35000/₹45000 per meter, where as the rate of pile foundation provided in the cost estimates of the project was only ₹10414 per meter.

3.1.5.5 Acceptance of bid without assessing its reasonableness – unnecessary toll burden

As per departmental estimates for 'Yanam-Yedurulanka bridge', construction cost of bridge was ₹63.99 crore which included a cost of ₹31.08 crore for 'Well' type foundations. It was noticed that the successful bidder had submitted its bid with 'Pile' type foundations. Audit noticed that considering the fact that pile foundation is more economical than well foundation, construction cost of bridge works out to approximately ₹55 crore. However, department did not consider this fact during bid evaluation and accepted lowest bid even though the amount of subsidy (₹69 crore) sought by bidder was more than the entire construction cost. Thus, the department, in effect, paid entire cost upfront to concessionaire and still allowed it to collect toll from road users for 15 years. Department neither obtained any justification from lowest bidder nor conducted any financial analysis on its own to assess the reasonableness of bid before accepting.

Government agreed that project was awarded on the basis of lowest subsidy sought and that well foundations for said bridge would be economical (without any supporting data) in view of the large scour anticipated. However, fact is that pile foundation is more economical.

3.1.5.6 Non collection of performance security

Clauses 13.1 to 13.3 of tender conditions/Terms of Reference (TOR) of 'Yanam-Yedurulanka bridge' provided that Entrepreneur shall deposit with Government 3 *per cent* of project cost as Construction Performance Security

¹⁴ for 696 piles as being executed in this project

¹⁵ During evaluating the lowest bid, department worked out Equity IRR at 13.65 *per cent*. As per assumptions in DFR, an Equity IRR of 14 to 18 *per cent* was reasonable. Audit considered maximum return of 18 *per cent* for the purpose of cashflow analysis

and 0.5 per cent as Maintenance Performance Security. However, these clauses were omitted in the Agreement resulting in non-collection of ₹3.85 crore. Government replied that performance security was not taken and maintenance security was now being obtained.

3.1.5.7 Post tender favour to bidder

TOR of ‘Yanam-Yedurulanka bridge’ did not provide for any concession to bidders for exemption of Sales Tax (ST) on works contract. However, the successful bidder submitted its bid with a condition that it shall be exempted from payment of ST for this project. Though Government rejected (June 1999) this condition initially, it later accepted (August 1999) reimbursement of ST, and an amount of ₹91.49 lakh was reimbursed.

Government replied that this was based on recommendations of Technical Committee, which opined that bridge was not viable without this concession. Fact remains that this was a post tender change which was not offered to other bidders.

3.1.6 Procurement of higher loans by Concessionaires

In BOT projects, finances required for project are met from Grant given by Government, concessionaires’ own equity contribution and balance through loans raised by concessionaires. Audit noticed that concessionaires of HKR road, NAM road and Godavari bridge obtained high amounts of loan from lending institutions, by projecting project costs higher than those mentioned in RFP documents.

Table-3.3 – Details of loans taken by concessionaires vis-à-vis TPCs

(₹ in crore)

	Original TPC as per RFP document	TPC projected by bidders during bid evaluation	TPC projected by Concessionaires to lenders	Grant from Government	Original TPC minus Grant	Loan actually taken
HKR Road	1358.19	1852.89	2209.00	454.00	904.19	1525
NAM Road	1196.84	1424.88	1760.53	467.02	729.82	1060
Godavari Bridge	593.00	861.00	861.00	207.55	385.45	566

(Source : Project related agreements and other departmental records)

As can be seen from above, loans obtained were more than ‘Original TPC minus Grant’ in all three projects.

As per provisions of Concession Agreements, a Substitution Agreement is concluded between lending agency, concessionaire and Government, wherein, Government agrees to the condition that in the event of financial default of concessionaire, lending bank has a right to substitute the concessionaire by another one till realization of outstanding dues. Thus, raising of high amounts of loan by concessionaires increases risk to Government in such event.

Further, as per concession agreement, department has to make termination payments to concessionaire in case of termination of concession agreement before end of concession period in the event of Force Majeure or default of client/ concessionaire. These termination payments are linked to Debt Due to banks. Thus, facilitation of higher loans increases department's liability in event of termination of agreement.

Government replied that as per concession agreement, it had no role in loans obtained by concessionaires and has no obligation to lenders except for signing the substitution agreement. It was also replied that even in case of termination, there is no higher risk to Government due to higher loans, since 'Debt due' used for determining termination payments was linked to only TPC as defined in agreement. While the reply suggests that it was the lending institutions which bear the risk, fact remains that there was an inherent system weakness. There was no mechanism in concession agreements to prevent concessionaire from (i) raising abnormally high loans by inflating the project cost, and (ii) constructing a PPP project only with loan raised and grant paid by Government without its own investment (or getting back its initial investment).

3.1.7 Development agreements concluded by concessionaires

After concluding Concession Agreements, Special Purpose Vehicles¹⁶ (SPVs) of HKR road and NAM road entered into EPC¹⁷ agreements for execution as shown below:

Table-3.4 – Value of EPC contracts concluded by Concessionaires

(₹ in crore)				
Project	TPC projected by bidder during bid evaluation	Construction cost* assessed by TA during bid evaluation	Total value of EPC contracts concluded by SPV	Difference
HKR Road	1852.89	1351.27	1750.00	398.73
NAM Road	1424.88	1178.16	1540.28	362.12

* including escalation during construction

(Source : Information as per departmental records)

Audit observed that:

- total values of EPC contracts in these projects were much higher than construction costs worked out by TA for the respective projects.
- SPVs awarded EPC contracts at inflated values to its own member firms (either original members or inducted subsequently).
- in respect of NAM road, one EPC agency did not have experience in execution of highway road projects, as per the experience certificates furnished at RFQ stage. Monthly progress reports indicate that the

¹⁶ SPV is an independent entity created by successful bidder solely for purpose of the project awarded

¹⁷ Engineering, Procurement and Construction

entire work was being executed by this agency and the other consortium member was not involved in execution.

- in HKR road, one EPC agency (which was inducted into the SPV subsequently) had experience in only irrigation and pipeline works and did not have experience in road projects.

Government replied that as per agreements, the concessionaires are free to award works either to members of consortium or to any other EPC contractors and that concessionaire is entirely responsible for quality of works. However, the present system does not address the risk of inflating the values of the development agreements and entrusting them to its own member firms to justify higher loans obtained by the SPVs. The system also does not prevent inexperienced firms forming consortiums with reputed firms, only to increase chance of being selected for the PPP contracts.

3.1.8 Project Execution

It was observed that progress of works was slow in the following four projects:

Project (Due date of completion)	Percentage of progress¹⁸ as of September 2013	Audit observations
Godavari Bridge (May 2012)	82.83	After more than a year from target date, progress of super-structure of bridge was still 86.69 <i>per cent</i> . Progress of approaches on Kovvur side was only 45.31 <i>per cent</i> as five acres of land is yet to be acquired due to court cases. Though the entire land required for approach road on Rajahmundry side was handed over by January 2012 (90 <i>per cent</i> of this handed over before November 2009), progress of this approach road was only 74.57 <i>per cent</i> .
HKR road (August 2013)	67.81	Physical progress achieved was only 67.81 <i>per cent</i> . Out of the total of 105.21 Km road, bituminous concrete was completed in only 57.93 Km. Even embankment was not formed in 17.65 Km. Land Acquisition was 77.41 <i>per cent</i> and water pipelines and electrical lines affecting a stretch of 34.3 Km and 49.86 Km respectively were yet to be shifted. Department entrusted five new bypass roads ¹⁹ which were not part of initial project proposals at additional cost.

¹⁸ As per progress reports submitted by Independent Engineer to department and other departmental records

¹⁹ at Pragnapur, Kukunoorpally, Sultanabad, Peddapalli and Godavarikhani

Project (Due date of completion)	Percentage of progress ¹⁸ as of September 2013	Audit observations
NAM road (July 2013)	Overall progress in percentage terms not available	Out of the total of 212.5 Km road, bituminous concrete work was completed in 172.11 Km only and construction was at various stages in remaining reaches. Even embankment work was not completed for a length of 21.57 Km. 65 structures are in progress and 37 structures (including two Road Over Bridges, designs of which were not even approved) were still to be taken up. 15 <i>per cent</i> of land is yet to be handed over. Water pipelines for 52.58 Km and 659 electrical poles are to be shifted.
Kadapa – Pulivendula road (October 2011)		Three reaches (KP-02, KP-03 and KP-04) were completed and one reach (KP-01) was yet to be completed. Delay in land acquisition affected package KP-01. Original concessionaire defaulted in repayment of loan taken from lenders and was substituted (May 2012) with another agency. Substitute concessionaire also suspended work in October 2012 and there was no progress thereafter. Widening of only 9.545 Km road was completed, out of total length of 13.300 Km in this reach. Two major bridges in Km 3/400 and Km 6/100 and a culvert in Km 3/100 were still incomplete. In other three reaches, though widening of carriage way was completed, handing over of only a partial land resulted in non-completion of roadside drains in village limits, avenue plantation and construction of bus bays and shelters.

Due to non-completion of projects within due dates, intended objective of providing improved level of service to road users was not achieved as contemplated.

3.1.8.1 Non-completion of punch list items

As per agreements of Kadapa – Pulivendula road, Independent Engineer (IE) may issue a provisional certificate of completion of project, even though some works were not yet complete, provided road stretch can be legally, safely and reliably placed in commercial operation. Such a Provisional Certificate shall append thereto a list of outstanding items (Punch List). All Punch List items shall be completed by Concessionaire within 120 days from issue of Provisional Certificate.

Audit observed that IE issued Provisional Certificates for three packages during August 2010 – September 2011 along with Punch List items like construction of CC drains, landscaping, avenue plantation, construction of bus shelters, etc. As Punch List items were not completed even after the lapse of more than one year from issue of Provisional Certificates, the department withheld certain amounts. Audit observed that amounts so withheld were less than their actual cost as shown below:

Table-3.5 – Details of amounts withheld by department towards unfinished punch list items

(₹ in crore)

Package	No. of Semi Annuities/Total Amount paid	Estimated cost of Punch List items	Total amount withheld	Difference
KP-02	4/27.95	1.69	0.49	1.20
KP-03	5/57.61	2.49	1.06	1.43
KP-04	3/34.68	1.15	0.55	0.60
Total		5.33	2.10	3.23

(Source : Information as per departmental records)

Government replied that punch list items could not be taken up due to delay in land acquisition process and to safeguard Government interests, recovery was being affected at proportionate rates. However, fact remains that proportionate amounts were not recovered as shown above.

3.1.9 Conclusion

Department did not have a standard policy / procedure for identification of Projects to be taken up under PPP mode and those to be taken up with budgetary support. There were cases of taking up projects without establishing their technical requirement and financial viability; changed decisions like switching from BOT mode to conventional mode, Toll mode to Annuity mode and vice versa; revision in scope of project during tender process; unexplained cancellation of tenders; subsequent shelving of projects completely, etc. Bidding process lacked transparency, some projects were awarded on lowest bid basis without assessing the reasonableness of bids, resulting in unnecessary toll burden on road users. Projects which were earlier assessed to be viable without or limited funding from Government were awarded at high costs. There was no mechanism to prevent the Concessionaires from raising high amounts of loans by projecting inflated project costs to banks and award of project works to inexperienced EPC agencies by concessionaires. Projects were not completed in time due to non-handing over of lands and non-shifting of utilities.

3.1.10 Recommendations

- ***Specific criteria for identification of projects to be taken up (i) through either PPP mode or conventional contract system, and (ii) with budgetary support or with borrowings need to be devised.***
- ***A standard and uniform mechanism may be stipulated for assessing reasonableness of bids in PPP projects.***
- ***Suitable safeguarding clauses may be incorporated in the Concession Agreements to prevent concessionaires from raising abnormally high amount of loans, to protect Government from higher risks.***
- ***A suitable mechanism may be put in place to ensure that project works are entrusted by concessionaires only to agencies with sufficient experience in concerned works.***

Environment, Forests, Science and Technology Department

3.2 Diversion of Forest land for non-forest purposes, Compensatory Afforestation (CA) and CAMPA

3.2.1 Introduction

Andhra Pradesh has a total notified forest area of 63.81 lakh Hectare (Ha)²⁰ (comprising 23.2 *per cent* of total geographical area of the State). Reserved, Protected and Un-classed forests occupy 50.48 lakh Ha (79.10 *per cent*), 12.37 lakh Ha (19.38 *per cent*) and 0.97 lakh Ha (1.52 *per cent*) of the total forest area respectively. The State also has a protected area network of 15.28 lakh Ha (23.9 *per cent* of total forest area).

Forest (Conservation) Act, 1980 (Act) enacted by Government of India (GoI) and Forest (Conservation) Rules, 2003 (Rules) issued there under prohibit diversion of forest land for non-forest purposes, except with prior approval of GoI. Such approvals are granted in two stages:

In Stage-I, proposal for diversion is agreed to in principle, subject to fulfilment of various conditions, which include (i) providing equivalent non-forest land (or) in case non-forest land is not available, degraded forest land to the extent of twice the forest land diverted, for Compensatory Afforestation (CA); and (ii) payment of Net Present Value (NPV) of forest land diverted, cost of CA and penal cost of CA, if any, by user agency. In Stage-II, formal approval is accorded for diversion of forest land after all conditions stipulated in Stage-I have been fulfilled.

Ad-hoc Compensatory Afforestation Fund Management and Planning Authority (Ad-hoc CAMPA) was created (May 2006) at Central level in which amounts paid by user agencies towards CA and NPV of the forest land being diverted were to be deposited. AP State CAMPA was subsequently constituted during September 2009. Funds received by Ad-Hoc CAMPA were released to State CAMPA subject to maximum of 10 *per cent* of accumulated principal amount pertaining to respective States/Union Territories, for utilization as per approved Annual Plan of Operations (APOs).

3.2.2 Scope of Audit

Audit conducted between August 2012 and December 2012 covered a period of five years ending 2012-13. Records of Forest Headquarters, Andhra Pradesh Forest Development Corporation (APFDC) and 17 Divisions²¹ substantially funded by CAMPA were examined. Audit was conducted to ascertain whether diversion of forest land, collection of moneys towards CA and NPV, CA of the non-forest land and various other conditions imposed by

²⁰ As per Andhra Pradesh State of Forest Report, 2012

²¹ Adilabad, Ananthapuramu, Chittoor West, Eluru, Hyderabad, Jannaram, Kakinada, Karimnagar West, Kurnool, Manchirial, Nalgonda, Narsipatnam, Paloncha, Srikakulam, Vishakhapatnam, Vizianagaram and Warangal North.

GoI while approving diversion of forest lands were properly attended to and implemented.

Audit findings are discussed below:

Audit findings

3.2.3 Diversion of Forest land for non-forest purposes

Diversion of forest land for non-forest purposes is subject to prior approval of GoI. State Forest Department is responsible for ensuring the fulfilment of all the conditions stipulated by GoI and reporting the same to GoI. Audit noticed following deficiencies:

3.2.3.1 Incorrect acceptance of CA land

Department diverted (2008) 567 Ha of forest land in Karimnagar East and Kothagudem Forest Divisions to Singareni Collieries Company Limited²² (SCCL) for coal mining. GoI while approving (May/July 2008) stipulated that CA be raised in 401.96 Ha of non-forest land.

Scrutiny of records revealed that 339.34 Ha of land accepted by Forest Department from user agency in Srikakulam Division in fact was un-notified forest land already owned by Forest Department since 1976. Acceptance of its own forest lands from user agency and reporting compliance with the conditions to GoI resulted in according of approval to diversion of forest land without obtaining equivalent non-forest land for CA.

Department replied that approval of diversion was based on reports (November/ December 2000) of DFO and confirmation by District Collector that sufficient non-forest land was available in the 'Land Bank' constituted in the district. However, reply was silent on acceptance of forest land already in possession of department without verification.

3.2.3.2 Unauthorised use of forest land

An extent of 1157.20 Ha of forest land was diverted to I&CAD²³ Department for construction of Pulichintala Reservoir Project across Krishna River consequent on final (Stage-II) approval given by GoI (October 2006).

Scrutiny of records of Nalgonda Division revealed that 102.80 Ha of forest land in Chintalapalem Reserve Forest Block under Miryalaguda Range falling in submergence area of the project was not included in the initial proposals for diversion by user agency. This resulted in unauthorized use of forest land for non-forest purposes without providing equivalent non-forest land for CA and making payment of NPV, which at minimum of rates²⁴, works out to ₹7.2 crore.

²² a Public Sector Undertaking

²³ Irrigation and Command Area Development

²⁴ ₹7 lakh per Ha for crown density between 0.1 to 0.2 as per rates applicable prior to March 2008

Department replied that user agency was requested (November 2012 to January 2013) to verify and send proposals for diversion and to stop the work till the issue is settled.

3.2.3.3 Construction of reservoir without forest clearance

In-principle (Stage-I) approval for diversion of 39.27 Ha of reserve forest land was accorded by GoI (November 1998) for construction of reservoir across Kovvada Kalva in West Godavari District subject to condition of transfer of equivalent non-forest land for CA.

Scrutiny of records revealed that construction of reservoir was completed (September 2004) even without final (Stage-II) approval of GoI.

Department replied that user agency paid NPV recently and submission of compliance report was in process.

3.2.3.4 Non/short-collection of NPV

(i) GoI accorded (July 2010) final approval for diversion of 3731.07 Ha of forest land for construction of Indira Sagar (Polavaram) Multipurpose Project across Godavari River based on the reported fulfilment of conditions stipulated in Stage-I approval (December 2008).

Scrutiny of records at Paloncha Division revealed that diverted forest land included 101.81 Ha falling in 'Papikonda National Park' notified (November 2008) under Section 35 (4) of Wildlife (Protection) Act, 1972. As per orders (March 2008) of Supreme Court of India, NPV of such National Park areas was to be assessed at 10 times of normal rates. However, NPV was collected at five times the normal rate, resulting in short collection of NPV of ₹41.42 crore.

Department replied that the area was under Wild Life Sanctuary at the time of Stage-I clearance and became part of National Park only after completion of Stage-I conditions and hence enhanced rate was not applicable. However, Papikonda National Park was notified (November 2008) even before Stage-I clearance (December 2008). Besides, revised rates are applicable in all cases where final approval was granted after the Court orders.

(ii) Ministry of Environment and Forest, GoI clarified (September 2003/ May 2004/ October 2006) that NPV shall also be charged in all the cases where final (Stage-II) approval has been granted on or after 30 October 2002, irrespective of date of in-principle (Stage-I) approval.

Audit scrutiny revealed that in two cases²⁵, though department issued demand notices to user agencies in August 2007/November 2007 for payment of NPV amounting to ₹40.03 lakh, same was not collected even after more than five years.

²⁵ (i) 4 Ha to a private firm (in Ananthapuramu Division) and (ii) 1.88 Ha to National Highways Authority of India (in Visakhapatnam Division)

Department replied that GoI was requested to cancel mining lease in one case and that in the other case, latest notice was issued to user agency in December 2012 for payment of NPV.

3.2.4 Compensatory Afforestation

CA was one of the most important conditions stipulated by GoI while approving proposals for diversion of forest land for non-forest uses. Audit noticed the following:

3.2.4.1 Acceptance of disputed/encroached non-forest lands for CA

(i) In Mancherial Forest Division, 100 Ha of forest land was diverted (June 1999) in favour of a private company for mining of limestone. Lease granted for a period of 10 years, was later transferred (2001) in favour of another lessee. Mining lease was renewed for a further period of 20 years based on approval by GoI (June 2009). Scrutiny of records revealed that against 100 Ha of non-forest land identified in Pagadapally Village and mutated (September 2000) in favour of department for raising CA, 40 Ha of land was disputed/ under cultivation by villagers for last six to eight years. As a result, CA was not taken up on this land.

(ii) Similar acceptance of disputed/encroached lands by department was noticed in three more cases²⁶ during 1996 to 2004, wherein, out of 8.64 Ha of non-forest land accepted for CA, 5.75 Ha was later found to be encroached/ disputed and hence no CA could be carried out thereon. Even on balance 2.89 Ha, no CA was done so far (June 2013).

(iii) In three²⁷ other cases during period 2001 to 2011, CA stipulated by GoI had not been carried out or only partially carried out for various reasons. In these cases, as against stipulated CA of 154.47 Ha of non-forest land, afforestation was taken up in only 10 Ha so far (June 2013).

Department replied that matter would be pursued with Revenue Department and action would be taken to raise CA in all cases.

3.2.4.2 Non-notification of forest lands accepted for CA

As per guidelines issued under the Act, non-forest land accepted in lieu of diverted forest land for raising CA was to be notified as Reserve/Protected Forest within six months of Stage-II approval. In test checked divisions, Audit noticed that in 35 cases (*Appendix-3.2*) out of 94 cases notification process was not completed (June 2013) even after lapse of a period ranging upto 20 years since final approval by GoI, denying contemplated higher protection to these lands.

²⁶ DFO Vizianagaram – 3.64 Ha, DFO Srikakulam – 3.75 Ha, DFO Vizianagaram – 1.25 Ha

²⁷ DFO Eluru – 39.27 Ha and 4.20 Ha (nil CA); DFO Chittoor East – 110.87 Ha (partial CA)

Department attributed (June 2013) the delay to lengthy process involved in notification and stated that notification process was completed in 78 out of 280 cases of non-forest land accepted. It further stated that efforts were being made to hasten the process by conducting monthly review meetings.

3.2.5 Non-fulfilment of project specific conditions

GoI while according approval for diversion of forest land imposes certain Project specific conditions to be fulfilled by the Department/user agency after commencement of Project. Audit noticed cases of failure of fulfilment of such conditions as detailed in the following paragraphs:

3.2.5.1 CA land not declared as ‘Sanctuary’

GoI approved (March 1993) diversion of 177.47 Ha of forest land in Kurnool District for Srisailam Right Bank Canal on a specific condition that character of non-forest land identified for CA should be maintained as habitat for Great Indian Bustard (GIB) and should be declared as ‘Sanctuary’. Scrutiny of records revealed that non-forest CA land of 246.77 Ha identified and handed over (1990) to department in Rollapadu and Sunkesula villages of Kurnool District is yet to be integrated into existing Rollapadu Wild Life Sanctuary and notified as ‘Sanctuary’ (June 2013). Non fulfilment of the condition stipulated by GoI even after 20 years affected maintenance of area as a habitat for GIB, a bird on verge of extinction.

It was replied that notification proposals were sent to District Collector, Kurnool (April 2013) and matter would be pursued.

3.2.5.2 Canal Bank plantations not taken up

GoI approved (November 2006) diversion of 118.71 Ha of forest land in Ananthapuramu and Proddatur Divisions for Chitravathi Balancing Reservoir (CBR) canal on a specific condition that canal bank plantation should be taken by State Forest Department at the cost of user department. Scrutiny of records of Ananthapuramu Division revealed that stipulated condition is not yet complied with (June 2013) by department even after a lapse of six years.

It was replied that matter would be pursued with user agency to pay amount to take up canal bank plantation.

3.2.5.3 Non establishment of Green Belt in mining areas

GoI approved (May 2002) diversion of 4.05 Ha of forest land in Ananthapuramu Forest Division for mining of Steatite and Dolomite by a private firm on a specific condition that surrounding areas of cluster of mines should be enriched by green belt/ enrichment plantations and Soil and Moisture Conservation (SMC) works at the cost of lease holders. However, no such green belt was established (June 2013) even after a lapse of 11 years.

Department replied (June 2013) that user agencies had since deposited required funds and green belt plantation would be taken up.

3.2.6 Management of CAMPA fund

During 2006-07 to 2012-13, Department transferred ₹2142.22 crore to Ad-hoc CAMPA, received ₹448.69 crore allocated from Ad-hoc CAMPA and spent ₹357.65 crore leaving a balance of ₹91.04 crore (March 2013). Analysis of management of State CAMPA fund revealed the following:

3.2.6.1 Delayed remittance of funds into Ad-hoc CAMPA

Scrutiny of records of State CAMPA revealed that there were delays in remittance of Demand Drafts received by department towards CA/NPV from various user agencies into Ad-hoc CAMPA. Considering 10 days as reasonable time, there were unexplained delays ranging upto 242 days in 476 cases involving an amount of ₹1278.43 crore, resulting in loss of interest of ₹2.64 crore.

Department replied (June 2013) that process of transfer of DDs at various levels involved considerable time and instructions had been issued to ensure that DDs were sent to Head Office within three days of their receipt to facilitate expeditious transfer to Ad-hoc CAMPA.

3.2.6.2 Monitoring and Evaluation by State CAMPA

Audit noticed that only three meetings were held as against stipulated six meetings²⁸ by Steering Committee during period 2009-12. APOs which were needed to be prepared and submitted by Executive Committee to Steering Committee before end of December each year were delayed for periods ranging from three (2011-12) to nine (2009-10) months. This resulted in consequential belated approval of APOs impacting achievement of objectives.

Guidelines issued (July 2009) by GoI on State CAMPA stipulated that an independent system of concurrent monitoring and evaluation of works implemented in the States should be evolved and implemented to ensure effective and proper utilization of funds. However, no such mechanism was evolved by AP State CAMPA so far.

It was replied that though a concurrent monitoring through web enabled portal of e-Green watcher of Central Ad-Hoc CAMPA was launched in October 2012, no independent third party evaluation could be put in place for want of guidelines from Ad-Hoc CAMPA.

3.2.7 Conclusion

There were diversions of forest land without getting required non-forest land for Compensatory Afforestation (CA) from user agencies. There were cases of short/non collection of NPV from user agencies. In a number of cases, non-forest land accepted for afforestation was not notified as Protected/Reserved forest even after passage of one to 20 years from final approval, though Forest Conservation Act stipulates such notification within six months. Project

²⁸ Steering Committee is required to meet at-least once in six months. It met only once in a financial year

specific conditions were not complied with in some cases. CA also suffered due to acceptance of disputed and encroached lands for afforestation and non-obtaining of alternate lands. There were delays in remittance of amounts received from user agencies into Ad-hoc CAMPA, resulting in loss of interest. Prescribed number of Steering Committee meetings were not held and there were delays in holding meetings with consequent delay in approval of Annual Plan of Operations.

3.2.8 Recommendations

- *Government should ensure that the conditions stipulated by Government of India while approving forest land diversions are complied with in all cases.*
- *Government should put in place proper mechanism for verification of non-forest lands identified by user agencies for Compensatory Afforestation, before acceptance by Department.*
- *Government should take stringent action in cases of unauthorised diversion of forest lands by user agencies.*
- *Government should take immediate steps to notify all non-forest lands already accepted for Compensatory Afforestation and ensure notification within the prescribed six months period in future cases also.*
- *Department should avoid delays in transfer of the amounts received from user agencies towards Net Present Value, Compensatory Afforestation, etc. to Ad-hoc CAMPA.*

Irrigation and Command Area Development Department

3.3 Modernization of Irrigation Systems

3.3.1 Introduction

Modernization of irrigation projects involves restoration/improving standards of reservoirs, dams, canals and distributary network of existing irrigation systems deteriorated due to aging, repeated erosion, silt formation and flood damages. GoAP accorded administrative approval (May 2006 to May 2009) for modernization of eight irrigation systems in the State to stabilize 55.76 lakh acres of ayacut under these systems with a cost of ₹15,001 crore (details in *Appendix-3.3*).

3.3.2 Audit scope and objectives

Audit examined (August 2012 to February 2013) implementation of seven modernization projects (excluding Nagavali system, where works were yet to be taken up) in offices of 3 CEs, 12 SEs and 18 EEs. Test check of 48 (13 per cent) out of 369 packages entrusted was conducted to assess whether (i) modernization works were taken up based on scientific assessment of needs and with proper planning, (ii) financial propriety was ensured in tendering and contracting, and (iii) works were executed smoothly and envisaged objectives were achieved in time. Audit findings are discussed below:

Audit findings

3.3.3 Preparation of Detailed Project Reports (DPRs)

As per Central Water Commission (CWC) guidelines (1980), Detailed Project Reports (DPRs) for Modernization of Irrigation and Multipurpose Projects should, *inter alia*, cover agronomic and management aspects such as seepage losses, wastage of water, land potential, cropping pattern and crop water requirement, water management, maintenance, etc; present performance of various components of project and their comparison with proposed features. Audit noticed that no DPR was prepared for Nizamsagar project and Godavari Delta System (GDS).

Commissioner, Godavari Basin stated that a DPR was prepared (not supported by any record) for Nizamsagar modernization. Chief Engineer, GDS on the other hand replied that there was no need for preparing a DPR as GDS was an already existing irrigation system. However, it was essential to study vital aspects mentioned in CWC guidelines for planning specific works to be carried out.

3.3.4 Improper planning in TBPFLC

Tungabhadra Project High Level Canal (TBPFLC) runs for a length of 196.43 km. The initial length of 105.437 km was in neighbouring State under jurisdiction of Tungabhadra (TB) Board. The original designed capacity of

TBPHLC was 4000 cusecs at head reach near Tungabhadra reservoir and 2575 cusecs where it enters AP State.

In August 2005, GoAP decided to allocate 10 TMC²⁹ of Tungabhadra water³⁰ (out of the AP's share of 73.01 TMC³¹) to Pennar Ahobilam Balancing Reservoir (PABR) for drinking and other incidental needs of Hindupur area in Ananthapuramu district. This water was proposed to be drawn by widening TBPHLC.

Audit, however, observed that GoAP took up (November 2007) widening of TBPHLC within the State border to increase its carrying capacity to 4200 cusecs and entrusted six package works (cost: ₹463.50 crore) during May - July 2008, without obtaining acceptance from neighbouring State for widening of TBPHLC on that side. Works were in progress and an expenditure of ₹161.62 crore was already incurred as of March 2013. Unless TBPHLC on other State is also widened, widening of canal on AP side would not serve the objective of providing 10 TMC of water to PABR and expenditure thereon would remain unfruitful.

Government replied (August 2013) that negotiations with Government of neighbouring State and Tungabhadra Board for such widening of canal initiated by GoAP in 2006 and were still on. However, objective of widening TBPHLC at a cost of ₹463.50 crore would not be fulfilled till an agreement is reached and canal in that State is also widened.

Even after more than six years since commencement of negotiations no agreement was reached. In fact, as recently as in April 2011, TB Board entrusted task of preparation of DPR for remodelling and restoration of TBPHLC on other side to its original carrying capacities indicating that there was perhaps no proposal for increasing its capacity. Therefore, utility of widening of TBPHLC at this end taken up at a cost of ₹463.50 crore is doubtful.

3.3.5 Assessment and stipulation of canal closure period

As modernization works were taken up on already existing irrigation systems, its execution was possible only during canal closure periods. Canal closure periods were finalized every year on advice of Irrigation Advisory Board (IAB), chaired by the District Collector concerned. However, there was no documentary evidence to show that department had calculated the canal closure period based on past experiences or had at any time approached IAB for assessing the probable canal closure periods or declaring a crop holiday, before taking up modernization works.

Audit observed that department failed to provide required canal closure period to contractors as a result of which, modernization works were not completed

²⁹ Thousand million cubic feet

³⁰ GoAP initially (in January 2004) decided to allocate 5 TMC of water to PABR. This was later increased to 10 TMC in August 2005.

³¹ TBPHLC (32.50 TMC), TBPLL (24 TMC), Kurnool Cuddapah (KC) Canal (10 TMC) and Rajolibanda Diversion Scheme (6.51 TMC)

as targeted and intended benefits not achieved. Deficiencies in providing canal closure period were as follows:

3.3.5.1 Non-stipulation of canal closure period in agreements

(i) There was no specific mention about working period / canal closure period in agreements of GDS, Pennar Delta System (PDS) and Tungabhadra Project Low Level Canal (TBPLLC) packages.

Government replied that (i) working period provided was 51 months in respect of GDS, (ii) water was released for prolonged periods due to demands from farmers in PDS and due to prevailing conditions in TBPLLC. However, audit observed that in GDS, 51 months was total contract period and not canal closure period. Department should have convinced the farmers about the importance of canal closure and benefits of providing sufficient working period to contractors.

(ii) In Package-39 of PDS (agreement period: 24 months), agency stopped work (March 2009) after executing a meager 6.17 *per cent* work citing non-availability of continuous working period for nearly two years from date of entrustment (May 2007). Department finally proposed (August 2012) to close the contract and to revise estimates for balance work with latest rates. Similarly, department had to propose pre-closure of Packages-34 and 40 (entrusted in May/February 2008) due to continuous release of water and lack of working period.

Further, though Government permitted (December 2012) to close all these three packages (expenditure: ₹12.27 crore), contracts were yet to be closed (June 2013) and re-entrusted, resulting in non-achievement of intended objectives.

Government replied (August 2013) that working period was restricted as water was released for both Rabi and Kharif crops due to availability of abundant water and canal closure was done only partially. Department should have taken up modernization works only after planning canal closure periods.

(iii) In package-2 (entrusted in June 2008) of TBPLLC, contractor stopped work after executing a meagre 7.31 *per cent* work (expenditure: ₹0.92 crore) and requested (September 2011) to stop water in canal for at least six months continuously and make payments with latest rates for balance work, or to close the contract. However, no decision was taken by department so far (July 2013). Government accepted that due to uncertainty in closure period, sufficient working period was not made available and hence closure of contract was proposed. Failure to make available required working period led to non-completion of works and non-achievement of intended objectives.

3.3.5.2 Non-providing of working period as stipulated in agreements

Even in projects, where closure / working periods were stipulated in agreements, department failed to make available the required working period to agencies as discussed below:

- Agreements of Krishna Delta System (KDS) modernization provided for canal closure period of 560 days (out of total contract period of 51 months). As against this, working period actually given was only 300 days.
- In TBPFLC, out of 23 months of working period to be provided (total contract period: 51 months), less than 17 months of working period was made available.
- In Nizamsagar project, out of 12 months canal closure period to be provided as per agreements (contract period: 25 months), department could make available only 182 days within agreement period resulting in non-completion of works.

Government replied that shortfall in providing working period was due to release of water in canals for extended periods, release of drinking water and loss of working period due to rains. However, release of drinking water and rainy season are not unforeseen contingencies and water release periods of previous years should have been taken into account while planning modernization works.

3.3.5.3 Impact of non-providing of working period on future tenders

As per tender procedure followed by GoAP, to qualify for award of a work, bidder should have a bid capacity greater than estimated value of work. During tender evaluation, bid capacity of each bidder is assessed using formula of " $2AN-B$ "³². If agreement period is of short duration, bidder should possess higher bid capacity and *vice-versa*. Therefore, non / improper assessment of working period in modernization works of irrigation systems and consequent stipulation of short agreement duration would restrict the number of eligible bidders and thereby competition. Audit noticed that there was poor response to tenders in many cases, forcing department either to call for tenders several times or to split works into small packages. Non-providing of required working/canal closure period in ongoing works would have further discouraging effect on competition in future tenders also.

3.3.6 Lack of competition in tendering

Audit observed in some cases that works were awarded to single bidders, as shown below:

³² This is the formula used to assess the bid capacity of the tenderers, in which 'A' stood for maximum value of civil engineering works executed in any one year during the last five years, 'B' indicated the value of existing commitments and ongoing works, while 'N' is the number of years prescribed for completion of work for which tenders are invited. Under this procedure, the bidders had to demonstrate that their bid capacity was more than the estimated value of the work for which tenders were called for.

Table-3.6 – Number of works awarded to single bidders

Sl. No.	Irrigation System	Number of packages entrusted so far	Packages entrusted to single bidders (percentage)
1	KDS	56	18 (32)
2	Nizamsagar	16	10(62)
3	TBPLLC	18	15(83)

(Source : Information as per departmental records)

- Out of 18 packages entrusted to single bidders in KDS, 15 were premium bids. Out of these, nine were entrusted in first tender call itself.
- All the 10 packages entrusted to single bidders in Nizamsagar were premium bids and five were in first call.
- Out of 15 packages entrusted to single bidders in TBPLLC, 14 were on premium out of which six were in first call.

Receipt of single bids in large number of cases indicates lack of competition for modernization works.

Government replied that single bids were accepted (i) to complete works early to achieve modernization benefits to farmers and recall to tenders requires revision of estimates which involves extra financial implications (ii) due to urgency and programme works to be grounded before Khariff season and (iii) in view of poor response to earlier calls. However, urgency in entrustment did not ultimately translate into early completion, as only three out of 43 packages entrusted to single bidders were completed so far.

3.3.7 Issues pertaining to bid evaluation

Audit observed several instances where transparency in bidding process and evaluation was not fully ensured.

(i) In KDS, out of 56 packages, one firm bagged 18 packages (*Appendix-3.4*). Audit observed that in 17 out of these 18 packages only two bids were received and in one package single bid was received/accepted. Lowest bids in these 17 packages were at premium ranging from 3.72 to 4.5 per cent while the second lowest bids ranged from 4.59 to 4.98 per cent, close to the permissible upper ceiling of five per cent. Government did not offer any remarks.

(ii) Further, when tenders for Packages-1 and 4 of KDS were invited (December 2007), two and three bids respectively were received. One firm emerged lowest in both cases with bid values of ₹204.67 crore and ₹147.70 crore respectively.

Clause 28.2 of tender stipulated that - "Negotiations at any level were strictly prohibited. However, good gesture rebate, if offered by lowest bidder prior to finalization of bids may be accepted by bid accepting authority". However, department rejected L1 bids and entrusted works to L2 bidder (same firm in

both cases) at L1 rates. While reasons for rejection of L1 bids were not on record, allowing L2 bidder to lower its bid values after opening of bids was in violation of tender conditions.

Government replied that a High Power Committee rejected the tenders of L1 due to technical reasons and recommended award of contract to L2 who met technical and financial requirements. However, reply is contrary to the fact that price bids were opened only after technical qualification.

(iii) As per Government of AP orders³³, to qualify for award of any work, each bidder should demonstrate having executed a minimum specified value of similar works during last five years immediately preceding the financial year in which tenders were invited.

Audit observed that in Packages-10, 11, 12 and 15 of Nizamsagar modernization, Government relaxed (November 2008) this condition after opening of tenders and permitted the department to consider value of similar works executed in the year 2002-03 which was beyond the block period (i.e. from 2003-04 to 2007-08) stipulated in tender documents. In all four packages, single bids received (from the same firm) with a tender premium ranging from 2.52 to 4.86 *per cent* were accepted.

Government replied that tender condition was relaxed only to start work before Kharif 2008. However, Audit observed that by the time relaxation was given, Kharif 2008 had already begun. Also, three out of above four works had not been completed even after more than two years from their target dates of completion. Moreover, relaxing qualification criteria after opening of bids was against the spirit of competitive bidding.

3.3.8 Defining the scope of work in agreement

Work of construction of Sangam barrage cum bridge (package no. 33) of PDS was entrusted to a firm for ₹86.20 crore in April 2007 under Engineering, Procurement and Construction (EPC) turnkey system³⁴. The basic project parameters of agreement stipulated a barrage with (i) a minimum length of 1076 Mts., (ii) 77 vents and (iii) maximum flood discharge (MFD) of 7.50 lakh cusecs at a level of +35.000 M to be constructed as per relevant standards³⁵.

During finalization of designs, department insisted that barrage should be constructed for a length of 846 Mts. with a discharge of 7.5 lakh cusecs with a scour depth of 1.25 times on upstream side and 1.75 times on downstream

³³ GO.Ms.No.23, dated 5 March 1999 (reiterated in GO.Ms.No.94, dated 1 July 2003) of I&CAD Department

³⁴ Under EPC turnkey system, the contractor has to conduct survey and investigation, prepare and submit designs to the department (in line with the basic project parameters broadly defined in the agreement) and execute the entire work including all ancillary and incidental items of work and deliver the project in complete shape. No additional payments would be made for any additional/increased quantities of work under the defined scope of work

³⁵ Standards provided in AP Detailed Standard Specifications (APDSS), Bureau of Indian Standards (BIS) and CWC manuals, Ministry of Surface Transport (MOST) specifications and other Government circulars issued from time to time

side. Contractor contended (September 2007) that design parameters suggested by department were higher than those stipulated in IS codes and demanded extra payments for additional work.

An Expert Committee constituted by Government for examining the issue recommended (February 2008) to close the contract and refund the deposits to contractor and call for fresh tenders on the ground that agency did not agree for scour depths and other technical parameters and that no agreement was reached despite several negotiations. Committee also opined that there was change in scope of work due to reduction of barrage length from 1076 Mts. to 846 Mts. Accordingly, the contract was closed and work was re-entrusted (July 2008) to another firm for ₹122.50 crore.

Government replied that contract was closed as (i) proposal of agency was not in tune with parameters approved by Committee; (ii) agency insisted on additional payments contrary to agreement conditions; and (iii) in view of urgency to complete work within intended period of 30 months.

If agency failed to adhere to agreement conditions, action should have been taken as per agreement conditions/codal provisions and work should have been re-entrusted on the risk and responsibility of first agency. Instead, department took upon itself the additional cost of ₹36.30 crore, involved in re-entrustment.

3.3.9 Progress of works

Progress of works and expenditure (as of March 2013) under modernization projects were as follows :

Table-3.7 – Progress of modernization works and expenditure

Sl. No.	Irrigation System	Total number of packages	Packages entrusted	Target date of completion as per agreements*	Packages to be completed by March 2013	Packages completed	Cost of the agreements concluded (₹ in crore)	Expenditure (₹ in crore)
1	Nagarjunasagar	776	104	September 2016	18	Nil	2194.92	738.07 [#]
2	KDS	68	56	July 2016	12	Nil	2875.81	673.62
3	GDS	211	157	March 2016	8	Nil	1308.17	272.54 [@]
4	TBPHLC	6	6	September 2012	6	Nil	458.42	161.62
	TBPLLC	18	18	October 2012	18	2	174.05	93.72
5	PDS	10	10	March 2012	10	Nil	940.40	367.72
6	Nizamsagar	16	16	May 2015	14	1	550.77	218.28
7	Yeleru Irrigation System	3	2	October 2013	1	1	7.81	3.09
	Total	1108	369		87	4	8510.35	2528.66

* the target date of completion of the latest agreement concluded

[#] Information on Nagarjunasagar pertains to 24 main canal packages. Details of the 80 distributary packages were not furnished by department

[@] Information on GDS pertains to 21 main (EPC) packages. Details of remaining smaller works were not furnished by department

(Source : Data furnished by I&CAD Department)

As can be seen from above table, out of 87 modernization works whose agreement period was over, only 4 works were completed (March 2013).

Audit noticed that delays in remaining 83 works ranged from five to 46 months from original target date of completion.

- Though target date of completion was over in all agreements of TBPHLC, TBPLLC and PDS, only two works in TBPLLC were completed.
- In Nizamsagar project, even though agreement period of 14 agreements was over, only one work (substantial portion of work was deleted from scope of this contract) was completed.

Government attributed delays to inadequate working period, due to extended period of water regulation and stagnation of water in canal prism. These issues should have been taken into account at planning stage itself.

3.3.10 Impact of non-completion of Krishna Delta System (KDS) on Krishna Basin projects

Modernization of KDS envisaged saving of about 29 TMC of water, out of which 20 TMC was proposed to be allocated for the Rajiv Bhima Lift Irrigation Scheme (RBLIS) and remaining 9 TMC was allocated for Dr. K.L. Rao Sagar (Pulichintala) project.

It was noticed that though Pulichintala and RBLIS projects were taken up in 2004 and 2005 respectively and are in advanced stage of execution, modernization works of KDS were taken up only in 2008 and progress was only 23.42 *per cent* (March 2013). Besides, 12 works have not yet been entrusted.

Till completion of modernization of KDS, water needs of RBLIS and Pulichintala projects were proposed to be met by curtailing demands from other projects in Krishna Basin. Thus, delay in taking up and completing KDS works would have an adverse impact on availability of water for RBLIS and Pulichintala/put strain on other projects in Krishna Basin.

Government replied that all efforts were being made to accelerate progress of KDS modernization and achieve the contemplated savings of water.

3.3.11 Encroachments

Work of modernization of PDS package 35, comprising two canals viz., Survepalli canal and Krishnapatnam canal was entrusted to a firm in April 2008. The work involved cement concrete paving lining to bed and side slopes. However, Surveypally canal (km 0.600 to km 5.600) and Krishnapatnam canal (km 0.000 to km 2.000) were encroached in Nellore town limits. As a result, work could not be taken up in Nellore town limits despite completion (April 2010) of agreement periods.

Audit observed that based on suggestions from the public representatives, department proposed (March 2012) construction of retaining walls instead of cement concrete lining on side slopes in these places.

Government replied that modernization works in above canals were taken up anticipating that encroachments would be cleared during execution but this could not be done due to legal complications. It was further replied that to avoid delay in contract and as there were no prospects of clearing encroachments in near future, proposals for construction of retaining walls are contemplated.

This not only indicates lack of monitoring by department in safeguarding canal banks from encroachments but also improper planning and entrustment of packages without ensuring hindrance free site.

3.3.12 Infertuous expenditure on Nizamsagar main canal

Under Jalayagnam programme, Government took up a new lift irrigation scheme viz., Dr. B.R. Ambedkar Pranahita Chevella Sujala Sravanthi (PCSS) and entrusted (November 2008) package nos. 20 and 21 under EPC turnkey mode. After detailed survey and investigations in respect of PCSS project by EPC agencies, department proposed (February 2010) to utilize two reaches³⁶ of the main canal of Nizamsagar project as a common carrier for both projects, to avoid running parallel canals of PCSS and Nizamsagar adjacently. This necessitated widening and deepening of Nizamsagar main canal to increase its carrying capacity from 40 cumecs to 110 cumecs.

Modernization works in above mentioned reaches of Nizamsagar main canal (Package nos. 10, 11 and 12) were, however, already entrusted (in January 2009). As widening work of Nizamsagar main canal was proposed to be taken up under PCSS packages, common reaches were required to be deleted from three modernization packages. Audit observed that department deleted works valuing ₹26.33 crore from the scope of package-11, but no such deletions were effected in package nos. 10 and 12.

Audit also noticed that proposal to share main canal of Nizamsagar with PCSS came up during a joint inspection (February 2010) conducted by CE, Central Designs Organization with Commissioner, Godavari Basin. However, department allowed the contractor of package-11 to execute (November 2011) further work (embankment with borrowed soils for a quantity 1.56 lakh cum³⁷) in common canal reaches and paid ₹2.92 crore for this work. Since widening of canal in these reaches would require removal of embankments, expenditure incurred on embankment in these reaches was infertuous.

³⁶ from km 93.50 to km 102.375 and from km 104.925 to km 118.205

³⁷ Left side : from km 100.000 to km 100.800, km 101.525 to km 101.775, km 105.200 to km 108.200, km 108.250 to km 109.075, km 109.175 to 110.00, Right side: km 105.200 to km 106.300, km 106.375 to km 108.200, km 108.250 to km 109.075, km 109.175 to km 110.00

Government replied that deletion proposals in respect of package nos. 10 and 12 were under process. It was further replied that only accumulated earth in the canal was removed and main component of works were not taken up after joint inspection.

However, Measurement Books of package-11 showed that embankment work valuing ₹2.92 crore was executed (Date of recording measurements: 7 November 2011 and check-measured on 9 November 2011) more than one and a half year after joint inspection.

3.3.13 Conclusion

Modernization works were taken up without proper planning and without ensuring practical execution for timely achievement of intended objectives. A large number of works were entrusted to single bidders at tender premium. There were deficiencies in bid evaluations. Progress of works was poor resulting in non-completion of projects. Existence of encroachments along canals and Government's inability to clear them also hampered works in some projects. Taking up widening of Tungabhadra Project High Level Canal on one side of border without reaching agreement for widening of the canal on other side led to doubtful utility of expenditure already incurred. Due to delayed taking up of modernization of Krishna Delta System and its non-completion, objective of saving 20 TMC of water, intended to be provided to Rajiv Bhima Lift Irrigation Scheme, could not be achieved.

3.3.14 Recommendations

- ***Government should ensure that DPRs, based on scientific studies, are invariably prepared for every modernization project.***
- ***Government should frame suitable guidelines to assess and pre-determine the canal closure period on a realistic basis and ensure that sufficient working period is provided for timely completion of modernization works.***
- ***Government should speed up land acquisition and clearance of encroachments in all ongoing modernization projects to facilitate their early completion and achievement of intended objectives.***
- ***Government should review reasons for low competition in tendering for modernization works and take suitable remedial measures to improve competition to ensure timeliness and economy in award of works.***

3.4 Flood Banks

3.4.1 Introduction

Government of Andhra Pradesh (GoAP) took up restoration of existing flood banks³⁸ on five rivers³⁹ and formation of two new flood banks⁴⁰ in order to minimize damage to human lives, property and crops and have safe disposal of flood waters. During January 2007 to July 2008, 1322.34 kilometres (km) of Flood Bank works at a cost of ₹2312.77 crore were taken up (details in *Appendix-3.5*).

3.4.2 Scope of Audit

Audit was conducted during October-December 2012 in offices of Engineer-in-Chief / Chief Engineers (5), Circles (7) and Divisions (14). Out of 85 packages proposed under flood banks, 66 were awarded (during June 2007 – September 2011) out of which 39 packages were test checked in audit with a view to ascertain whether (i) Flood Bank works were taken with proper planning, (ii) pre-requisites were completed before entrustment, and (iii) works were executed as planned and intended objectives achieved. Audit findings are as follows:

Audit findings

3.4.3 Non-availing of Central assistance

GoAP submitted (December 2006) proposals to GoI seeking financial assistance under the Centrally sponsored scheme 'Flood Management Programme' for taking up flood bank works on Godavari, Vamsadhara and Nagavali rivers.

After scrutinizing proposals in respect of Godavari flood banks, Central Water Commission (CWC) requested (February 2007) GoAP to recalculate Benefit Cost Ratios (BCRs) duly considering the difference between value of average annual flood damages (based on data of last ten years obtainable from Revenue Department) and average annual damage anticipated after execution of flood bank works. However, preparation and submission of revised BCR as sought by CWC was not on record. In respect of flood banks of Vamsadhara and Nagavali rivers also, GoAP did not furnish replies to remarks (February 2007) of CWC as of January 2014. As a result, GoAP could not avail central assistance of ₹844.35 crore⁴¹.

On Godavari flood banks, department replied (August 2013) that proposals were being submitted for central assistance in 12th Plan (2012-17). Department had not furnished any reply on other projects.

³⁸ the bund like formation on river bank to prevent river water from entering the adjacent areas

³⁹ Godavari, Krishna, Pennar, Vamsadhara and Nagavali

⁴⁰ on Kundu and Handri rivers in Kurnool district

⁴¹ GoI share of 75 *per cent* on (i) ₹815.07 crore for raising and formation of flood banks on Godavari; and (ii) ₹310.73 crore for standardisation of flood banks of Vamsadhara and Nagavali

3.4.4 Assessment of necessity of works

Audit noticed improper assessment of scope of works in following cases:

(i) A flood bank protection work (estimated value: ₹51.65 crore⁴²) was proposed and entrusted (September 2009) on Kandaleru right branch canal in Nellore district, presuming discharge of branch canal as 45000 cusecs. After more than two years, department proposed to close the contract as it was found that Kandaleru branch canal was only a supply channel carrying a small discharge of 450 cusecs and did not require any flood bank protection work. This shows that flood bank works were taken up without proper investigations/ studies initially.

(ii) In respect of Vamsadhara Flood Bank (VFB), GoAP accorded a second administrative approval (May 2008) for a portion of work⁴³ for ₹18.50 crore on the ground that it was not included in the original administrative approval (January 2007). However, later, it cancelled (October 2011) the second administrative approval based on information (February 2009) from Chief Engineer, North Coast that the same was, in fact, already covered in VFB-1 package taken up under original administrative approval. This indicates that proposals were not scrutinized properly before approaching Government.

(iii) The item formation of gravel path and subsidiary works were included in both the Flood Bank Package⁴⁴ as well as the Modernization package⁴⁵ of Krishna Delta System. Chief Engineer (KDS) instructed (October 2012) Superintending Engineer, Irrigation Circle, Vijayawada to delete the item from either of the projects. However, records of implementation of these instructions were not found in audit (July 2013).

3.4.5 Non-entrustment of works

Once actual need for taking up flood bank work is established and prioritized, works should be entrusted without delay in order to avoid further damage.

Department invited (during July to December 2008) bids for 12 packages of Pennar Flood bank (PFB) three times. In first call, single bids were received for seven packages and there was no response for remaining five packages. Government ordered for cancellation of tenders for all works and when tenders were invited for second and third times, no bids were received. Subsequently, Government permitted (August 2009) to club 12 packages into two packages. However, works were not entrusted even after that (as of June 2013).

Similarly, there was no response to packages (Nos. 2 to 6) of Swarnamukhi Flood Bank (SFB) despite calling for tenders four times. Government permitted (August 2009) to club all 5 packages into a single package. Though estimate was recast (February 2011), works were not yet entrusted (June 2013).

⁴² Package-1 : ₹25.47 crore and Package-2: ₹26.18 crore

⁴³ formation of flood banks from Kaduma village to Rugada village of Kothuru mandal in Srikakulam district

⁴⁴ KFB -3 from km 65.000 to km 85.400

⁴⁵ No.24 of Krishna Western Bank canal from km 45.200 to km 86.600

Audit observed that though there are existing Government instructions (November 1970) that in case of low competition, work should be entrusted either on nomination basis not exceeding estimate rates or by splitting works into smaller works and inviting fresh tenders, department did not explore these options. Instead of splitting the works department clubbed them into larger packages, which restricts the competition. Due to non-entrustment of these works, intended objective of providing protection from floods was not achieved.

3.4.6 Progress of works

Though all 66 entrusted flood bank works were to be completed by December 2012 as per original agreements, only 18 (10 out of 40 test checked packages) were completed as of March 2013 (status of completion is indicated in *Appendix-3.6*). Delays in completion of packages were on account of delay in land acquisition, non-finalization of designs, non-eviction of encroachments and non-shifting of utilities like electrical and telephone lines.

Thus, main objective of Government of providing strong and reliable protection from submergence and inundation with flood waters was not achieved despite incurring expenditure of ₹927.53 crore during past five years on various flood bank projects. It is pertinent to note that Government initially intended (August 2006) to complete protection works of Godavari, Krishna, Vamsadhara and Nagavali before next flood season. Audit could not assess continued loss due to non-completion of flood bank works as department had not furnished any data on losses occurred due to floods during last five years.

3.4.7 Non-finalization of designs

In the agreements relating to VFB-1, VFB-2 and VFB-3 packages of Vamsadhara flood banks, department specified the observed maximum flood level (OMFL) to be considered by the contractors for designing the flood bank works. However, after award of works a question arose as to whether the OMFL as specified in agreements should be adopted or OMFL of 1980 floods. While department could not take a decision on the issue, contracting agencies of these three packages stopped works since June 2010, March 2011 and July 2010 respectively, citing ambiguity in OMFL.

Meanwhile, eight villages⁴⁶ under VFB-3 package suffered (August 2010) floods. Department requested (October 2010) contractor for rectification of Groynes and other structures for which contractor sought (March 2011) clarification on OMFL. Government constituted (September 2011) a committee to decide on the issue of OMFL. No decision had been taken on the issue (March 2013).

Thus, due to indecision on OMFL, above VFB packages were not completed after incurring an expenditure of ₹5.93 crore⁴⁷ and intended objective not achieved.

⁴⁶ Bhyri village of Srikakulam Mandal and Gara, Arangipeta, Kallivanipeta, Jogupanthulupeta, Buravalli, Vomaravalli, Salihundam of Gara Mandal

⁴⁷ VFB-1: ₹3.85 crore; VFB-2 : ₹1.03 crore; and VFB-3: ₹1.05 crore

3.4.8 Land Acquisition

Main reason for non-completion of projects was non-acquisition of land. As against total requirement of 4732.78 acres of land for all flood bank projects, department could acquire only 774.5 acres (16.36 *per cent*) as of March 2013, leaving a balance of 3958.28 acre still to be acquired, despite completion of agreement period in all projects. The situation was similar in conventional unit price contract packages⁴⁸ as well as in respect of Engineering, Procurement and Construction (EPC) packages⁴⁹. Flood bank wise position of land acquisition is detailed in *Appendix-3.7*. Audit observations are as under:

(a) Kundu flood bank protection works for reach-II were entrusted in March 2009. The amount (₹22 crore) for land acquisition was deposited with Revenue Divisional Officer (RDO) Nandyal in May 2012 i.e., only after completion of agreement period (March 2011) due to non-provision of funds. Government accepted (December 2012) the request of contracting agency for cancellation of agreement. The work was not re-entrusted so far (June 2013).

(b) In respect of Maddileru (Package-III) and Chamakalva (Package-I), department initially decided, before tendering, that works were to be taken up in existing river course and hence issue of land acquisition does not arise. Works entrusted (October 2008) were to be completed within 24 months i.e., by October 2010. However, department later found that 42.12 and 65.27 acres respectively were required for two packages. While department could complete (in 2013) land acquisition in Maddileru package only after more than two years after completion of agreement period, an extent of 10.04 acres was still to be acquired in Chamakalva package as of January 2014. Value of work done in these packages was ₹7.77 crore (53.04 *per cent*) out of ₹14.65 crore and ₹3.3 crore (16.13 *per cent*) out of ₹20.46 crore, respectively. Thus, initial incorrect assessment of land requirement led to delay in completion of these two packages.

In respect of Godavari Flood Banks, department replied that due to resistance by occupants and litigations, there was delay in LA process which were unavoidable and inevitable inspite of coordination with revenue authorities and with encroachers. Department did not furnish reply on other issues. Government had earlier issued orders (July 2003) to the effect that works should be entrusted only after ensuring pre-requisites so as to ensure uninterrupted progress of works. However, department in 33 cases failed to fully acquire and hand over hindrance free land to contractors (in 13 cases, land acquisition was nil) even after expiry of agreement period.

3.4.9 Non-completion in small gap portions

Audit noticed that in certain packages of Godavari Flood Banks (GFB) small gap portions were not completed (April 2013) as detailed in table below:

⁴⁸ Under conventional unit price contract system the department takes total responsibility for identifying the lands required for works, acquiring lands and handing over the same to contractor firms

⁴⁹ Under EPC system, contractor proposes alignment and submits land plans after conducting detailed survey and investigations. The responsibility of acquiring land and handing over the same to contractor for execution of works rests with department

Table-3.8 – Details of unattended gap portions in Godavari flood banks

Sl. No.	Package / Work	Reach (from Km - to Km)	Total length of reach (in Km)	Reaches left unattended (from Km - to Km)	Total length unattended (in Km)	Reason
1	Vasista Right Bank	0.000 to 23.000	23.00	0.925 to 1.350	0.425	Encroachments
2	Vasista Right Bank	68.000 to 90.200	22.20	70.700 to 71.100 and 74.500 to 75.000	0.900	Houses and Electric Poles
3	Vynatheya Left Bank	0.000 to 28.500	28.50	0.000 to 0.225	0.225	Land Acquisition
4	Package-1 (Warangal)	In 6 village limits	25.50	1.375 to 2.300	0.925	Land Acquisition
5	Gowtami Left Bank	20.000 to 40.000	20.00	28.900 to 29.100 and 31.000 to 31.200	0.400	Land Acquisition & Electrical Poles
6	Vasista Right Bank	45.500 to 55.000	9.50	51.025 to 51.350; 52.650 to 52.850; and 53.150 to 53.425	0.800	Houses and Electrical Poles

(Source : Information as per departmental records)

Audit observed that leaving small gaps in works that were almost complete could prove risky during rains / flood and cause damage to portions already executed. Despite spending ₹129.63 crore on the above GFB works, contingent risk to lives and public property still exists.

Department accepted that some gaps were pending due to land acquisition, non-completion of shifting of electric poles, etc.

3.4.10 Treating works mentioned in basic parameters as additional items

Basic project parameters of Package-11⁵⁰ of Godavari Flood Banks (GFB), entrusted (November 2007) to a contractor for ₹34.07 crore under EPC turnkey system⁵¹ stipulated, *inter-alia*, construction of protection walls wherever necessary as per site conditions. System requirements and conditions of basic project parameters also stipulated that all protection works should be executed as per specifications and no extra payment would be made to bidder. However, Audit observed that department proposed two protection works⁵² treating them as additional items. The State Level Standing Committee agreed (October 2008) for entrustment of above works as additional items of work. Accordingly, based on Government orders (June 2009) a supplemental agreement was concluded (July 2009) for ₹4.78 crore with EPC agency. This resulted in avoidable additional financial burden on Government.

⁵⁰ Raising and widening of AGLB to 1986 flood standards from km 0.00 to km 32.00 and AGRB from km 0.00 to 3.025 (new formation) and in between km 0.00 to 40.200 and to protect the neckless bund in Polavaram between km 37.400 to km 40.120 including BT Road, protection works and reconstruction / remodeling of existing structures

⁵¹ Under EPC turnkey system, the contractor has to execute the entire work as defined in the basic project parameters in the agreement including all ancillary and incidental items of work and deliver the project in complete shape to the department

⁵² (a) Construction of retaining wall from km 1.200 to 1.600 on AGRB at Vadapalli village limits and (b) Construction of retaining wall from km 19.100 to 19.300 on AGLB at Bobbilanka village limits

3.4.11 Conclusion

There were instances of taking up flood bank works without proper assessment of need and planning. Department could not avail central assistance for Godavari, Vamsadhara and Nagavali Flood Bank works. Forty eight out of 66 flood bank packages were not completed due to delay in land acquisition, non-finalization of designs, non-eviction of encroachments, non-shifting of utilities, etc. Thus, main objective of providing strong and reliable protection from submergence and inundation with flood waters had not been achieved despite incurring an expenditure of ₹927.53 crore on these projects.

3.4.12 Recommendations

- *Government should ensure that flood bank works are taken up with proper planning and accurate assessment of requirements including designs.*
- *After identification of the need for flood banks, department should facilitate identification of lands, their acquisition, completion of works as per schedules to ensure achievement of objective of safety of people and assets in adjacent areas.*

Hyderabad
The

(LATA MALLIKARJUNA)
Accountant General
(Economic & Revenue Sector Audit)
Andhra Pradesh

Countersigned

New Delhi
The

(SHASHI KANT SHARMA)
Comptroller and Auditor General of India

Appendices

Appendix 1.1

(Reference to paragraph 1.3, page 2)

List of Departments under Economic Sector

1. Agriculture and Co-operation
2. Animal Husbandry and Fisheries
3. Energy
4. Environment, Forests, Science and Technology
5. Industries and Commerce
6. Information Technology and Communications
7. Infrastructure and Investment
8. Irrigation and Command Area Development
9. Public Enterprises
10. Transport, Roads and Buildings

Appendix 1.2

(Reference to paragraph 1.3, page 2)

List of Autonomous Bodies

- 1 YSR Horticulture University
- 2 Andhra Pradesh State Seed Certification Agency
- 3 Andhra Pradesh Co-operative Rural Irrigation Corporation
- 4 The Hyderabad Agricultural Cooperative Association Limited (HACA)
- 5 Andhra Pradesh Oilfed
- 6 Andhra Pradesh Co-operative Bank Limited (APCOB)
- 7 Andhra Pradesh Spinfed
- 8 Andhra Pradesh Co-operative Tribunal
- 9 Andhra Pradesh Markfed
- 10 Acharya N G Ranga Agricultural University, Rajendra Nagar
- 11 Federation of Sericulture and Silk weavers Co-operative Societies Limited (SERIFED)
- 12 Andhra Pradesh Sheep & Goat Development Co-operative Federation Limited
- 13 Andhra Pradesh Livestock Development Agency
- 14 Andhra Pradesh State Fishermen Co-operative Societies Federation Limited
- 15 Andhra Pradesh State Co-operative Joint Farming and Labour Contract Societies Federation Limited
- 16 Andhra Pradesh Invest
- 17 Andhra Pradesh Horticulture Agency
- 18 Andhra Pradesh Dairy Development Co-operative Federation Limited
- 19 Andhra Pradesh Infrastructure and Investment Corporation (APIIC)
- 20 Water and Land Management Training and Research Institute
- 21 Andhra Pradesh Pollution Control Board
- 22 Andhra Pradesh Council of Science and Technology
- 23 Zoo Authority of Andhra Pradesh
- 24 Andhra Pradesh State Biodiversity Board
- 25 Environment Protection Training and Research Institute (EPTRI)
- 26 AP Khadi and Village Industries Board
- 27 AP State Compensatory Afforestation Fund Management & Planning Authority
- 28 Andhra Pradesh Electricity Regulatory Commission

Appendix 1.3

*(Reference to paragraph 1.6.3, page 4)***Department-wise break-up of outstanding Inspection Reports and Paragraphs**

Department	Number of IRs/Paragraphs pending as of 30 September 2013	
	IRs	Paragraphs
Agriculture and Cooperation	712	2541
Animal Husbandry, Dairy Development and Fisheries	236	893
Energy	2	13
Environment, Forests, Science and Technology	472	1170
Industries and Commerce	339	1074
Information Technology and Communication	8	57
Infrastructure and Investment	12	70
Irrigation & Command Area Development	1554	4241
Roads and Buildings	472	1380
Total	3807	11439

Appendix 2.1

(Reference to paragraph 2.1.15, page 27)

Details of cases involving delay/non-establishment of laboratories

Sl. No.	Name of Unit	Implementing agency and place	Amount sanctioned and year of sanction	Status/ Remarks
1.	Plant Health Clinic	Horticulture Research Station, Lam, Guntur District under Horticultural University	₹20 lakh sanctioned during 2007-08	Equipment costing ₹20 lakh purchased but not installed due to lack of building to house the Laboratory, rendering the expenditure unfruitful.
2.	Bio Control Laboratory	Horticultural Research Station, Mallepally, Nalgonda District under Horticultural University	₹75 lakh sanctioned during 2008-09	Building completed in March 2012 at a cost of ₹49.79 lakh, but required equipment not purchased and power supply connection not obtained rendering the expenditure incurred on construction of building unfruitful.
3.	Bio Control Laboratory	Department of Horticulture, Utukuru village, YSR district in collaboration with Krishi Vigyana Kendram	₹75 lakh sanctioned in August 2009 ₹25 lakh released in September 2010	₹6.03 lakh incurred on construction of compound wall around an already existing Training institute. Laboratory not established and the intended objective of production of bio agents was not achieved.
4.	Bio Control Laboratory	Horticultural Research Station, Aswaraopet, Khammam district under Horticultural University	₹75 lakh sanctioned during 2008-09	Though construction of building and purchasing of equipment was completed during 2009 at a cost of ₹73.25 lakh, isolation of native bio-control agents of horticulture crops, establishment and maintenance of cape gardens to support and maintain population of beneficial organisms, standardization of protocols for mass production, mass multiplication of bio agents and subsequent release and sale of bio control agents was not done reportedly due to non availability of Scientists in entomology, plant pathology, microbiology and horticulture, rendering the expenditure unfruitful.

Appendix 2.2

(Reference to paragraph 2.2.9.1, page 42)

List of MI projects not completed as of July 2013

Name of the work	Intended ayacut (acres)	Year of taking up (sanction)	To be completed by	Expenditure so far (₹ in crore)	Reasons
Tank across Jilleduband vagu Gunjepalli (v), Mudigubba (M), Ananthapuramu District	2792	November 2003	July 2005	6.31	Non-acquisition of land
Formation of MI tank across China Suddavagu, Mategaon (v), Bhainsa (M), Adilabad District	4600	September 2004	December 2006	2.35	Non-acquisition of land
New tank across local vagu in Ruyyadi (v), Talamadugu (M), Adilabad District	835	September 2004	March 2006	0.51	Non-acquisition of land
New tank across local vagu in Mankapur (v), Namoor (M), Adilabad District	1572	April 2008	August 2010	6.48	Non-acquisition of land
New tank near Kokkuguda (v) Jainoor (M), Adilabad District	954	February 2005	October 2006	2.94	Stoppage (August 2007) of work by contractor and non-entrustment of balance works since then.
Extension of feeder channel from Errakunta, Maktha Anantharam (V) Bibinagar (M) to Ooracheru, Dharmaram (V) Mothkur (M) in Nalgonda district	7560	March 2005/ April 2006	June 2007/ April 2009	10.27	Work in all the three reaches was stopped due to non-handing over of lands, leaving the project incomplete. Meanwhile, the cost of land acquisition has also increased by ₹11.24 crore.
Formation of Reservoir across Peddagedda near Jamparakota (V), Palakonda (M) in Srikakulam district	2100	October 1988	January 1990	8.02	The work was terminated/stopped (in 1990, 1995, 2002 and 2009) due to protests from project affected families and remained incomplete even after 25 years. The project cost had already increased by ₹15.32 crore (April 2006) and likely to increase further.
Restoration of Gandicheruvu MI tank near Somayajulapalli (v), Gandlapenta (M) of Ananthapuramu District	200	August 2007	May 2009	0.64	Foreshore of this abandoned tank was encroached and pattas were also issued to the occupants. The department took up restoration work without rehabilitation of pattadars. The work was stopped (August 2010) due to agitations by the villagers and remained incomplete.
	20613			37.52	

Appendix 2.3

(Reference to paragraph 2.2.9.1, page 42)

List of tanks taken up under APILIP, but not completed due to land acquisition problems

Name of the tank	Ayacut	Agreement concluded	Target date of completion	Land required (acres)	Acquired (acres)	Balance (acres)	Expenditure as of March 2013 (₹ in lakh)
IB Division, Nirmal, Adilabad District							
¹ FNT a/c l/s Zandguda, Ramguv (V), Thamsi (M)	2000	September 2008	March 2010	100.19	31.28	68.91	631.52
FNT a/c l/s Laxmipur H/o Chenchughat (V), Adilabad (M)	600	September 2008	September 2009	59.03	36.30	22.73	239.19
FNT a/c l/s Malkapur, Gudihatnoor (M)	267	June 2012	June 2013	55.09	Nil	55.09	Nil
FNT a/c l/s Gowliguda (V), Neradigonda (M)	150	February 2011	February 2012	43.27	Nil	43.27	Nil
FNT a/c l/s Dahagaon (V), Talamadugu (M)	500	September 2009	September 2010	73.33	Nil	73.33	63.33
FNT a/c l/s Thatiguda, Khanapur (M)	350	September 2008	June 2009	34.22	5.35	28.87	61.54
FNT a/c l/s Paspule, Khanapur (M)	300	November 2008	August 2009	20.22	Nil	20.22	78.08
Special MI Division, Utnoor, Adilabad District							
FNT a/c l/s Elkapally, Khanapur (M)	1000	February 2009	February 2010	122	Nil	122	Nil
FNT a/c l/s Nagepally	380	December 2009	September 2010	67	Nil	67	Nil
FNT a/c l/s Chakepally	380	November 2011	August 2012	75.10	19.36	55.74	37.72
FNT a/c l/s Ginnersa	600	May 2011	May 2012	64	31.09	32.91	190.02
FNT a/c l/s Pangidimandira	600	December 2011	March 2013	77.23	40.00	37.23	64.30
IB Division, Mancheri, Adilabad District							
FNT a/c l/s Rachini (V), Thandur (M)	350	December 2009	September 2010	30.01	Nil	30.01	126.63
FNT a/c l/s Nennel (V&M)	400	October 2009	July 2010	43.34	Nil	43.34	225.50
FNT a/c l/s Kondampet, Kotapally (M)	180	October 2009	July 2010	25.26	Nil	25.26	58.21
FNT a/c l/s Kundaram, Jaipur (M)	650	November 2009	November 2010	87.22	Nil	87.22	438.94

¹ Formation of New Tank across local stream

Name of the tank	Ayacut	Agreement concluded	Target date of completion	Land required (acres)	Acquired (acres)	Balance (acres)	Expenditure as of March 2013 (₹ in lakh)
PPRP Division, Bellampally, Adilabad District							
FNT a/c l/s Gundamghut (V), Asifabad (M)	850	May 2011	December 2013	170.96	Nil	170.96	24.51
FNT a/c l/s Achlapur (V), Thandur (M)	2000	October 2009	October 2011	347.08	Nil	347.08	1456.38
FNT a/c l/s Thangallapally (V), Dehagaon (M)	300	November 2011	August 2013	63.1	Nil	63.1	21.39
Total	11857			1557.65	163.38	1394.27	3717.26

FNT: Formation of New Tank; a/c : across; l/s : local stream

Appendix 2.4

(Reference to paragraph 2.2.10.1, page 44)

Progress of works entrusted under APCBTMP in test checked districts

District	Works entrusted to contractors		Works entrusted to WUAs		Total	
	Taken up	Completed	Taken up	Completed	Taken up	Completed
Adilabad	56	51	56	50	112	101
Ananthapuramu	143	117	144	140	287	257
Chittoor	165	140	165	140	330	280
Mahabubnagar	270	200	271	216	541	416
Medak	232	203	232	213	464	416
Nalgonda	136	6	136	34	272	40
Nellore	127	106	127	124	254	230
Srikakulam	82	4	81	2	163	6
Total	1211	827	1212	919	2423	1746

Appendix 2.5

(Reference to paragraph 2.2.10.1, page 44)

List of works not commenced under APCBTMP in Srikakulam and Nalgonda districts

Name of the tank	Village	Mandal	Agreement date	Agreement value (in ₹)	Stipulated date of completion
Srikakulam District					
Bandirevugai tank	Gorlepadu	Kaviti	09-07-2010	10,18,860	08-10-2010
Voora Tank	Karapadu	Kaviti	09-07-2010	8,76,000	8-10-2010
Dharma sagaram	China-padmapuram	Pathapatnam	24-01-2012	24,20,092	23-4-2012
Pedda	Seethamma-valasa	Ranastalam	22-12-2009	6,66,578	21-3-2010
Chuttu	Aguru	Rajam	17-11-2008	10,12,386	16-5-2009
Rudrasagaram	Gaddimudidam	Rajam	29-12-2009	13,92,266	28-3-2010
Ayyavari Tank	DRNValasa	Rajam	23-12-2009	7,52,757	22-3-2010
Timmayyapoonu	Saradhi	Rajam	09-07-2010	12,35,084	8-10-2010
Venkayya	Voppangi	Regadi Amadalavalasa	27-11-2009	10,51,762	26-2-2010
Yerra tank	Ponugitivalasa	Santhakaviti	09-07-2010	10,12,484	8-10-2010
Nalgonda District					
Chinthalacheru (Ooracheruvu)	Kopple	Gurrampode	30-12-2011	4,13,033	29-12-2012

Appendix 2.6

(Reference to paragraph 2.3.9.1, page 62)

Details of CSCs envisaged, rolled out and actually operational

Zone No.	Name of Districts	No. of CSCs envisaged to be set up in the agreement	No. of CSCs rolled out (SCA-VLE agreement)	Percentage of roll out	No of CSCs actually operational	Percentage of CSCs Operational
I	Visakhapatnam	213	170	80	107	50
	Vizianagaram	213	173	81	91	43
	Srikakulam	213	154	72	111	52
	East Godavari	214	232	108	175	82
III	Nizamabad	213	243	114	143	67
	Adilabad	213	203	95	101	47
	Karimnagar	213	163	77	108	51
	Warangal	213	208	98	107	50
V	Guntur	213	251	118	141	66
	Kurnool	213	177	83	75	35
	Prakasham	213	251	118	119	56
	Total	2344	2225	95	1278	55
II	West Godavari	213	130	61	101	47
	Krishna	213	153	72	128	60
	Khammam	213	144	68	120	56
	Total	639	427	67	349	55
IV	Ranga Reddy	213	108	51	79	37
	Medak	213	135	63	92	43
	Mahabubnagar	213	165	77	107	50
	Nalgonda	213	137	64	105	49
VI	YSR Kadapa	213	130	61	98	46
	SPS Nellore	213	114	54	118	55
	Chithoor	213	126	59	121	57
	Ananthapuramu	213	110	52	69	32
	Total	1704	1025	60	789	46
	Grand Total	4687	3677	78	2416	52

Appendix 3.1

(Reference to paragraph 3.1.2, page 67)

Details of the test checked PPP road projects

1. *Four laning of Hyderabad-Karimnagar-Ramagundam Road (HKR Road)*

Hyderabad-Karimnagar-Ramagundam Road (HKR Road) State Highway No.1 also known as Rajiv Rahadari starts from km 9.600 Parade Grounds, Secunderabad and passes through the districts of Hyderabad, Rangareddy, Medak, Karimnagar and Adilabad to join NH-16 near Mancherial. Government accorded administrative sanction in October 2009 for four laning of the above road. Total project cost (TPC) of the project was ₹1358.19 crore. Project was entrusted (May 2010) to a Concessionaire on DBFOT (Toll) basis with a grant of ₹454 crore and a concession period of 25 years (including a construction period of 30 months). Construction work was in progress (September 2013).

2. *Four laning of Narketpally-Addanki-Medarmetla Road (NAM Road)*

State Highway (SH) – 2 originates from NH-9 at Narketpally in Nalgonda District and passes through the districts of Nalgonda (88 Km), Guntur (78 Km) and Prakasam (46.5 Km) to join NH-5 at Medarmetla near Addanki in Prakasam District with a total length of 212.500 Km. The existing highway is a two lane undivided carriageway (except for 2.8 Km, which was 4 laned). Government accorded administrative approval in October 2009 for four laning of above road. TPC of the project was ₹1196.84 crore. Project was awarded (May 2010) to a Concessionaire on DBFOT (Toll) basis with a grant of ₹ 467.02 crore and a concession period of 24 years (including a construction period of 30 months). Construction work was in progress (September 2013).

3. *Four laning of Nellore-Gooty Road*

Government initially proposed (2008) for up-gradation of ‘Nellore-Gorantla’ road (connecting NH-5 with NH-7 via Atmakur, Badvel, Kamalapuram) to four lane under BOT-Annuity mode. Later, proposal was revised and 295 Km long road from Nellore to Gooty (which is a part of Mypadu-Nellore-Bellary-Bombay road), interconnecting NH-5, NH-18, NH-7 and NH-63, was proposed for up-gradation and Government accorded administrative approval in February 2009. TPC of the project was ₹962 crore. Subsequently, a portion of the project road (i.e. the stretch from Mydukuru to Jammalamadugu) was taken up (January/April 2012) for four laning under the World Bank assisted AP Road Sector Project (APRSP) and was in progress. Four laning of remaining portion of ‘Nellore - Gooty’ road has not been taken up.

4. *Construction of major bridge across river Godavari (Godavari Bridge)*

The project contemplates construction of a four lane bridge for a length of 4.150 Km on river Godavari with required approaches for a length of about 10.338 Km to connect Km 82/4 of Eluru – Gundugolanu – Kovvur (EGK) Road on Kovvur side (West Godavari district) and joining NH-5 at KM 197/4 on Rajahmundry side (East Godavari district). TPC of the project was ₹593 crore (later revised to ₹808.78 crore). The project was awarded under BOT- Toll basis to a Concessionaire with a grant of ₹207.55 crore and a concession period of 25 years (including construction period of three years) and concession agreement was concluded (November 2008). Construction work was in progress (September 2013).

5. *Four laning of Puthalapattu-Naidupeta Road (PN Road)*

Government accorded (October 2009) administrative approval for upgradation of Puthalapattu – Naidupeta Road from Km 0.000 to Km 41.700 and from Km 59.000 to Km 116.830 to four lanes. TPC of the project was ₹406.93 crore. Department invited tenders (RFQ in April 2008 and RFP in March/April 2009) for taking up the project under BOT (Toll) basis. However, tenders were cancelled (June 2010) and the project was not taken up as the project road was converted as a National Highway.

6. *Kadapa-Pulivendula Road (KP Road)*

Government proposed (July 2007) to upgrade the Kadapa - Pulivendula Road (KP Road) from existing two lanes to four lanes under PPP mode. Administrative approval was accorded in December 2008. TPC of the project was ₹265.34 crore. The road work was divided into four packages and after call of tenders, works were awarded (July 2009 – January 2010) to different agencies on BOT-Annuity basis for completion in 18 months.

(₹ in crore)

Package	Date of Agreement	Semi Annuity amount	Total amount to be paid in 10 years
KP-01	9 October 2009	9.35	187.00
KP-02	9 July 2009	7.64	152.80
KP-03	5 August 2009	12.50	250.00
KP-04	25 January 2010	11.14	222.80
	Total	40.63	812.60

Four laning of three packages (KP-02, KP-03 and KP-04) was completed except some punch list items and package KP-01 (from Km 1/700 to Km 15/000) was not completed (September 2013).

7. Yanam - Yedurlanka Bridge

Government proposed to construct a High Level Road Bridge (HLB) across Gowthami Branch of Godavari River between Yanam (which is a part of the Union Territory of Puducherry) and Yedurulanka (in East Godavari district of AP) to provide better connectivity among three coastal districts of East Godavari, West Godavari and Krishna. After tender process, the work was awarded (October 1999) to a Concessionaire on BOT-Toll basis. Total project cost was ₹110 crore, out of which the Government provided a subsidy of ₹69 crore. Construction period stipulated was 33 months and concession period was 15 years. The bridge was completed within stipulated period and opened for traffic on 05 October 2002. The period of toll collection was up to 30 September 2017.

8. Construction of High Level Bridge across river Krishna in Mahabubnagar District

High Level Bridge across river Krishna with approaches was proposed with an intention to reduce travel distance between Kollapur in Mahabubnagar district and Atmakur in Kurnool district by 127 km. Government accorded (February 2007) Administrative Approval for ₹191 crore to take up the work under BOT-Annuity basis in a phased manner – construction of HLB in phase-I and widening and strengthening of connecting single lane road after 5 years in phase-II. TPC of the project was ₹149 crore. Department invited tenders to take up the bridge work under BOT-Annuity basis and after finalization of tenders, asked (September 2008) the lowest bidder to conclude agreement. However, the bidder did not come forward to conclude agreement. Later, Government issued orders (December 2009) to convert the project as a plan work instead of BOT-Annuity. The work has not been taken up so far.

9. Construction of HLB across river Musi

The work of construction of two-lane bridge across Musi River from Km 6/6 to Km 7/2 of Miryalguda – Kodad Road including approaches in lieu of existing Causeway in Nalgonda District (TPC: ₹14.5 crore) was entrusted (February 2009) under BOT-Toll basis to a Concessionaire which offered to pay a premium of ₹4.05 crore to the department. Concession period was 15 years (including construction period of 18 months). The bridge was completed and the concessionaire started collecting toll from 19 February 2010 onwards.

Appendix 3.2

(Reference to paragraph 3.2.4.2, page 84)

Delay in notification of forest land accepted for Compensatory Afforestation

Sl. No.	Name of the Project	Date of GoI final approval	Non-forest CA land accepted (Ha) and Forest Division in which accepted	Time elapsed since final approval (as of June 2013)
1	Forest land – rehabilitation of people Thitigudem, Chirumalla, Sitarampuram and Karakagudem of Manugur Taluk, diversion of 10 Ha of forest land in Mothi RF of Bayyaram Range.	31.08.1992	10.00, DFO, Paloncha	20 years 10 months
2	Laying of 220 KV line from lower Sileru to Bommuru	07.02.1994	225.160, DFO, Kakinada	19 years 04 months
3	Diversion of forest land of 48 Ha, Chimalpad RF, Mudupally beat of Karepally range of Khammam Division for coal mining at Yellandu – Open Cast Project-II in favour of Singareni Collieries Company Limited (SCCL)	22.07.1995	48.00, DFO, Paloncha	17 years 11 months
4	Mining of lime stone Calcite etc in favour of user agency in Kurnool Dist.	12.09.1995	1.770, DFO, Kurnool	17 years 9 months
5	Diversion of 286.25 Ha of forest land on lease basis mining towards balance requirement of open cast project –II-Phase III in Kondapur- Ext.-1 and Kondiagudem RF	10.10.1997	19.12, DFO, Paloncha	15 years 8 months
6	Diversion of 73.93 Ha of forest land in Compt. No. 27, Saidulunama RF, Nalgonda Dist. in favour of user agency	23.02.1998	43.909, DFO, Nalgonda	15 years 4 months
7	Diversion of 124 Ha of forest land for Guathamikhani- OCP- Phase II- in favour of SCCL.	17.08.1998	124.00, DFO, Paloncha	14 years 10 months
8	Diversion of forest land Centenary Incline- Yellandu in favour of SCCL.	10.09.1998	4.77, DFO, Paloncha	14 years 9 months
9	Diversion of 2 Ha of forest land for sand stowing plant for PK.No.1 Incline Manuguru Forest.	27.05.1999	2.00, DFO, Paloncha	14 years 1 month
10	Construction of approach road to Guathamikhani – OCP – from workers colony	27.08.1999	1.80, DFO, Paloncha	13 years 10 months
11	Construction of Dharacalva reservoir project.	27.10.2000	10.810, DFO, Kakinada	12 years 8 months
12	Diversion of forest land – OCP-I in Koyagudem	14.05.2001	18.57, DFO, Paloncha	12 years 1 month

Sl. No.	Name of the Project	Date of GoI final approval	Non-forest CA land accepted (Ha) and Forest Division in which accepted	Time elapsed since final approval (as of June 2013)
13	Extraction of iron ore in Bellary RF in favour of user agency	21.10.2005	18.00, DFO, Ananthapuramu	7 years 8 months
14	Construction of Peddavagu Irrigation Project in Adilabad Dist. (Komaram Bheem Project).	02.12.2005	189.00, DFO, Ananthapuramu	7 years 6 months
15	Diversion of 220.091 Ha of forest land in Bhupathipalem, Geddada, Cheruvupalem and Rampa forest block in RC varam range of Kakinada Division for construction of Bhupathipalem Reservoir.	22.12.2005	220.190, DFO, Kakinada	7 years 6 months
16	Diversion of 110.87 Ha for Eco-Tourism Project in Ranga Reddy (RR) District.	23.03.2006	110.87, DFO, Chittoor East.	7 years 3 months
17	Pushkar Lift Irrigation Scheme.	21.04.2006	4.110, DFO, Kakinada	7 years 2 months
18	Mining lease for extraction of iron ore in Bellary RF in favour of user agency.	05.10.2006	39.50, DFO, Ananthapuramu	6 years 8 months
19	Diversion of 4.74 Ha of forest land in Ramavaram RF for shifting of 220 KV KTS Nunna SC line in Kothagudem Division.	21.11.2006	4.74, DFO, Paloncha	6 years 7 months
20	Diversion of 13.205 Ha of forest land to install natural gas pipe line through Rathikalwa RF in E.G. Dist. in favour of user agency.	21.05.2007	15.823, DFO, Nalgonda	6 years 1 months
21	Diversion of 4.88 Ha of forest land for shaft sinking of Shanthikhanai long wall project in favour of SCCL.	18.07.2007	4.88, DFO, Paloncha	5 years 11 months
22	Diversion of 39.40 Ha of forest land in four RFs of Hyderabad Division for formation of Outer Ring Road – Phase II (A) in favour of HUDA.	21.02.2008	40.47, DFO, Nalgonda	5 years 4 months
23	Talleru and Kodavali lift canals (left main canal and right main canal) under Pushkar Lift Irrigation Scheme.	03.03.2008	17.860, DFO, Kakinada	5 years 3 months
24	For excavation of canal in package no. 27 from Km 0.00 to 9.00 under GNSS flood flow canal in favour of Irrigation Dept.	26.03.2008	33.510, DFO, Kurnool	5 years 3 months
25	Excavation of SRBC main canal from 142.925 to 146.275 Km in favour of Irrigation Dept.	21.07.2008	29.260, DFO, Kurnool	4 years 11 months

Sl. No.	Name of the Project	Date of GoI final approval	Non-forest CA land accepted (Ha) and Forest Division in which accepted	Time elapsed since final approval (as of June 2013)
26	For excavation of Chute canal for spillway of Owk reservoir (Gollaleru drain) in favour of Irrigation Dept.	24.07.2008	4.80, DFO, Kurnool	4 years 11 months
27	Excavation of Owk canal to GNSS flood flow canal from Km 57.70 to Km 63.70 in favour of Irrigation Dept.	14.10.2008	28.00, DFO, Kurnool	4 years 8 months
28	Diversion of 175.69 Ha forest land in Paloncha Forest Division for open cast coal mining (OCP-II), Manuguru in favour of SCCL.	05.02.2009	175.69, DFO, Paloncha	4 years 4 months
29	Mining for extraction of Black granite in favour of user agency.	05.03.2009	7.40, DFO, Ananthapuramu	4 years 3 months
30	Mining for extraction of black granite in favour of user agency.	05.03.2009	7.40, DFO, Ananthapuramu	4 years 3 months
31	Diversion of 98.093 Ha of forest land in Kadlakoti (10.54 Ha), Thumkunta (77.129 Ha), Shamirpet (10.60 Ha), RF for ORR Project- Phase II (B), HUDA advance works in favour of PD & Special Collector, ORRP, HUDA.	08.04.2010	111.57, DFO, Nalgonda	3 years 2 months
32	Diversion of 3731.07 Ha (3473.00 Ha notified forest, 258.07 Ha deemed forest land as per Hon'ble Supreme Court Decision) - Construction of Indira Sagar (Polavaram) Project.	28.07.2010	1152.34, DFO, Kakinada	2 years 11 months
33	Formation of approach road for transportation of Minerals in favor of user agency.	02.09.2011	2.24, DFO, Ananthapuramu	1 year 9 months
34	Extraction of limestone mining in favor of user agency.	5.12.2011	630.00, DFO, Ananthapuramu	1 year 6 months
35	Formation of HAUL road for transport of limestone in favor of user agency.	24.02.2012	6.05, DFO, Ananthapuramu	1 year 4 months

Appendix 3.3

(Reference to paragraph 3.3.1, page 88)

Modernization projects approved by Government

Sl. No.	Name of the scheme	Ayacut (in lakh acres)	Background for modernization	Month/Year of Administrative Approval	Administrative Approval cost (₹ in crore)
1	Nagarjunasagar Project	21.53	Deterioration of canal and distributary system; deficiencies in the dam due to repeated erosion and pitting of concrete	February 2008	4444.41
2	Krishna Delta System (KDS)	13.35	Damages caused by cyclone OGNI (October 2006) in the four delta districts ² .	November 2007	4573.00
3	Godavari Delta System (GDS)	10.38	Increase in ayacut; present carrying capacity of the system including structures was found inadequate; outliving of canal and structures which are in dilapidated condition; and damages caused by cyclone OGNI.	November 2007	3361.00
4	Tungabhadra Project High Level Canal (TBP HLC) & Low level Canal (TBPLLC)	4.65	HLC: Allocation of water of 5 TMC ³ (later increased to 10 TMC) to Pennar Ahobilam Balancing Reservoir (PABR) for drinking water and other needs of Hindupur area in Ananthapuramu district; reduction in storage capacity of the Tungabhadra project reservoir. LLC : Continuous siltation; seepage losses due to existence of reaches without lining (from KM 250.58 to KM 310.00 of main canal and 124 KMs distributary system out of 215KMs).	November 2007 (HLC) and February 2008 (LLC)	794.12
5	Pennar Delta System	2.47	Silting of principal supply channels resulting in reduction of discharge capacity; Silting up of reservoirs and distributary systems.	May 2006 - February 2009	1001.73
6	Nizamsagar Project	2.31	Decrease in carrying capacity of canal due to siltation; Seepage losses due to unlined canals.	June 2008	549.60
7	Yeleru Irrigation system	0.67	Inundation of 0.30 lakh acres every year during cyclonic season.	July 2008	138.00
8	Nagavali system	0.40	Aging; several high floods and heavy rains caused silting up and erosions in the system.	May 2009	139.59
		55.76			15001.45

² Krishna, Guntur, Prakasam and West Godavari districts

³ Thousand Million Cubic Feet

Appendix 3.4

(Reference to paragraph 3.3.7, page 92)

Packages bagged by one contractor in modernization of Krishna Delta System

	Name of the Work (Package No.)	Estimate Value (₹ in crore)	Quotation of L1 bidder		Quotation of L2 bidder	
			Amount (₹ in crore)	Tender percentage	Amount (₹ in crore)	Tender percentage
1	Modernization of South channel from KM 0.000 to KM 24.210 and its distribution system (5/KDS/K/ 09-10)	68.18	70.88	(+) 3.96	71.49	(+) 4.85
2	Modernization of East channel from KM 0.000 to KM 17.740 and its distributory system (6/KDS/K/09-10)	61.73	64.13	(+) 3.9	64.75	(+) 4.9
3	Modernization of Ryves canal from Km 2.752 to Km 18.200 and its distributory system (9-1 /KDS/K/ 07-08)	55.93	58.06	(+) 3.81	58.65	(+) 4.87
4	Modernization of Ryves canal from Km 18.200 to Km 26.735 and its distributory system (9-2/KDS/K/ 09-10)	45.04	46.75	(+) 3.79	47.26	(+) 4.91
5	Modernization of Ryves canal from Km 26.735 to Km 36.312 and its distributory system (9-3 /KDS/K/ 09-10)	39.95	41.55	(+) 3.99	41.93	(+) 4.95
6	Modernization of Inampudi and Bhimanadi Drainage Basin (18-9 /DR/KDS/K/09-10)	36.78	38.23	(+) 3.96	38.51	(+) 4.7
7	Modernization of East side Channel from KM. 20.720 to KM 35.400 and Nizampatnam Canal from KM.21.123 to KM 32.000 and West side channel from KM.20.961 to KM 29.955 and branches and distributaries (22-1/ KDS/G/2009-10)	62.34	64.78	(+) 3.9	65.39	(+) 4.89
8	Modernization of East side Channel from Km 35.400 to Km 43.875 and Nizampatnam Canal from Km.32.000 to Km.43.875 and West side channel from Km. 29.955 to 43.875 and branches and its distributaries (22-2/ KDS/G/ 2009-10)	39.79	41.36	(+)3.95	41.61	(+) 4.59
9	Modernization of East side Channel from Km.43.875 to Km.58.710 and Nizampatnam canal from Km.43.875 to 59.300 and West Side Channel from Km.43.875 to Km 59.285 and branches and distributaries (22-3/KDS/G/2009-11)	53.16	55.29	(+) 3.99	55.66	(+) 4.69

	Name of the Work (Package No.)	Estimate Value (₹ in crore)	Quotation of L1 bidder		Quotation of L2 bidder	
			Amount (₹ in crore)	Tender percentage	Amount (₹ in crore)	Tender percentage
10	Modernization of Nizampatnam Canal from Km.59.300 to Km.66.185 including branches and distributaries (22-4/ KDS/G/ 2009-12)	43.61	45.37	(+) 4.05	45.69	(+) 4.79
11	Modernization of Repalle Main drain old course from Km.0.000 to 23.924 including all Major, Medium & Minor drains in R.M.Basin (23/DR/KDS/G/2009-10)	24.57	25.67	(+) 4.5	25.77	(+) 4.91
12	Modernization of Kolimerla drain below Commamur Canal, Nakkavagu upper arm, Chebrolu side drain and all infalling drains (17/DR/KDS/G/2009-10)	41.07	42.64	(+) 3.81	43.11	(+) 4.96
13	Modernization of Nallamada drain below commamuru Canal and Nallamada drain above Commamur Canal from Km.0.000 to Km.4.500 and all infalling drains (19/DR/KDS/G/2009-10)	27.82	28.85	(+) 3.69	29.21	(+) 4.98
14	Modernization of Repalle Main drain from Km.16.200 to 28.800 including all Major, Medium & Minor drains in R.M.basin (22/DR/KDS/G/2009-10)	23.09	23.95	(+) 3.72	24.24	(+) 4.95
15	Modernization of Bhattiprolu main drain from Km.16.600 to 40.000 including Major, medium and minor drains in B.M.basin (25/DR/ KDS/G/ 2009-10)	37.24	38.72	(+) 3.99	39.08	(+) 4.96
16	Modernization of R.M. Drain from Km.28.800 to Km. 50.624 and B.M. Drain from Km.40.00 to Km.47.000 and its Medium and Minor drains (28/DR/KDS/G/2009-10)	30.51	31.67	(+) 3.79	32.02	(+) 4.95
17	Modernization of Tenali drain and other all Medium and minor drains in T.B.Basin and also Minor drains in Karlapalem Mandal (30/DR/KDS/G/2009-10)	34.06	35.38	(+) 3.89	35.74	(+) 4.96
18	Modernization of Romperu left arm from Km 9.656 to Km.12.975 and Perali drain including all infalling drains (14/DR/KDS/G/2009-10)	25.52	26.53	(+) 3.96	Only one bid was received	

Appendix 3.5

(Reference to paragraph 3.4.1, page 98)

List of Flood Bank schemes taken up

Sl. No.	Flood Bank Schemes	Month /Year of Administrative Sanction	No. of FB packages	Length in KM	Cost (₹ in crore)
1	Godavari Flood Banks (GFB)				
	a) GFB in East Godavari and West Godavari districts	January 2007	37	409.70	548.32
	b) GFB in Khammam and Warangal districts	February 2007	5	93.82	246.87
2	Flood Banks in Nellore District (NFB)				
	a) Pennar Flood Banks (PFB)	July 2008	12*	139.25	206.32
	b) Swarnamukhi Flood Banks (SFB)	July 2008	6	106.05	171.41
	c) Tsalla Flood Banks (TFB)	July 2008	2	32.55	60.02
	d) Kandaleru Flood Banks	July 2008	4	61.80	105.20
	e) Kalingi Flood Banks	July 2008	2	53.20	62.33
3	Flood Banks on Vamsadhara and Nagavali rivers				
	a) Vamsadhara Flood Banks (VFB)	January 2007	4	168.50	212.58
	b) Nagavali Flood Bank (NFB)	January 2007	2	82.88	98.15
4	Flood Banks in Kurnool District				
	a) Handri Flood Banks (HFB)	April 2008	2	16.09	244.70
	b) Kundu Flood Banks	March 2008	2	4.85	97.51
	c) Maddileru Flood Banks (MFB)	March 2008	1	1.65	
	d) Chamakalva Flood Banks (CFB)	March 2008	2	6.70	
5	Krishna Flood Banks (KFB)	November 2007/ January 2008	4	145.30	259.36
	Total		85	1322.34	2312.77

* Six each on left and right sides

Appendix 3.6

(Reference to paragraph 3.4.6, page 100)

Details of flood bank packages and progress as of March 2013

River	Total No. of packages / works (Administrative sanction)	Number of works taken up (Agreements concluded)	Target date of completion of the latest agreement	No. of packages completed out of total packages	Total Expenditure incurred, so far (₹ in crore)
Godavari at Dowlaiswaram	37	37	December 2012	17	583.12
Godavari at Warangal	2	2	September 2009	--	47.79
Godavari at Khammam	3	3	September 2009	--	28.96
Pennar [#]	12	--	--	--	Nil
Kandaleru [@]	4	3	--	--	Nil
Swarnamukhi	6	1	March 2011	--	16.74
Tsalla kaluva	2	2	January 2011	--	Nil
Kalangi	2	2	March 2011	--	12.05
Krishna	4	4	August 2010	1	187.89
Nagavali	2	2	June 2009	--	31.22
Vamsadhara	4	4	December 2010	--	7.95
Chamakalva	2	2	October 2010	--	3.53
Maddileru	1	1	October 2010	--	7.11
Handri	2	2	May 2012	--	1.17
Kundu	2	1	March 2011	--	Nil
Total	85	66		18	927.53

[#] Agreements yet to be concluded

[@] Two packages already closed and one proposed for closing

Appendix 3.7

(Reference to paragraph 3.4.8, page 101)

Status of land acquisition in various flood bank projects as of March 2013

(in acres)

	Flood Bank	Land to be acquired	Land Acquired	Balance
	(a) For EPC packages			
1	Krishna Flood Banks	188.52	61.83	126.69
2	Nagavali Flood Banks	385.00	148.06	236.94
3	Vamsadhara Flood Banks	1424.36	225.97	1198.39
4	Handri Flood Banks	15.78	--	15.78
5	Godavari Flood Banks in Khammam and Warangal Districts	1287.19	33.42	1253.77
6	Flood Banks in Nellore District			
	(i) Swarnamukhi Flood Banks (SFB)	52.46	7.43	45.03
	(ii) Tsalla Flood Banks (TFB)	119.46	--	119.46
	(iii) Kalingi Flood Bank (KLGFB)	191.61	--	191.61
	<i>Total for EPC packages</i>	<i>3664.38</i>	<i>476.71</i>	<i>3187.67</i>
	(b) For conventional packages			
1	Chamakalva Flood Banks	132.05	89.84	42.21
2	Maddileru Flood Banks	42.12	39.03	3.09
3	Kundu Flood Banks	544.65	--	544.65
4	Godavari Flood Banks in East Godavari and West Godavari Districts	349.58	168.92	180.66
	<i>Total for conventional packages</i>	<i>1068.40</i>	<i>297.79</i>	<i>770.61</i>
	Grand Total	4732.78	774.50	3958.28

Glossary

Glossary

AAP	:	Annual Action Plan
AEs/AEs	:	Assistant Executive Engineers/ Assistant Engineers
AIBP	:	Accelerated Irrigation Benefit Programme
AP Agros	:	Andhra Pradesh State Agro Industries Development Corporation Limited
AP MACS Act	:	Andhra Pradesh Mutually Aided Cooperative Societies Act 1995
APC	:	Agricultural Production Commissioner
APCBTMP	:	Andhra Pradesh Community Based Tank Management Project
APEDA	:	Agricultural and Processed Food Products Exports Authority
APFDC	:	Andhra Pradesh Forest Development Corporation
APFMIS Act	:	AP Farmers Management of Irrigation System
APILIP	:	Andhra Pradesh Irrigation and Livelihood Improvement Project
APOs	:	Annual Plan of Operations
APRDC	:	Andhra Pradesh Road Development Corporation
APSIDC	:	Andhra Pradesh State Irrigation Development Corporation
APRSAC	:	Andhra Pradesh State Remote Sensing Application Centre, Hyderabad
APSWAN	:	Andhra Pradesh State Wide Area Network
APTSL	:	Andhra Pradesh Technology Services Limited
BCRs	:	Benefit Cost Ratios
BEL	:	Bharat Electronics Limited
BLS	:	Base Line Survey
BOOT	:	Build, Own, Operate and Transfer
BOT	:	Build, Operate and Transfer
CA	:	Compensatory Afforestation
CADA	:	Command Area Development Authority
CAMPA	:	Compensatory Afforestation Management and Planning Authority
CBR	:	Chitravathi Balancing Reservoir
CDO	:	Central Design Organisation
CE	:	Chief Engineer
CED	:	Central Excise Duty

CRS	: Citrus Research Station
CSC	: Common Service Center
CSIR	: Council of Scientific and Industrial Research
CWC	: Central Water Commission
DD	: Demand Draft
DDH/ADH	: Deputy/Assistant Director of Horticulture
DEITY	: Department of Electronics and Information Technology
DFOs	: Divisional Forest Officers
DFR	: Detailed Feasibility Report
DHM	: District Horticulture Mission
DHQs/MHQs	: District and Mandal Head Quarters
DLIC	: District Level Implementation Committee
DPR	: Detailed Project Report
DWMA	: District Water Management Authority
EDS	: Electronically Deliverable Services
EE	: Executive Engineer
EGK road	: Eluru-Gundlakolanu-Kovvur road
EMD/FSD	: Earnest Money Deposit/Further Security Deposit
EPC	: Engineering, Procurement and Construction
FAT	: Final Acceptance Test
FDR	: Flood Damage Repair
FTL	: Full Tank Level
G2B	: Government to Business
G2C	: Government to Citizen
G2G	: Government to Government
GAP	: Good Agricultural Practices
GDS	: Godavari Delta System
GFB	: Godavari Flood Bank
GIB	: Great Indian Bustard
GoAP	: Government of Andhra Pradesh
GoI	: Government of India
Ha	: Hectare
HKR road	: Hyderabad-Karimnagar-Ramagundam Road
HLB	: High Level Bridge
HO	: Horticulture Officer
HRS	: Horticulture Research Stations

HU	:	Horticulture University
I & CAD	:	Irrigation and Command Area Development
IA	:	Internal Audit
IAB	:	Irrigation Advisory Board
ICAR	:	Indian Council of Agriculture Research
ICT	:	Information and Communication Technology
IE	:	Independent Engineer
INM	:	Integrated Nutrient Management
IPM	:	Integrated Pest Management
IRC	:	Indian Road Congress
IRR	:	Internal Rate of Return
IT&C	:	Information Technology and Communication
ITDA	:	Integrated Tribal Development Agency
JBIC	:	Japan Bank for International Corporation
KDS	:	Krishna Delta System
KP Road	:	Kadapa-Pulivendula Road
LIS	:	Lift Irrigation Schemes
MFD	:	Maximum Flood Discharge
MGNREGS	:	Mahatma Gandhi National Rural Employment Guarantee Scheme
MI	:	Minor Irrigation
MMPs	:	Mission Mode Projects
MoU	:	Memorandum of Understanding
NABARD	:	National Bank for Agriculture and Rural Development
NAM road	:	Narketpally-Addanki-Medarmetla Road
NeGP	:	National e-Governance Plan
NH	:	National Highway
NHM	:	National Horticulture Mission
NPV	:	Net Present Value
OMFL	:	Observed Maximum Flood Level
OMT	:	Online Monitoring Tool
PABR	:	Pennar Ahobilam Balancing Reservoir
PAT	:	Partial Acceptance Test
PCSS	:	Dr. B.R. Ambedkar Pranahita Chevella Sujala Sravanthi
PCUs	:	Passenger Car Units

PDS	:	Pennar Delta System
PFB	:	Pennar Flood Bank
PN Road	:	Puthalapattu-Naidupeta Road
PoP	:	Points of Presence
PPP	:	Public Private Partnership
PR	:	Panchayat Raj
RBLIS	:	Rajiv Bhima Lift Irrigation Scheme
RDO	:	Revenue Divisional Officer
RFP	:	Request for Proposal
RFQ	:	Request for Qualification
RIDF	:	Rural Infrastructure Development Fund
RRR	:	Repairs, Renovation and Restoration
SAUs	:	State Agriculture Universities
SCA	:	Service Center Agency
SCCL	:	Singareni Collieries Company Limited
SCP	:	Special Component Plan for Scheduled Castes
SDA	:	State Designated Agency
SDC	:	State Data Center
SEs	:	Superintending Engineers
SFB	:	Swarnamukhi Flood Bank
SHM	:	State Horticulture Mission
SHQ	:	State Head Quarters
SI	:	Survey of India
SLAP	:	State Level Action Plan
SMC	:	Soil and Moisture Conservation
SPV	:	Special Purpose Vehicle
SSDG	:	State Service Delivery Gateway
SSR	:	Standard Schedule of Rates
ST (in Chapter - 2)	:	Service Tax
ST (in Chapter - 3)	:	Sales Tax
SWAN	:	State Wide Area Network
TA	:	Transaction Advisor
TB	:	Tungabhadra Board
TBPHLC	:	Tungabhadra Project High Level Canal
TBPLLC	:	Tungabhadra Project Low level Canal
TCIL	:	Telecommunication Consultants India Limited

TD	:	Target Date
TEC	:	Technical Evaluation Committee
TEFR	:	Techno-Economic Feasibility Report
TIS	:	Tank Information System
TMC	:	Thousand Million Cubic Feet
TOR	:	Terms of Reference
TPA	:	Third Party Auditor
TPC	:	Total Project Cost
TR&B Department	:	Transport, Roads and Buildings Department
TSP	:	Tribal Area Sub-plan
TT	:	Target Traffic
UC	:	Utilisation Certificate
VC & MD	:	Vice Chairman and Managing Director
VFB	:	Vamsadhara Flood Bank
VLEs	:	Village Level Entrepreneurs
WALAMTARI	:	Water and Land Management Training and Research Institute
WUAs	:	Water User Associations