CHAPTER - III
COMPLIANCE AUDIT

AUDIT OF SELECTED TOPICS

FOOD, CIVIL SUPPLIES AND CONSUMER AFFAIRS DEPARTMENT

3.1 Leakages in Public Distribution System

3.1.1 Introduction

Public Distribution System (PDS) came into existence with effect from 1 July 1965 with the multiple objective of rationing of essential commodities, ensuring availability of basic commodities to the poor and needy through Fair Price Shop (FPS), stability of prices and to check the practice of hoarding and black marketing.

3.1.2 Functioning of the Rationing System

The major agencies of the system are:

Government of India (GoI)	-	Responsible for fixing quantity and price of food grains to be distributed to all categories of beneficiaries.
Food Corporation of India (FCI)	-	Responsible for procurement, transportation and warehousing the food grains.
State Government (Secretary, Food, Civil Supplies and Consumer Affairs Department)	-	Responsible for identification of BPL families, issuing ration cards, the management of PDS, supervision and monitoring of FPS.
Dealers	-	Responsible for distribution to actual consumers.

The Commissioner of Civil Supplies (CCS) is the Head of the Department who is assisted by Director of Civil Supplies (DCS), Controller of Rationing, two Deputy Controllers of Rationing, 14 District Supply Officers (DSO), 63 *Taluk* Supply Officers (TSOs) and six City Rationing Officers.

In order to ensure the availability of essential commodities, Kerala State Civil Supplies Corporation Limited (KSCSC) was also entrusted the responsibility of providing assistance and services in the distribution of essential commodities under two separate subsidy schemes. The activities of the Company supplement the other schemes implemented by the department.

The GoI makes bulk allocation of ration articles for distribution through PDS among the States whereas the Ministry of Petroleum and Natural Gas allocates kerosene. The quantity of allocation is based on the number as well as category of ration cards in the State as approved by it. Food grains procured

by GoI through FCI are allocated to State on price fixed by GoI for different categories of card holders.

3.1.3 Audit objectives, scope and methodology

The objective of Audit was to examine whether:

- there was diversion of ration articles by the Authorised Retail Dealers (ARD) and
- there was excess issue of subsidised commodities to families by KSCSC

Audit conducted a field survey of ration articles availed by 2,783 card holders[37] spread over 39 *taluks* (out of 69) in 10 districts (out of 14) of the State were cross verified with the primary records maintained at the respective ARDs during the period. Audit also test checked about 40 lakh sales bills of 102 outlets (under five depots) using the data analysis software IDEA to check the veracity of quantity restriction exercised by KSCSC on the commodities sold at subsidised rates.

3.1.4 Audit Findings

Audit found leakages in PDS as shown below:

3.1.4.1 Falsification of ration accounts by dealers

i) Accounting of ration articles

As per Rule 53 (1) and 29(1) of Kerala Rationing Order 1966 (KRO), Authorised Wholesale Dealer (AWD) should make necessary entries in the day book and ledger on supply of ration articles to ARD against payment of cash and similarly, on issue of ration articles to Card holder, ARD should record the same in the appropriate space in the ration card. The AWDs/ARDs should also maintain regular, accurate daily accounts of each rationed articles. At the end of the month, a monthly rationing report should be prepared showing details of quantity allotted, lifted and distributed and submit to the TSOs along with the monthly indent for the next month. The TSOs consolidate the monthly reports of the ARDs under their jurisdiction and submit to the DSOs and the DSOs to the DCS.

ii) Comparison of issued quantity recorded in ration cards with the records in ARDs through field survey

A field survey was considered to see whether the rationed articles accounted for as issued were actually distributed to the card holders and also to ascertain whether the accounts maintained by the ARDs were correct and complete.

For the purpose, copies of 2,783 ration cards (2,607 APL[38] and 176 BPL) collected were tabulated and cross verified with the preliminary accounts viz., day book and ledger of the ARDs.

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[37] Employees of the audit units under the audit jurisdiction of AG (E&RSA) where audit was undertaken during the year 2013 and who volunteered to participate in the survey.

[38] As the probability for availing the ration articles were comparatively less in respect of APL cards the survey focused on APL card holders.

It was revealed that the ARDs had accounted essential commodities far in excess of that was availed by card holders as shown below:

Table 3.1: Excess accounting by ARDs for the month of March 2013

	Rice			Wheat			Kerosene
	APL	BPL	Total	APL	BPL	Total	Total
No. of cards test checked	2,607	176	2,783	2,607	176	2,783	2,783
No. of cards in which quantity was less than ARD's record	2,142	166	2,308	1,046	123	1,169	1,944
Percentage of cards with difference	82.16	94.32	82.93	40.12	69.89	42.01	69.85
Quantity availed by card holders (in Kg./L)	10,415	1,836	12,251	737.5	250	987.5	813.7
Quantity recorded as issued by ARDs (in Kg/L)	22,766	4,613	27,379	3,317.5	988	4,305.5	2,138.55
Quantity inflated by ARDs as a percentage of original purchase	219	251	223	450	395	436	263

Lack of departmental monitoring on issue and accounting of ration articles and failure to make end to end computerisation of PDS led to falsification of accounting of ration articles and its diversion to open market.

3.1.5 Sale of subsidised items by KSCSC without restriction and resultant loss

Kerala State Civil Supplies Corporation Limited (KSCSC), a Public Sector Undertaking, was incorporated with the objective of procurement and distribution of essential commodities to the public at reasonable prices. KSCSC procures commodities from the open market through tenders and sell them from 1,314 outlets (as of March 2013) across the State which are coordinated by 56 Depots. These items are sold to the customers without quantity restriction at a retail price fixed by the Company on a commercial basis above the procurement price.

KSCSC sells part of the commodities procured as "subsidised sale"; based on a lesser price fixed by the GoK. GoK releases grants to KSCSC for compensating the loss borne by the Company. Being a subsidised sale, the eligible quantity to a household is restricted and the quantity restriction is monitored through ration cards by entering the card number at the time of sales in the billing software in the sales outlets. The sales from outlets are managed using MySQL based database-Outlet Management System (OMS).

Audit noticed that the subsidised sales were made without any restriction. The commodities were sold without entering the ration card numbers[39] in the billing software or against invalid ration card numbers or in excess of the restricted quantity per household.

[39] Refers to ration card numbers not matching with 10 digit unique numbers.

The amount of subsidy borne by GoK on the sales without restriction - being the difference between subsidised rates and regular retail price worked out to ₹ 9.88 crore at five test checked depots and the outlets coming under them as indicated in the table below:

Sl. No.	Name of depot	No. of outlets analysed	Amount of ineligible subsidy (₹ in crore)			
			Without ration cards	Invalid ration cards	Sales above eligible quantity	Total
1.	Kannur	26	0.40	1.34	0.12	1.86
2.	Kottayam	15	0.21	0.15	0.01	0.38
3.	Alathur	16	0.62	0.34	0.09	1.04
4.	Chavakkad	20	0.94	1.90	0.04	2.88
5.	Attingal	25	3.47	0.19	0.06	3.72
Total		**102**	**5.64**	**3.92**	**0.32**	**9.88**

The Government stated (January 2013) that strict instructions were given to ensure that subsidy items were issued only to genuine customers. Further, directions were also given to recover the loss on account of such instances, if any, from the officers responsible.

3.1.6 Conclusion

The results of the findings show that the accounts maintained by the ARDs were manipulated and the quantity obtained through the manipulation were possibly diverted and disposed in black market. Audit also noticed that the commodities were sold at subsidised rate through KSCSC without any restriction. The diversion/unrestricted sales so made were mainly due to the lack of supervision and monitoring on the part of the department. Considering that Government subsidies distribution of ration articles to beneficiaries, Government was bearing a huge unnecessary subsidy burden on sale of ration articles to ineligible people.

3.1.7 Recommendations

- Action may be taken to strengthen the inspection of the ARDs by periodical verification of the accounts of the ARDs with reference to the entries made in the ration cards;
- End to end computerisation including biometric system may be implemented in a time bound manner;
- Action may be taken to ensure sale of item only to genuine customers through KSCSC.

3.2 Excess payment due to incorrect computation of Value Added Tax

An excess amount of ₹ 14.23 crore was reimbursed to FCI due to the incorrect computation of VAT on CIP

Food Corporation of India (FCI) is responsible for procurement, transportation and warehousing the food grains to be distributed to the ration card holders through Authorized Wholesale Dealer and Retail Dealer. FCI procures the food grains at Central Issue Price (CIP) fixed by GoI and sells them to Authorized Wholesale Dealers at wholesale price. GoK introduced (vide GO (Ms) No.11/2011/F&CSD dated 25 February 2011) a special scheme of issue of food grains (rice and wheat) at subsidised rates to different categories of card holders through PDS (as stated below):

- At the rate of ₹ two per kg to certain categories of APL card holders,
- At the rate of ₹ two per kg to all BPL card holders up to 31 August 2011 and at the rate of ₹ one from 1 September 2011.

In order to compensate the difference between the CIP and wholesale price of FCI, the State Government gave subsidy to FCI at the following rates during the years 2010-11, 2011-12 and 2012-13.

Category	Amount of subsidy per quintal (in ₹)
APL (Rice)	690
APL (Wheat)	470
BPL (Rice) (upto 31.08.2011)	420
BPL (Rice) (from 01.09.2011)	520
BPL (Wheat)	270

The quantum of subsidy was arrived at in such a way that the retail selling price should be ₹ two / ₹ one per kg as the case may be, after meeting all other expenses including VAT on central issue price**.** As per the provisions of the Kerala Value Added Tax Act, 2003, the FCI is not liable to pay VAT on the amount of subsidy received from Government. Thus, VAT to be reimbursed to FCI is to be calculated on net CIP (i.e. CIP less amount of subsidy). Instead, VAT was calculated in full CIP (inclusive of subsidy) and re-imbursed to FCI. This resulted in excess payment of ₹ 14.23 crore as shown in **Annexure IX.**

Due to the incorrect computation of VAT on CIP, the amount reimbursed during the years 2010-11, 2011-12 and 2012-13 was in excess by ₹ 14.23 crore**.** On this being pointed out, the department accepted the point.

IRRIGATION DEPARTMENT

3.3 Functioning of Lift Irrigation Schemes

3.3.1 Introduction

Lift irrigation is a method of irrigation in which water is not transported by natural flow (as in gravity-fed canal systems) but is lifted with motor and pumps. Lift Irrigation Schemes (LISs) are mainly intended to enhance the irrigation potential of paddy production. LISs, coming under Minor Irrigation (MI) sector, were undertaken when the water source - rivers, canals, ponds, etc - was at a level lower than the level of area irrigated entailing lifting of water for irrigation.

There are 459 LISs in Kerala spread over in 13[40] districts, with an ayacut[41] of 38,938 hectare (ha.). These form only 18.7 *per cent* of the total area of 2,08,160 ha. under paddy cultivation. The total expenditure during 2009-2013 towards construction, upkeep and maintenance of MI structures[42] like LISs, class I and II schemes, etc. was ₹ 666.20 crore.

3.3.2 Organisational set up

Works of construction and maintenance of lift irrigation structures are being attended to by MI divisions headed by Executive Engineers who are being assisted by sub-divisional engineers and sectional engineers. Three MI circle offices are functioning to supervise the functions. The Chief Engineer (CE) (Irrigation and Administration), Thiruvananthapuram is the Administrative head of the department. The Principal Secretary to Government, Water Resources department is the head at Government level.

3.3.3 Audit Scope and coverage

Audit studied the viability of LISs by scrutinising the functioning of LISs in Ernakulam, Thrissur and Palakkad districts where 279 schemes (61 *per cent* of the schemes) were implemented and about ₹ 199.66 crore was incurred. The audit was conducted during April 2013 to August 2013 covering the period from 2009-10 to 2012-13.

3.3.4 Audit findings

Audit found that LISs are not delivering the intended benefits as discussed in the succeeding paragraphs.

3.3.4.1 Budget Allocation and Expenditure

The budget allocation and expenditure incurred for the construction, upkeep and maintenance of MI structures for the period between 2009-10 and 2012-13 are mentioned below.

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40 There is no LIS in Thiruvananthapuram district.
41 Ayacut- Irrigable area
42 MI structures are classified into three -.Class I, Class II and Lift Irrigation.

Table 3.2 : Allocation and Expenditure details for MI structures for four years

(₹ in crore)

Year	2702 - Revenue		4702 –Capital		Total		
	Allocation	Expen-diture	Alloca-tion	Expen-diture	Allocation	Expen-diture	Percentage of expenditure on allocation
2009-10	128.45	114.29	56.29	18.61	184.74	132.90	72
2010-11	149.45	107.56	78.49	26.35	227.94	133.91	59
2011-12	174.65	104.69	128.16	76.59	302.81	181.28	60
2012-13	186.07	139.21	161.66	78.90	347.73	218.11	63
Total	**638.62**	**465.75**	**424.60**	**200.45**	**1063.22**	**666.20**	

Source: Figures compiled by the Office of the PAG (A&E), Kerala

There was over budgeting during all the years – for Capital as well as Revenue heads covered under review. The over budgeting was more in the Capital heads especially during 2009-10 and 2010-11, 67 *per cent* of the allocation under Capital outlay remained unutilised. This is an indication that new MI schemes are not being implemented as envisaged.

3.3.4.2 LISs in the State

There were 459 LISs in Kerala to serve the ayacut of 38,938 ha. District wise details of LISs as of July 2013 are given below.

Table 3.3: District wise details of LISs

Sl. No.	Name of District	No. of LISs	Ayacut (in ha.)	Sl. No.	Name of District	No. of LISs	Ayacut (in ha.)
1	Thiruvananthapuram	Nil	Nil	9	Palakkad	41	4,572
2	Kollam	14	572	10	Malappuram	51	6,725
3	Pathanamthitta	51	357	11	Wayanad	21	1,210
4	Alappuzha (Chengannur)	14	1,475	12	Kozhikode	5	143
5	Kottayam	13	793	13	Kannur	4	232
6	Idukki	4	333	14	Kasargode	3	426
7	Ernakulam	141	12,500	**Total**		**459**	**38,938**
8	Thrissur	97	9,600				

Source: Departmental data/ website

In the sample check, audit noticed that there were significant variations between the details of LISs maintained by CE's office and by the division offices as shown below.

Table 3.4: Discrepancies in the number of schemes

Sl. No.	Division	Nos. as per CE	Nos. as per Division	Ayacut as per CE (in ha.)	Ayacut as per Division (in ha.)
1.	Ernakulam	136	141	12,500	12,460
2.	Thrissur	91	97	9,600	8,453
3.	Palakkad	37	41	4,572	3,901
	Total	**264**	**279**	**26,672**	**24,814**

Source: Divisional records/website

On pointing out the discrepancies CE accepted that the total number of schemes in the three divisions was 279 but did not provide data on effective ayacut presently available.

3.3.4.3 Drastic reduction in area under paddy cultivation

LISs were mainly intended for the benefit of paddy cultivation. Availability of water is a major requirement for paddy, as it requires regular water supply. Out of the total area under paddy cultivation, 0.55 lakh ha. has natural water supply, whereas 1.53 lakh ha. (73.61 *per cent*) was irrigated through various irrigation structures of major, medium and minor irrigation.

Paddy, a major crop of Kerala, was being cultivated in about 8.76 lakh ha. in 1975-76 according to the data of Bureau of Economics and Statistics (BES) but during the last several years the area under paddy cultivation had been declining drastically and it reached to the lowest level of 1.97 lakh ha. in 2012-13 as shown below:

Table 3.5: Progressive reduction in area under paddy cultivation

Sl. No.	Year	Area (in ha.)	Percentage of reduction
1.	1975-76	876022	-
2.	1985-86	678281	22.57
3.	1995-96	471150	46.22
4.	2005-06	275742	68.52
5.	2012-13	197277	77.48

The area under paddy cultivation had gone down over the years mainly because there has been a shift in terms of cropping area of paddy cultivation to other yields such as plantation, arecanut, coconut as well as conversion of paddy fields for non-agricultural purposes. One of the major objectives of LISs to increase the irrigation potential of paddy cultivation has thus become irrelevant now.

This was also evident in the reducing number of LISs commissioned recently. Most of LISs were constructed more than 30 years back considering the land use pattern and cropping pattern prevailed at that time. Only 10 schemes were commissioned during last 10 years of which three schemes were commissioned during the period covered in audit.

As per paragraph 21.1.4 of Kerala Public Works Department (KPWD) Manual, the ayacut of the LISs was to be identified and verified at the time of commissioning of the schemes. The achieved ayacut for the 459 schemes commissioned more than 30 years back as per departmental website was 38938 ha. However, test check of verified ayacut for three districts showed that most of the LISs were verified more than 30 years back and achieved ayacut may not be relevant now due to the changes in the land use pattern and reduction in paddy cultivation. This necessitates a further verification to find out effective ayacut presently available under LISs in order to assess their viability.

3.3.4.4 Increase in cost despite reduction in area under paddy cultivation

The construction and maintenance of LISs are attended to by the MI wing of Water Resources department. In addition to LISs the wing was in charge of the construction and maintenance of other MI structures like Class I and Class II schemes. For the purpose, as many as 2,168 staff were deployed to the wing (January 2014). However, the department was not keeping any separate data for expenditure on LISs. The expenditure on MI including LISs is increasing over the years despite decrease in area under paddy cultivation as indicated below:

Table 3.6: Expenditure details of LISs for the period from 2003-04 to 2012-13

Period	Expenditure (₹ in crore)		
	Revenue	Capital	Total
2003-04	40.26	0.62	40.88
2004-05	49.93	0.50	50.43
2005-06	50.08	0.82	50.90
2006-07	35.47	0.38	35.85
2007-08	61.82	2.55	64.37
2008-09	77.90	1.10	79.00
2009-10	64.27	1.61	65.88
2010-11	59.98	10.54	70.52
2011-12	53.63	30.75	84.38
2012-13	80.91	22.74	103.65

Source: Figures compiled by the Office of the PAG (A&E), Kerala.

3.3.4.5 LISs not handed over to farmers

KPWD Manual (Para 21.1.1 of Chapter XXI) stipulated that, MI works benefiting an area less than 200 acres (80 ha.) were to be maintained either by

lift irrigation co-operative societies or by the ryots themselves directly[43]. However, out of 279 LISs in three districts, 156 schemes having irrigable area (ayacut) less than 80 ha. are still maintained by the department. Expenditure on maintenance, revamping and manpower engaged for their operation during the period 2009-10 to 2012-13 was ₹ 27.25 crore as shown in Table below, which was avoidable, had the schemes been transferred to the co-operative societies/ryots.

Table 3.7: Avoidable maintenance costs

(₹ in crore)

Districts	No. of LISs	2009-10	2010-11	2011-12	2012-13	Total
Ernakulam	72	2.88	3.45	3.18	3.07	12.58
Thrissur	62	1.72	2.98	3.48	3.56	11.74
Palakkad	22	0.16	0.51	1.53	0.73	2.93
Total	**156**	**4.76**	**6.94**	**8.19**	**7.36**	**27.25**

Source : Departmental data

3.3.4.6 Unfruitful expenditure on Lift Irrigation Schemes

Out of 279 LISs implemented in three districts, 19 LISs were not functioning for years ranging from two to 17 as of March 2013 for various reasons such as non availability of water near the pump house, damage occurred to motor and pump sets, breaching of canal portions, theft of motors and pump sets, litigation with private party against constructing canal in their land, project found unviable later etc; as indicated in **Appendix 3.1**. Out of the 19 non functional schemes implemented at a total cost of ₹ 4.74 crore, eight schemes could not even be commissioned till date (August 2013) in spite of spending an amount of ₹ 3.39 crore.

3.3.4.7 Avoidable payment of penalty on Electricity charges

Electric Motors and pump sets are used for lifting water from rivers and canals for feeding the ayacuts. Either High Tension (HT) for connected load of 100 KVA or more or Low Tension (LT) connections is provided to run the motors based on the Kilo Volt Ampere (KVA) of the motors installed in each pump house. As per clause 19 of Kerala State Electricity Board (KSEB) terms and conditions of supply 2005, every consumer should execute a service connection agreement on the occasion of availing fresh connection or whenever there were changes in connected load. Similarly for HT connections the consumer was to install Time of Day (ToD) meter. As per special conditions of "Schedule of tariff and terms and conditions for retail supply by KSEB" the maintenance and replacement of defective meters shall be done by licensees at their costs. On failure on this count KSEB would charge extra at the rate of 50 *per cent* of original tariff. As the department failed to fulfil the above conditions KSEB imposed penalty of ₹ 4.27 crore during the period from 2009-10 to 2012-13 as given in table below:

[43] Benefiting area < 200 acres but > 50 acres by Lift Irrigation co-operative societies,< 50 acres by ryots themselves directly or through Co-operative Societies.

Table 3.8: Details of avoidable penalty on electricity charges

Name of MI Division	No. of HT connection	Penalty for (₹ in crore)		Adjustments (penalty prior to 2010) (₹ in crore)	Total (₹ in crore)
		Meter fault	Non-execution of Agreement		
Ernakulam	16	1.56	0.78	1.12	3.46
Thrissur	7	0.12	0.11	0.15	0.38
Palakkad	6	0.17	Nil	0.26	0.43
Total	**29**	**1.85**	**0.89**	**1.53**	**4.27**

Source: Data furnished by department

Had the department taken timely action to execute agreements and replace the faulty meters, the penalty of ₹ 4.27 crore could have been avoided.

3.3.4.8 Payment of electricity charges without consuming electric power

LISs incur recurring maintenance cost and bulk of it is attributable to energy charges. As per clause 8 of the Schedule of Tariff and Terms and Conditions for Retail Supply by KSEB, electricity charges are levied based on actual consumption or minimum tariff amount whichever is higher. Further, minimum charges are imposed even if the plant or machines are not operated or no power is consumed. Thenampara LIS in Palakkad district partially commissioned in 2001 but stopped functioning in 2001 itself due to breach in the main canal which was completed partially. The department had been paying electricity charges at a minimum rate of ₹ 38,940 per month during the period of non-operation. The electricity charges paid from September 2001 to March 2013 without consuming any electric power was ₹ 54 lakh.

3.3.4.9 Idle expenditure under MIRPA and Special package

Government accorded sanction in November 2009 for revamping the existing LISs under Malabar Irrigation Package (MIRPA) and Special package for Ernakulam district. MI Divisions Ernakulam, Thrissur and Palakkad purchased 431 Motor and pump sets at a cost of ₹ 5.28 crore for 254 LISs during the period between 2011 and 2013. However, 187 motor and pump sets purchased for 116 LISs for which ₹ 2.75 crore has been incurred remained idle due to non-supply of soft starter, non-completion of civil and electrical works as detailed below:

Table 3.9: Details of idle motors and pump sets as on August 2013

Name of Division	No. of LISs taken for revamping	No. of Motor and pump sets purchased	Idling of motor and pump sets		
			No. of LISs	No. of motor and pump sets	Expenditure incurred (₹ in crore)
Ernakulam	127	224	6	10	0.17
Thrissur	90	133	90	133	2.14
Palakkad	37	74	20	44	0.44
Total	**254**	**431**	**116**	**187**	**2.75**

Source: Departmental data

Thus due to laxity of the department, the equipment purchased for ₹ 2.75 crore for augmenting irrigation potential was remaining uninstalled and hence could not be used for intended purpose.

The matter was reported to Government in September 2013; their remarks are awaited (January 2014). The department confirmed that the basic objective of LISs was to facilitate irrigation for paddy cultivation and that the area under paddy cultivation reduced considerably over years. However, the department stated that due to the distribution of water through canals there was rise in ground water table which in turn helped getting potable water in wells. This contention was not tenable as the objective of the scheme was to enhance irrigable area under paddy cultivation.

3.3.5 Conclusion

From the audit findings discussed above, it was concluded that;

- There was over budgeting for capital as well as revenue heads resulting in under utilisation of the funds allotted for the LISs.
- Department did not have a complete data regarding the effective ayacut now available for irrigation as verification of ayacut of the completed schemes was done years back.
- Many LISs were idle inspite of incurring huge expenditure for their construction.
- Department has been incurring avoidable expenditure in the form of penalty on electricity charges due to non replacement of faulty meters and non execution of agreement.
- Pumps and motors purchased for revamping the schemes are remaining idle in many cases due to non completion of civil and electrical works.
- The completed schemes having ayacut less than 80 ha. were not transferred to ryots as envisaged in the KPWD Manual. Owing to change of land use pattern and crop pattern the area of paddy cultivation has been reducing rapidly. Hence it is not likely to maintain the LISs unless there is active participation of ryots. Transfer of completed schemes to ryots would result in economical maintenance by retaining the highly warranted schemes alone due to direct participation of beneficiaries in the administration of LISs.

3.4 Irregularities in the execution of Regulator-cum-Bridge work

Extension of undue benefit of ₹ 2.43 crore to the contractor by facilitating supply of sand at reduced rate.

Government issued (June 2008) Administrative Sanction (AS) for construction of Regulator-cum-Bridge across Bharathapuzha at Chamravattom in Malappuram district at a cost of ₹ 113 crore (SoR 2008) under Rural Infrastructure Development Fund (RIDF) XIII of National Bank for Agriculture and Rural Development (NABARD). The project envisaged construction of a regulator having 70 vertically operated shutters and a bridge of 978 m length connecting Ponnani and Tirur town in Kochi-Kozhikode highway. Government issued Technical Sanction (TS) at an estimated cost of ₹ 119 crore (based on SoR 2008). While the work was nearing completion, the

Executive Engineer (EE) Project Division, Chamravattom reported (April 2010) to the Superintending Engineer (SE) that no provision had been made in the estimates for construction of side protection walls of the river banks and for connecting the bridge to the either banks of the river and hence the project would be incomplete. To incorporate the additional works, the AS was revised (August 2010) to ₹ 134 crore (based on SoR 2010).

Audit noted that as per the terms and conditions of the tender, contractor had to procure all materials required for construction works including river sand. As per agreement, the contractor was eligible to get ₹ 990 per cum. of river sand to be used in construction work. This works out to ₹ 1,285 per cum. after inclusion of contractor's profit and tender premium. As the river sand was not available in the market, the contractor sought (October 2009) permission of District Collector (DC), Malappuram, through EE to mine 28,000 cum. of river sand from the project site. At the first instance, DC allowed 5,171 cum. (7,756.5 MT) of sand for preliminary works at the rate of ₹ 634 per tonne which was the rate allowed for the works executed by Nirmiti Kendra[44]. Considering the elements of contractor's profit and tender premium the cost of sand works out to ₹ 1,234 per cum. Against the allowed quantity of 5,171 cum., the contractor mined only 666.66 cum. As the sand was being sold to public for ₹ 317 per tonne (₹ 617 per cum. after inclusion of contractor's profit and tender premium) by the local *Panchayat* , the contractor requested the DC through EE to allow him to mine sand at the same rate which was also granted to the contractor for 50,000 cum. of sand. The DC, however, directed EE that in case the contract rate was more than the concessional rate, the difference should be recovered from the claim of the contractor. The contractor mined 36,283.34 cum of sand against the permitted quantity of 50,000 cum. But the department did not recover the differential amount (contractual rate minus concessional rate) from the contractor. Allowing contractor to mine 666.66 cum of sand at concessional rate and failure to comply with the direction to collect differential rate for 36,283.34 cum of sand had resulted in providing undue benefit to the contractor to the tune of ₹ 2.43 crore[45] (up to October 2011).

The matter was reported to Government in May 2013 and the reply from Government is awaited (December 2013).

PUBLIC WORKS DEPARTMENT

3.5 Execution of State Road Projects using Central Road Fund

3.5.1 Introduction

Central Road Fund (CRF) created under the CRF Act, 2000, envisages development and maintenance of various roads by GoI from cess collected on petrol and high speed diesel oil at the rate of ₹ two per litre. Subsequently in exercise of powers conferred under the Section 12 of the CRF Act, Ministry of Road Transport and Highways (MoRTH), GoI vide notification dated 10 July

[44] An autonomous body engaged in construction works.

[45] (36,950 m^3 X ₹ 1,285) - (666.66 cum X ₹ 1,234 + 36,283.34 m^3 X ₹ 617)

2007 made the CRF (State Roads) Rules, 2007 for the disbursement of CRF in respect of specified projects. Categories of works under the programme are as follows:

- State roads excluding rural roads i.e., construction of missing bridges, cross-drainage works, bye passes, parallel service roads along with National and State Highways; widening of two lanes; strengthening of weak pavement; rehabilitation of bridges and engineering aspects of road safety works;
- road projects of Inter-State Connectivity (ISC); and
- road projects of Economic Importance (EI) i.e., roads directly connecting important market places, economic/industrial zones, agricultural region, roads benefitting vulnerable section of the society and also roads leading to socially important infrastructure such as cremation grounds, orphanage etc.

Implementing agency for the schemes is Public Works Department (PWD) headed by Secretary to Government at Government level and CE, PWD (National Highways) and his officers and staff at departmental level.

CRF works were implemented in State from 2001-02 onwards. During the 12 year period up to 2012-13, 88 works relating to State roads having a length of 1,380.60 kms and five road projects of ISC having length of 97.3 kms were sanctioned by the MoRTH. Of these 76 State road works having a length of 1,219.395 kms and four roads of ISC having a length of 87.6 km were completed as on 31 March 2013.

The audit of Execution of State Road Works using CRF during 2008-09 to 2012-13 was carried out through test check of records during the period May 2012 to June 2012 in the offices of the CE, National Highways, all three circles and eight divisions covering 67.10 *per cent* expenditure (₹ 315.76 crore) of the total expenditure of ₹ 470.55 crore incurred during the period. In addition to the 48 road projects **(Annexure X)** sanctioned during 2008-13, the expenditure incurred on the ongoing projects are also test checked in audit. The audit findings with reference to non observance of the provisions of the CRF Act, 2000, CRF (State Road) Rules, 2007 and other Rules and codal provisions for planning and execution of works are discussed below:

3.5.2 Physical progress

The present position of projects sanctioned during the five year audit period from 2008-09 to 2012-13 are given in table shown below:

Table 3.10: Details of works sanctioned, completed and pending for the period 2008-13

	CRF State roads			ISC			Total		
	No.	Length in km	Sanctioned cost (₹ in crore)	No.	Length in km	Sanctioned cost (₹ in crore)	No.	Length in km	Sanctioned cost (₹ in crore)
Ongoing projects as on 31 March 2008	21	352.635	138.14	4	87.600	33.02	25	440.235	171.16
Projects Sanctioned during 2008-13	47	676.96	424.64	1	9.7	7.10	48	686.66	431.74
Total	**68**	**1029.595**	**562.78**	**5**	**97.3**	**40.12**	**73**	**1126.895**	**602.90**
Completed during 2008-13	56	868.395	433.44	4	87.6	33.02	60	955.995	466.46
De-sanctioned	2	0	6.29	0	0	0	2	0	6.29
Work not taken up	1	6.00	3.73	0	0	0	1	6.00	3.73
Ongoing Works	9	155.20	119.32	1	9.7	7.10	10	164.90	126.42

3.5.3 Financial outlay and expenditure

Year-wise position of budget allocation, receipt of funds from GoI, corresponding expenditure by GoK are given in table below:

Table 3.11: Details of budget provision, grants received from GoI etc.

(₹ in crore)

Year	Budget provision	Sanctioned cost of projects by MoRTH	Funds released by GoI	Expenditure	Excess (+) / Savings (-) over BE (percentage in bracket)
2008-09	49.50	103.73	44.85	51.88	(+) 2.38 (4.81)
2009-10	58.70	85.68	60.12	58.40	(-) 0.30 (0.51)
2010-11	151.86	169.65	81.34	154.36	(+) 2.50 (1.65)
2011-12	51.04	0	4.44	51.12	(+) 0.08 (0.16)
2012-13	148.86	66.39	124.86	154.79	(+) 5.93 (3.98)
Total	**459.96**	**425.45**	**315.61**	**470.55**	

State Government incurred an expenditure of ₹ 470.55 crore, against which GoI reimbursed only ₹ 315.61 crore during the period from 2008-09 to 2012-13 leaving a shortfall in re-imbursement to the extent of ₹ 154.94 crore. The delay in taking up and completion of projects in compliance with CRF Rules resulted in short fall in release of fund by GoI. The flow of fund from GoI was dependent on the works executed and any failure to comply with the stipulations would affect adversely the flow of fund from GoI. The department has not maintained work wise details to facilitate any reimbursements in case of shortfall.

3.5.4 Planning

Audit scrutiny revealed that the primary requirement of survey and investigation for balanced development of infrastructure in the road network of the State [Rules 5 (5) of CRF Rules] was not available with the department. The department did not prepare any work plan, either annual or composite to execute the projects in a systematic manner. The department stated that the selection of projects was made on the basis of the requests of MLAs, MPs and Ministers. This led to various disparities in taking up CRF projects as mentioned below.

3.5.4.1 Regional imbalance in selection of road works

As per Rule 5(5) of CRF Rules, the project shall be selected with a view to have a balanced development of the road network in the entire State. However, no projects had been sanctioned in Idukki district of the State ever since the CRF schemes had been implemented in 2001 and in Wayanad since the last five years despite the fact that these districts share border with other States and are important for ISC. The district-wise details are as shown below.

Table 3.12 : Details of projects sanctioned during the period 2001-02 to 2012-13

Sl. No.	Name of district	Total	Sanctioned cost (₹ in crore)	Actual expenditure	State roads		ISC projects	
					Completed	Ongoing	Completed	Ongoing
1.	Thiruvananthapuram	17	164.28	173.58	16	1	-	-
2.	Kollam	1	7.85	4.35	0	1	-	-
3.	Alappuzha	2	17.75	12.08	1	1	-	-
4.	**Pathanamthitta**	**1**	**8.45**	**11.44**	**1**	**0**	-	-
5.	Kottayam	6	89.73	56.77	3	3	-	-
6.	**Idukki**	**0**	**0**	**0**	**0**	**0**	-	-
7.	Ernakulam	19	112.81	117.09	19	-	-	-
8.	Thrissur	4	21.21	21.54	4	-	-	-
9.	Palakkad	4	46.59	38.41	1	1	1	1
10.	Malappuram	9	79.78	59.49	8	1	-	-
11.	Kozhikode	13	59.04	47.98	12	1	-	-
12.	Wayanad	5	31.76	32.27	2	-	3	-
13.	Kannur	7	60.12	57.58	6	1	-	-
14.	Kasaragod	3	21.00	17.79	3	-	-	-
	Total	**91**	**720.37**	**650.37**	**76**	**10**	**4**	**1**

Audit observed that the department has not selected road works so as to have a balanced development as mandated by the Rules.

3.5.4.2 Projects on Inter-State Connectivity (ISC) and Economic Importance (EI) were ignored

During the period 2008-13, only one project[46] under the category of ISC was taken up whereas no projects under the category of EI had been taken up since 2001.

[46] Improvements to Kannannur Mercy College Mepparambu Kavilppadu olavacode road connecting NH 47 and NH 213 in Palakkad district.

3.5.4.3 Overlapping projects

MoRTH approved in principle (July 2010) execution of the 13.710 km of road comprising – 'Improvements to Aluva - Paravur road from km 1/330 to 12/200 km' and 'Anchal –Vazhikulangara road from km 0/000 to 2/840 km' under the category of EI at a cost of ₹ 8.10 crore. But another project viz 'CRF - link road connecting NH 17 and NH 47 under the improvement to riding quality of Parur - Nedumbassery Airport road' had also been sanctioned by MoRTH in November 2009. The second project includes the first road except the portion of 'Anchal –Vazhikulangara road' from km 0/000 to 2/840. Audit observed that proposal of the same road under two projects led to overlapping which eventually lead to halting one of the projects. Thus the absence of sound planning system eventually resulted in granting two sanctions for a single project.

3.5.4.4 Selection of NH projects using CRF allotment for State road projects

Projects required in NH roads are being funded by GoI directly. CRF allotment to States was meant for utilising on State roads. Audit revealed that the project 'Construction of Dharmadom Bridge in NH 17' in Kannur District which was completed at a cost of ₹ four crore was taken up by National Highways Division, Kannur using CRF. CE replied that due to sudden settlement of piers, the bridge was in the verge of collapse and that there was no provision made in Annual Plan and hence CRF was used immediately for the construction of bridge.

Audit observed that the bridge forming part of NH wing should have been constructed utilising funds allotted for NHs and the CRF meant for State roads could have been utilised for other eligible State road projects.

3.5.4.5 Projects proposed without ensuring availability of land

Rule 5 (3) of CRF Rules *inter alia* stipulates that the proposals shall include only those projects where land is available without any encumbrance. But the department prioritised and obtained sanction of MoRTH for two projects in two divisions[47] without ensuring the availability of unencumbered land/clear site. Various pre-requisites such as acquisition of land, clearance from forest department etc. were not obtained prior to taking up the project. This had resulted in lagging of projects or de-sanctioning of projects by MoRTH as shown below:

Table 3.13: Details of projects proposed without ensuring availability of land

Sl. No.	Name of projects	Year of sanction	Present position of the projects	Reason for non-availability of land	Amount involved (₹ in crore)
1	Anakayam bridge in Nedumbassery-Kodaikkanal road (NH division, Muvattupuzha)	October 2008	De-sanctioned by MoRTH (August 2011)	Want of clearance from GoI to divert Forest land for the construction	5.17

[47] Muvattupuzha and Kannur .

Sl. No.	Name of projects	Year of sanction	Present position of the projects	Reason for non-availability of land	Amount involved (₹ in crore)
				of bridge	
2	Ezhimala-Vellur-Padiyottuchal road-Pulingome from chainage 37/800km to 43/234 km including construction of bridge (NH Division, Kannur)	June 2005	Completed in March 2010 with a delay of more than two years. Delay resulted in enhancement of contract value by ₹ 1.61 crore.	Non shifting of utilities from the alignment of road	1.61

The award of project without ensuring the availability of unencumbered land not only resulted in non completion of project and escalation of cost but also delayed further grants by GoI.

3.5.4.6 Improper planning and evaluation of projects

Selection of the following projects without planning and absence of evaluation of benefit to public, resulted in dropping the project midway or remaining incomplete indefinitely after incurring ₹ 5.91 crore in two cases test checked in two divisions as shown below:

Table 3.14: Projects for which intended benefit could not be served

Sl. No.	Name of projects	Status/ expenditure incurred	Details of project	Audit observation
1	Ezhimala-Vellur-Padiyottuchal-Pulingome from chainage 37/800 km to 43/234 km including construction of bridge (NH Division Kannur)	Work completed on March 2010 Expenditure: ₹ 5.83 crore	The bridge is situated on the State border and ends in forest area of the State of Karnataka. The cost incurred for the construction of the bridge alone was **₹ 1.75 crore**. The improvement of the road was given top priority stating that the road was the shortest link between Ezhimala Naval Academy and Bangalore from where infrastructure related requirements of naval academy was to be conveyed. The work could not be arranged beyond the border as the land is situated in forest area.	The project was wrongly prioritised and executed without considering the fact that the other end of the bridge was forest land of another State and as a result the expenditure for the bridge became idle. Though the work in the State of Kerala has been completed, the work in the State of Karnataka could not be arranged. The State Government should have co-ordinated with Government of Karnataka for the timely completion of work.
2	Construction of Kalpetta bye pass (NH Division Kozhikode)	Expenditure: ₹ 4.16 crore Balance work is being carried out by Roads Division,	In June 2006, construction of Kalpetta bye pass with provision for pavement was awarded using CRF in NH Division, Kozhikode. Owing to defective	The intention of CRF is to utilise the fund for development of the road as per Indian Road Congress/MoRTH specification. But due to omission in providing

Sl. No.	Name of projects	Status/ expenditure incurred	Details of project	Audit observation
		Kalpetta	planning, sufficient quantity of various items work was not included in the estimate. Therefore the work was completed only up to embankment level with an expenditure of **₹ 4.16 crore**. The balance work is being executed by roads wing of State PWD using State fund and the work has not been completed so far (June 2013).	sufficient items/quantities in the work, the bye pass has not materialised even after expending ₹ 4.16 crore from CRF. CE replied that the expenditure towards extra quantity of random rubble and hard rock excavation was assessed as ₹ 2.20 crore but there was no provision to meet the extra liability. Hence it was decided to close the project at formation level.

3.5.5 Delays

According to CRF (State Road) Rules, 2007 for the disbursement of the CRF in respect of specified projects, an individual project is required to be technically approved, financially sanctioned and awarded to contractor within a period of four months from the date of approval from GoI and period of completion should not exceed 24 months including tendering process.

Test check of records of three[48] implementing circles regarding the projects awarded during 2008-09 to 2012-13 revealed that there was delay in award of work by the department in respect of 41 projects ranging from one month to 34 months and hence the commencement of the project was delayed.

In two cases, the projects had to be awarded at higher costs. The cost overrun consequent on the delay in the award of project in two cases amounted to ₹ 2.08 crore as illustrated below:

- The project of Improvements of riding quality of SH 52 Palakkad - Pollachi road was sanctioned by MoRTH in June 2007 for ₹ 9.28 crore against the estimate of ₹ 8.79 crore. The lowest quoted (October 2007) rate was 12.97 *per cent* above the estimate rate. State Government approved (March 2008) nine *per cent* above estimate rate after a lapse of five months against the stipulated period of four months. But contractor was not willing to execute the project at the rate approved by the department. Subsequently, the work was re-tendered and awarded in January 2010 at 28 *per cent* above estimate rate after a lapse of 31 months from the date of sanction with an excess cost of ₹ 1.32 crore.
- The project of Improvements to Thrikkunnapuzha-Mavelikkara (via) Nangiarkulangara road was sanctioned by MoRTH for ₹ 7.02 crore in January 2011. The Estimated PAC of the work was ₹ 6.65 crore. The project was tendered with last date for submitting tender proposals as 28 February 2011. Financial bid was opened on 19 May 2011.The lowest offer received was ₹ 7.41 crore. As firm period of 120 days

[48] NH Central circle, Kochi, NH North circle, Kozhikode and NH South circle, Thiruvananthapuram.

from 28 February 2011 expired on 28 June 2011 the lowest bidder extended the firm period for further three months up to 29 September 2011. However, the department approved tender only in October 2011. The lowest bidder refused to take up the project. The department approved (April 2012) the offer of second lowest bidder with the agreed PAC was ₹ 8.17 crore. Audit revealed that delay in finalisation of tender within the firm period led to extra commitment of ₹ 0.76 crore.

3.5.6 Modification of specification in violation of sanction led to extra expenditure

As per para 1801.1.2 of KPWD Manual the specifications should not be changed during the execution of the project unless warranted due to technical reasons. Audit revealed that the alterations to the approved specifications were made without proper justification and resulted in avoidable extra expenditure of ₹ 42.68 lakh as detailed in table shown below:

Table 3.15: Details of projects with unjustified changes in specifications

Sl. no.	Name of projects	Expenditure incurred/ Status	Nature of projects	Audit observation
1	Improvement to Muvattuppuzha-Theni road	₹ 5.41 crore project completed	The thickness of Bituminous Concrete (BC) as per the estimate approved by CE was 25 mm. Accordingly the quantity sanctioned was 1500 m^3. While inviting tenders the thickness was enhanced from 25 mm to 30 mm by SE resulting in increase in the quantity of BC by 318.235m^3	SE has not furnished any technical reasons for the modification of the thickness except the plea that Tender schedule provided of thickness of 30 mm. Hence the change was unwarranted as no valid reason attributed to the change and this has resulted in excess expenditure of **₹ 21.12 lakh.**
2	Improvements to Padanilam-Nanminda road	₹ 8.83 crore project completed	The scrutiny of the project file of CRF 2010-11 under NH Division, Kozhikode, showed the Surface Dressing was provided as extra item and was executed on WMM for allowing traffic. The item of Surface Dressing was not provided in the project sanctioned estimate of MoRTH.	As per MoRTH specification 112.2 the contractor should have done the project of widening road by allowing traffic along part width of existing road by providing treated shoulders on the side where project was not progressing. The treatment on shoulders included providing of Granular Sub Base (GSB) and surface dressing over it. As per MoRTH specification 112.6 such treatment was an incidental item of project and should be the responsibility of the contractor and should not be paid separately. Hence payment for the same as an extra item was unwarranted. The extra expenditure works out to **₹ 13.52 lakh.**
3	Strengthening and improvements to Azhichilam-Faroke college-Faroke Chungam	₹ 2.18 crore project completed	In the sanctioned estimate (May 2009) of the project, the area to be widened is 6597 m^2 and area of existing road to be raised by laying Built up Spray Grout (BUSG) was	(i) Road widening was proposed with the courses of layers of GSB, WMM, BM and BC. But deviating from original sanction an additional course

Sl. no.	Name of projects	Expenditure incurred/ Status	Nature of projects	Audit observation
	Road connecting Calicut Bye pass and NH 17.		1,304 m^2. On execution, the area to be widened was limited to 2,529.54 m^2 due to insufficient land width and quantity of BUSG (in area) enhanced to 36,793.47 m^2 citing execution of BUSG in entire area to increase in crest thickness.	of BUSG was provided in the widened area of 2,529.54 m^2 instead of 1,304m^2 as provided in the original estimate. This has resulted in an avoidable expenditure of **₹ 5.39 lakh**. (ii) Before applying bituminous courses, tack coat was to be applied on existing bituminous layer and prime coat on non bituminous layer as per MoRTH specification. However in violation of the same, prime coat was applied over both bituminous and non bituminous areas before applying BUSG. Avoidable expenditure due to providing prime coat instead of tack coat for an area of 22221.73 m^2 was **₹ 2.65 lakh**.

3.5.7 Absence of a monitoring system

The expenditure incurred for projects utilising CRF is reimbursed from GoI subject to restrictions such as;

i) Expenditure to the extent of 110 *per cent* of sanctioned cost of a project.
ii) Project should be commenced within four months and completed within 24 months of sanction.

Reimbursement from GoI (₹ 315.61crore) was far short (₹ 154.94 crore) of expenditure incurred (₹ 470.55 crore), as detailed in Table 3.11. Audit revealed that CE, NH or the State Government had neither project wise reimbursement details nor reason for shortage of reimbursement. Further, Government did not take timely action to arrange the projects within four months so that projects could be completed within 24 months. Government replied that the shortage of reimbursement was not taken up with GoI and that there is no system of informing shortage of reimbursement. It was also stated that the department does not have a system of maintaining project -wise reimbursement.

Audit recommends that there should be a mechanism to monitor progress of projects sanctioned and reimbursement from MoRTH so that the Government would be able to get the amount reimbursed from GoI in time.

3.5.8 Impact

Sl.No.	Particulars	Reference to para	Amount (₹ in crore)
1	Overlapping projects	3.5.4.3	8.10
2	Selection of NH project using CRF allotment for State road projects	3.5.4.4	4.00
3	Projects proposed without ensuring availability of land	3.5.4.5	6.78
4	Improper planning and evaluation of projects	3.5.4.6	5.91
5	Delays	3.5.5	2.08
6	Modification of specification in violation of sanction led to extra expenditure	3.5.6	0.43
Total			**27.30**

3.6 Inadmissible payment to contractor for works not executed

Over payment of ₹ 0.91 crore by the EE due to improper assessment of actual work executed

The Superintending Engineer (SE), Roads and Bridges, North Circle, Kozhikode awarded two Road improvement works namely 'Improvements to Karyavattom-Alanalloor road' (Work-I) and 'Mankada-Pattikkad road' (Work-II) in Malappuram district with Estimated Probable Amount of Contract (EPAC) of ₹ 2.15 crore as detailed below:

(₹ in crore)

Particulars	Work I	Work II	Total
Date of Award	July 2005	August 2004	
EPAC	1.08	1.07	2.15
Accepted rate	17.99 *per cent* below EPAC	27.92 *per cent* below EPAC	
Contract amount	0.93	0.78	1.71
Revised EPAC	1.65	1.80	3.45
Date of completion	February 2007	August 2007	
Claim preferred by the contractor	1.44	1.37	2.81
Amount paid to the contractor	1.19	0.91	2.10
Month of payment	June 2008	May 2007	
Balance payment due	0.25	0.46	0.71

In June 2007 Audit objected to the revised estimate as it exceeded the powers of the SE. EE, Roads Division Manjeri therefore paid ₹ 2.10 crore limiting the payment within the sanction amount of ₹ 2.15 crore. Aggrieved by non-

receipt of balance amount, the contractor moved the High Court. In the counter affidavit filed, the EE admitted the claims of the contractor, based on which the High Court ordered (27 August 2009) to release the balance amount. The department effected payment of balance amount of ₹ 0.71 crore in May 2011.

Audit scrutiny of records of the Division revealed that:

1. A departmental scrutiny of work was ordered (October 2010) and conducted in January 2011/April 2011 to assess the actual work executed by the contractor. It was found that ₹ 2.10 crore paid before the Court's intervention was actually in excess of the work done by ₹ 19.85 lakh (₹ 17.51 lakh for work I + ₹ 2.34 lakh for work II). It is evident from this that the EE admitted the excess payment without proper measurement of work actually done. Further, by filing an affidavit admitting the contractor's claim for a further amount of ₹ 0.71 crore, the EE was responsible for a total excess paid amount of ₹ 0.91 crore.
2. The Court while giving direction (August 2009) for payment had opined that it is open to the Government to take appropriate steps against the contractor if the work had not been completed satisfactorily. Based on the belated scrutiny conducted by the department in January 2011/April 2011, the department could have recovered the excess paid amount from the contractor. Instead they chose to file a writ petition which was not necessary to effect the recovery.

The matter was reported to the Government in July 2012. The Government replied (October 2013) that the withheld amount was released based on orders of the High Court and that the delinquent officers were punished for the erroneous sanction of revised estimates. Government also stated that a writ appeal was filed in the High Court for recovering the excess amount from the contractor. The second part of the reply is not acceptable due to the fact that the High Court had given an order that gave room for recovery of amounts for work not done by the contractor and there was no need for the department to approach the Court.

3.7 Time and cost overrun due to delay in revision of a faulty design

Absence of adequate field work and subsequent delay in revising design in construction of a bridge resulted in time overrun by more than six years and cost overrun of ₹ 13.79 crore.

Public Works Department issued (September 2004) AS for the construction of Mattool-Madakkara bridge across Mattool river in Kannur district under the RIDF X scheme of NABARD at an estimated cost of ₹ 11.50 crore (based on 1999 SoR). The work consisted of construction of a 259.43 m bridge having seven spans approved by Design Research Investigation and Quality control Board (DRIQ). The length of approach road was 475 m on Madakkara side of which 250 m passes through water logged area and for a length of 508 m on Mattool side.

The work was technically sanctioned (November 2004) for an estimated cost of ₹ 9.79 crore. The work was awarded (March 2005) to M/s.Kerala State Construction Corporation Ltd. (KSCC) by SE, Roads and Bridges, North Circle, Kozhikode at 20.50 *per cent* above the estimate rate at an agreed EPAC of ₹ 11.11 crore. The work was to be completed by April 2007.

The land was handed over to the contractor on 5 April 2005 for construction work. The contractor commenced the work and requested (May 2005) the department to change the scope and design of the work by extending the bridge to cover the portion of the approach road over the water logged area at an estimated extra cost of ₹ 9.18 crore. Total cost of original works and extra works (including tender excess) was ₹ 20.29 crore. As no decision on his proposal was taken, the contractor stopped the work (June 2006) after completing six pile groups incurring an expenditure of ₹ 3.78 crore. The Division submitted (August 2006) a revised design of bridge to cover approach road. Government rejected the said proposal in August 2007 and directed the department to complete as originally designed and estimated.

However, based on a subsequent report of the CE (R&B) (December 2008), Government issued (February 2009) revised AS for ₹ 31.78 crore (based on 2008 SoR) including provision for payment already made amounting to ₹ 3.78 crore for executed item of work. CE approved the revised estimate for ₹ 31.78 crore incorporating 11 extra items which covered the construction of bridge proper over the water logged area. Government also conceded the demand of the contractor for rate revision and sanctioned revised rate at 10 *per cent* over the estimate for the balance work which resulted in escalating the total contract value to ₹ 34.08 crore. The payment made to the contractor (upto January 2014) amounted to ₹ 33.65 crore. The work was completed in February 2014.

The defective design in the project and undue delay in revision of estimates to remedy the same resulted in cost escalation of ₹ 13.79 crore[49] and time overrun by more than six years (as of February 2014).

The matter was reported to Government (July 2013); their reply has not been received (March 2014).

3.8 Undue benefit to a contractor

Extra expenditure of ₹ 0.80 crore due to calculation of rates for 'extra item' based on SoR 2010 instead of SoR 2007 and mistake in reckoning the distance from source of material to the work site

Government issued AS (August 2006) for the work of Improvement of 16100 metres of Kottayam-Kumarakom-Thaneermukkom road in three[50] reaches at an estimated cost of ₹ 6.91 crore under RIDF XI Scheme of NABARD for tourism development. The work was technically sanctioned for an estimated cost of ₹ 6.80 crore based on 2004 SoR. The SE, Roads and Bridges, South

[49] ₹ 34.08 crore - ₹ 20.29 crore

[50] Reach- I : Baker Junction to Illickal bridge – 4,200 metres.
Reach-II : Illickal bridge to Kumarakom boat jetty – 7,200 metres.
Reach-III: Boat jetty to Pennar bridge-4,700 metres.

Circle, Thiruvananthapuram invited tenders on three occasions between January 2007 and May 2008, but all the three tenders could not be finalised either due to incomplete bids or reluctance by contractors to extend firm period.

The work was tendered for the fourth time during June 2009 and was awarded (November 2009) to a contractor[51] at 65 *per cent* above the estimates. The Agreed Probable Amount of Contract amounted to ₹ 9.53 crore. The work was completed in December 2011 and total payment of ₹ 18.76 crore was made.

The original proposal for the base course of the road was 'Water Bound Macadam[52]' (WBM). During execution of the work (November 2010) the base course was changed from WBM to 'Wet Mix Macadam'[53] (WMM) for the reason that the WMM would be better considering the type of soil, more durable and better for the life of pavement. The revision of base course from WBM to WMM was treated as an 'extra item' and the rate was worked out to ₹ 1,355/cum based on SoR 2010. The quantity of WMM actually executed was 22,938.385 cum and amount paid on the same was ₹ 5.13 crore.

The Audit scrutiny of records in this regard in the office of the CE, Roads and Bridges, Thiruvananthapuram revealed the following:

- The change from WBM to WMM was decided after ascertaining the site conditions, nature of soil, the connectivity of the road from Kumarakom with other part of the town, the state of road during monsoon season etc. The department had ignored the site condition while preparing the original estimates and awarding the work. Hence this had to be assigned as an 'extra item'.

- For effecting the changes in the base course from WBM to WMM, the rates as per SoR 2010 were adopted instead of SoR 2007. This was a violation of tender conditions which stipulate that the rate of 'extra item' should be arrived at applying the rates as per original tender on which the tenders were invited. As a result there was an excess expenditure of ₹ 53.91 lakh (**Annexure XI)**.

- Similarly, it was noticed that while changing the base course from WBM to WMM, it required three types of Bolder Stone (BS) to be transported to the site. However, while calculating the conveyance charges of BS the distance was reckoned as 36 kms against the actual distance of 30 kms. The conveyance charges of BS for one cum. of WMM for 30 kms worked out to ₹ 385.97 as per SoR 2007. But in the computation of rates, for extra items, it was incorrectly reckoned as ₹ 443.78, the difference being ₹ 57.81 for one cum. of WMM. The resultant excess payment worked out to ₹ 26.47 lakh (**Annexure XI)**.

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[51] Shri.K.V.Joseph & sons, Kurickkal house, Edappally village, Ernakulam.

[52] WBM : A paved surface having compressed layer of clean crushed coarse aggregate mechanically interlocked, voids filled with binding materials with the assistance of water.

[53] WMM : it is a road base material consisting of crushed rock usually pre-mixed with controlled amount of water for adequate compaction.

Thus the calculation of rate of extra item in violation of contract conditions resulted in extension of undue benefit of ₹ 80.38 lakh to the contractor.

On this being pointed out the CE stated (July 2013) that the computation of extra items on the basis of SoR 2010 was a mistake and that action would be taken in due course.

TOURISM DEPARTMENT

3.9 Infructuous expenditure on wooden cottages

Adoption of unsuitable design for construction of wooden cottages at Ponmudi resulted in infructuous expenditure of ₹ 1.24 crore.

Government decided to construct a Tourist Complex at Ponmudi in Thiruvananthapuram district and AS was issued by General Administration (Tourism) department (August 2000) for construction of 15 wooden cottages at a cost of ₹ 1.17 crore utilising Central Assistance of ₹ 1.09 crore and State component of ₹ 0.08 crore. The works were to be executed through CPWD as deposit work stipulating the completion of work in 12 months.

The CPWD commenced the work in September 2003 on the basis of drawings and designs prepared by an empanelled architectural consultant of the Tourism department. The work was completed in December 2005 at a cost of ₹ 1.24 crore. Tourism department ordered in June 2007 to hand over all newly built cottages along with the old cottages and dormitories in the vicinity at Ponmudi to KTDC to operate a viable hotel within a shortest possible time. The cottages were handed over by CPWD after two years in December 2007.

The KTDC inspected the cottages and reported (February 2009) that these cottages were in damaged condition and hence, it could not operate the hotel (March 2014). A Committee of experts from CPWD, the architectural consultants engaged for this work and KTDC examined (April 2009) the condition of cottages and found that the structures had badly deteriorated due to exposure to severe weather conditions and non-occupancy of the cottages for more than three years since its construction.

The present condition of the cottages are as depicted in the photographs below:

Photographs of cottages (taken on 10 August 2013)



Audit scrutiny of the records of the Directorate of Tourism revealed the following.

- There was undue delay in the commencement and completion of the work. Though the AS was issued by General Administration (Tourism) department in August 2000, the work was commenced only in September 2003 i.e. after a delay of 37 months and completed in December 2005 against 12 months stipulated completion time. The Tourism department did not pursue with the CPWD for the timely completion of the work.
- The design of wooden cottages was not site specific taking into consideration the weather conditions at Ponmudi.
- The works completed by CPWD in December 2005 was handed over only in December 2007; after a delay of 24 months.
- No clear cut responsibility for maintenance of the cottages existed with the result that after their completion in December 2005 there was no regular maintenance especially of the wooden structures. Consequently, due to direct exposure to severe weather, the wooden structure of the cottages deteriorated and got badly decayed affecting the stability of the cottages and making them unfit for any profitable use.
- Though the department accorded sanction for construction of a tourist complex at Ponmudi in August 2000, the department decided only in June 2007 (after seven years) to operate a hotel through KTDC under the department.

Thus poor design and choice of material compounded with lack of maintenance and indecisiveness regarding manner of putting them to use led to deterioration and decay of the cottages making them unsuitable to be operated by the Tourism department thereby rendering the expenditure of ₹ 1.24 crore as infructuous.

The matter was reported to the department (October 2011) and to Government (July 2012); their reply has not been received (May 2014) despite reminders in October and November 2013 and March 2014.

WATER RESOURCES DEPARTMENT

3.10 Idle investment on incomplete irrigation projects

3.10.1 Introduction

Irrigation department[54] has taken up 25 major and medium irrigation projects to divert water for irrigating the ayacut[55] area. These projects consist of

- Water storage structures like dams/barrages/regulators
- Canal system consisting of main canals taking off from the reservoir, branch canals for taking water from main canals to distributaries which would feed water to the ayacut.

Of the 25 Projects, five major/medium irrigation projects viz. Muvattupuzha Valley Irrigation Project (MVIP), Idamalayar Irrigation Project (IIP), Karappuzha Irrigation project (KRP), Banasura Sagar Irrigation Project (BSP) and Attappilly kadavu Regulator cum Bridge (ARCB) are lying incomplete. Total cost of these projects originally envisaged was ₹ 89.19 crore. The same was revised several times, the latest cost estimate being ₹ 2,270.30 crore (25 times). Total expenditure so far (March 2013) incurred was ₹ 1,568.10 crore.

Audit reviewed implementation of three of the five projects during previous years as detailed below.

Name of the Project	Year of Audit Report	Paragraph Number of Audit Report (Civil)
MVIP	1983-84	4.1
	1993-94	4.1
IIP	1994-95	4.1
KRP	1984-85	4.1.5
	1996-97	4.1

The scope of present audit includes all the above five incomplete projects.

Audit verified the records pertaining to the period from 2008-09 to 2012-13 relating to construction and maintenance of the projects kept in seven divisions and the controlling offices like Office of the SEs and CEs to look into various reasons for failure to complete the projects and cost escalation.

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[54] The field department under water resources department of Government.
[55] Cultivable land that could be irrigated by the waters of a project.

3.10.2 Physical and Financial Status

3.10.2.1 Physical status

The canal system comprised main canals taking off from the reservoir, branch canals for taking water from main canals to distributaries which would feed water to the ayacut. The canals had not been completed resulting in time over run. Project details at a glance are depicted in table below:

Table 3.16: Status of projects as on 31 March 2013

Particulars	MVIP	IIP	KRP	BSP	ARCB	Total
Name of the River	Thodupuzha River	Periyar	Karappuzha	Karumanthodu at Padinjarathara	Kurumali River	
Nature of Water storage structures	Dam	Barrage	Dam	Dam of KSEB	Regulator	
Districts irrigated	Kottayam Ernakulam and Idukki	Ernakulam and Thrissur	Wayanad	Wayanad	Thrissur	
Project commenced	1975	1981	1978	1999	2008	
Period of completion originally fixed (in years)	10	10	5	4	2	
Proposed year of completion	1985	1991	1983	2003	2010	
Original project cost (₹ in crore)	20.86	17.85	7.60	37.88	5.00	89.19
Revised project cost (₹ in crore)	939	694	441.50	185.50	10.30	2270.3
Expenditure (₹ in crore)	851.23	378.74	291.04	42..85	4.24	1568.10
External assistance received for the project	154.964$	nil	48.32 @	nil	4.24^	207.524
Proposed length of canals (in km)	363.473	204.458*	128.93	73.395	No canal	770.256
Length of canal constructed (in km)	301.783	92.666*	47.67	2.905	No canal	445.024
Percentage completed	83.03	45.30	36.97	3.96	Not applicable	57.78[56]
Length of canal on which water distribution commenced for irrigation (in km)	247.345	0#	10.82	nil	No canal	258.165
Ayacut originally envisaged (Ha)	17400	20200	4650	2800	1490	46540
Revised ayacut envisaged (Ha)	19237	14394	5600	2800	2250	44281
Ayacut irrigable (Ha)	15202	0#	601.09	0	0	15803.09
Ayacut percentage achieved	87.36	0	12.92	0	0	33.96

[56] The figure represents percentage of length of canal constructed (445.024 kms)over the proposed length of canals (770.256 kms)

Particulars	MVIP	IIP	KRP	BSP	ARCB	Total
Overall status	Dam and main canals completed. Major portion of other canals completed.	Barrage already completed.Main canal to be completed.	Dam completed. Main canals completed.	Dam completed. Main canal to be completed.	Water storage structure to be completed.	

Source: Departmental figures, finance accounts, $ AIBP assistance, *including modification of existing CRBC and CLBC: # trial run alone conducted in March 2013 upto 23rd km; @NABARD loan ₹ 45.60 crore and AIBP ₹ 2.72 crore: ^ NABARD loan ₹ 4.24 crore.

The department was able to complete only 58 *per cent* of the proposed length of canal that could possibly irrigate only 34 *per cent* of the ayacut area planned despite huge cost and time overruns.

3.10.2.2 Financial status

The project is funded from the own resources of State Government, funds received from GoI as Accelerated Irrigation Benefit Programme (AIBP) and NABARD. All the assistance from GoI are included in the Consolidated Fund of State and budgeted under Grant "XXXVIII- Irrigation". The total expenditure for the projects as on 31 March 2013 was ₹ 1,568.10 crore.

Funds provided in Revised Budget[57] and fund utilised as of March 2013 in respect of the selected five projects is furnished in table below.

Table 3.17: Fund allocation and expenditure –project wise details

(₹ in crore)

Particulars	Expenditure upto 31 March 2008	2008-09	2009-10	2010-11	2011-12	2012-13	Total	Upto date Expenditure
MVIP								
Budget		14.83	11.40	31.62	16.31	25.13	**99.29**	
Expenditure	711.70	30.55	12.29	30.58	27.59	38.52	**139.53**	851.23
IIP								
Budget		31.47	14.36	13.62	10.00	15.63	**85.08**	
Expenditure	280.33	36.34	20..83	15.79	12.19	13.26	**98.41**	378.74
KRP								
Budget		16.87	20.90	13.65	6.02	5.24	**62.68**	
Expenditure	259.99	12.40	4.04	5..20	4.92	4.49	**31.05**	291.04
BSP								
Budget		8.90	5.59	5.79	7.50	6.08	**33.86**	
Expenditure	21.42	9.27	4.16	2.18	2.71	3.11	**21.43**	42.85
ARCB								
Budget		0	0	1.00	1.52	0	**2.52**	
Expenditure		0	0.61	1.72	1.91	0	**4.24**	4.24
Total								
Budget		72.07	52.25	65.68	41.35	52.08	**283.43**	
Expenditure	1,273.44	88.56	41.93	55.47	49.32	59.38	**294.66**	1,568.10

Project wise audit findings are given in succeeding paragraphs:

[57] There are separate minor heads for projects under major heads 4700 for MVIP, IIP and BSP and 4701 for KRP and ARCB.

3.10.3 Muvattupuzha Valley Irrigation Project (MVIP)

3.10.3.1 Profile of MVIP

The project is intended to provide irrigation to an area of 17,400 ha. for three harvests of crops of paddy a year in Idukki, Ernakulam and Kottayam districts by utilising the tail race waters[58] from Moolamattam power house of Idukki Hydro Electric Project released to Thodupuzha River. The Irrigation department constructed (1994) Malankara dam across Thodupuzha River for storing water to irrigate 17,400 ha. area. To take the water to ayacut on both left and right banks of the Thodupuzha River, two main canals taking off from the dam for a length of 65.437 km was constructed completely (2007). From the main canal the water is diverted to the ayacut through six branch canals having a length 57.154 km and 58 distributaries taking off from the branch canals for a length of 240.882 km. However, as on 31 March 2013, 61.668 km length of canal is yet to be completed even after lapse of 37 years of commencement of the project.

3.10.3.2 Time and cost overrun

The project MVIP commenced in 1975, was scheduled to be completed in 1985; but the construction of canals was still going on as of 31 March 2013 with a time overrun of 27 years. Time lag of 27 years on project resulted in revision of project cost on six occasions. In the latest revision in 2011, it was raised to ₹ 939 crore. When compared to the original cost of ₹ 20.86 crore the cost had escalated by ₹ 918.14 crore; cost escalation being 4,401 *per cent*. Cost escalation during the audit period was ₹ 98 crore.

3.10.3.3 Planning of physical features

Designing the physical features of the projects is the first step in planning. For designing the physical features, an investigation is necessary. Based on the investigation, design is carried out, hydraulic particulars[59] fixed and design drawing prepared. Individual works are estimated based on the design drawing. Any laxity in this regard would definitely result in delay in implementation of the projects. A test check of work files revealed that these steps were often overlooked in planning the projects as narrated below:

a) In MVIP, the structures of canals were designed without considering the hydraulic particulars of branch canals. In Karikode distributary, the upstream was narrower than the down stream. Resultantly, the cross section and bed slope for major portion of Karikode distributary was of a higher water discharge than what was available from the parent canal. The discharge of parent canal (Peruva) was 3.752 cum per second whereas the discharge of Karikode distributary was five cum per second. This has resulted in re-designing the canal which in turn resulted in non execution / completion of works.

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[58] Water pumped out of the hydro power plant after power generation.

[59] The parameters used to design various aspects of canals like width, depth, slope, lined or unlined beds and sides, types of structures, etc.

b) The contract for Mammalassery distributary of MVIP work was awarded (1999) without finalising the design of aqueduct[60] (chainage 1460 m to 1770 m). But on finalising the design (2001) contractor was not willing to do the work with the existing rates in the contracts. During execution of the re-tendered works it was found that the design was not suitable to the soil condition and hence it was revised in 2009. The work is going on (June 2013) based on the revised design.

3.10.3.4 Implementation

The implementation of a project starts after proper completion of planning at the initial stage of the projects. Any lapse in planning would result in defective implementation of the project. The defects in implementation as noticed in Audit are discussed in the ongoing paragraphs.

a) Delay in land acquisition

The land acquisition for the projects should have been completed prior to the awarding of the works. Since the project MVIP was scheduled to be completed in 1985 land acquisition should have been completed well in advance for the timely completion of work. The extent of land to be acquired at the end of March 2008 was 25.672 ha. Audit found that the extent of land acquired during the period 2008-09 to 2012-13 was only 18.370 ha. leaving a balance extent of 7.302 ha. of land still to be acquired.

The delay in land acquisition resulted in prolonging the completion of the project.

b) Slow progress in awarding the canal works

The status of completion of branch canals and distributaries are tabulated below:

Table 3.18: Status of canal system (Branches and distributaries)

(in km)

	Total length of canal to be completed as on 31 March 2008	Canal formation works completed in each year					Length of canal completed within five years	Total length to be completed as on 31 March 2013
		2008-09	2009-10	2010-11	2011-12	2012-13		
Branch canal	9.875	0	4	1.178	0.664	1.114	6.956	2.919
Distributaries	72.491	1.2	5.507	2.7	2.787	1.523	13.717	58.774
Total	**82.366**	**1.2**	**9.507**	**3.878**	**3.451**	**2.637**	**20.673**	**61.693**

Total length of canal left incomplete in MVIP as on 31 March 2008 was 82.363 km. The project authorities were able to award works for a length of 26.683 km (32.40 *per cent*) to the contractors who were able to complete 20.673 km (25.10 *per cent*) canal formation work during the last five years. The department could not award the balance 55.680 km canal work for execution till 31 March 2013. The slow progress in awarding resulted in non-completion of canal construction works.

[60] An artificial channel for conveying water, typically in the form of a bridge supported by tall columns across a valley.

Despite stipulation of 10 year period for completion of the project in the first DPR the project was incomplete (March 2013). Audit found that the delay was due to non-availability of land, non finalisation of estimate/revised estimate and other reasons as highlighted in table below:

Sl. No.	Name of canal/work with chainage	Details of works	Reason for delay in award/completion of work	Present status (31 March 2013)	Audit observation
Delay due to non-availability of land					
1	Anicadu east minor distributary ch 0 m to 1855 m	Agreement for the formation of the distributary was awarded in July 2004 for a contract amount (1999 SoR) of ₹ 2.48 crore. But due to non availability of land the site was not handed over to the contractor. The land was fully received in December 2009 only.	Contractor was not willing to execute the work at the agreed rate due to non-revision of rates. The estimates were revised based on 2009 SoR and the SE recommended (December 2011) to entrust the work to the original contractor at 2009 SoR.	In June 2012 contractor expressed his unwillingness to execute the work at 2009 SoR. Hence SE directed (August 2012) the EE to revise the estimate as per 2012 SoR. The estimate was not revised so far.	Defective planning resulted in non-acquisition of land which in turn resulted in non-completion of canal and non-achievement of ayacut of 100 ha.
2	Edayar distributary chainage 0 m to 4,215 m	Work was awarded in 2004 for an amount of ₹ six crore without getting land.	Department was unable to hand over the land due to non availability of land. Land was received in January 2010 only.	The contractor had expressed his willingness to execute the work at 2009 SoR and the fact communicated to Government in June 2011. Now department is trying to get the work executed through the same agency at 2010 SoR.	The work remained incomplete and hence ayacut of 265 ha. left un- irrigated.
Delay due to non finalisation of estimate/revised estimate					
3	Piravam Branch Canal (PBC) from chainage 4,150 m to 6,604 m (Expenditure: ₹ 1.49 cr.)	The work awarded (June 1995) for an amount of ₹ 1.35 crore at 54 *per cent* above on 1992 SoR. This was held up from 1996 due to vigilance enquiry against the award of work. Later, the work was entrusted (January 2007) based on Government orders at 45 *per cent* above 1999 SoR; scheduled month of completion was January 2008.	Contractor did not complete the work in time. SE did not extend the contract duration as the contractor was not willing to execute supplemental agreement with the condition that no enhancement rate would be asked for the works to be executed during the extended period. The contract was terminated only in July 2012.	Estimate of balance work amounting to ₹ 80.38 lakh had been submitted to CE. P II (February 2013) for getting sanction which is yet to be obtained.	There was inordinate delay of four years for termination and hence the work could not be rearranged at risk and cost liability of the contractor. SE replied that if the work had been terminated, the balance work required rate revision and much delay might have occurred on rearrangement. Reply of SE is not tenable for the reason that had the work been terminated and the balance work arranged on time, excess cost could have been recovered from the original contractor by invoking risk and cost clause in the agreement.

Sl. No.	Name of canal/work with chainage	Details of works	Reason for delay in award/completion of work	Present status (31 March 2013)	Audit observation
4	Manjoor distributary chainage 782 m to 981 m	The work was awarded in 2007.	Works involved siphon for crossing Railway for which two types of pipes having a diameter of 1300 mm and 800 mm were required as outer and inner pipes of siphon of which inner pipe was not included in the estimate. Revision of estimate subsequently to include the necessary items led to termination of work without risk and cost of the contractor (May 2009).	Balance work amounting to ₹ 34 lakh could not be rearranged so far due to non finalisation of estimate of balance work.	An amount of ₹ 46.44 lakh spent on partially completed structures remained unfruitful. The failure to incorporate the item for "inner pipe" in the estimate resulted in delay of six years.
5	Kidangoor distributary – aqueduct ch 3,770 m to 3,970 m	The construction of canal from ch 3,200 m to ch 49,00 m was awarded in October 2007. Open foundation was proposed in the sanctioned estimate.	While excavating (2009) for foundation hard soil strata was not met with as the strata was loose clayee soil. The contract was terminated in March 2011 as the contractor asked for rate enhancement and as the design was not finalised.	Design was finalised and estimate of balance work forwarded to CE in January 2013 for sanction for CE. An amount of ₹ 1.61crore already incurred for the work.	Defective investigation led to the non- arrangement of work which in turn resulted in non-achievement of entire ayacut of 360 ha
6	Elanji distributary ch 0 to 3,415 m (Expdr: ₹ 3.89 cr.)	Work awarded in December 1998. Work was standstill from March 2008. Later due to delay in completion of work contract was terminated in June 2010	SE was not able to obtain the fresh estimate from EE.	Balance work was not tendered yet.	The work remained incomplete and hence ayacut of 152 ha. left unirrigated.
Delay on account of other reasons					
7	Ezhuthonipadom aqueduct at over railway line of Ettumanoor Branch Canal ch 18,220 m to 18,275.5 m	The Railway agreed to undertake the staging, shuttering and signaling work for concreting over rail portion by railway itself. For the purpose, irrigation department had remitted an amount of ₹ 90.76 lakh (₹ 52.49 in March 2008 and ₹ 38.27 in October 2008) to Railways.	The work for the concrete work of the aqueduct tendered thrice (March 2011, March 2013 and April 2013). But tenders were not finalised so far due to non availability of offer/ favourable offers and hence Railway terminated the staging work awarded by them.	Railways requested (March 2013) the irrigation department to arrange the staging work along with concrete work as it was not feasible to synchronize both works if they were arranged separately. But, Irrigation department proposed (June 2013) to arrange the works separately again.	Audit observed that an amount of ₹ 90.76 lakh was blocked up with Railways for the last five years due to non-arrangement of work. It is also felt that arranging staging and shuttering work and concrete work separately was most unscientific and possibility of getting favourable offer is remote due to the difficulty of synchronising both the works.

3.10.3.5 Idling of expenditure

As the water is brought to the ayacut through canals on the system of gravitational flow, the canal work should have been arranged in such a manner that the works in upstream completed first. Failure to arrange the work in order of priority right from feeder has resulted in construction of canals of 43.037 km at a cost of ₹ 35.53 crore (**Appendix 3.2**) without connectivity.

Resultantly, water could not be distributed to an ayacut of 1695 ha. of land where the construction of canal works were idling. Hence, an amount of ₹ 35.53 crore is blocked without serving intended purpose.

3.10.4 Idamalayar Irrigation Project (IIP)

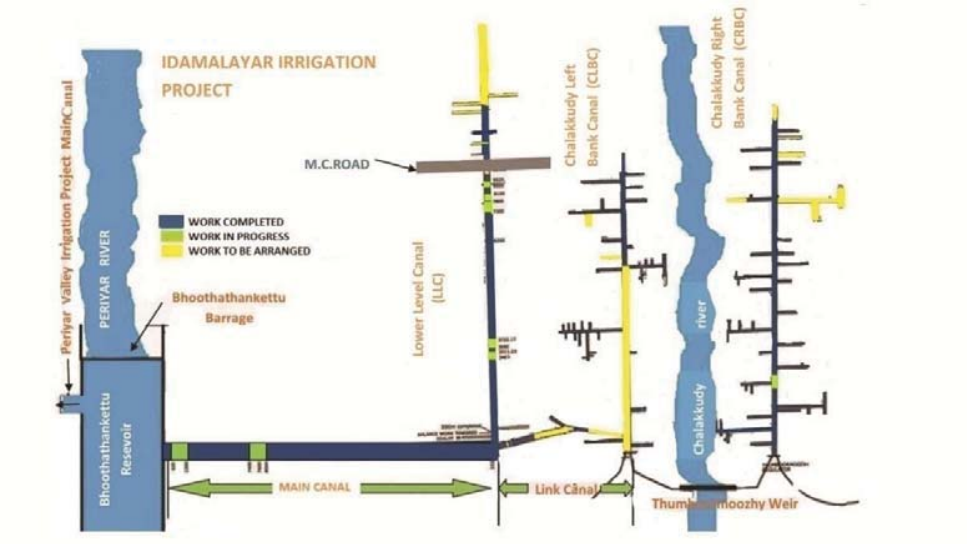
3.10.4.1 Profile of IIP

The IIP has two features.

- Utilising tail race water of Idamalayar Hydro Electric Project for irrigating the agriculture fields of right bank of Periyar River.
- Diverting water to the left bank canals (LBC) of the existing Chalakudy River Diversion Scheme (CRDS) and delink the LBC from CRDS which was being fed from Thumboormoozhi reservoir of the CRDS.

For the above purpose, the water is collected first in Bhoothathankettu Barrage of Periyar Valley Irrigation Project (PVIP). On delinking LBC of CRDS more water would be available in Thumboormoozhi reservoir of existing CRDS which would be released solely to ayacut of right bank canals (RBC). Hence the works involved in the projects are the construction of:

- Main canal (MC) of 32.28 km length taking off from the right bank of the Bhoothathankettu Barrage
- Low level canal (27.30 km) for drawing water from the MC
- Link canal (7.58 km) for drawing water from the MC and
- Re-modeling of the existing left and right bank canals of the CRDS, including construction of additional branches and distributaries to carry the augmented flow to serve additional areas, renovation of the existing canal systems under LBC and RBC of CRDS.



The low level canal (LLC) feeds an ayacut of 4,672 ha. in the right bank of the Periyar River. The MC having a direct ayacut of 999 ha. would be joined with

the existing LBC of CRDS through link canal to create an additional ayacut of 209 ha. on the left bank of Chalakudy River. The entire water now available under CRDS would be diverted to the RBC of the CRDS, thereby creating an additional ayacut of 8,514 ha. on the right bank of the Chalakudy River. Thus the total additional ayacut envisaged under the IIP is 14,394 ha.

3.10.4.2 Delay in implementation and resultant cost overrun

The project IIP was commenced in 1981 and scheduled to be completed within a period of 10 years. But the project is still under progress. Time lag of 21 years on project resulted in revision of project cost on four times taking the cost from ₹ 17.85 crore to ₹ 694 crore with a cost escalation by ₹ 676.15 crore (3,788 *per cent*). The cost enhancement between 2007 (₹ 539.50 crore) and 2012 (₹ 694 crore) was ₹ 154.50 crore. Audit observed that department had not formulated proper planning to the effect that the projects were completed in a phased manner within the time frame and at the cost proposed which led to time and cost overrun as explained in succeeding paragraph.

3.10.4.3 Delay in finalisation of design of canals due to non completion of investigation

Investigation is the first step to design a project. Only after investigation the detailed design could be prepared. But the project authorities failed to conduct investigation for finalising the alignment of some stretches of new canals LLC and new canals CRBC of CRDS. The absence of investigation hampered further progress in the execution of the formation of canals.

3.10.4.4 Slow progress of land acquisition

The assessment of exact area of land required for the purpose of construction of canals can be done only after the finalisation of alignment and design of canals. Owing to delay in finalisation of alignment the land acquisition process also was not started for formation of new branches LLC and new branches CRBC of CRDS. Besides, delay in various process of land acquisition also contributed non-completion of land acquisition in time.

The extent of land to be acquired at the end of March 2008 was not assessed so far due to non finalisation of alignment of new canals of RBC of CRDS. Audit found that land was not acquired during the period 2008-09 to 2012-13 for new branches LLC and new branches CRBC of CRDS.

3.10.4.5 Slow progress in works

During the period the department could award only 2.165 km of canal works. As on 31 March 2013 length of canal works to be completed was 111.792 km. The slow progress in awarding the work resulted in non-completion of canals.

Table 3.19: Status of formation and re-modelling of canal system

(length in km)

	Total length of canal completed as on 31 March 2008	Total length of canal to be completed as on 31 March 2008	Canal formation works completed in each year					Length of canal completed within five years	Balance length to be completed as on 31 March 2013	Percentage
			2008-09	2009-10	2010-11	2011-12	2012-13			
Main canal	15.107	17.171	0.7	5.626	2.135	4.478	2.958	15.897	1.274	7.42
Link canal	2.2	5.380	0	0.461	0	0.132	0	0.593	4.787	8.90
Low level canal (LLC)	10.086	17.214	1.1	1.072	0.011	0	0	2.183	15.031	87.32
Branches of LLC	0	26	0	0	0	0	0	0	26	100
Modification of CLBC	1	3.1	0	0	0	0	0	0	3.1	100
Modification of CRBC	45.6	2.6	0	0	0	0	0	0	2.6	100
Branches of CRBC and CLBC	0	59	0	0	0	0	0	0	59	100
Total	**73.993**	**130.465**	**1.8**	**7.159**	**2.146**	**4.610**	**2.958**	**18.673**	**111.792**	**85.69**

The department was able to award only 2.165 km of canal works and constructed 18.67 km of canals during five year period after incurring an expenditure of ₹ 98.41 crore.

Reason for slow progress of arranging work were due to non-availability of land, non finalisation of estimate/revised estimate and other reasons as given in the table below:

Sl. No.	Name of canal/work with chainage	Details of works	Reason for delay in award/completion of work	Present status (31 March 2013)	Audit observation
Due to delay in land acquisition and non-finalisation of estimate					
1.	Link canal 2000 m-7575 m	Construction of 4.787 km link canal to be arranged.	Land not acquired to the extent of 11 ha.	Revised proposal forwarded to Government (November 2011) for getting sanction for taking land under urgency clause in respect of chainage from ch 2000 m to 3000 m .	Delay in finalisation of land acquisition resulted in non-completion of the work.
2	Low level canal	Work for construction of LLC from chainage 10,490 m to 12000 m was arranged in June 2004.	Later, work was terminated (March 2009) due to non availability of land for crossing Main Central road. Estimate for the reach of road crossing was not finalised.	Work is standstill.	Audit observed that delay in finalisation of estimate and land acquisition led to the non-completion of the canal.
Due to other reasons					
1	Low level canal chainage 80 m to	The work was arranged in	The work was terminated in	Estimate for ₹ 79.6 lakh submitted to	Lack of co-ordination

Sl. No.	Name of canal/work with chainage	Details of works	Reason for delay in award/completion of work	Present status (31 March 2013)	Audit observation
	715 m.	April 2000.	November 2009 without risk and cost due to non-shifting of high tension line by KSEB. Later, work was re-tendered thrice (October 2010, November 2010, and March 2011).In last tender the lowest offer was 87 *per cent* above estimate rate. But Government approved 40.10 *per cent* only which was not acceptable to the contractor. Hence the work was not started.	CE (January 2013) for getting Technical sanction.	between Irrigation department and KSEB led to the non-re-arrangement of work of 635 m in the opening portion of LLC resulting in idling the construction of downstream portion of the LLC.

3.10.4.6 Idle expenditure on the project

The expenditure incurred so far was ₹ 378.74 crore in 31 years. The expenditure incurred was mainly for construction of canal system comprising MC, LLC, LC and re-modeling of CLBC and CRBC. But the construction work of MC was not completed so far. Though CC lining[61] of works in some reaches within 23 km are still to be completed, a trial run was carried out (March 2013). It was revealed in audit that a trial run of partially completed structures alone would not contribute for serving the ayacut due to the following reasons.

- Reaches between 0.625 to 1.350 km and 7.400 to 8.000 km of the MC were not completed
- There were incomplete portion in the initial chainage link canal and Low Level Canal.
- Construction of link canal was not completed yet due to failure to acquire 11 ha. land.

As water distribution could not be effected for irrigation under the project, an amount of ₹ 378.74 crore incurred for the project remained unfruitful.

3.10.5 Karappuzha Irrigation project (KRP)

3.10.5.1 Profile of KRP

Karappuzha Irrigation Project in Wayanad district was taken up in 1978 for increasing production of rice by 22,550 MT. The project envisaged construction of a dam across Karappuzha river at Vazhavatta along with canal system. The construction of the dam was completed. However, the department neither completed nor arranged any canal formation work during the last five years.

[61] Cement concrete lining works done through earthen canal.

3.10.5.2 Delay in implementation and resultant cost overrun in KRP

The project KRP was commenced in 1978 and scheduled to be completed within a span of five years.

Time lag of 29 years on project resulted in revision of project on five times and cost enhanced from ₹ 7.60 crore to ₹ 441.50 crore with a cost escalation of ₹ 433.90 crore (5,709 *per cent*). During the period between 2009 and 2012 the cost enhancement was ₹ 49 crore. Audit observed that department had not formulated proper planning to the effect that the projects could be completed in a phased manner within the time frame and at the cost proposed which led to time and cost overrun.

3.10.5.3 Slow progress of land acquisition in KRP

The project area required was 1481 ha. of land. Though the project was to be completed within five years in 1983, the land acquisition was not completed even by 2013. As on 31 March 2013, the department acquired 1,378.762 ha. of land leaving 102.238 ha. of land. The extent of land acquired during the period from 2008-09 to 2012-13 was only 14.9766 ha. which represented only 12.78 *per cent* of total 117.2146 ha. of land to be acquired as on 31 March 2008. The department stated that the progress in the work was hampered following a public demand and that the work may be resumed only after ascertaining the necessity of future acquisition of land. In this connection, the SE's office informed that the minutes of the meeting directing to acquire land only after public survey was not received from the Collectorate so far (August 2013).

3.10.5.4 Slow progress in arranging works in KRP

Total length of canal left incomplete in KRP as on 31 March 2008 was 81.26 km. The project authorities failed to arrange or to complete any length of canal formation works during the period 2008-09 to 2012-13. To a query in audit, the project authorities stated that no works were arranged by the department during the period between 2008-13. However, the department was not able to furnish any justification for not arranging the work even though land was available for construction of distributaries in some cases test checked by audit.

Status of canal system is as shown below.

Table 3.20: Status of canal system

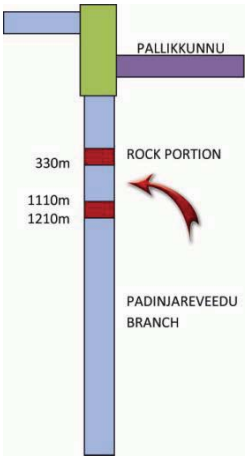
Category	Total		Completed as on 31 March 2013		Percentage completed	
	Numbers	Length (in km)	Numbers	Length (in km)	Numbers	Length (in km)
Main canal	2	25.545	2	25.545	100	100
Branch canals	5	43.24	1	20.005	20	46.27
Distributaries	21	60.145	1	2.120	4.760	3.52
	28	**128.93**	**4**	**47.67**	**14.29**	**36.98**

3.10.5.5 Non receiving of grant of AIBP

Central assistance under Accelerated Irrigation Benefit Programme (AIBP) was available for certain ongoing works in particular years in order to complete projects in a phased manner so that irrigation benefit reached to the public early. Funding for the years subsequent to first year will be based on the confirmation of expenditure of the previous years.

In KRP, GoI provided grant of ₹ 2.72 crore under AIBP for 2006-07 for 15 components. Audit found that bills of eight out of 15 works included under the AIBP were neither submitted nor finalised so far. Non finalisation of bills of works coming under AIBP led to loss of assistance under AIBP from 2007-08 onwards. Thus, due to negligence on the part of department, the State was deprived of any assistance in subsequent years in respect of this project.

3.10.5.6 Non commencement of water distribution due to poor execution of canal work



Though the construction of entire length of 25.545 km of main canal was completed, water distribution was not possible in Left Bank Main Canal (LBMC) beyond the chainage from 5 km due to blockage in cut and cover from 10.175 km and 15 km and excessive seepages in LBMC. Similarly, the water distribution was not commenced beyond 3.7 km of Right Bank Main Canal (RBMC) due to damages and seepages in RBMC. Therefore, water distribution was not possible in 36.85 kms and hence an expenditure of ₹ 63.87 crore (**Appendix 3.3**) remained blocked up for five years. Similarly, in Padinjareveedu branch canal the work had to be terminated due to detection of exposed hard rock between chainage 0/000 km to 0/430 km. As a result the work pertaining to the above chainage was re-aligned and the land acquisition work is in progress. Thus due to the lapses in investigation, the work was delayed for five years.

3.10.6 Banasura Sagar Irrigation Project (BSP)

3.10.6.1 Profile of BSP

Kerala State Electricity Board (KSEB) constructed a dam across Karamanthodu at Padinjarathara in Wayanad district to store 6.7 TMC feet[62] of water, of which 1.7 TMC ft of water would be used to irrigate the field by constructing canals. The project envisages to irrigate 2,800 ha. of land with increased food production of 8,838 tonnes of paddy annually.

3.10.6.2 Delay in implementation and resultant cost overrun

The project was commenced in 1999 and scheduled to be completed within a span of four years. The department was able to complete less than one *per cent* of canal work in five years after incurring an expenditure of ₹ 21.43 crore. Time lag of nine years on project resulted in upward revision of project cost two times from ₹ 37.88 crore to ₹ 185.50 crore with a cost escalation of ₹ 147.62 crore (390 *per cent*). The cost escalation during the audit period was by ₹ 58.50 crore. Audit observed that department had not formulated proper planning to the effect that the projects could be completed in a phased manner within the time frame and at the cost proposed which led to time and cost overrun. There was no intervention of higher authorities to fill the vacancies of technical staff in BSP which affected the progress of works.

[62] Thousand million cubic feet.

3.10.6.3 Slow progress of land acquisition in BSP

The total land required for the project was 72.462 ha. Though the land acquisition procedure had to be completed prior to the arrangement of the work, the department was able to acquire only 20.209 ha. of land in 13 years after incurring ₹ 42.85 crore.

As seen from the table, the extent of land acquired during the audit period 2008-09 to 2012-13 was only 5.7306 ha. which represented only 9.88 *per cent* of requirement.

Table 3.21: Details of land acquisition for the last five years

Total land to be acquired as on 31 March 2008 (in ha.)	Land acquired in last five years (in ha.)						Percentage of land acquired with respect to total balance land to be acquired	Balance land to be acquired (in ha.)
	2008-09	2009-10	2010-11	2011-12	2012-13	Total		
57.984	1.2275	3.4478	**0**	0	1.0553	5.7306	9.88307	**52.2534**

(Source: Departmental figures)

The department attributed the shortage of staff for survey, investigation as well as delay in getting land acquisition compensation, to the delay in land acquisition.

3.10.6.4 Slow progress in awarding works in BSP

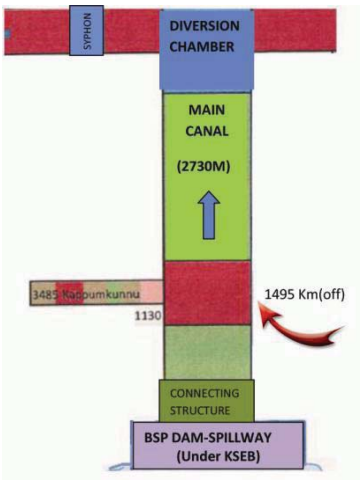
Total length of canal left incomplete in BSP as on 31 March 2008 was 71.185 km. The project authorities completed only 0.695 km canal formation work during the last five years leaving a balance length of 70.490 km of canal to be completed. During the period, the department could award only 1.615 km of canal construction works. The slow progress in arranging the work resulted in non-completion of canals. The delay in land acquisition, revision of estimates /design after awarding works and delay in approving revision of estimates and non-deployment of required number of technical staff in BSP for preparation of estimate /revised estimate led to delay.

Table 3.22: Status of canal system

(in km)

	Total length of canal to be completed as on 31 March 2008	Canal formation works completed in each year					Length of canal completed within five years	Total length to be completed
		2008-09	2009-10	2010-11	2011-12	2012-13		
Main canal	0.520	0	0	0	0.150	0	0.150	0.370
Branch canal	14.420	0	0	0	0	0	0	14.420
Distributaries	56.245	0	0	0	0.545	0	0.545	55.700
Total	**71.185**	**0**	**0**	**0**	**0.695**	**0**	**0.695**	**70.490**

3.10.6 .5 Defective investigation



The work of canal construction from ch 1130 m to 1500 m of main canal was awarded in October 2004 stipulating the period of completion in October 2006. During the course of execution, it was noticed that the open foundation proposed at Piers[63] P2 to P4, P7 and P8 was unsuitable due to the soil strata at the proposed site. Hence the open foundation was changed to Pile foundation. Thus due to lapse in investigation, the work had to be stopped after incurring an expenditure of ₹ 47.86 lakh. The work is at stand still (31 March 2013).

3.10.6.6 Termination of work due to non-handing over of site

Process of land acquisition and construction programme was not synchronized. In BSP, 12 canal formations works costing ₹ 16.88 crore were awarded on or before 2008 with a period of completion of six to 18 months. Consequent on non finalisation of land acquisition process there was delay in handing over/non handing over of site to the contractors which resulted in stoppage/delay in execution of work. Hence, these works were terminated and remain to be rearranged. Audit observed that had the land acquisition been synchronized with work awarded, the work could have been arranged in 2010 and completed by 2012.

3.10.6.7 Idle expenditure

As on 31 March 2013, an amount of ₹ 42.85 crore was spent on BSP. However, water distribution could not be commenced due to non completion of main canal from ch 1130 m to 1500 m. More importantly the irrigation department had fixed the Minimum Drawdown Level[64] (MDDL) for irrigation supply is 760.075 m above Mean Sea Level (MSL) which was the off take level of main canal. However, data available with the KSEB revealed that water level in the reservoir was lower than the off take level fixed for BSP during March 2007 to May 2007 (average 755.4 m), April 2008 to May 2008 (average 755.7 m), April 2009 to May 2009 (average 755.7 m) and May 2010 (756.3 m). This confirms that the project work would be ineffective even with the commissioning of the project.

3.10.7 Attappillykadavu Regulator cum Bridge (ARCB)

3.10.7.1 Idle expenditure due to non completion of the project

Construction of ARCB was awarded in June 2008 with a period of completion as 24 months. After completing 70 *per cent* of the work, work was held up

[63] Pillars of bridge.
[64] Height from MSL at which the outlet to be provided on the dam for drawing water for irrigation purpose.

from 31 March 2012 due to non-availability of fund from NABARD. Delay in completion of the project was attributed to continuous flow of water in the river, revision of design and non availability of sufficient land for approach road. An amount of ₹ 4.24 crore was spent for the project so far and ₹ six lakh payable to the contractor. It was estimated by EE that the balance work would cost ₹ six crore at 2012 SoR. Thus the cost escalation would be 106 *per cent* when compared to AS of ₹ five crore. Audit observed that as major portion of the work viz. erection of shutter was not commenced, no irrigation potential was created. Hence the entire expenditure of ₹ 4.24 crore spent on the project remained unfruitful.

3.10.8 Conclusion

Delay in land acquisition, poor investigation, execution and contract management coupled with ineffective monitoring led to huge time and cost overruns and creation of idle infrastructure.

3.11 Undue benefit to a contractor in five inland navigation works

Non-execution of agreements as provided for in tenders resulted in granting undue benefit of ₹ 1.03 crore to contractor in five canal improvement works undertaken in Kottayam district.

The Director, Inland Navigation, Water Resources department, Kollam (Director) invited tenders (February 2011) for five[65] inland navigation works for improvement of five stretches of boat route / feeder canals in Kottayam district under RIDF XVI programme of NABARD. The EPAC of all the five works were ₹ 5.38 crore. The work involved deepening the canal bed using suitable mechanical means and depositing the spoil conveniently at suitable places sufficiently away from the banks at contractor's own risk including hire charges of dredger or any other mechanical means, cost of oil etc.

As per Notice Inviting Tenders (NIT), bidders were required to work out their workable rates independently and submit their bids quoting only a single fixed percentage rate above or below or at par with the Net PAC (NPAC). In all the five works put to tender, there was no supply of departmental machinery or materials and thus the EPAC and NPAC were the same.

The lowest offers in all the five tenders were from a single bidder[66] and the quoted rates ranged between 20 and 42 *per cent* below the EPAC. The single bidder was awarded the contract at the rate quoted by him. The Director, executed the agreements (February –March 2011) applying the rebate ranging from 20 to 42 *per cent* on EPAC quoted by the bidder after allowing hiring charges thereby bringing the agreement value to ₹ 4.59 crore.

Audit scrutiny of the contract agreements and payments made revealed that the agreements were incorrectly executed for ₹ 4.59 crore as against ₹ 3.54

[65] Improvement of boat route canal from Kumarakom to Muhamma, Vaikom to Thavanakkadavu, Cheepunkal to Mannanam, Muttar - Neelamperur canal and Kallara Feeder canal.

[66] Southern Dredging Company (P) Ltd., Flat No.905, Pioneer Towers, Marine Drive, Kochi 682031.

crore which should have been the contract value as per the terms and conditions of the NIT. Based on the actual work done, the contractor was paid ₹ 4.52 crore against ₹ 3.49 crore by allowing deduction of hiring charges of dredgers which was inadmissible. This led to excess payment of ₹ 1.03 crore (**Annexure XII)**.

The matter was pointed out to the department in June 2013 and reported to Government in August 2013; their replies are awaited (March 2014).

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