

Chapter - 2

Performance Audit

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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)	November 2011 to March 2012
	July and October 2011 (ADH-2)	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)