

**REPORT OF THE
COMPTROLLER AND AUDITOR
GENERAL OF INDIA**

**on
ECONOMIC SECTOR**

for the year ended MARCH 2015

**Government of Kerala
Report No. 4 of the year 2016**

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PREFACE

This Report for the year ended March 2015 has been prepared for submission to the Governor of Kerala under Article 151 of the Constitution of India.

The Report contains significant results of the performance audit and/or compliance audit of the Departments of the Government of Kerala under the Economic Services including Departments of Agriculture, Forest, Public Works and Transport, Water Resources and Coastal Shipping and Inland Navigation Department.

The instances mentioned in this Report are those, which came to notice in the course of test audit for the period 2014-15 as well as those which came to notice in earlier years but could not be reported in previous Audit Reports; instances relating to the period subsequent to 2014-15 have also been included, wherever necessary.

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

INTRODUCTION

CHAPTER I INTRODUCTION

1.1 About this Report

This Report of the Comptroller and Auditor General of India (CAG) relates to matters arising from performance audit of selected programmes and activities and compliance audit of Government departments and autonomous bodies under Economic Sector.

The primary purpose of the Report is to bring to the notice of the State Legislature, the important results of audit. Auditing Standards require that the materiality level for reporting should be commensurate with the nature, volume and magnitude of transactions. The findings of audit are expected to enable the Executive to take corrective actions as also to frame policies and directives that will lead to improved financial management of the organisations, thus, contributing to better governance.

This chapter, in addition to explaining the planning and extent of audit, provides a synopsis of the significant deficiencies and achievements in implementation of selected schemes, significant audit observations made during compliance audit and follow-up on previous Audit Reports.

1.2 Profile of units under audit jurisdiction

The Principal Accountant General (Economic and Revenue Sector Audit) Kerala conducts audit of the expenditure under Economic Services incurred by 22 departments at the Secretariat level and also the field offices, two autonomous bodies, 41 other autonomous bodies/institutions, 100 public sector undertakings and two departmental commercial undertakings under the jurisdiction of these departments. The departments are headed by Additional Chief Secretaries/Principal Secretaries/ Secretaries, who are assisted by Directors/Commissioners/Chief Engineers and subordinate officers under them.

The comparative position of expenditure incurred by the Government during the year 2014-15 and in the preceding year is given in **Table 1.1**.

Table 1.1. Comparative position of expenditure incurred by the Government

Disbursements	2013-14			2014-15			(₹ in crore)
	Plan	Non-plan	Total	Plan	Non-plan	Total	Percentage (+) Excess (-) Deficit
Revenue Expenditure							
General Services	126.65	26478.44	26605.09	133.76	31298.99	31432.75	(+)18.15
Social Services	4645.93	16333.95	20979.88	5893.10	17825.01	23718.11	(+)13.05
Economic Services	2301.08	5627.98	7929.06	4255.73	5941.84	10197.57	(+)28.61
Grants-in-aid and Contributions		4971.47	4971.47	---	6398.00	6398.00	(+)28.69
Total	7073.66	53411.84	60485.50	10282.59	61463.84	71746.43	(+)18.62

Disbursements	2013-14			2014-15			Percentage (+) Excess (-) Deficit
	Plan	Non-plan	Total	Plan	Non-plan	Total	
Capital Expenditure							
Capital outlay	3497.62	796.71	4294.33	3880.54	374.05	4254.59	(-)0.93
Loans and advances Disbursed	537.53	926.64	1464.17	--	--	743.09	(-)49.25
Repayment of public debt			3244.81			5842.77	(+)80.07
Contingency Fund			67.39	--	--	-	-
Public Account disbursements			120992.20			136242.59	(+)12.60
Total			130062.90			147083.04	(+)13.09
Grand Total			190548.40			218829.47	(+)14.84

(Source: Finance Accounts)

1.3 Authority for Audit

The authority for audit by the CAG is derived from Articles 149 and 151 of the Constitution of India and the Comptroller and Auditor General's (Duties, Powers and Conditions of Service) Act, 1971(CAG's DPC Act). The CAG conducts the audit of expenditure of the departments of the Government of Kerala under Section 13¹ of the CAG's (DPC) Act. The CAG is the sole auditor in respect of 24 autonomous bodies which are audited under Sections 19(2), 19(3)² and 20(1)³ of the CAG's (DPC) Act. Besides, CAG also conducts audit under Section 14⁴ & 15 of CAG's (DPC) Act in respect of 218 other autonomous bodies which are substantially funded by the Government. Principles and methodologies for various audits are prescribed in the Auditing Standards and the Regulations on Audit and Accounts, 2007 issued by the CAG.

1.4 Organisational structure of the Office of the Principal Accountant General (E&RSA), Kerala

Under the directions of the CAG, the Principal Accountant General (E&RSA), Kerala conducts the audit of Government Departments/Offices/Autonomous Bodies/ Institutions under Economic and Revenue Sector, which are spread all over the State. The Principal Accountant General (E&RSA) is assisted by three Group Officers.

- ¹ Audit of (i) all transactions from the Consolidated Fund of the State (ii) all transactions relating to the Contingency Fund and Public Accounts and (iii) all trading, manufacturing, profit & loss accounts, balance sheets and other subsidiary accounts.
- ² Audit of the accounts of Corporations established by law made by the State Legislature on the request of the Governor.
- ³ Audit of accounts of any body or authority on the request of the Governor, on such terms and conditions as may be agreed upon between the CAG and the Government.
- ⁴ Audit of all (i) receipts and expenditure of a body/authority substantially financed by grants or loans from the Consolidated Fund of the State and (ii) all receipts and expenditure of any body or authority where the grants or loans to such body or authority from the Consolidated Fund of the State in a financial year is not less than ₹ one crore.

1.5 Planning and conduct of Audit

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

After completion of audit of each unit, Inspection Reports (IRs) containing audit findings are issued to the heads of the offices. The departments are requested to furnish replies to the audit findings within four weeks from the date of receipt of the IRs. Whenever replies are received, audit findings are either settled or further action for compliance is advised. The important audit observations arising out of these IRs are processed for inclusion in the Audit Reports, which are submitted to the Governor of State under Article 151 of the Constitution of India for being presented to the State Legislature.

During 2014-15, 9,383 party-days were used to carry out audit of 1,173 units (Performance Audit and Compliance Audit) of the various departments/organisations which fall in the audit jurisdiction of the Principal Accountant General (E&RSA), Kerala. The audit plan covered those units/entities which were vulnerable to significant risks as per our assessment.

1.6 Significant Audit Observations

In the last few years, Audit has reported on several significant deficiencies in implementation of various programmes/activities through performance audits as well as on the quality of internal controls in selected departments which impact the success of programmes and functioning of the departments. Similarly, the deficiencies noticed during compliance audit of the Government departments/organisations have also been reported upon.

The present report contains findings of three performance audits and 12 compliance audit paragraphs. The significant audit observations are discussed below:

1.6.1 Performance audits of programme/department

1.6.1.1 *Inland Water Transport in Kerala-Development of Waterways and Operation of Transport Services*

Though the Inland Waterways Authority of India had spent ₹228.60 crore from 1994-95 to 2014-15 for the development and maintenance of National Waterway-3 (NW-3), merely 37 km of NW-3 is utilised for cargo transportation leaving 168 km not being utilised at all. This was due to lack of State Government initiative in ensuring cargo movement between Kollam and Kottapuram and inability to remove fishing nets affecting navigability. Execution of development and improvement works in State waterways was poor as only 114.76 km of 421.33 km was completed due to non-availability of hindrance free land, encroachment of waterways etc. Non-removal of large scale siltation in artificial canals impedes the continuous navigability through the waterways. In 17 test checked feeder canal works, none of them qualified the standards prescribed by the Irrigation Department. Besides, improvement works carried out in seven feeder canals incurring ₹6.95 crore did not serve

the intended purpose due to lack of subsequent maintenance. Multiplicity of agencies and departments and lack of co-ordination amongst them was a major contributing factor for poor development and operation in the waterways. Deficiencies in executing transportation contracts of cargo such as excessive time taken for completion of trips, non-utilisation of full capacity of barges, non-operation of trips targeted, delay in repair of barges contributed to business loss of ₹3.69 crore to Kerala State Inland Navigation Corporation, the sole PSU in the field. The loss of State Water Transport Department (SWTD) had been increasing year after year due to uneconomic operation of services, reducing number of passengers etc. Repair works of boats were delayed abnormally and one-third of the fleet were in dock. Purchase of 18 steel boats costing ₹7.93 crore could have been avoided had the repair of boats been carried out in time. There was no system in place to assess the safety of navigation channels by any authority. More than 50 *per cent* of the waterways used by SWTD for boat operation remained unsafe due to lack of dredging by the Irrigation Department.

(Chapter II)

1.6.1.2 Implementation of Kerala Forests (Vesting and Management of Ecologically Fragile Lands) Act, 2003

The Department did not have a definite action plan to identify the complete extent of land which qualifies as Ecologically Fragile Land (EFL) either under Section 3 or 4 of the EFL Act, 2003 even after 15 years of its implementation. Vesting of private plantations inside a National Park was delayed unjustifiably especially when the use of chemicals and fertilisers by the cultivators harm the ecology and wild life. There was no action plan to identify and conserve all the mangrove ecosystem. Forest Department could not take steps to maintain the EFL after including it in the Working Plan for protection and conservation. The survey and demarcation of boundaries of notified EFL was delayed indefinitely due to lack of co-ordination between Forest Department and Revenue Department.

(Chapter III)

1.6.1.3 Soil Survey and Soil Conservation activities in Agriculture Department

Watershed atlas prepared between 2005 and 2011 intended for prioritising the soil conservation activities was not reliable as it had deficiencies such as inclusion of forest areas, discrepancies in geographical area, lack of periodical updation etc. Adoption of rates as per old Schedule of Rates for execution of various Rural Infrastructure Development Fund schemes resulted in short receipt of assistance and consequent non-achievement of targets. Failure to forward proposals for additional funds within the prescribed time to meet extra expenditure on account of cost escalation resulted in shortfall ranging from 25 to 90 *per cent* in completing the activities in treatable areas. Soil Health Cards to help farmers to judiciously plan fertilizer application which would in turn reduce the cost of cultivation did not achieve the objectives. There was no evaluation of activities related to conservation by the Directorate of Soil Survey and Soil Conservation (DSSSC) in respect of creation and maintenance of assets utilising the Corpus fund. DSSSC prioritised carrying out renovation

of private ponds utilising the assistance under 13 FCA. Out of 480 public ponds available in the Kuttanad region, DSSSC carried out renovation works in 134 ponds of which 92 were private ponds.

(Chapter IV)

1.6.2 Compliance Audit Paragraphs

Audit of Transactions

- Watershed to treat an area of 228 Ha at project cost of ₹0.46 crore was stopped as the legal status of the land in possession of private people was a forest.

(Paragraph 5.1)

- Failure to recover risk and cost from the contractor and to re-award the work resulted in non-completion of soil conservation works to benefit 940 Ha of land and consequent loss of assistance of ₹1.37 crore from NABARD.

(Paragraph 5.2)

- Failure of DSSSC in submitting project proposals as per the RKVY guidelines in respect of 134 watersheds resulted in expenditure of ₹27.97 crore becoming unfruitful.

(Paragraph 5.3)

- PSU not directly executing works have been paid mobilisation advance of ₹0.81 crore in violation of instructions. Further, DSSSC had withdrawn ₹1.13 crore from the treasury in March 2015 before incurring the actual expenditure and held it till December 2015 as against the codal provisions.

(Paragraph 5.4)

- Irregular revision of rate of items mentioned in the agreement schedule by treating them as extra items and non-availing of agreed tender rebate while making payments thereon to the contractor resulted in undue benefit of ₹1.09 crore to the contractor.

(Paragraph 5.5)

- Execution of original works without prior approval of MoRTH by treating them as ordinary repair works resulted in rejection of reimbursement claim of ₹68.10 crore besides foregoing agency charges of ₹6.13 crore.

(Paragraph 5.6)

- The execution of work without tender process and unwarranted revision of agreed rates by PWD extended undue benefit of ₹92.32 lakh to the contractor.

(Paragraph 5.7)

- The PWD constructed “fender piles” for protecting a bridge from the impact of collision with barges even though bridge did not have scope for navigation of heavy vessels resulting in wasteful expenditure of ₹3.12 crore.

(Paragraph 5.8)

- Separate payment amounting to ₹2.28 crore was made to contractors by PWD outside the agreed rate for removing obstacles encountered during sinking of wells for foundation of four bridges.

(Paragraph 5.9)

- Lapse of the department in adhering to PWD Manual instructions and Government orders regarding finalisation of tender within firm period resulted in avoidable financial implication of ₹1.56 crore.

(Paragraph 5.10)

- Failure to exercise required verification by PWD resulted in double payment for executing an item of work in the construction of Mythrakadavu bridge across river Chaliyar in Malappuram District.

(Paragraph 5.11)

- Description of work in agreement schedule was at variance with provisions in data sheet and treating side protection work as extra item by Water Resources Department had resulted in extra expenditure to the tune of ₹7.05 crore.

(Paragraph 5.12)

1.7 Lack of responsiveness of Government to Audit

1.7.1 Outstanding Inspection Reports

The Handbook of Instructions for Speedy Settlement of Audit Objections/Inspection Reports issued by the State Government in 2010 provides for prompt response by the Executive to the IRs issued by the Accountant General (AG) to ensure action for rectification in compliance with the prescribed rules and procedures and accountability for the deficiencies, lapses etc., noticed during the inspection. The Heads of Offices and next higher authorities are required to comply with the observations contained in the IRs, rectify the defects and omissions and promptly report their compliance to the AG within four weeks of receipt of the IRs. Half-yearly reports of pending IRs are being sent to the Secretaries of the Departments concerned to facilitate monitoring of the audit observations.

As of 30 June 2015, 266 IRs containing 1,017 paragraphs were outstanding against the Forest and Agriculture Departments. Year-wise details of IRs and paragraphs outstanding are detailed in **Appendix 1.1**.

A review of the IRs pending due to non-receipt of replies, in respect of these two departments revealed that the Heads of offices had not sent even the initial replies in respect of 85 IRs containing 423 paragraphs.

1.7.2 Departmental Audit Committee Meetings

The Government set up department-wise audit committee to monitor and expedite the progress of the settlement of IRs and paragraphs in the IRs. During the year 2014-15, five Audit Committee Meetings were held wherein 245 out of 2605 IR Paragraphs pertaining to the period between 2008-09 to 2014-15 relating to departments of Finance, Agriculture, Water Resources, Ports and Public Works were settled.

1.7.3 Response of departments to the draft paragraphs

Draft Paragraphs and Reviews were forwarded demi-officially to the Additional Chief Secretary/Principal Secretaries/Secretaries of the departments concerned between October 2015 and March 2016 with a request to send their responses within six weeks. The departmental replies were not received in respect of one review and seven out of 12 compliance audit draft paragraphs featured in this Report. The replies have been suitably incorporated in the Report.

1.7.4 Follow-up action on Audit Reports

The Finance department issued (January 2001) instructions to all administrative departments of the Government that they should submit Statements of Action Taken Notes on audit paras included in the Audit Reports directly to the Legislature Secretariat with copies thereof to the Audit Office within two months of their being laid on the Table of the Legislature.

The administrative departments did not comply with the instructions and five departments had not submitted Statements of Action Taken for 10 paragraphs for the period 2012-13 and 2013-14 respectively even as of February 2016. One Action Taken Note (ATN) each against Tourism and Co-operation Department and two ATNs against Information Technology and three ATNs from the Public Works and Water Resource Departments on Audit Paragraphs have not been received so far (March 2016).

1.7.5 Paragraphs to be discussed by the Public Accounts Committee

There were 16 paragraphs relating to seven departments pertaining to the period 2012-13 and 2013-14 pending discussion by the Public Accounts Committee as of February 2016. One Audit Paragraph each from Co-operation and Ports (Harbour Engineering), two Paragraphs each from Agriculture, Information Technology, Tourism Departments and four paragraphs each from Public Works and Water Resources Departments are pending discussion so far (March 2016).

PEFORMANCE AUDIT

CHAPTER - II

TRANSPORT, WATER RESOURCES AND COASTAL SHIPPING AND INLAND NAVIGATION DEPARTMENT

Performance Audit on Inland Water Transport in Kerala-Development of Waterways and Operation of Transport Services

2.1 Introduction

Inland Water Transport (IWT) is the most energy and cost efficient mode of transport and is best suited for moving bulk and hazardous goods. The components of IWT infrastructure are: (a) fair waterway and navigation facilities; (b) terminals, jetties and repair yards, with connectivity to mainland; and (c) vessels (barges, boats, jhankars etc.).

2.1.1 Inland Waterways in Kerala

Kerala has a total length of 1,687 km long waterways. It includes 590 km of West Coast Canal (WCC) from Neeleswaram in the north of the State to Kovalam in the south. The remaining portion comprises of feeder canals/rivers. The unique feature of WCC is that it flows parallel to the Arabian Sea with openings to the sea at several places. Several important roads including National (NH 66)¹ and State highways are also either connected or run parallel to WCC. This geographical feature ensures connectivity of the canal to minor ports and to hinterlands.

A portion of WCC (205 km), from Kollam to Kottappuram (168 km) and two other canals in Kochi (Champakara canal, 14 km and Udyogamandal canal, 23 km), constituting 12.15 *per cent* of the total IWT in Kerala, were declared by Government of India (GoI) as National Waterway-3 (NW-3) in the year 1993. This stretch is developed and maintained by the Inland Waterways Authority of India² (IWAI).

¹ NH 66 from Kanyakumari to Panvel (up to Kasargod it is parallel to WCC).

² IWAI, established in October 1986 under the Ministry of Shipping, Road Transport and Highways of Government of India (GoI). It performs functions such as infrastructure development and regulation on NWs, conducting Techno- economic feasibility studies of waterways, advising GoI on IWT matters, assisting States in IWT development, etc.

Figure No. 1: Form of the State Waterway network



2.1.2 Authorities in IWT Sector

The authorities/agencies executing various functions/components of IWT sector and their functional areas are summarised below.

Table 2.1: Components, Functions and Authorities in IWT sector

IWT Sector components	Functional area	Government Departments/ Agencies/ PSUs entrusted with execution	Functions	Private sector involved or not?
Waterways	National waterway-3	IWAI under GoI	Development, maintenance & navigational support	No
	State waterways	Irrigation Department under GOK	Development, maintenance & navigational support	No
Inland water vessels	All inland waterways	Port Department under GOK ³	Regulation of Inland water vessels	No
		Kerala State Inland Navigation Corporation (KSINC) and Steel Industries Kerala Limited (SILK), (Both PSUs)	Vessel manufacturing	Yes
		KSINC, State Water Transport Department (SWTD) of GOK	Vessel ownership and operations	Yes
		KSINC, SWTD, SILK	Vessel repairs/maintenance	Yes
Terminals / Jetties	National waterway-3	IWAI	Terminals/Jetties-construction/maintenance	No
	State waterways	Irrigation Department under GOK	Terminals/Jetties-construction/maintenance	No
	All inland waterways	KSINC, SWTD	Terminals/Jetties-operation	Yes

2.2 Audit objectives

The objectives of the Performance Audit were to assess whether:

- there was effective utilisation of the abundant inland waterways and the infrastructure created; and
- passenger and cargo operations on inland waterways were economical, efficient and safe.

2.3 Audit criteria

The activities of IWT Sector were examined with reference to the following:-

- IWT Policy of Government of India, 2001;
- Kerala Inland Vessel Rules, 2010; and
- Kerala Public Works Department Manual.

2.4 Audit scope and methodology

The Audit commenced with an Entry Conference with Secretary to Government, Transport Department (TD) and Joint Secretary to Government,

³ Since 2010, Port Department has been issuing license to the vessels after ensuring the safety aspects.

Water Resources Department (WRD), GOK on 22 August 2014 where the audit objectives and criteria were discussed and the audit methodology explained. The Audit was conducted between September 2014 and January 2015 and from October to November 2015 in WRD, office of the Chief Engineer (Irrigation & Administration) [CE(I&A)] and six⁴ out of eight divisions executing IWT works under the CE (I&A), Directorate of Inland Navigation and both division offices under the Directorate, KSINC, Directorate of SWTD covering the period 2010-15. The audit party also visited Port Office, Alappuzha, IWAI, Kochi, State Planning Board, National Transportation Planning and Research Centre (NATPAC), District Collectorates at Alappuzha, Kottayam, Kozhikode and Ernakulam and Directorate of Fisheries. Audit examined work files, progress reports and Government sanction files. As part of gathering audit evidence, joint inspections were also conducted along with the officials of Irrigation Divisions at Kottayam, Alappuzha and Thrissur. In the conduct of PA, certain activities which commenced prior to 2009 but were relevant to the period covered in audit have also been examined. Exit conferences were held on 10 March 2015 and on 8 September 2015 with the Secretary to Government, TD and Additional Secretary to Government, WRD during which audit findings were discussed. The replies from the State Government and Departmental officers have been taken into account while finalising the report.

2.5 Audit Findings

2.5.1 NW-3 and its utilisation

National Waterway-3 is an integral part of WCC and Inland Water Transport Infrastructure in Kerala. Smooth functioning of the IWT system requires coordinated efforts of waterway developers⁵. The Audit findings related to utilisation of NW-3 are discussed below:

- ***Underutilisation of developed waterways (NW-3)***

The Detailed Project Report (July 1992) for the development of NW-3 declared 'operational' in November 2007 had projected that cargo of around 41.73 lakh MT per annum could be transported through NW-3 by the year 2009-10⁶. NW-3, is running almost parallel to NH-66. IWAI had spent ₹228.60 crore during 1994-95 to 2014-15 for the development and maintenance of NW-3 and completed approximately 85 *per cent* capital dredging works. It had also established eight terminals in NW-3 with cargo handling facilities.

Audit analysis revealed that the potential of developed waterways remained under utilised as shown in Table 2.2.

⁴ Alappuzha, Ernakulam, Kottayam, Kozhikode, Malappuram and Thrissur

⁵ The developers include IWAI for NW-3, WRD, GoK for State Waterways, KSINC and SWTD.

⁶ The comparison of cargo transport was made with respect to DPR prepared by IWAI in 1992. In it the projections for cargo transportation were made only upto 2009-10. Hence, comparison was possible upto 2009-10.

Table 2.2: Cargo Movement in NW-3 during 2010-15

Sl. No.	Year	Quantity of cargo transported (in lakh MT)	Percentage of potential cargo transported
1	2009-10	06.83	16.37
2	2010-11	8.88	21.28
3	2011-12	13.44	32.21
4	2012-13	12.36	29.62
5	2013-14	10.33	24.75
6	2014-15	10.15	24.32

Further, out of the total quantity of cargo transported during 2014-15 (10.15 lakh MT) through NW-3, 99.60 *per cent* (10.11 lakh MT) was through the Champakkara (14 km) and Udyogamandal canal (23 km) which were bye-routes⁷ of NW-3. Utilisation of the remaining portion of NW-3 was less than one *per cent*. Thus, the utilisation of inland waterways for cargo transportation was limited to merely 37 km of the NW-3 and the remaining 168 km of NW-3 was not being utilised at all.

Audit further noticed that Kochi Port situated near NW-3, had been handling around 216 lakh MT of cargo annually. Several PSUs⁸ situated in the close proximity (near to en-route) of NW-3 were transporting large volumes of cargo such as petroleum products, hazardous chemicals, fertilisers etc. by road. On being pointed out by Audit about the scope of shifting cargo transportation from roadways to waterways, Travancore Cochin Chemicals Limited (TCC) replied (July 2015) that material to Kerala Minerals & Metals Limited (KMML), Chavara could be transported by IWT if proper unloading facilities were established at KMML. Government stated (November 2015) that action will be taken to construct terminals and other infrastructure facilities at the location of KMML. The Indian Oil Corporation (IOC) stated (July 2015) that preliminary feasibility studies are being made to locate a suitable land alongside water front in between Kollam and Thiruvananthapuram to develop a small storage facility for positioning product through waterways from their major terminal and effecting further supplies to retail outlets/ consumers located in that area.

- ***Lack of policy directions by State Government for increased utilisation of NW-3***

Kerala State Inland Navigation Corporation (vessel operators) and IWAI had been seeking⁹ Government directions for being made mandatory movement of hazardous cargo compulsory through waterways, introduction of subsidy scheme¹⁰ for cargo movement through inland waters, adoption of norms for the movement of a fixed percentage of cargo of PSUs through waterways etc.

⁷ The bye-route means the Champakkara canal and Udyogamandal canal joining the NW-3 at Kochi.

⁸ Kerala Minerals and Metals Limited (KMML), Travancore Cochin Chemicals Limited (TCC), The Fertilisers and Chemicals Travancore Limited (FACT), Indian Oil Corporation Limited (IOCL), Bharat Petroleum Corporation Limited (BPCL), Hindustan Petroleum Corporation Limited (HPCL).

⁹ July 2004 (IWAI), June 2010 (IWAI), June 2011 (KSINC), September 2012 (IWAI), December 2013 (KSINC), March 2014 (KSINC) and February 2015 (IWAI).

¹⁰ As introduced for coastal shipping in January 2013 by GoK.

for effective usage of NW-3. The Government, however, had not issued directions in this regard.

- ***Fishing nets affecting navigability in NW-3***

Fishing nets erected by fishermen in waterways¹¹ have been hindering navigability through NW-3 ever since its formation in 1993. In the joint inspection conducted (July 2004) by IWAI and Fisheries Department in July 2004, 457 licensed and 714 unlicensed fish nets were found in NW-3. IWAI had been pursuing the matter of removal of fishing nets from NW-3 with GOK. Accordingly, after several rounds of discussion with fishermen communities, GOK decided to compensate the fishermen for removing licensed and unlicensed nets¹² and had paid ₹10.32 crore as compensation till date (July 2015). The payment of compensation to unlicensed nets encouraged fishermen to erect such nets again. It was observed that 74 nets were still remaining in NW-3 as of July 2015 thereby affecting cargo movement.

The inability to remove all the fishing nets resulted in underutilisation of NW-3 even after incurring ₹228.60 crore for development and maintenance of the waterway.

Additional Chief Secretary, CSIND (November 2015) replied that Fisheries Department was taking measures to remove the fishing nets by paying compensation and the problem will be permanently solved only when there was regular movement of vessels. The reply was not tenable as both the envisaged activities i.e. complete removal of nets and vessel movement, were not taking place. As such, the objective of waterway utilisation had not been achieved.

Recommendation No. 1 : Government may ensure policy intervention for mandatory movement of hazardous cargo by inland waterways; complete removal of encroachments and fishing nets and ensure availability of infrastructural facilities at locations suitable to PSUs for effective use of NW-3.

2.5.2 Development and maintenance of State controlled and managed waterways by Irrigation Department

The Irrigation Department is responsible for development and maintenance of canals and rivers forming part of State waterways. It undertakes works such as dredging, side protection works and construction of boat jetties and landings to ensure continuous navigability through inland waters. Various deficiencies observed during the execution of development and improvement works of State waterway are discussed below.

i) Poor progress in execution of development/ maintenance works

As per the instructions of Irrigation Department, IND was to carry out improvement works in WCC and feeder canals. Scrutiny of records relating to the period 2006-07 to 2014-15 revealed as under:

¹¹ Fisheries Department of GoK had been issuing licence to fishermen for erecting fishnets in inland waterways till 1986.

¹² At the rate of ₹0.10 lakh per licenced net (w.e.f. February 1999), ₹1.00 lakh per licenced net and ₹0.50 lakh per unlicenced net (w.e.f. February 2011) and ₹2.50 lakh per licenced net and ₹1.25 lakh per unlicenced net (w.e.f. June 2013).

- **Waterways**

The overall physical progress in the WCC development/maintenance work was poor as detailed below:

Table 2.3: Details of physical progress of waterway works

(in kms)

Particulars	Natural Waterway	Artificial Waterway	Uncut portion	Total
Available length	241.127	137.795	42.41	421.332
Planned length	92.345	131.05	17.61	241.05
Completed length	92.25	19.21	3.30	114.76

Source: Progress report of Irrigation Department

As of March 2015, only 27 per cent of total length had been completed at a cost of ₹118.60¹³ crore by the Department in a period of 10 years, mainly due to delay in land acquisition, survey and investigation. Failure to complete the planned length of artificial waterways and uncut portions had resulted in lack of continuous availability of waterways for navigation.

- **Canals and boat jetties**

Similarly, the achievement in number of canal works undertaken by the Irrigation Department during the period between 2006 and 2015 was poor as summarised in the table below:

Table 2.4: Details of number of canal works

(₹ in crore)

Particulars	Main canal works		Jetties, landings construction works		Feeder canal works		Total	
	No. of works	Expenditure	No. of works	Expenditure	No. of works	Expenditure	No. of works	Expenditure
Completed	153	142.73	122	14.09	52	37.41	327	194.23
In progress	25	21.65	02	0.18	11	8.16	38	29.99
Not arranged	37	0.00	29	0.00	0	0.00	66	0.00
Foreclosed, terminated, dropped etc.	37	17.78	05	0.00	0	0.00	42	17.78
Total	252	182.16	158	14.27	63	45.57	473	242.00

Source: Progress report of Irrigation Department

The Department was not able to arrange 37 main canal development works owing to the delay in the finalisation of tenders, technical sanctions and demarcation of canal boundaries. Likewise, 29 works of construction of boat jetties could not be arranged as the Department had failed to complete the tender procedure as well as the completion of the works before the close of 12th Finance Commission from where it was being funded.

As per clause 15.2.2(d) of the Kerala PWD Manual, the availability of hindrance free land is to be ensured prior to the award of tender. Audit analysis revealed that out of 37 main canal-development works which were foreclosed/terminated, nine works (length : 14.29 kms in artificial waterway) were foreclosed/terminated due to failure of the Department in ensuring hindrance free land and 14 works (length: 11.26 kms in artificial waterway) were foreclosed/terminated due to expiry of 12th Finance Commission period. Of this, 10 works alone could be re-arranged so far.

¹³ Natural waterway – ₹9.57 crore; Artificial waterway - ₹96.71 crore and uncut portion - ₹12.32 crore.

ACS, CSIND stated (December 2015) that few works were tendered in anticipation of availability of land before commencement of work and admitted that delay in land acquisition and delay in payment to contractors were responsible for slow progress of work. The reply was not tenable since about 10 years had elapsed in such land acquisition and procedural issues.

ii) Encroachment of waterways

As per departmental instructions, the Junior Engineer should inspect the entire length of the navigation route atleast twice every month to identify locations where there is insufficient draft or insufficient width or obstructions of any kind and take urgent remedial action. Particular care should be taken to prevent private persons from encroaching the navigable waterway by driving in fishing stakes or creating any other form of hazard to navigation. Such encroachments should be promptly got removed by seeking help of Revenue and Police Officers.

Audit scrutiny revealed that departmental instructions were not being adhered to properly for stopping encroachment of such land (**Appendix 2.1**). The instances of encroachments as on October 2015 noticed during review are mentioned below:

- **Thiruvananthapuram and Kollam district:** 1,128 families were residing along a length of 36.70 km of the waterways from Kovalam (Ch. 0.00 km) to Nadayara *Kayal* (Ch. 55.17 km).
- **Thrissur district:** 832 families were residing along the waterways at Kodungallur (214), Mukundapuram (78), Thrissur (97) and Chavakkad (443).
- **Malappuram district:** 18 shops were situated on the banks of PC Canal in Ponnani *Taluk*, which are to be removed.

The Irrigation Department also did not have comprehensive data as to the locations and extent of land encroached upon in the inland waterways in the State due to absence of survey and demarcation of boundaries of waterways which were to be done by Director of Survey Wing of Revenue Department and CE (I&A) of Irrigation Department respectively.

The only eviction carried out (August 2015) by the Department was the 7.86 km (eight chainages) from Eravipuram *kayal* to Ashtamudi *kayal* in the WCC with the help of Revenue Department.

Government replied that the cases of encroachments were being brought to the notice of the revenue authorities as and when noticed and action was being taken to evict them. The fact however, remains that the department took seven years to clear the encroachment in a small stretch of seven km on the banks of Kollam *thodu* (waterway connecting Eravipuram *kayal* to Ashtamudi *kayal*) in Kollam. Thus, the Department's efforts towards removing encroachments were not encouraging.

iii) Poor prioritisation of works

(a) In the waterway network, two adjoining natural waterways are connected with artificial canals to facilitate navigability in more areas. The depth, width and siltation of the natural waterway are high as compared to

artificial canals. During monsoon, the waterways are filled up due to deposit of sand, silt etc. The simultaneous dredging of the both artificial and natural canals are of equal importance as the exclusion of one would affect the continuous navigability.

The Department carried out dredging operation in natural canals while dredging was not carried out largely in artificial canals. Out of 87 works (188.65 kms) involving dredging in different chainages taken up by the Department during 2006-15, 21 works (62.65 kms) were in natural waterway (₹9.78 crore) and 66 works (126 kms) were in artificial canals (₹111.60 crore). Though, the Department carried out cent *per cent* (62.65 km) of dredging operations in natural canals, only 15.25 *per cent* (19.22 km) of dredging operations was completed in artificial canals. Thus, lack of prioritisation in dredging resulted in non-removal of large scale siltation in artificial canals impeding continuous navigability in the entire waterways.

CSIND agreed with the audit observations.

(b) Audit noticed that, Irrigation Department had constructed (2008-10), 20 boat jetties between Kollam and Kovalam stretch of WCC by spending ₹3.07 crore, though waterways were not navigable and no public boat service was in operation whereas the priority should, have been on improvement of the waterways. Further, boat jetties were being constructed instead of cargo terminals, as waterways were to be developed with the main objective of shifting cargo transportation from road.

Government replied that the natural portion of waterway was already used by the public for navigation purpose and hence, construction of boat jetties was a matter of public interest. The reply was not tenable as the total connectivity between Kovalam and Kollam had not been established to operationalise the sector so far due to non-development of artificial canals in this stretch. Besides, a joint inspection by Audit with EE, IN Division, Kollam of the jetties revealed that five¹⁴ jetties out of 20 were in a dilapidated condition due to non-use as can be seen in the picture given below.

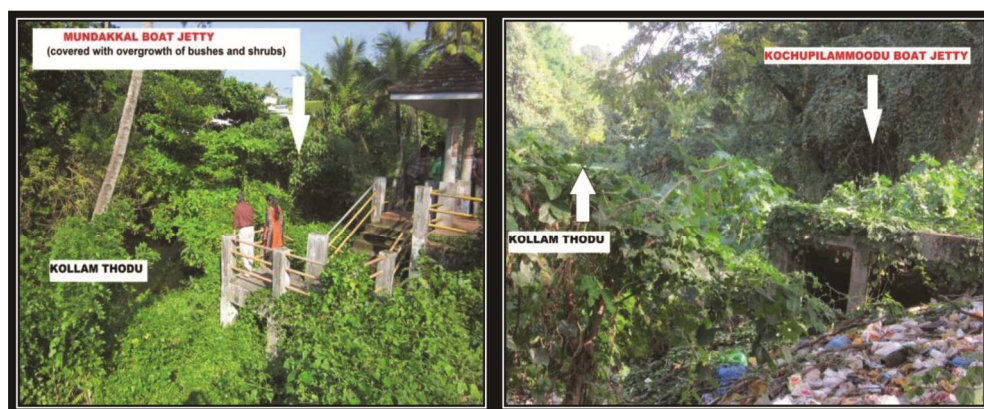


Figure 2: Dilapidated jetties along Kollam Thodu

The inadequate development of State controlled waterways can be attributed to the absence of a detailed policy and strategic plan.

¹⁴ Chamakkada, Eravipuram *kayal*, Kochupilammoodu, Mundakkal and Thannikadavu

Recommendation No. 2: Government may formulate a detailed strategic plan for leveraging its rich endowment of inland waterways. It must on priority undertake dredging works in both natural and artificial waterways and construct cargo terminals.

2.5.3 Improvements / maintenance of feeder canals

i) Execution of works in feeder canals not meeting prescribed standards

The Irrigation Department had been executing development and improvement works of various feeder canals joining NW-3 and the remaining parts of WCC in order to facilitate cargo and passenger movement. The Department had carried out improvement works in 53 feeder canals

Audit scrutiny revealed that improvement works of 17 feeder canals (**Appendix 2.2**) were not taken up as per the approved standard norms¹⁵ of Irrigation Department, but were based on requests from public representatives and local residents. In fact, these 17 feeder canals required major rectification works such as removal of rail over bridge, road over bridge, etc. hindering navigability. Thus, the improvement works carried out were not useful since major rectification works were left unattended causing obstructions in cargo and passenger movement.

ii) Lack of subsequent maintenance of improved feeder canals

Joint inspection of seven of the 53 improved feeder canals (three in Alappuzha District, three in Kottayam District and one in Thrissur District), revealed that though the Department had spent ₹6.95 crore on their improvement, these canals were not in navigable conditions due to lack of subsequent maintenance (**Appendix 2.3**).

Though the initial developments were made by the Irrigation Department, the subsequent maintenance was to be done by LSGIs concerned. Audit observed that LSGIs had failed to formulate any norms for improvement and subsequent maintenance of feeder canals.

GOK accepted the audit observation and stated that hereafter, the feeder canals would be taken up for renovation as per IWA norms for facilitating transportation. The fact, however, remains that expenditure of ₹6.95 crore already incurred during September 2008 to July 2014 on the seven works did not serve the intended purpose.

2.5.4 Multiplicity of agencies leading to lack of direction, co-ordination and monitoring

The activities of inland navigation in the State are regulated by Chief Engineer (Irrigation & Administration). Besides, GOK formed an Inland Navigation Directorate (IND) in 2005 under CE (I&A) headed by a Director for development and maintenance of inland waterways. The West Coast Canal passes through the jurisdiction of eight Irrigation Divisions of which only two Divisions¹⁶ are under the control of the Director, IND. The remaining six

¹⁵ Minimum width - 14 metre, minimum draft -1.70 metre, minimum vertical clearance - five metre

¹⁶ Divisions at Kollam (covering Thiruvananthapuram and Kollam Districts) and at Kannur (covering Kannur and Kasaragod Districts)

divisions of Irrigation Department are under the control of SEs in the respective Circles. Thus, IND has no control over a length of 207 km of WCC coming under Thrissur, Malappuram and Kozhikode Irrigation Divisions. Similarly, feeder canal in four districts viz. Alappuzha, Ernakulam, Kottayam and Thrissur are under the respective Irrigation Divisions.

The activities of inland waterways and navigation are carried out by three Government agencies as detailed below:

- i) Irrigation Department, including IND, for development of State Waterways;
- ii) KSINC for cargo operations; and
- iii) SWTD for passenger operations.

Apart from the leading role played by Irrigation Department and SWTD, the agencies /Departments such as LSGIs, Revenue, Fisheries, Tourism, Transport etc. have various roles in the activities connected with the maintenance, development and utilisation of Inland Waterways. Audit examination revealed that the roles and responsibilities of these agencies were not clearly defined by GOK resulting in overlap, non-coordination and delayed responses, avoidance of responsibility etc. Multiplicity of agencies and Departments and lack of co-ordination amongst them was a major contributing factor for poor development and operation in the waterways leading to instances of encroachments by public, erection of fish-nets in waterways impeding the movement of vessels, non-removal of water hyacinth, non-dredging of boat channels as required by SWTD, operation of unsafe vessels and existence of unsafe jetties in waterways.

GOK stated that various works were being monitored by convening meetings of all concerned Departments such as Revenue, Fisheries, Tourism and Transport. Reply was not tenable because despite such meetings, the issues such as lack of continuous navigability, non-removal of encroachment and fishnets, idling of boat jetties, low draft in NW-3 and boat service channels etc. were yet to be addressed in a meaningful manner.

Recommendation No. 3: Government needs to constitute an Apex Authority to monitor activities of the different departments concerned with Inland waterways for timely development and maintenance of waterways including removal of various obstacles in waterways.

2.6 Cargo transport operations in Inland Waterways

GOK established Kerala Shipping and Inland Navigation Corporation Limited (KSINC)¹⁷ as a State PSU for transportation of goods and passengers in inland waters within and outside the State of Kerala. The KSINC had eight barges for transportation of cargo as on 31 March 2015. Private players were also in the field.

Cargo transportation remained the major revenue segment for KSINC, followed by tourism boat service, boat construction and repair etc. KSINC was

¹⁷ Incorporated on 7 July 1989 by amalgamating Kerala Inland Navigation Corporation Ltd. (established in 1975) and Kerala Shipping Corporation Ltd. (established in 1974).

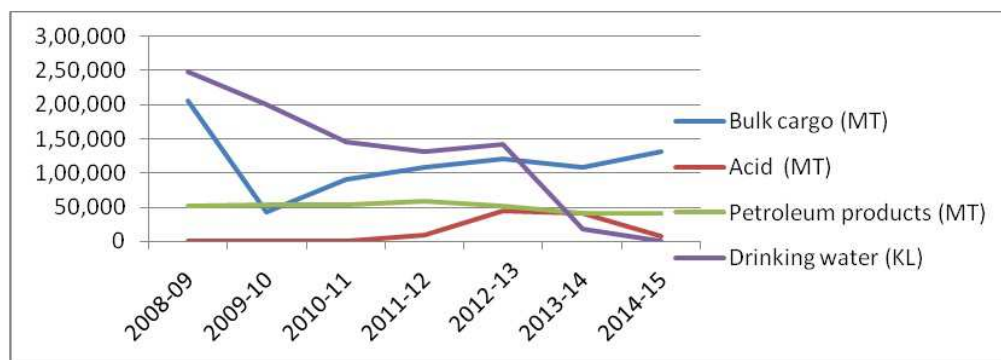
incurring operating loss throughout the period covered by Audit and the accumulated loss stood at ₹13.01 crore as on 31 March 2015.

Audit noticed various deficiencies in cargo transportation which are discussed in succeeding paragraphs.

2.6.1 Deficiencies in executing transportation contracts of bulk cargo and acid leading to consequential loss of business

The cargo transport operations of KSINC showed a decreasing trend compared to 2008-09 as shown in Chart 2.1 below:

Chart 2.1: Details of cargo transport operations by KSINC



During the period 2009-15, The Fertilisers and Chemicals Travancore Limited (FACT), Kochi, a Central PSU had awarded three biennial contracts for transportation of bulk cargo (Sulphur and Rock Phosphate) and two biennial contract for transportation of Phosphoric acid from Kochi Port at Willingdon Island to its divisions at Ambalamedu and Udyogamandal through NW-3¹⁸ using barges.

The work for the transportation of 10.45 lakh MT of cargo was awarded by FACT to the KSINC. However, KSINC could transport only 7.37 lakh MT (70 per cent of the contracted quantity). The shortfall in quantity transported resulted in loss of revenue of ₹368.62 lakh to KSINC.

The Government replied that adequate quantity was not available for transportation at all the times in the godowns of FACT and whatever quantity available was being shared with the other private operators. Test check of daily closing stock data of FACT for the year 2014-15 indicated that adequate quantity was available for transportation for more than 90 per cent of the days.

KSINC was not able to transport the quantity awarded mainly due to its own inefficiencies such as high turnaround time of barges, non-utilisation of full capacity of barges, non-availability of barges due to excess repair time taken etc. as discussed below.

- **Excessive time taken for completion of trips**

The Managing Director of KSINC had formed a Committee (January 2009) to fix standard time required for transporting bulk cargo to FACT. Though the Committee had recommended a standard time of 15 hours per trip for carrying bulk cargo to FACT, no further action was taken in the matter to implement

¹⁸ Champakkara canal of 13 km and Udyogamandal canal of 24 km which are part of NW-3.

this recommendation. While quoting in the tender of FACT for the transportation of bulk cargo, the KSINC had, however, estimated that 24 hours would be required for a trip by each vessel.

Audit found that only 465 (38 *per cent*) out of 1,234 trips operated during the five year period (2010-15) were within 24 hours. In respect of the balance 769 trips, the average time taken was 36 hours per trip. Audit further noticed that private sector barges had been completing the trips with lesser time.

Audit further found that, in some of the trip sheets, though reasons for taking excess time such as low draft in the channel, tidal variations, fish nets in waterway, etc. were mentioned, the reasons were too general in nature and not specific. Apparently, the Management of KSINC had not made use of these trip sheets for possible improvement in the operations. KSINC admitted the Audit findings that the time taken for completion of trip was high.

- ***Non-utilisation of full capacity of barges***

During 2010-15, KSINC used two barges for transportation of bulk cargo to FACT. Audit, however, noticed from Barge Operation Register that on several occasions, the quantity carried by barges was less than their capacity, as given below:

1. Barge Athulya with a carrying capacity of 600 MT operated 637 trips during 2010-15 of which 269 trips were with load less than its capacity.
2. Barge Bhagya with a capacity of 300 MT operated 597 trips during 2010-15 of which 149 trips were operated with load less than its capacity.

On account of the above there was under-utilisation of 12,738 MT (6.20 *per cent*) of cargo carrying capacity.

While admitting audit observation, GOK replied that operation at reduced capacity was due to low draft in the channel (at Thevara in Champakkara Canal forming part of NW-3) and KSINC had taken up the issue with IWAI for ensuring sufficient draft.

- ***Non-operation of trips targeted***

KSINC had targeted to transport (September 2011) 500 MT of phosphoric acid per day from Willingdon Island to FACT Ambalamedu and Udyogamandal by taking two trips per day per barge with the two barges in possession. However, as against 3,274 trips targeted (2010-15), KSINC operated 606 trips (18.5 *per cent*) only due to non-cooperation of operating staff. Though barge operating staff were repeatedly directed by the management to complete two trips per day per barge, adequate progress could not be achieved.

While KSINC stated that the operating staff was not heeding to management's directions, GOK replied that situation had since improved and now the barges were taking two trips on most days. Audit, however, noticed that there was no desired improvement as the number of trips operated during the first half of 2015-16 was 92 only as against scheduled 120 trips in 60 days of operation.

• **Delay in repair of barges**

KSINC had not fixed any norms regarding the time required for dry dock repair of vessels. Audit noticed that, compared to the time of two months fixed when repair work was proposed for outsourcing, there was considerable delay in repair of their own vessels at SWC as shown below.

Table 2.5: Details showing delay in repair of barges

Sl. No.	Barge	Withdrawal from service for repair	Due date for completing repair works	Actual date of re-starting service	Delay (in months)	Impact of delay
1.	Bharatha	8 October 2009	8 December 2009	28 April 2010	4.5	During this period, KSINC could not offer adequate number of barges suitable for POL ¹⁹ transportation, which caused a loss of revenue of ₹65.46 lakh to KSINC.
2.	Bhama	5 May 2010	5 July 2010	28 October 2010	3.5	
3.	Bharatha	31 January 2012	31 March 2012	13 July 2012	3.5	
4.	Bhama	4 November 2012	4 January 2013	10 November 2013	10	
5.	Archana	10 November 2013	10 January 2014	5 November 2014	10	

Audit further observed that due to delay in repairing its vessels on time though found repairable, barges were either disposed of as scrap or repaired incurring additional expenditure as shown in **Appendix 2.4**.

Government replied that labour issues created by trade unions in the Slipway Complex caused delay in completing repair works. They further stated that KSINC was finding it difficult to take decision as whether to go in for repair or for scrapping. However, it was observed in Audit that BoD had decided to go for repair but this decision was not implemented in time. This worsened the condition of barges and ended up in scrapping.

Recommendation No.4: KSINC may consider installation of GPS in the vessels to facilitate monitoring of their movement and to detect causes for delay, which may help in reduction in time for completion of trips. Repairs of vessels must be completed on schedule to minimise idle time.

2.7 Passenger transport operations in Inland Waterways

Public passenger water transport services (ferry services) in inland waters of Kerala are run by three bodies/departments viz: State Public Works Department, Local Self Government Institutions and State Water Transport Department.

2.7.1 Performance of SWTD in IWT sector

SWTD operates passenger boat services from 14 operating centres²⁰ in the inland waterways covering six districts of the State. As of 31 March 2015, SWTD had been operating 51 schedules consisting of 49 public passenger / ferry service and two tourism oriented schedules.

Audit findings relating to SWTD are given in the succeeding paragraphs:

¹⁹ Petrol, oil and lubricant.

²⁰ Alappuzha, Changanassery, Edathuva, Ernakulam, Kavalam, Kollam, Kottayam, Muhamma, Nedumudy, Panavally, Parassinikkadavu, Pulinkunnu, Payyanur and Vaikom.

2.7.1.1 Increasing loss of SWTD

The operational statistics of SWTD revealed that its losses were increasing year after year (from ₹18.78 crore in 2010-11 to ₹34.64 crore in 2014-15) and the accumulated loss as on 31 March 2015²¹ was ₹345.30 crore. The average loss per km operated had increased from ₹90.74 to ₹154.37 (70 *per cent* increase) during the five year period. The major reasons for increasing loss were uneconomic operation of services, reducing number of passengers, inefficient fleet management, etc. as discussed in succeeding paragraphs.

2.7.1.2 Uneconomic operation of services

The fuel cost per km of operation was ₹42.26 in 2012-13 and ₹51.26 in 2013-14 against which the Earning Per Kilometre (EPKM) was only ₹23.04 and ₹31.73 respectively. Audit analysis revealed that none of the passenger schedules operated by SWTD were able to meet even the fuel cost of operation due to inadequate number of passengers as explained below.

- **Reducing number of passengers**

The total number of passengers travelled by SWTD boats decreased from 242 lakh in 2000-01 to 144.16 lakh in 2014-15 (40.4 *per cent*). It had good passenger patronage only in those places where the origin and / or destination of trip is located near places²² connected by road.

Audit also noticed that attempts at boosting passenger traffic by tying up with two tourism schedules and two-wheeler carrying boats were also not able to attract more passengers.

The GOK / SWTD attributed the decrease in passenger traffic to the increased road connectivity and consequent reduction in scope of operations of the Department. It was further replied that the boat services were being operated with the social objective of providing transport facilities to those who were residing in water logged areas.

- **Increased cost of operations**

Around 66 *per cent* of the total expenditure of SWTD was related to salary and establishment expenditure and 30 *per cent* for fuel. While the average revenue from a passenger during 2014-15 was ₹5.28, the expenditure incurred by SWTD per passenger was ₹29.31. Thus, the GOK had to carry a financial burden of ₹24.03 for each passenger. Thus, ferry services being operated by SWTD were uneconomic.

2.7.2 Inefficient fleet management in SWTD

At the end of March 2015, SWTD was having 84 boats (29 wooden boats and 55 steel boats). Audit noticed that one third of the fleets (28 boats) were under repair. The extent of delays in repair and their impact are explained below.

- **Repair of boats delayed abnormally**

The SWTD has repair facilities (Slipways) at Alappuzha and Ernakulam capable of carrying out major repair of six and two boats respectively, at a

²¹ Provisional

²² Source: NATPAC Study Report, 2013

time. A period of three months was fixed for major repair for each boat. The excess time taken during 2010-15 for major repair ranged from two to 28 months at Alappuzha and from three to 18 months at Ernakulam, resulting in loss of 13,860 operating days. The SWTD had not maintained any data regarding the reasons for delay.

The GOK replied (October 2015) that fixing three months period for executing major repair works as a whole was not logical as it depended upon a variety of factors. The reply was not tenable as the norms were fixed after considering all such factors. Moreover, while approving the proposal for outsourcing repair works of SWTD, Transport Department had also fixed (September 2002) three months time for repair of boats.

SWTD switched over to the use of steel boats in the place of wooden boats for safety reasons from 2004. However, it did not carry out in-house repair of the steel boats and thus 18 boats were awaiting repair for period ranging from one month to five years as of March 2015.

Audit noticed that, on account of prolonged docking, all the steel boats were in deteriorated condition.



During the period 2010-15, SWTD had acquired 29 steel boats from SILK²³ at a cost of ₹12.84 crore. Of these, 18 boats were purchased during October 2010 to March 2014 at a time when nine to 26 wooden and steel boats were pending repair. Audit observed that had the repair been carried out in time, purchase of 18 new steel boats costing ₹7.93 crore during this period could have been avoided.

Audit further noticed that during the period 2009-13, cost of repair had doubled²⁴. As a result, SWTD has to bear a minimum additional financial liability of ₹45 lakh in respect of 10 steel boats docked during November 2009 to January 2013.

SWTD pointed out (April 2015) lack of sufficient infrastructure facility and staff as reasons for not repairing steel boats. It further stated that a new slipway was constructed at Alappuzha for the purpose. Audit noticed that the additional slipway constructed at a cost of ₹1.82 crore had not been utilised till March 2015 though its trial run was conducted in January 2013. Meanwhile, SWTD had issued (February 2015) work order for outsourcing the repair work of steel boats. Audit observed that there was no justification for keeping steel boats idle for period ranging up to five years as SWTD could have made the

²³ Steel Industries Kerala Limited, a State Government PSU.

²⁴ Estimated PAC as per Schedule of Rates for repair of boats.

required arrangements for repair in time either at its own yard or by outsourcing.

2.7.3 Navigation channels were not dredged

In the Report of the E. Mytheenkunju Commission of Enquiry (Thekkady Boat Tragedy, September 2009) it was emphasised that navigable waterways shall be properly maintained by dredging and removing obstacles.

More than 50 *per cent* of the waterways used by SWTD for boat operation were facing the problem of inadequacy of draft. Though SWTD had been requesting the Irrigation Department for dredging of these waterways for the past several years, dredging work was yet to be arranged (December 2015). Audit also noticed that there was no system in place to assess the safety of navigation channels by any authority. Further, in the absence of coordinated efforts among the multiple agencies currently existing in inland water sector, passenger transport operation in inland water was prone to accidents.

GOK / SWTD replied that Irrigation Department had been requested to execute dredging works in navigation channels and SWTD had been working with the initiative for ensuring coordinated efforts with related agencies. The reply was not acceptable as dredging work had not been completed so far (March 2015) by Irrigation Department.

Recommendation No. 5: In order to increase operational efficiency and cost optimisation, GOK may consider instituting PPP arrangements in passenger services for efficient operations.

2.8 Conclusion

Despite being energy and cost efficient with least carbon footprint, the State of Kerala has failed to fully leverage its abundant inland waterways. The Government did not issue directions about using waterways for cargo movement and prohibition of movement of hazardous cargo by road. Due to lack of infrastructural facilities, various PSUs were not shifting cargo movement from road to waterways. GOK failed to address issues like availability of hindrance free land, obstacles like fishnets and encroachment for development of waterways. There was no apex authority to monitor implementation of development works. Dredging works were not prioritized which prevented thorough navigability in waterways. The number of passengers using waterways has been decreasing. A comprehensive strategic plan to address these issues needs to be formulated and notified on priority.

CHAPTER - III

FOREST DEPARTMENT

Performance Audit on Implementation of Kerala Forests (Vesting and Management of Ecologically Fragile Lands) Act, 2003

3.1 Introduction

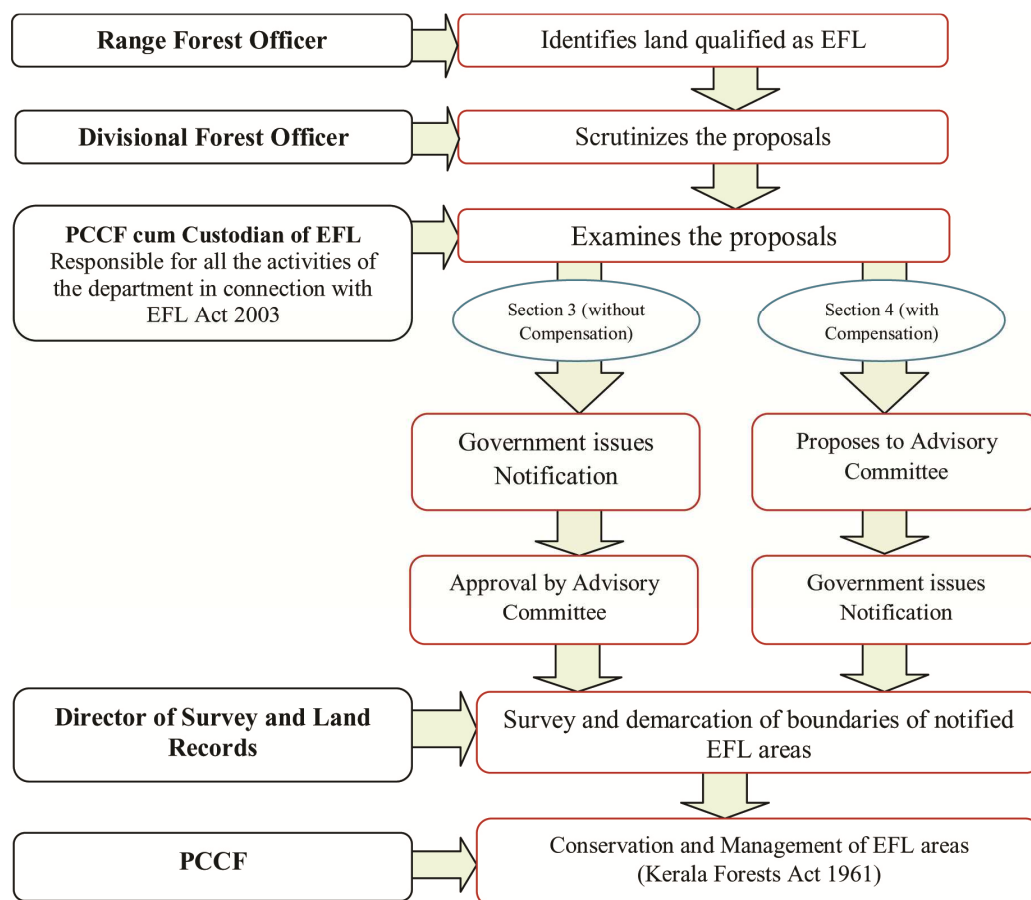
Government of Kerala (GOK) passed the Kerala Forests (Vesting and Management of Ecologically Fragile Lands) Ordinance, 2000 to vest in the Government, the identified ecologically fragile lands in the State of Kerala and for the management of such lands with a view to maintaining ecological balance and conserving the biodiversity. Subsequently, the Kerala Forests (Vesting and Management of Ecologically Fragile Lands) Act, 2003 (hereinafter referred to as the EFL Act) was enacted with effect from June 2000. As per the EFL Act, any forest land held by any persons and lying contiguous to or encircled by a Reserved Forest or a vested forest which is predominantly supporting natural vegetation is termed as Ecologically Fragile Land. The notified lands shall be deemed to be Reserved Forest under Kerala Forest Act 1961. Land to the extent of 14,905.17 Ha (**Appendix 3.1**) was notified under Section 3 of EFL Act and 5.23 Ha land was notified under Section 4 till July 2015.

Ecologically fragile lands are vested under Sections 3 or 4¹ of the EFL Act. Under Section 3, the ownership and possession of all ecologically fragile land held by any person or any other form of right over them shall stand transferred to and vested in the Government by way of notification. Under Section 4, the Government shall have the authority to notify any land satisfying to be ecologically fragile land, based on the recommendations of the Advisory Committee². In respect of land vested under Section 4, the owner thereof shall be eligible for compensation for the said land including the permanent improvements thereon.

¹ Vesting of EFL is either by paying compensation (Section 4) or without paying compensation (Section 3)

² A committee notified by Government under Section 15 of the EFL Act having State wide jurisdiction which identifies and recommends whether the land qualifies for EFL under Section 3 or 4.

3.1.1 Organisational chart showing the administration of EFL



3.2 Audit Objectives

Audit was carried out with the objectives to analyse:-

- whether the Department was able to identify and vest in Government, land qualified as EFL, under Kerala Forests (Vesting and Management of Ecologically Fragile Lands) Act, 2003 in a planned manner; and
- whether the land vested in the Government under the EFL Act 2003 has been conserved by the Department to ensure ecological balance and bio-diversity.

3.3 Audit Criteria

The Audit criteria were adopted from the following sources:

- 1) Kerala Forests (Vesting and Management of Ecologically Fragile Lands) Ordinance 2000,
- 2) Kerala Forests (Vesting and Management of Ecologically Fragile Lands) Act, 2003 and its Amendment Act, 2009,

- 3) Kerala Forests (Vesting and Management of Ecologically Fragile Lands) Rules, 2007,
- 4) Kerala Forest Act, 1961

3.4 Audit Scope and Methodology

The PA on Implementation of EFL Act covering the period 2000 to 2015 was conducted from May 2015 to October 2015 to evaluate the implementation of various activities such as notification and conservation of ecologically fragile land in the State. The records relating to implementation of the EFL Act available with the Government and in the EFL wing of Forest Department, its field offices and Directorate of Survey and Land Records were scrutinized.

The Department has 25 Territorial Divisions and 11 Wildlife Divisions. The areas notified under EFL are in 18 Territorial Divisions and three Wildlife Divisions. Based on the extent of land notified as EFL, the PA covered six³ Territorial / Wildlife Divisions for field audit which were selected by sampling using Probability Proportional to Size and Without Replacement (PPSWOR) technique. In addition to examination of records of selected divisions, Audit team conducted joint physical verification at KP Estate- Silent Valley, Pachakkanam Estate at Thekkady, Sankarangode private agricultural land at Nilambur South and mangrove sites at Kannur which are proposed / notified under Sections 3 and 4 of the EFL Act.

3.5 Audit findings

3.5.1 Non-identification of EFL

The EFL Act was enacted with the main objective of vesting in the Government, EFL identified in the State for the management of such lands with a view to maintaining ecological balance and conserving the bio-diversity. The Act, however, did not specify any time frame for completing this task. The department had also not prepared any action plan for executing this task in a concerted manner. Consequently the Department had failed to identify all the ecologically fragile lands in the State so far (as of January 2016). EFL lands were being identified in a piece-meal manner and notified only when some cases were reported by Range Forest Officer to the DFO. Audit observed that 14,910.40 Ha (**Appendix 3.1**) land has been notified in 133 notifications with effect from the year 2000 onwards based on proposals received by the Custodian from the field offices across the State.

During the exit conference, the ACS agreed with the audit findings and stated that the non-survey of forest land was a major issue due to shortage of manpower being faced by Revenue Department, which was to conduct such surveys. ACS also stated that directions have been issued to the field officers of Forest

³ Mannarkkad, Nenmara, Nilambur South, Palakkad, Silent Valley National Park and Wayanad South.

Department to keep travelling, exploring and conducting physical verification to identify lands qualified as EFL in their respective ranges.

3.5.2 Delay in notification of identified land

Audit noticed that out of the proposals for EFL notification received from the field offices, 163.1901 Ha involved in 18 cases (**Appendix 3.2**) were pending decision in Custodian's office since 2008 due to non-furnishing of complete details from the field offices (Range Offices/Divisional Forest Offices). Nine⁴ field officers had submitted proposals to the Custodian without ascertaining the factual position. As a result, the processing and issue of EFL notification was inordinately delayed which ultimately affected the management of such land.

ACS replied that the Custodian of EFL had initiated action for collecting the required details for processing the notification. The reply was not acceptable since the Department had initiated action to assess the actual extent of the land only after 15 years.

Recommendation No. 1: Government may initiate action to obtain details of the total EFL in the State by preparing an action plan and notify the same at the earliest, to maintain the ecological balance and to conserve bio-diversity.

3.5.3 Non-acquisition of private forest under Section 4 of the EFL Act

Audit noticed that 30 proposals involving 393.6377 Ha of private land to be notified as EFL under section 4 of the Act were pending with the Custodian since 2008. The proposals were referred to the Advisory Committee only in October 2015 after a delay of seven years. The Department had not acquired even a single private forest by paying compensation despite lapse of 15 years since the introduction of the EFL Act. It was further noticed that the Advisory Committee had not been re-constituted between 2010 and 2014 after the expiry of the term of the first Committee in 2010 which was constituted in 2007. All this delayed the process of notification of 393.6377 Ha of EFL thereby affecting the achievement of the intended purpose of the Act.

Audit further noticed that in respect of two cases included in the selected samples and another one instance noticed from the media, 399.64 Ha of land were pending notification as discussed below:

(a) *KP Estate - lying inside Silent Valley National Park*

The Silent Valley National Park, a Wildlife Division at Palakkad, formed in 1984, is a unique preserve of natural rainforests comprising an area of 23,752 Ha. The KP Estate is a private property having 141.64 Ha land lying inside Silent Valley National Park. Audit observed that the planters were cultivating various crops without paying attention to the surrounding bio-diversity. Five Diesel pumps (16 HP), chemical fertilizers and vehicles were being used inside the forest which adversely affected the evergreen ecology. The River Kunthi runs through the

⁴ DFOs of Kozhikode, Mannarkad, Marayur, Nenmara, Nilambur North, Nilambur South, Palakkad, Thrissur and Wayanad South.

private estate and the use of chemical fertilizers, pesticides and fungicides inside the estate had caused widespread water and soil pollution. These private operations within the National Park were detrimental to the conservation of biodiversity of the surrounding forest.



Canopy cleared and buildings constructed for cultivation activities



Canopy cleared for roads

On the request of the Wildlife Warden, Silent Valley National Park, Mannarkkad, valuation of the KP Estate was done by Revenue Department which fixed (December 2010) the value at the rate of ₹2.02 lakh per acre for land with roads and ₹1.21 lakh per acre for land without roads. However, due to the absence of Advisory Committee since 2010 followed by inaction after its re-constitution (2014), the estate was yet to be acquired by Forest Department. The Government had not furnished specific reply in this regard.

(b) Down Ton Estate, Pachakkanam lying inside Periyar Tiger Reserve

Down Ton Estate, Pachakkanam having 208 Ha of land with a private cardamom estate is enclosed in the Periyar Tiger Reserve (PTR), Thekkady in Idukki District. In order to avoid the possible clear felling of trees, fragmentation and selling of the estate property by the owners and to protect the bio-diversity of the PTR, a proposal for the acquisition of the estate was submitted to the Field Director (PTR) by the Wildlife Preservation Officer (Thekkady) but it could not materialise for want of funds as compensation was required to be paid. Subsequently, the Custodian had also not taken follow-up action for vesting the land under the control of the Government of Kerala till date (January 2016).

Audit noticed that the entire cultivation in the estate was solely dependent on the use of chemical fertilizers, fungicides, pesticides etc. which contaminated Kullarthodu – a stream flowing through the estate. It was also posing threat to the wildlife and human beings. Further, the present owners were running a commercial resort in the name of Down Ton Heritage Homestay inviting tourists for trekking. The roads leading to the estate were passing through the PTR and were being used for commercial purposes by the estate owners. Such use of Reserved Forest was a clear violation of Section 2 of Forest (Conservation) Act 1980 which imposes restriction on use of forest land for non-forest purpose.



Canopy cleared for cardamom cultivation

Cardamom cultivation inside the Estate with power fencing

Audit observed that the Range Forest Officer (Vallakadavu) had forwarded (February 2014) a proposal to Deputy Director (PT), Periyar East Division, Thekkady for notifying the entire 208 Ha of estate land under EFL Act. However, the Custodian had failed to take steps to notify the land which resulted in continued depletion of forest ecology.

(c) Sankarangode private agricultural land under DFO, Nilambur South

An area of 50 Ha of land (New Block No.118 - Survey No.01 to 23) lies within the New Amarambalam Reserve under the Padukka Forest Station, Karulayi Range Forest Office of Nilambur South Division. The land which was surrounded on all sides by Reserved Forest was an elephant corridor. The only way to reach the land was by crossing through the surrounding Reserved Forest. The land was being used by its owners for cultivation and had constructed buildings in the said land for their stay and used the surrounding Reserved Forest to graze their cattle. As the grazing of cattle inside Reserved Forest adversely affected the forest and wildlife ecology, the Range Forest Officer had forwarded proposals (January 2008) to DFO for notification of the land under the EFL Act.

Audit noticed that though the proposal for notification under the EFL Act was forwarded by the Range Forest Officer during January 2008, the same was forwarded by the DFO, Nilambur South to the CCF, Eastern Circle, Palakkad only in November 2014, i.e. after a delay of six years. The proposal was still pending as it was wrongly sent to the CCF, Palakkad instead of to the Custodian under the EFL Act. Audit noticed that though an amount of ₹100 lakh was available (August 2008) with the Custodian as Reserve Fund for acquisition of EFL, due to its non-utilisation, the funds had lapsed in the same year. In spite of the initiative (August 2008) taken by the Range Forest Officer for acquiring the land, the inordinate delay on the part of the DFO (Nilambur South) in forwarding the proposal to the Custodian had resulted in non-acquisition of land thereby causing further damages to the forest ecology and lapse of fund of ₹100 lakh. Justification for delay in forwarding the proposal by the DFO to the Custodian had not been furnished till December 2015.



Private estate encircled by Reserved Forest



Deer from surrounding forest grazing inside the estate

ACS accepted the Audit findings during the exit conference and stated that the said land would be acquired only after ensuring availability of sufficient funds for the purpose as at present, the Department was facing shortage of funds for acquisition of private forests. ACS further stated that the Department would keep exploring new avenues for raising funds. The reply was not acceptable since the proposals had been pending since 2008 and during all these years, the ownership of this land remained vested with individual owners instead of with Forest Department right from the promulgation of Ordinance in 2000.

Recommendation No. 2: Government may initiate action to provide sufficient funds for acquisition of land under EFL Act without any further delay.

3.5.4 Non-Acquisition of private mangrove forests under EFL Act 2003

Mangroves are salt tolerant plant community found in tropical and sub-tropical inter tidal regions and are unique eco-systems which provide habitat for various migratory birds and breeding and feeding ground for many aquatic species. Mangrove forests are proved to be capable of acting as a protective belt against the tsunami waves and as such require effective conservation and scientific management intervention. Under Section 4(1) of Kerala Forests Act, 1961, Government is empowered to declare any land as a Reserved Forest. Therefore, the Department also needs to conserve the mangrove eco-system as per the EFL Act.

Audit noticed that the Department had neither a comprehensive data about the extent of mangrove forests in the State nor an action plan to conserve the same. Though the Forest Department had been submitting proposals for the acquisition of private mangrove forest under Section 4(1) of the EFL Act comprising 140.80 Ha in Kannur district to the Government since 2007, it did not fructify so far. The absence of an Advisory Committee during 2010-14 to identify the mangrove forest as per Section 15 of the EFL Act resulted in delay in identifying the mangrove forest and notifying it as EFL. Even after the re-constitution of the Advisory Committee in June 2014, the above extent of mangrove forest was not identified by the Department for which no justification has been given despite being requested by Audit (June 2015).



Mangroves destroyed at Kannur District

Destruction of Mangrove area

Thus, due to lack of adequate data about mangrove forest in the State and its acquisition, the fragile eco-system of mangrove forest was further prone to destruction and degradation while the Department was not able to conserve them.

ACS accepted the Audit observation that private mangrove forest in the State had not been identified and vested in GOK. He further stated that the acquisition and conservation of mangrove forest was a new concept. Recently, the Department had taken over 238.92 Ha of mangrove forest (Government land) in Kannur district under the Kerala Forest Act 1961. He also added that the details of private mangrove forest in the State were being collected for acquisition under EFL Acts.

Recommendation No. 3: Government needs to take urgent necessary action to identify all the mangrove forests and prepare a management plan for their conservation.

3.5.5 Non-restoration of 17.48 Ha of EFL at Nenmara

An extent of 17.48 Ha of land under Nenmara Forest Division, was notified as EFL in October 2000 based on the EFL Ordinance, 2000. Meanwhile, the occupant of the land had approached (January 2004) the Hon'ble High Court and obtained an order to revoke the notification within four weeks. As per the legal opinion (August 2004), even if the property had been de-notified, the Government had an higher option of notifying the property as per the provisions of the EFL Act 2003.

Audit noticed that the Custodian, complying partially with the legal opinion, had de-notified (April 2004) the land but failed to re-notify the land till date for no specific reasons after the EFL Act had come into force. Hence, the land was still remaining with the owners with the effect that the land, which was once notified as ecologically fragile, was devoid of any protection and scientific conservation as intended by the EFL Act due to failure of the Department in re-notifying the land as EFL.

ACS accepted the Audit observation and stated that the de-notification was ordered by the Hon'ble High Court during 2004 when the ordinance had lapsed and hence the entire extent of EFL was de-notified. ACS assured that action would be taken to remedy the situation. However, the legal opinion that the land

could be vested again after the enactment of the Act was not complied by the Department so far.

Recommendation No. 4: Government may initiate steps to re-notify the de-notified land without any delays.

3.5.6 Issue of NOC for registration of sale deed of lands proposed for EFL notification at Mannarkkad

In the Mannarkkad Forest Division, Audit noticed an instance of issuance of No Objection Certificates (NOC) by the DFO, for obtaining possession certificates for lands which were proposed to be notified as ecologically fragile lands.

It was observed that the following plots of land falling under Attapadi Range of Mannarkkad Division were proposed by DFO (May 2007 and June 2014) to be notified as ecologically fragile land under Section 3 of EFL Act 2003.

Table 3.1: Details of land proposed by DFO for notification as EFL

Sl. No	Survey No.	Extent of Land (in Acre)	Location
1	1130/13 pt	9	Puthur Village
2	1130/13 pt	15	
3	1130/13 pt	8	
4	1130/13 pt	15	
5	1130/13 pt	12	
Total		59	

Audit observed that the above lands were not notified till date. As the proposal was pending, the DFO, Mannarkkad, relying on reports of Range Officer (RO), issued (2012) NOCs to the owners to register the ownership deed of the plots in the office of the Sub-Registrar as requested (July and December 2012) by the owners. The NOC also stated that the plots did not qualify as 'forest'.

Audit observed:

- The NOCs issued by the DFO based on the report of the RO was not in order. Since NOCs were issued, the owners had sought (March 2009) exemptions from notifying the land and had obtained possession certificates and started clear felling the trees.
- Subsequently in May 2015, the DFO in-charge of the Division had cancelled the NOCs issued by the then DFO during 2012 and the matter was reported to the revenue authorities. But the lands were yet to be notified as EFL and taken over by Government.
- No action was taken by the Custodian against the DFO who had granted NOCs for land proposed for EFL in an unauthorized manner.

ACS accepted the audit observation and stated that all the NOCs issued were subsequently cancelled and that action would be taken against the person concerned.

3.5.7 Delay in survey of notified EFL area and non-inclusion of EFL in Management Plan

Section 6 of the EFL Act, 2003, envisaged that, within such time as may be prescribed, the Custodian shall cause to demarcate the boundaries of ecologically fragile land vested in Government under Sections 3 and 4. Further, as per Rule 8(3) of the EFL Rules 2007, all lands notified shall be demarcated by the Custodian showing the survey and sub-division number, boundary particulars etc. by erecting permanent cairns along the boundaries within a period of two years from the date of publication (February 2007) of Rules. As per Section 16 of the EFL Act 2003, EFL is required to be managed by the Forest Department as per Management Plans⁵. The survey of forest land in each Division was required to be conducted by the Assistant Director, Forest Mini-Survey Cell, Kozhikode upon the requests made by the DFOs concerned. The failures noticed in this regard are brought in the following paras:

- ***Lack of Coordination between Forest and Revenue Departments***

Audit observed that even after fifteen years from the implementation of the Act, the Department had not included the activities on management of EFL in the Management Plan or Annual Plan of Operation (APO) and also had not completed demarcation process except 306.74 Ha (June 2015). However, the DFOs had not made specific requests to the Assistant Director, Survey Cell to get the notified EFL area surveyed. Similarly, the Custodian had also not taken up the matter with the Director of Surveys and Land Records, Revenue Department to work out a plan to conduct the survey of EFL area (comprising of 14,910.40 Ha spread over Kerala) within the time frame. The lapse in conducting survey of the remaining land primarily rest with DFOs as the Surveyors are attached to the DFOs.

On this being pointed out, ACS stated that due to the shortage of adequate staff for survey work, Government had approved (October 2015) a proposal from Forest Department to impart training to its field staff at Survey Training School in Survey Wing of Revenue Department who in turn could conduct the survey of forest areas under the supervision of Survey Department. The reply was not acceptable, as the steps taken by the Department to train the forest personnel would not be fruitful as Kerala Survey Act was not amended making the forest personnel competent to conduct survey operation.

- ***No penal provisions for delay in demarcation of EFL***

As per Rule 8(2) of EFL Rules 2007, the Custodian could extend the time of two years for demarcation of EFL from the commencement of the EFL Act for justifiable reasons. But the EFL Act was silent about the penal provisions in the Rules for fixing liability for non-conduct of survey within the fixed time frame. As a result, the survey activities and demarcation of EFL were delayed indefinitely and hence EFL already notified could not be effectively managed to maintain ecological balance conserving the biodiversity.

⁵ Management Plan is part of a working Plan which is written scheme of management aiming at a continuity of policy and action and controlling the treatment of forest in a scientific manner.

ACS replied that EFL are managed in the same manner giving thrust to arresting the degradation factors and protection of the forest as of the adjoining natural forest area of the Division. In addition, directions were issued to Field Officers to get the EFL area surveyed through the Forest Mini Survey Unit and in order to avoid the delay in doing survey, steps were being taken to train the forest personnel through the Survey Wing of the Revenue Department. The reply was not tenable since the management of EFL said to be undertaken related to only general protection works such as fire protection works, booking of offences etc. under various Forest Acts and not the special protection works so as to maintain the forest in a scientific manner. In case, the EFL are protected in the same manner as of the adjoining forest, the Department should have included the protection works of EFL in the Working Plan.

Recommendation No. 5: Government may take steps to notify the said lands and include it in its Working Plan for further protection and conservation.

3.5.8 Monitoring and Evaluation

According to EFL Act 2003, the lands to be vested as EFL under GOK's control were to be managed in an integrated and uniform manner within their ecological boundaries in accordance with the management plans based on sound scientific principles. The scrutiny of records revealed that the lands vested had not been included in the Annual Plan of Operations (APO) of the Divisions for maintenance in a scientific manner. On this being pointed out in Audit, the Custodian stated that EFL was automatically taken as part of the protection working circle of the approved Working Plan of the division and as and when Working Plan was revised, EFL area would be taken in area account of the divisions.

3.6 Conclusion

Despite a lapse of 15 years from the commencement of the EFL Act, the Department did not have a database of lands which could be notified as EFL, thereby hampering the protection of these areas and their consequent conservation and development. The survey and demarcation of boundaries which were to be completed within the stipulated time was delayed due to lack of co-ordination between Forest Department and Revenue Departments. The Department was not able to prevent the private plantations which were encircled by Reserved Forest and delay in acquiring such land caused threat to the ecology. Mangroves which were fragile and highly productive ecosystem found along the coasts were exposed to the risk of degradation due to absence of comprehensive data and an action plan to conserve them.

CHAPTER - IV

AGRICULTURE DEPARTMENT

Performance Audit on Soil Survey and Soil Conservation activities in Agriculture Department

4.1 Introduction

The Directorate of Soil Survey and Soil Conservation (DSSSC) under Department of Agriculture is entrusted with the planning and implementation of various soil survey and soil and water conservation activities in Kerala. The survey activities include identification and prioritisation of watersheds which requires conservation measures, Detailed Soil Survey (DSS), analysis of soil samples received from farmers and external agencies, publication of reports and maps on land resources, issue of soil health cards to farmers etc. The conservation wing undertakes implementation of various soil and water conservation schemes sanctioned by Government. DSSSC received ₹194.65 crore for various soil survey and conservation schemes implemented during 2010-15.

Soil and water conservation activities are undertaken on watershed basis. Watershed is a geo-hydrological unit that drains water to a common point. Activities undertaken on watershed basis include construction of contour bunds, check dams, retaining wall, agro forestry and agrostological measures etc. For convenience, the average area of each watershed is fixed between 500 -1000 hectares.

4.2 Audit Objectives

The main objectives of the Performance Audit are to ascertain whether

- planning for soil survey and conservation activities were adequate and effective; and
- implementation of survey and conservation works were economical and effective and whether monitoring was effective.

4.3 Audit Criteria

Audit criteria were drawn from

- Guidelines for watershed development projects issued by Government of India (GoI);
- Orders issued by Government of Kerala (GOK) relating to soil survey and conservation activities;
- Soil Conservation Code issued by GOK;
- PWD Schedule of Rates 2010, 2011 and 2012 and Delhi Schedule of Rates 2013 and 2014; and
- Kerala Financial Code volume I.

4.4 Scope and methodology of Audit

The Audit examined the planning, implementation and monitoring of survey and conservation activities carried out by Directorate of Soil Survey and Soil Conservation (DSSSC) and its selected subordinate offices covering the period 2010-15. Out of 14 District offices, five¹ district offices were selected using Probability Proportional to Size without Replacement (PPSWOR) method. One inter-state project Kabini² (Wayanad) and one river catchment protection project³ were also selected.

4.5 Audit Findings

The lapses noticed in the planning, implementation and monitoring of soil survey and conservation activities are discussed in succeeding paragraphs.

4.5.1 Inconsistencies in Watershed Atlas

The watershed atlas of all the Districts were completed and published during the period 2005-11. However, the watershed atlas included the forest as well as the non-forest areas of the State without demarcating the entire forest area in the watershed atlas e.g. the total forest area in Kozhikode district was marked as 1,069 Ha instead of 29,045 Ha.

The total geographical area of Wayanad district is 2.13 lakh Ha. But in the watershed atlas of Wayanad district, the total area prioritised for conservation activities was recorded as 2.37 lakh Ha (i.e 0.24 lakh Ha more than geographical area) which is indicative of incorrect data being relied upon by the Directorate.

The soil survey wing of the Directorate, categorised watershed into high, medium and low priority area for carrying out soil conservation activities in the State. The watershed atlas contains priority wise classification of watershed, delineated area of each watershed, details of watersheds selected for conservation activities till the date of publication of watershed atlas etc.

The information contained in the watershed atlas which serves as the basis for conservation activities was not updated periodically to ascertain the extent of land treated under various schemes.

DSSSC accepted the Audit observation and stated that details of watersheds undertaken for conservation in the State will be incorporated in the watershed atlas at the earliest.

4.5.2 Arrangement of conservation activities ignoring prioritisation of watersheds

The watersheds which are of high priority require immediate intervention over the medium and low priority watershed as the area is more prone to degradation. In District Soil Conservation Offices (DSCO), Kozhikode and Thrissur, it was

¹ Alappuzha, Kannur, Kozhikode, Thrissur and Wayanad.

² River Valley Project, Kabini

³ Protection of the Catchment of Reservoir of Water Supply Scheme

noticed that high priority area (four out of seven) was ignored while executing the soil conservation activities. Instead, four medium prioritised areas with a project cost of ₹2.39 crore were undertaken under RIDF XVII & XIX schemes for conservation activities.

In the above cases, the DSCOs had forwarded the proposals without ascertaining the priority of area proposed for conservation activities before submitting it for sanction. Besides, the technical wing of the Directorate had failed to check the proposal which resulted in carrying out soil conservation activities ignoring high priority areas. By not selecting high priority areas, risk of degradation would not be mitigated.

4.5.3 Submission of project proposals based on pre revised rates and consequent reduction in project cost - ₹10.84 crore

Para 1601.1.1 and 2 of Kerala Public Works Manual provides that preliminary and Detailed Estimates for the works shall be prepared based on the SoR in force.

On verification of soil conservation works sanctioned under RIDF XIX and RIDF XX, it was noticed that the rates of some of the major components of these works viz. 1) Stone pitched contour bunds 2) Agrostological measures etc. were based on pre-revised SoRs and not with reference to the prevalent SoRs.

The projects under various RIDF schemes were sanctioned based on the project proposals submitted by the Directorate. These projects are executed by beneficiaries themselves. Test check of 27 out of 75 projects revealed that the project cost which should have been ₹47.38 crore as per the prevalent SoR was wrongly calculated to ₹36.54 crore due to adoption of rates as per pre-revised SoR resulting in a reduction of ₹10.84 crore (**Appendix 4.1**). As a result, the beneficiaries would not be able to complete the works with the amount sanctioned at the pre-revised rates. This resulted in non achievement of targets. The records indicated that the beneficiaries who commenced the work had expressed their inability to execute the work of construction of contour bund and agrostological measures due to low amount of assistance.

DSSSC replied that the increase in cost due to rate revision was taken care of with the contributions by the beneficiary farmers concerned. The reply was not tenable, as contribution from farmers was limited to five to 10 *per cent* only depending on the category of farmers whereas the project cost ₹10.84 crore (22.88 *per cent*) thereby shifting the burden on beneficiaries which was against the spirit of the scheme.

4.6 Execution of works at enhanced rate (₹2.08 crore) and reduction in components of soil conservation

As per the instructions of NABARD, proposal, if any, on account of cost escalation shall be proposed within a year of sanction or three months from the date of award of work up to 2010 and thereafter, the period was changed to two years from the date of sanction.

In this connection Audit observed the following

- In 19 out of 55 cases test checked, DSSSC had failed to adhere to the schedule prescribed for completion of work. The delay ranged upto three years. The DSSSC directed the DSCOs to execute the work as per the revised SoR by reducing the quantity of various components where soil conservation activities were planned to be carried out. Due to sanction of enhanced rate, the State exchequer was burdened to the tune of ₹2.08 crore as NABARD had not been approached to match the cost escalation.
- The reduction in quantities due to enhancement of rates of major components ranged from 25 to 90 *per cent* as detailed below:

Table 4.1: Details showing shortfall in the quantity executed

Components of soil conservation activities	Quantity to be executed as per original Technical sanction	Quantity executed (Completed project)	Short fall in quantity (percentage)
Stone pitched contour bund	610680 RM	419206 RM	191473 RM (31 %)
Agrostological measures	135000 RM	13962 RM	121038 RM (90 %)
Moisture conservation pit	14500 Nos.	10890 Nos.	3610 Nos. (25 %)
Earthen bund	20500 Nos.	3775 Nos.	16725 Nos. (82 %)

- Reduction in quantities also led to non-achievement of the objective i.e. soil conservation.
- There was a reduction of 1,17,321 man-days due to reduction in quantities which also hindered the ancillary objective viz. providing employment.

DSSSC replied that in order to limit the project cost within the sanctioned amount, the quantum of works was adjusted. The reply was not tenable as reduction in quantity resulted in change in the scope of work and loss of man-days, resulting in non-achievement objectives.

Recommendation No.1: Government may issue instructions to the Department to ensure timely submission of proposals to cover the effect of cost escalation to NABARD in order to avail the eligible assistance envisaged under the scheme for covering the targeted quantity of treatable area.

4.7 Ineffectiveness in implementation of Soil Health Card scheme

In order to help the farmers to judiciously plan fertiliser application which would in turn reduce the cost of cultivation, DSSSC implemented the scheme of issuing Soil Health Cards (SHC) free of cost to farmers in selected *Panchayats*. In the State, DSSSC issued during 2008-2015, 51,986 SHCs covering 54 *Panchayats*; of which 34 *Panchayats* (63 *per cent*) were selected on the basis of requests/recommendation/ resolution of LSGIs/people's representatives/beneficiaries and not based on any criteria as the DSSSC had not prescribed any criteria to select *Panchayats* for issue of SHCs. The SHCs contained soil specific fertilizer and lime recommendation for each crop besides water holding capacity, elevation of land, slope, drainage soil texture etc. which were determined after

analysing the soil samples in Soil Analytical Laboratory. In this connection audit observed the following:

- The DSSSC had not prescribed any criteria to select *Panchayats* for issue of SHCs.
- There were 23,514 farmers in five test checked *Panchayats* of whom 10,772 were issued SHCs leaving behind a back log of 12,742 (54 *per cent*).
- Audit physically verified 77 out of 10,772 beneficiaries in five *Panchayats* in five districts to whom the Directorate had issued SHCs and observed the following
 - a. 18 *per cent* of the beneficiaries covered in the survey had not received SHCs even though the Directorate claimed to have issued the SHCs.
 - b. Updation of SHCs was essential for ensuring presence of needy elements in the soil annually and once in five years for ensuring the presence of micro nutrients in the soil. But Directorate was not updating the SHCs already issued.
 - c. Only 22 *per cent* of the beneficiaries had claimed the SHCs to be beneficial.

DSSSC admitted that there were no criteria for identifying *Panchayats* and farmers for issue of SHCs. With regard to updation of SHCs as well as for the prompt receipt of SHCs by the beneficiaries, DSSSC stated that it was due to lack of manpower. The reply of DSSSC was not tenable since the Directorate failed in helping the farmers by judiciously planning fertiliser application in order to reduce the cost of cultivation.

4.8 Evaluation of activities related to conservation by DSSSC

Audit noticed absence of system of evaluation for utilisation of Corpus fund created for maintenance of assets, absence of impact study and undue favour to private parties etc. which are discussed below:

4.8.1 Non utilisation of Corpus fund of River Valley Projects

Audit physically verified pond at Koodalkadavu watershed which was in destroyed condition. Though DSSSC should have utilised the fund for carrying out maintenance of such community assets (pond) it did not take any action to rectify the defects by utilising the fund. DSSSC came to know about the destruction only at the instance of Audit during joint inspection.

4.8.2 Non assessment of impact of works

The Directorate had not conducted any impact study during 2010-15 for assessing the effectiveness of soil conservation measures undertaken in the State.

In the absence of impact study, Audit could not assess the effectiveness of soil conservation measures and give any recommendation for future improvement. DSSSC accepted the above Audit observations stating that no evaluation study was undertaken by Directorate.

4.8.3 Renovation of private ponds ignoring public ponds ₹10.48 crore

For strengthening the ecological security of the Kuttanad wetland eco-system, GOK accorded (December 2011 and August 2013) Administrative Sanction for mitigation of agrarian distress in Kuttanad region through eco-restoration at a cost of ₹15.25 crore and ₹25.20 crore under Phase I and Phase II respectively. During the period 2011-15 the DSSSC received ₹26.86 crore under 13 FCA. There was no proposal under Kuttanad Package to renovate private ponds at the cost of Government.

On verification of implementation of scheme in Alappuzha district of Kuttanad region, Audit noticed that, the Directorate did not conduct any study/survey regarding the details of public ponds available to execute the renovation works under the package. Instead of conducting any survey, the office carried out renovation works in the ponds proposed by organisations/people's representative/local bodies, etc. The details of the amount spent for renovation of public and private ponds are as shown below.

Table 4.2: Details of renovation of ponds

Phase	Total number of ponds renovated	Amount spent for renovation (₹ in crore)	Number of ponds owned by private parties renovated	Amount spent for renovation of private ponds (₹ in crore)	Amount spent for renovation of public ponds (₹ in crore)
Phase I	61	5.52	39 (63.93%)	3.30 (59.78%)	2.22
Phase II	73	8.86	53 (72.60%)	7.18 (81.04%)	1.68
Total	134	14.38	92 (68.66%)	10.48 (72.88%)	3.90

Even though there were 480 public ponds in Kuttanad region which required renovation, the Directorate failed to identify and renovate these public ponds which were useful for irrigation and other common purposes.

DSSSC stated that the ponds were selected on the basis of priorities decided by local bodies for renovation. The reply was not tenable as there was sufficient number of public ponds requiring renovation. The joint physical verification (10 cases) revealed that renovated private ponds were utilised only for religious purposes and not for irrigation while public ponds renovated were used for irrigation purposes. The execution of renovation works of private ponds provided undue advantage to owners of private ponds at public cost.

Private ponds renovated under Kuttanad package



Recommendation No. 2: Agriculture Department may devise a system for judicious selection of public ponds for renovation works for the betterment of irrigation facilities.

4.8.4 Underutilisation and consequent lapse of fund provided for soil conservation activities - ₹22 crore

NABARD had sanctioned 431 projects (up to March 2015) in 20 tranches under RIDF scheme covering an area of 1,71,686 Ha at a project cost of ₹323.56 crore (Appendix 4.2).

The Directorate had completed (March 2015) RIDF XIII up to the period covered in Audit. The 280 projects were sanctioned up to RIDF XIII involving a project cost of ₹147.54 crore covering an area of 1,01,693 Ha. Out of the sanctioned project cost of ₹147.54 crore, DSSSC had utilised only ₹125.54 crore and hence, the Directorate could not achieve Cent *per cent* saturation. Thus, there was underutilisation of ₹22 crore.

Audit test checked four out of 25 projects sanctioned under RIDF XII having a project cost of ₹18.58 crore involving an area of 10,577 hectares. There was short availing of assistance in all the four cases as shown below:

Table 4.3: Details of fund utilised and reasons for underutilisation

Sl. No.	Name of watershed	Total area/ treatable area (Ha)	Project cost (₹ in crore)	Fund utilised (₹ in crore)	Reason for under utilisation	Short availing of assistance (₹ in crore)
1.	Choorani	183/ 152	0.30	0.19	The work was stopped (March 2009) as it was noticed that the soil conservation activities were undertaken in the plot which was not selected.	0.11
2.	Kuzhumbery Thodu	586/395	0.78	0.54	The work stopped as the balance area (134 Ha) to be covered comes under reserved forest category.	0.24
3.	Thoongayil watershed	500/480	0.78	0.57	Most of the remaining area is self protected and some of the treatable area of the watershed has been treated under NREGS.	0.21
4.	Nellipara-Nalumukku	480/440	0.65	0.56	Work was implemented in the same area by Grama panchayat.	0.09
	Total		2.51	1.86		0.65

Thus the absence of proper field verification and monitoring during the preparation of estimates, implementation, non-coordination with other agencies etc. by DSSSC/DSCO resulted in underutilisation and consequent short availing of assistance.

Recommendation No.3: The DSSSC may take stringent measures against the lapse of funds due to shortcomings of the implementing officers.

4.8.5 Submission of incorrect Utilisation Certificates – ₹15.20 crore

Utilisation Certificates (UCs) were required to be furnished by the grantee institutions in support of actual utilisation of funds for which, these were provided. However, test check of records in DSSSC revealed that incorrect/irregular UCs were issued against funds received as mentioned below:

- Though the Director received ₹26.86 crore, the actual expenditure was ₹17.97 crore in respect of Phase I and II of the Scheme ‘Mitigation of Agrarian distress in Kuttanad Region’. However, the UCs were submitted (February 2015 and January 2015) stating that the entire amount allotted for the project had been utilised.
- An amount of ₹5.71 crore was released (March 2013, July 2013 and October 2014) to DSSSC under RKVY scheme. However, the DSSSC submitted (October 2013, December 2014) UC stating that the funds allotted for the schemes have been completely utilised while there was no expenditure as on that date.
- The Director of Agriculture transferred (February 2015) an amount of ₹0.60 crore to DSSSC for implementation of National Mission for Sustainable Agriculture (NMSA). However, DSSSC furnished (March 2015) a UC while no expenditure was incurred.

Audit observed that the Director had signed the UC without ensuring the actual expenditure as such, he was responsible for submission of incorrect UCs.

DSSSC replied that incorrect UCs were furnished in order to avoid lapse of fund and in future, UCs will be submitted based on the actual progress. The reply was not acceptable as furnishing UCs amounted to misrepresenting facts which was indicative of lack of integrity in financial reporting by Directorate. Such a situation, which is fraught with the risk of fraudulent expenditure, calls for fixing of responsibility for submitting false UCs.

Recommendation No.4: DSSSC may take steps to curtail the practice of furnishing incorrect UCs to avoid the lapse of fund as it conveys the wrong status of work.

COMPLIANCE AUDIT

CHAPTER - V

COMPLIANCE AUDIT – OTHER TOPICS

AGRICULTURE DEPARTMENT

5.1 Lack of proper field study

Watershed to treat an area of 228 Ha at project cost of ₹0.46 crore was stopped as the legal status of the land in possession of private people was a forest.

Government of Kerala (GOK) accorded (November 2009) Administrative Sanction (AS) for Panchalithodu watershed to treat an area of 228 hectares at a project cost of ₹0.46 crore. The project report was prepared by District Soil Conservation Officer (DSCO) without sufficient base work/surveys and also without proper discussion with local authorities. The work was stopped (March 2011) due to the failure of Director of Soil Survey and Soil Conservation (DSSSC) to ascertain the legal status of the area before starting the work.

By that time the Directorate had achieved 15 *per cent* progress (₹0.06 crore financial progress) and requested¹ Government for dropping of project since conservation work was not possible in the Reserved forest area where Agriculture Department (AD) did not have jurisdiction. Due to the non implementation of project, financial assistance to tune of ₹0.40 crore earmarked for the project could not be availed of.

During Exit Conference, the Secretary admitted the Audit point and stated that in future, certification would be obtained from DSCO to the effect that the lands selected were free from all encumbrances before forwarding project proposals to Government.

5.2 Failure to re-arrange the work

Failure to recover risk and cost from the contractor and to re-award the work resulted in non-completion of soil conservation works to benefit 940 Ha of land and consequent loss of assistance of ₹1.37 crore from NABARD.

With a view to mitigate the flood thereby reducing the scarcity of water and to convert 400 Ha paddy field to double crop land, AD accorded administrative sanction (March 2007) to implement Drainage and Flood Protection works in Vayinthodu, Malachal in Thrissur District with NABARD assistance of ₹1.77 crore under RIDF XI. The project envisaged construction of regulator, restructuring of *thodu*, construction of sluice, retaining wall etc. so as to benefit 940 Ha of land. The DSCO awarded (March 2007) the work to M/s Eranad Construction Company Private Limited for ₹1.73 crore stipulating the period of completion as two years. The contractor stopped the work (June 2008) after incurring ₹0.36 crore and achieving 20 *per cent* financial progress and expressed unwillingness to continue the work as the water level in the

¹ July 2014, September 2014, November 2014 and March 2015.

canal was more than one metre deep and soil below water level was clayey and loose. The work was terminated (July 2010) by DSCO at the risk and cost of the contractor.

Audit further noticed that the Directorate forwarded (October 2014) a detailed estimate based on Delhi Schedule of Rates (DSR) 2014 for the work amounting to ₹6.50 crore to AD for inclusion under RIDF XX. The proposal was rejected (June 2015) by AD as it had already been sanctioned under RIDF XI. The Directorate was not able to re-arrange the work till date (November 2015).

During Exit Conference, the Secretary accepted the Audit observation and stated that necessary disciplinary action had been initiated against the officer responsible for the lapse and the Earnest Money Deposit of the contractor was forfeited.

5.3 Non-completion of Centrally Sponsored Schemes (CSS) leading to fragmented execution of schemes

Failure of the DSSSC in submitting project proposals as per the RKVY guidelines in respect of 134 watersheds resulted in expenditure of ₹27.97 crore becoming unfruitful.

In order to make specific interventions for development of agriculture, projects were taken up in the State through various CSS. Macro Management of Agriculture (MMA) was one of such scheme which included two sub programmes viz. National Watershed Development Project for Rainfed Area (NWDPA) and RVP implemented through Soil Conservation wing. The scheme provided flexibility for the State to develop and pursue the programmes and the benefits in terms of area, production level etc. are determined in an interactive mode with Ministry of Agriculture. The MMA became inoperative since April 2013 and thereafter the activities covered under MMA could be taken up under any other CSS/RKVY as per the extant guidelines.

i) Unfruitful expenditure on NWDPA leading to non-achievement of objectives

GoI accorded sanction for 31 sub-watersheds (134 micro watersheds) for treatment of 84,415 Ha of land under NWDPA at an estimated cost of ₹101.29 crore (90 per cent CSS) during XIth Plan period (2007-12). It was observed that an amount of ₹23.26 crore which was received was incurred upto March 2012 and a sum of ₹4.71 crore was incurred additionally out of Rashtriya Krishi Vikas Yojana (RKVY) scheme fund during 2012-13. The Directorate was able to carry out conservation activities in 30,797 Ha of land only with the available resources leaving the balance area of 53,618 Ha without undertaking conservation activities due to paucity of funds.

Audit further noticed that the Directorate submitted proposals to Project Preparation and Monitoring (PPM) Cell for sanction to undertake 134 balance work of watersheds for treating 8,333 Ha under NWDPA at an estimated cost at ₹10 crore during 2013-14. The proposals were rejected by the PPM Cell as these did not strictly comply with guidelines of RKVY. The

Directorate had not forwarded any proposals to the GOK for the period 2014-15 and 2015-16 to take up the balance works.

Thus, the failure of the Directorate in submitting project proposals as per RKVY guidelines in respect of 134 watersheds had resulted in non-achievement of the intended benefits such as ground water recharge, increase in number of wells and water bodies, enhancement of cropping intensity, changes in cropping pattern, higher yields in soil loss etc. Thus, the expenditure of ₹27.97 crore incurred on these watersheds could not become fruitful due to non-completion of project works.

During Exit Conference, the Secretary admitted the Audit observation and stated that the balance work would be taken up under new scheme after discussion in the next State Level Sanctioning Committee (SLSC) meeting.

5.4 Irregular drawal of amount from treasury and payments to contractor

PSU not directly executing works have been paid mobilisation advance of ₹0.81 crore in violation of instructions. Further, DSSSC had withdrawn ₹1.13 crore from the treasury in March 2015 before incurring the actual expenditure and held it till December 2015 as against the codal provisions.

As per GOK order dated July 2014, PSUs not directly executing works are not eligible for mobilisation advance. Further, as per guidelines, mobilisation advance can be paid to the agencies only after obtaining prior approval of Government in eligible cases.

- The work of ‘Strengthening and providing additional infrastructure facilities to the State Level Centre’ – Institute for Watershed Development and Management Kerala at Chadayamangalam (IWDMK) was awarded (December 2014) to M/s Kerala Land Development Corporation (KLDC) at an estimate cost of ₹0.81 crore. Though it was specifically mentioned in MoU with KLDC that the agency was executing the work through sub-contractor, the DSSSC paid (June 2015) the contract amount of ₹0.81 crore as mobilisation advance to the KLDC violating conditions in guidelines.
- DSSSC had withdrawn ₹1.13 crore from treasury in March 2015 before incurring the actual expenditure and held it till December 2015, against codal provisions.

During Exit Conference, the Secretary admitted the observation and stated that the matters would be pursued by the Department.

PUBLIC WORKS DEPARTMENT

5.5 Inadmissible payment to contractor on balance items of bridge work

Irregular revision of rate of items mentioned in the agreement schedule by treating them as extra items and non-availing of agreed tender rebate while making payments thereon to the contractor resulted in undue benefit of ₹1.09 crore to the contractor.

As per clause 23 (e) of Notice Inviting Tenders (NIT), extra items of work are those which are not expressly or impliedly described in the schedule, plans or specification. Those items of work which though highly necessary for the proper execution of the work and its completion, if not provided for in the original contract, can be treated as 'extras'.

Further, as per Clause 3 (b) of NIT, the overall percentage rate accepted and specified in the agreement shall not be varied on any account whatsoever.

The Superintending Engineer, PWD, Roads and Bridges, North Circle, Kozhikode (SE) had awarded² (April 2009) the work "construction of bridge at Varamkadavu in Chelora Grama Panchayat in Kannur district (balance work)" to a contractor³ at 21.80 *per cent* below estimated amount of ₹2.64 crore.

The items of work included in the original agreement schedule for formation of approach roads to the bridge structure which was completed in March 2005 consisted of earthwork for forming high embankment for approach roads, and ground improvement works using non-woven geo-textiles, woven geo-textiles and Pre-fabricated Vertical Drain (PVD).

During execution of the work, these items were treated as extra items and their rates enhanced, by executing (November 2009/March 2010) Supplementary agreements by the SE with the contractor. The contractor had agreed to execute these extra items at 21.80 *per cent* below estimate rate. The work was completed in May 2011. The contractor was paid an amount of ₹3.81 crore in five part bills as of December 2015.

Audit scrutiny revealed that:

- The above items of work were expressly mentioned in the Agreement executed by the contractor for the balance work. So, as per clause 23 (e) of NIT, they could not be treated as extra items. However, in violation of this provision, SE had treated them as extra items and revised (November 2009/March 2010) their rates.
- The Executive Engineer, PWD Roads Division, Kannur, (EE) did not apply tender rebate from the payments made to the contractor on the extra items, even though it was agreed in the supplementary agreements executed. This was in violation of the rules on application of overall tender percentage contained in the NIT.

The above violations resulted in inadmissible payment of ₹1.09 crore to the contractor, which amounted to undue benefit extended to him, as shown in the table below:

² SE (K) 5/2009-2010 dated 17 April 2009

³ Sri TA Abdulrahiman, Kasaragod

Description of item in Agreement	Up to date quantity executed	Agreed rate after applying tender rebate	Revised rate used for payment without tender rebate	Undue benefit to the contractor (in ₹)
(1)	(2)	(3)	(4)	[2 x (4-3)]
Earth work filling with all classes of soil suitable for forming high embankment...	54174.38 m ³	₹1516/10 m ³ (1939, less 21.80 %)	2,424/10 m ³	49,19,033.70
Providing and laying non-woven geo-textile fabric...	6332.08 m ²	₹55.91/m ² (71.5, less 21.80%)	88/m ²	2,03,196.45
Providing and laying woven geo-textile fabric...	4380.78 m ²	₹59.82/m ² (76.5, less 21.80%)	89.78/m ²	1,31,248.17
Providing and laying non-woven geo-textile fabric under water...	800 m ²	₹55.91/m ² (71.5, less 21.80%)	88/m ²	25,672.00
Providing and installing flexible pre-fabricated vertical drain...	130392.10 m	₹66.47/m (85, less 21.80%)	109.92/m	56,65,536.75
Total undue benefit to the contractor				1,09,44,687.07

When the matter was pointed out (June 2013), Government replied (October 2014) as under-

- revision of rates in earthwork was in lieu of wastage of earth during execution. Further, the estimate rate for earth work was adopted without applying tender rebate, as it was an extra item, and;
- the ground improvement materials viz., geo-textiles and PVD, were brought from abroad and that an approximate rate taken from earlier executed work was adopted in the estimate. But, when order was placed for these materials at the time of execution, their rates had increased. Further, these were not items included in the Schedule of Rates, but were market rate components for which tender variation was not applied.

The reply of Government was not tenable due to the following reasons:-

- Earthwork for formation of approach roads was an item expressly provided in the original agreement schedule. Hence, revision of its rate by treating it as an extra item was a violation of the condition of NIT. Moreover, the contractor had clearly agreed in the supplementary agreement that the tender rebate of 21.80 *per cent* was applicable for this extra item.
- Similarly, the items for ground improvement work were also expressly provided for in the schedule of the balance work. So, the contractor had quoted his rates accordingly with tender rebate. Hence, classifying them as extra items of work and enhancing their rates was a clear violation of the NIT provision.
- Further, as per NIT, it was the duty of the contractor to ensure availability of materials before quoting his rates. Hence, the contractor was not eligible for rate revision on account of non-availability of materials and variation in market rates. In this case also, the department failed to avail the benefit of tender rebate agreed by the contractor.

Thus, the action of the Department in enhancing the rates of items expressly mentioned in the agreement schedule by treating them as extra items in violation of the NIT provisions and non-availing of agreed tender rebate on

those items resulted in extending an undue benefit of ₹1.09 crore to the contractor.

5.6 Disallowance of re-imbursement claim by MoRTH

Execution of original works without prior approval of MoRTH by treating them as ordinary repair works resulted in rejection of reimbursement claim of ₹68.10 crore besides foregoing agency charges of ₹6.13 crore.

The Ministry of Road Transport and Highways (MoRTH) is primarily responsible for development and maintenance of National Highways (NHs). The activities are monitored by the Regional Office of MoRTH in each State. The actual work of construction of NH is entrusted to State Government on agency basis under the provisions of Article 258 of the Constitution of India for which nine *per cent* agency charges are claimed by State Government from MoRTH. The role of State Government is confined mainly to maintain, upgrade and improve the riding quality of existing NHs and carry out ordinary annual repairs.

Up to 31 March 2003, the State Government was to initially incur expenditure on construction and maintenance of NHs and then get it reimbursed from MoRTH. With effect from 1 April 2003, the system was changed to Direct Payment Procedure (DPP) by MoRTH for all NH works under the major head 5054 and Special repair and periodical renewal / Improvement of Riding Quality works under major head 3054. The transactions under DPP, therefore, do not involve the State Government budgetary system. For Ordinary Repairs (ORs) and Flood Damage Repairs (FDRs), the previous system was continuing. As such, the NH works undertaken as ORs and FDRs do not require prior sanction by MoRTH before execution.

Scrutiny of records (between December 2011 and October 2015) in five offices⁴ of NH wing of Public Works Department (PWD) revealed that 17 works (**Appendix 5.1**) were executed during the period 2011-12 and 2014-15 treating them as ORs, based on the sanctions of State Government only and claimed reimbursement from MoRTH (between January 2012 and June 2014) projecting them as ORs. The MoRTH disallowed (between March 2012 and September 2014) the claim for reimbursement stating that the works executed were not ORs but Original Works requiring prior sanction of MoRTH before execution. The claims thus disallowed amounted to ₹68.10 crore which the State Government had to bear from its own budgetary resources. Besides, the State also could not claim agency charges amounting to ₹6.13 crore.

Thus, the department failed to adhere to the guidelines of MoRTH while making claim for reimbursement of expenditure incurred on the maintenance of NHs and consequently burdening the State exchequer to the extent of ₹74.23 crore.

Government replied that the department had arranged the works due to poor condition of NHs in the State and inadequacy of funds / sanction from Government of India. It was also stated that the works undertaken were ORs

⁴ NH Division Kannur, Kodungallur, Kozhikode, Moovattupuzha and NH North Circle Kozhikode.

not requiring prior sanction from MoRTH. The reply is not tenable as the works executed were not Ordinary Repair works but were Original Works as remarked by MoRTH while scrutinising the claim for reimbursement. Further, these Original Works required prior sanction from MoRTH.

5.7 Awarding work without tender and providing undue benefit to a contractor

The execution of work without tender process and unwarranted revision of agreed rates by PWD extended undue benefit of ₹92.32 lakh to the contractor.

As per Para 2003 of Kerala Public Works Department Manual, works shall normally be awarded through open tenders after getting administrative and technical sanction and ensuring provisions of funds in the Budget.

Secretary to Government, PWD sanctioned (December 2012) re-construction of the partially collapsed Menonpara bridge across Korayar river in Nattukal-Velanthavalam State Highway in Roads Division, Palakkad through M/s. Kerala State Construction Corporation Limited (KSCC) without inviting tender at an estimated cost of ₹10.15 crore to avoid delay in tendering process. The Superintending Engineer (Roads and Bridges), North circle, Kozhikode (SE), awarded (January 2013) the work to KSCC at a cost of ₹9.31 crore. The site was handed over (January 2013) to the contractor for completion of work in 18 months. PWD revised (March 2013) the sanction to ₹18.30 crore after including road improvement work of nine kms in place of three kms originally estimated. The work was completed in May 2014. The contractor was paid ₹17.49 crore up to June 2015.

One of the items of work included in the agreement schedule for the construction of bridge was “Boring through all classes of soil for cast *in situ* bored piles with concrete mix M25, 1.20 metre internal diameter anchoring of pile in rock for a minimum depth of 50 centimetres etc”. The work involved construction of 28 piles, 12 piles for piers each having an average depth of nine metre and 16 piles for abutment each having an average depth of 10 metre. The total length of piles was estimated to be 270 m and the agreed rate was ₹16,344 *per* metre. However, during actual execution, Chief Engineer, PWD Roads and Bridges (CE) revised (May 2013) the rate of the above item from ₹16,344 to ₹34,017 *per* metre citing reasons such as increase in average depth of piles from nine to 19 m due to non availability of hard rock at the estimated depth, error in calculation of hire charges for piling plant and use of M Sand⁵ due to scarcity of river sand. CE sanctioned (May 2013) the rate of above item as ‘extra item’ and SE executed (June 2014) a Supplementary Agreement for a total length of 549.85 m. An amount of ₹1.87 crore was paid (July 2014) to the contractor for the ‘extra item’.

Audit scrutiny (February 2014) revealed the following:

- The bridge had collapsed in August 2010 and the Government decided to take up re-construction work only after a lapse of two-and-a-half years of collapse. Awarding of work to KSCC only without inviting

⁵ Mineral sand – This is at times used as an alternate for river sand.

open tenders after two-and-a-half years was lacking not only in justification but it was also against manual provisions which advocate transparency in selection of bidders through open competition.

- Items of work which do not form part of the original Agreement Schedule are treated as “Extra items”. In this case, the item “boring cast *in situ* piles”, was already existing in the Agreement Schedule. As such, it cannot be subsequently treated as an “extra item”.
- The contractor is expected, before quoting his rates, to inspect the site of the proposed work and assess the availability of specified materials. He is also expected to get himself acquainted with the sanctioned estimate, approved plans and drawings. Once his rates have been accepted and agreement finalized and signed, he is bound by the same and cannot claim its revision on grounds of errors in sanctioned estimates, un-availability or scarce availability of the specified materials etc.
- In the name of approving an “extra item”, the Department has resorted to revision of rates and specifications, after the award of work, on grounds of “scarce availability of river-sand”, “error in calculation of hire charges of piling plant” and made an extra payment of ₹97.17 lakh to KSCC. The action of the department was wrong as the ground cited for their action were not valid.

Thus, undue revision of rate resulted in extra payment of ₹97.17⁶ lakh to the contractor.

Government replied (October 2015) that the work was entrusted to KSCC to avoid delay as the tendering procedure would have taken long time. Further, the rates for piling were revised as the depth of piling work had to be increased from 270 m to 549 m during execution. Besides, due to non availability of good quality of river sand, the M sand was substituted and that there was some mistake in preparation of data.

The reply of the Government was not acceptable because the period of two-and-a-half years between the date of collapse of bridge and award of work for re-construction was reasonably adequate for completing all open tender formalities including invitation of competitive tenders so that the work could be awarded without compromising transparency instead of giving to KSCC only. Further, the revision of rates for piling was also not acceptable as the rate agreed by the contractor for piling was *per* metre and not for casting entire pile for a specific length. Besides, rate once concluded in the agreement signed by both the parties, was not required to be revised.

Thus, unwarranted revision of rate resulted in extension of undue benefit of ₹92.32⁷ lakh to the sub-contractor of KSCC.

⁶ (₹34,017 - ₹16,344) x 549.85m

⁷ ₹97.17 lakh less ₹4.85 lakh being five *per cent* margin of KSCC.

5.8 Wasteful expenditure on construction of fender piles in a bridge work

Department constructed “fender piles” for protecting a bridge from the impact of collision with barges even though bridge did not have scope for navigation of heavy vessels resulting in wasteful expenditure of ₹3.12 crore.

The Public Works Department (PWD) awarded the work of the construction of ‘Thadikkakadavu Bridge’ across Periyar river by Roads division, Ernakulam for ₹27.51 crore. The site was handed over (June 2012) to the contractor for completion of work in 18 months (December 2013). The work remained incomplete (July 2015) and the contractor had been paid ₹15.71 crore (July 2015).

The bridge was designed to rest on a foundation of bored cast-*in-situ* piles, for which 2,650 metres of piles at a unit rate of ₹27,056 per metre were planned. During execution, the length of piles was increased to 3,220 metres of which 729.79 metres were provided as ‘fender piles’⁸ in a separate pile group, upstream and downstream of the bridge. The department stated that the fender piles were required to protect the bridge from the impact of collision from heavily loaded cargo boats moving from Nedumbassery airport to Kochi city. The cost of construction of fender piles was ₹3.12 crore⁹.

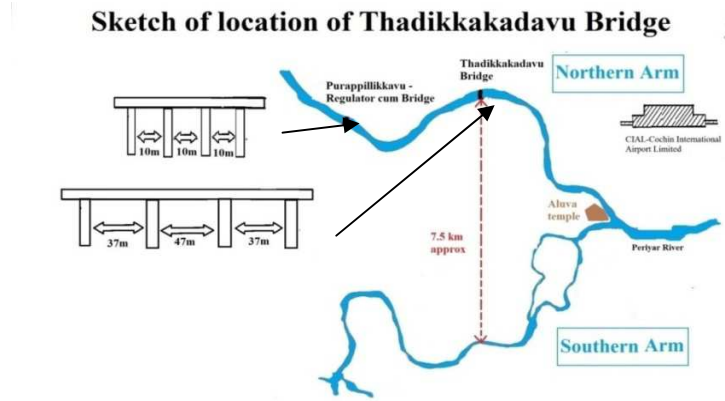
Audit observed that though the original design of the bridge was approved (March 2012) by the Design Research and Investigation Quality Control wing (DRIQ), under the control of Chief Engineer (Designs) as stipulated in the PWD manual, the design of fender piles was approved (November 2012) by the CE himself, which means that the DRIQ was not involved in the change of design of fender piles.

It was further noticed that there was no specific request from various stakeholders / departments (KSINC, SWTD, IND etc.) regarding provision for fender piles. Moreover, the route identified for connecting Nedumbassery airport with Kochi city passes through the southern arm of river Periyar, whereas the bridge was constructed on the northern arm as shown in the sketch attached.

Further, there was no infrastructure for anchoring of cargo boats anywhere near the Nedumbassery airport. Therefore, the construction of fender piles by adducing to safety concerns from barges / cargo boats was not tenable.

⁸ Fender piles are provided in ports and harbours to absorb the impact of berthing vessels and to avoid damage both to the vessels and the structure which are made of shock-absorbing materials.

⁹ Floating platform for working ₹25.61 lakh (+) anticorrosive treatment to reinforcement ₹4.51 lakh (+) boring and concreting ₹197.45 lakh (+) providing casing pipe ₹75.90 lakh (+) providing reinforcement to concrete ₹43.24 lakh = ₹346.71 lakh less tender rebate ₹34.95 lakh = ₹311.76 lakh say ₹3.12 crore.



Audit also observed that the fender piles were made of concrete with no impact absorbing quality to provide protection either to the bridge structure or to the vessels in the event of a collision. Further, the top level¹⁰ of fender piles constructed was much below the Maximum Flood Level (MFL)¹¹ of the river. The fender piles would not be visible during flood, making it likely to cause damage to the piers of the bridge as well as the barges. Thus, the purpose of protecting the piers with the help of fenders was doubtful.

On being asked, the Secretary, PWD replied (October 2015) that on account of concerns of polluting the drinking water projects at Chowara and Aluva, Cochin International Airport Limited (CIAL) shelved a proposal to develop the Southern branch of Periyar river as a waterway connecting CIAL to Kochi Seaport for cargo movement. An alternative proposal of developing the Northern branch was under consideration of CIAL, and hence, the fender piles were constructed in anticipation of movement of heavy cargo vessels through the same.

The reply was not tenable in view of the confirmation provided by Irrigation Department that there were no plans of developing the Northern branch of Periyar River over which the Thadikkakadavu bridge is constructed, as a waterway connecting CIAL with the Kochi Seaport. Irrigation Department further confirmed that there were bottlenecks for large scale cargo movement from CIAL to Kochi city/seaport through the Northern branch, like insufficient vertical clearance of existing cross structures, insufficient width and depth in a five km stretch between CIAL and Chengal thodu.

Thus, the decision to change the designs for providing fender piles was taken without assessing actual requirement and approval of the DRIQ Board which led to wasteful expenditure of ₹3.12 crore on construction of fender piles.

¹⁰ 49.8000 metres

¹¹ 51.825 metres

5.9 Avoidable payment on sinking of wells for foundation of four bridges

Separate payment amounting to ₹2.28 crore was made to the contractors by PWD outside the agreed rate for removing obstacles encountered during sinking of wells for foundation of four bridges.

The special conditions of contract stipulate that the rate quoted shall be inclusive of all the operations contemplated in the specification and tender schedule which covers the incidental work necessary for such operations. The conditions further stated that all items should be carried as per the relevant specification in the Madras Detailed Standard Specification (MDSS) which specifies that when the well has reached the required level care should be taken to see that it is seated properly.

Superintending Engineer, Roads and Bridges, North Circle, Kozhikode (SE), had awarded¹² (March 2011 to July 2012) four bridge works under PWD Roads Division, Manjeri at an estimated cost of ₹24.65 crore in Malappuram district. As per the agreement schedule, one of the items of work was sinking of reinforced cement concrete circular well in all classes of soil other than rock. The sinking process includes scooping of earth to line, level and plumb from inside and below steining with dredgers and other appliances including removal of obstacles. The EE made extra payments of ₹2.28 crore to the contractors of four bridge works towards charges for cutting and breaking down boulders having the size of more than 40 dm³ during sinking of wells and for seating of wells as shown below:

Table 5.1: Details of works showing extra payments made

Sl. No.	Name of work	Particulars of estimated cost and extra payments for well sinking			
		Item (as per agreement)	Estimated cost (₹ in lakh)	Extra payment (₹ in lakh)	Percentage of extra payment on estimated cost
(1)	(2)	(3)	(4)	(5)	[(5)/(4)]x100
1.	Construction of Mythrakadavu bridge	5	6.36	96.12	1,511.32
2.	Construction of Valippadam-Alungalkadavu bridge	6,7	15.15	63.49	419.08
3.	Construction of Thayyilakkadavu bridge	6,7	11.57	30.00	259.29
4.	Construction of Umminkadavu bridge	6,7	15.01	38.51	256.56
Total			48.09	228.12	474.36

Source: Agreements and vouchers

As can be seen from the above table, the percentage of extra payment comes to nearly four times the estimated cost of the agreed item of well sinking and this payment was made without following the usual tender procedure.

In this connection Audit observed the following:

All works except the extra items were put to tender on ‘percentage rate basis’ in which the ‘quoted rate’ was inclusive of all operations contemplated in the

¹² Shri.V.P.Mohammed Ayub, Eranhikode, Edavana, Malappuram, M/s Ernad Engineering Enterprises Ltd., Kodur P.O, Malappuram, M/s Thrimathy Contracting, CPC Centre, Hospital Road, Nilambur.

specifications and tender schedules including incidentals. The workable rate quoted by the bidder was inclusive of charges for removing boulders irrespective of their size. Therefore, the payment for cutting and breaking down boulders of more than 40 dm³ size during sinking of abutments and pier wells and for seating of wells on base, over and above the estimated cost was contrary to the provisions contained in the agreement.

Secretary, PWD stated (October 2015) that the approved design of bridges insisted seating of well foundation upon a levelled hard rock stratum and well kerbs were to be anchored to a minimum 60 cm depth into hard rock and that in order to seat the well foundations, the top layers of rock formations were to be cut and removed as mentioned in design and that the rates for the above rock cutting works were not included in the agreed specifications. Further, the reply stated that the general note in Standard Data Book permitted the payment for cutting down boulders of size above 40 dm³ and wooden logs of size above 100 dm³ if encountered during well sinking.

The reply of the Government was not tenable as the quoted rate was inclusive of all operations contemplated in the specifications and tender schedules including incidentals. The specification in the tender schedule and agreement schedule for the item of well sinking included 'removal of obstacles'. As notes in the Standard Data Book were not made part of the agreements, extra payment for cutting down boulders of size above 40 dm³ was not permissible.

Thus, due to its failure to adhere to the specifications in the tender schedules, the Department had extended undue benefit of ₹2.28 crore to the contractors.

5.10 Extra expenditure due to non-finalisation of tender within the firm period

Lapse of the department in adhering to PWD Manual instructions and Government orders regarding finalisation of tender within firm period resulted in avoidable financial implication of ₹1.56 crore.

According to the provisions of Kerala PWD Manual, consideration of tenders and the decision thereon should be completed well before the date of expiry of the firm period noted in the tender so that the selection notice is sent on or before the expiry of the firm period¹³. In case, selection notice is not issued before the expiry of the firm period, the bidder's offer would stand nullified automatically. In order to avoid such delays, Government had issued (May 2007) instructions prescribing time frame for completion of processing of tenders at various stages. Accordingly, the department shall place the tender before the Government within six weeks from the date of opening of tender followed by its submission before the Government Tender Committee (GTC) within seven days. After approval of proposal by GTC, order shall be issued within one week. The GOK, Finance Department had issued orders (January 2010) that in cases where tender amount is in excess of 10 per cent of Local

¹³ The firm period of a tender is the period from the date of opening of the tender to the date upto which the offer given in the tender is binding on the bidder. The firm period is fixed as the maximum time required within which a decision can be taken on the tender and order of acceptance issued in writing to the bidder, which shall be prescribed in the NIT.

Market Rate¹⁴ (LMR), justification should be submitted along with the tenders.

The Secretary (PWD) issued (December 2011) Administrative Sanction (AS) to the work 'Improvements to Kodumba-Padalikkadu Canal bund road from km 0/000 to 8/200' in Palakkad district at a cost of ₹5.10 crore. Based on Technical Sanction (TS) given by CE, the Superintending Engineer, PWD, Roads and Bridges, North Circle, Kozhikode (SE) invited (January 2012) pre-qualification-cum-tenders (PQ) for works from eligible contractors, fixing date of opening as 6 March 2012. The firm period of tender was 120 days i.e. up to 3 July 2012. Of the two bids received, one was pre-qualified (2 April 2012) by the Chief Engineers' Committee. The SE opened (10 April 2012) the financial bid of the pre-qualified contractor¹⁵ whose quoted rate was 14.89 *per cent* above the estimate rate. After processing the tender, the department accepted (April 2013) the tender rate quoted by the contractor after delay of eight months. In the meantime, the firm period had expired due to which the contractor was not willing (May 2013) to take up the work.

After failing to award the work due to the contractor's unwillingness, the department re-tendered (July 2013) the work which evoked no response. However, citing urgency of the work, the department invited (November 2013) negotiated quotations from 'A' class registered contractors for the work at the same estimate rates in terms of instructions contained in PWD manual. The only quotation received from a contractor¹⁶ was at 48.50 *per cent* above the estimate rate which was accepted (May 2014) by the Department at 45.43 *per cent* above the estimate rate as recommended by the Committee of Secretaries. The work was awarded (May 2014) to the contractor for ₹7.24 crore. The work which was scheduled for completion by May 2015 had been extended up to February 2016. An amount of ₹5.05 crore had been paid for the work done till September 2015.

Audit scrutiny relating to the first tender revealed that though the tenders were opened on 6 March 2012, the SE had furnished LMR justification only on 3 December 2012, after a delay of eight months as against six weeks as per guidelines. The delay in furnishing the LMR by SE resulted in delayed approval of tender by PWD and GTC. The LMR justification (December 2012) was 43.65 *per cent* above estimate rate. Audit observed that had the tender been accepted within the firm period, the work would have been executed by the first contractor at a cost of ₹5.68 crore as against agreed value of ₹7.24 crore.

On this being pointed out, the SE stated (August 2014) that the delay in forwarding tenders to PWD was due to the delayed response of the first contractor to negotiations. The reply was not tenable due to the reason that had the SE prepared LMR justification soon after the opening of financial bid, it would have been evident that the tender excess of 14.89 *per cent* above the Estimated Probable Amount of Contract offered by the first contractor was far below the LMR (December 2012) of 43.65 *per cent*.

¹⁴ The Local Market Rate for materials and labour shall be fixed by the EE twice every year for preparing LMR justification for the purpose of estimates for tender approval.

¹⁵ M/s PK Construction Company, Muvattupuzha.

¹⁶ M/s P.G Constructions, Pullani, Oarambil, Thrithala, Mezathur P.O, Palakkad.

Thus, the non-approval of the first tender by the department within the firm period due to non-preparation of LMR in time and delay in submission of tender documents adhering to the time schedules as per guidelines resulted in avoidable financial implication of ₹1.56¹⁷ crore which call for fixing of responsibility of the officials at fault for the inordinate delay in finalising the tender and initiate appropriate action against them.

5.11 Double payment to the contractor for same work through Hand Receipts

Failure to exercise required verification by PWD resulted in double payment for executing an item of work in the construction of Mythrakadavu bridge across river Chaliyar in Malappuram District.

Article 40 (b) of the Kerala Financial Code provides that every Government servant who incurs or authorises the incurring of any expenditure from public funds should see that the expenditure should not be *prima facie* more than the occasion demands. He is expected to exercise the same diligence and care in respect of all expenditure from public moneys under his control as a person of ordinary prudence would exercise in respect of the expenditure of his own money.

Superintending Engineer, Roads & Bridges, North Circle, Calicut,(SE) had executed an agreement (March 2011) with Shri.V.P.Mohammad Ayub, contractor, Erahikode, Edavana, Malappuram District, for the construction of Mythrakadavu bridge across river Chaliyar in Malappuram District. The work was executed by the Executive Engineer, Roads Division, Manjeri (EE).

Audit of vouchers (July 2015) of Public Works Department transactions (PWD) in the office of the EE revealed that the EE had made (July 2015) a payment of ₹14.93 lakh through a Hand Receipt (HR) prepared by the Assistant Engineer, Bridges Section, Manjeri (AE) and verified by the Assistant Executive Engineer, Bridges Sub Division, Manjeri (AEE) for an item of work “cutting and breaking into small pieces of boulders size during sinking of wells and seating of well – pier-2”. The payment recorded at page 35 of Measurement Book No.7732, was made through the Bill Discounting System (BDS) and adjusted in the Monthly Account of July 2015 through a Transfer Entry (July 2015). The EE made (July 2015) payment based on the sanction accorded in respect of an item of work in the Daily Labour Report by the Chief Engineer, Roads & Bridges (CE), Thiruvananthapuram.

As the sanction was more than two years old, a further scrutiny in Audit revealed that a total amount of ₹55.12 lakh (including the amount of ₹14.93 lakh related to the work) was paid during July 2015 for executing the item and that the amount of ₹14.93 lakh had already been paid earlier during May 2013 (CBV 150^{Dn} of May 2013) based on the same sanction for executing the same item. Both the payments, i.e. May 2013 and July 2015 were made through HR prepared by the then AE and verified by the then AEE and recorded on Page 6 of Measurement Book No.9360.

Further Audit investigation revealed that only one Daily Labour Report (DLR) was sanctioned in the Divisional records to support the payment of ₹14.93

¹⁷ ₹7.24 crore - ₹5.68 crore = ₹1.56 crore

lakh (May 2013). No DLR was available to support the second payment of July 2015 which confirmed that payment of ₹14.93 lakh made to the contractor during July 2015 through the BDS was double payment. On this being pointed out by Audit (December 2015), the EE admitted the double payment and got the amount remitted from the contractor in December 2015.

Audit of Internal Control Mechanism of the office of the EE, further revealed that the office was neither maintaining nor monitoring the requisite Control Registers as stipulated in Kerala Public Works Account Code Para No.10.5 (Works Abstract), Para Nos.10.6 and 5.3.3 (Works Register), Para No.10.7 (Contractors' Ledger) and Para No.22.2.7 (Miscellaneous Sanction Register). The AE was, thus, not exercising any preliminary checks on the contractors' claims. Thus, disregard for the mandatory checks of consulting previous records by the EE led to double payment of ₹14.93 lakh for the same work.

Further, the double payment of July 2015 was made through the newly introduced Bill Discounting System (BDS). The Finance Department (FD) transfers the details of only those Bills into the BDS database which are processed and recommended by the CE in 'EMLI'¹⁸ software and for which the FD had agreed to issue a Letter of Credit (LoC). The fact that the LoC for the payment of ₹14.93 lakh was issued by the FD in July 2015 and that the payment of July 2015 occurred through BDS, confirmed that the claim of the contractor was processed and recommended throughout the entire chain of authorities from the AE level to the CE level and that none of the authorities could detect the double payment being attempted. This revealed as under.

- a weak Internal Control Mechanism in the Roads and Bridges wing of the PWD;
- recovery of double payment in this case was at the instance of Audit but no action has been taken against the officials responsible for this. Besides, the present system gives scope for such double payments escaping detection in future; and
- the software EMLI was not able to detect the fact that a Letter of Credit had already been generated against the same sanction at an earlier date.

In this respect, Audit recommends as under:

1. The commission of double payment coupled with the weakness of the Internal Control Mechanism of the Department requires thorough investigation, preferably by Vigilance authorities to pre-empt any intentional negligence/fraud;
2. The software 'EMLI' may be modified so that only one Letter of Credit is generated against a sanction and any further attempt to generate Letter of Credit on the same sanction would be rejected by the system automatically; and
3. The payment of huge amounts through HRs (KPW Form 24), instead of the Forms KPW 22 (for making first and final payment to contractor) or KPW 23 (for making running payments), may be discouraged as the HRs

¹⁸ EMLI-Effective Management of Letter of Credit Issuance

lack the basic control measures and accountability provisions as compared to Forms KPW 22 or 23 which help to pre-empt irregular payments.

During Exit Conference, the Chief Engineer stated that this was the first instance and no other case of double payment was currently known to the Department. As regards enquiry about such instances taken place in other Divisions also, the Secretary to Government stated that assurance could be furnished only after an investigation in the matter. Thus, thorough investigation is required in the matter to guard against the recurrence of such serious lapses in future.

WATER RESOURCES DEPARTMENT

5.12 Extra payment to contractor due to omission in the specification of piling work in the agreement schedule

Description of work in agreement schedule was at variance with provisions in data sheet and treating side protection work as extra item by Water Resources Department had resulted in extra expenditure to the tune of ₹7.05 crore.

The Principal Secretary, Water Resources Department (December 2011) accorded Administrative Sanction for ₹60 crore for constructing a Regulator-cum-Bridge (RCB) at Pathalam across Periyar river under Irrigation division, Ernakulam. The tendered value of this work was ₹51.36 crore which was inclusive of the cost and working charges of steel liners for 'providing bored cast *in situ* RCC piles'. The Superintending Engineer, Irrigation Central Circle (SE), Thrissur awarded (July 2012) the work to a contractor¹⁹ for an amount of ₹49.72 crore. The work commenced in July 2012 for completion in 24 months. During the course of construction, Additional Chief Secretary, Water Resources Department had approved (April 2014) a revised estimate of ₹64.90 crore due to excess over agreed quantities in the original estimate and also for allowing extra items of work²⁰. The work was under progress as of March 2016.

(i) The RCB was proposed to be founded on bored cast *in-situ* piles in Reinforced Cement Concrete (RCC) as per the agreement schedule. The estimates prepared by CE included the cost of *in-situ* piles in RCC and providing casing pipe with MS plate (i.e. steel liner). Accordingly, the rate for 1,000 mm dia pile foundation was ₹20,528, ₹7,638 for RCC and ₹12,890 for steel liner. Similarly, for 500 mm dia foundation, the cost was ₹8,902, ₹1,911 for RCC and ₹6,991 for steel liner.

While floating the tender, the work description for these items did not include the use of steel liners and stated about the execution of RCC only. However, the rate mentioned for this work in the tender *inter alia* included the cost for steel liners. It was, however, noticed that during construction, steel liners were

¹⁹ M/s Marymatha Construction Company, Marymatha Square, Arakuzha road, Muvattupuzha P.O, Ernakulam district.

²⁰ Putting of ring bund, providing MS sheet piling work, providing and applying elastic and elastomeric membrane

not used and hence, the Executive Engineer, Irrigation Division, Ernakulam (EE) had deducted an amount of ₹3.50²¹ crore on account of non-usage of steel liners for bored cast *in-situ* pile work which the contractor had claimed while submitting CC VII and part bill.

The contractor represented (May 2013) against the deduction stating that the work was being executed as per specifications provided in the agreement schedule which did not give any information regarding the data of this item. The Irrigation Department opposed (May 2013) the plea of the contractor stating that data was inclusive of the rate of steel liner, deduction was made from the payment to the contractor as the steel liners were not used.

During review meeting (June 2013) on the progress of this work by Minister for Water Resources and Minister for Public Works, the representation of the contractor was discussed that the contractor was objecting to the deduction towards cost of steel liners used in the said RCC work which had resulted in huge financial loss to him and therefore he was unable to proceed further with the work. In the review meeting, it was decided that Principal Secretary, Water Resources Department would study this issue by entrusting this work to Chief Technical Examiner (CTE) and submit a report in the matter.

On the basis of the report submitted by the CTE, the Government observed that the plea of the contractor was valid and directed (January 2014) that the deducted amount may be released. Accordingly, the EE released (March 2014) the deducted amount of ₹3.50 crore to the contractor. The contractor had been paid a total amount of ₹6.48 crore on account of the use of steel liners in the work up to September 2015.

Audit observed that while preparing the estimates, the cost of providing steel liners in the pile work was approved by Chief Engineer, Irrigation and Administration (I&A) in the data sheet. However, the same was not included in the tender specifications. Thus, due to the omission in preparing the tender schedule in tune with the data sheet prepared for working out estimates, the contractor was demanding the payment on account of the use of steel liners in the RCC work whereas actually he had not used the steel liners. As such, he was eligible for the payment for doing RCC work only and not for steel liners which he had not used while executing the work as certified by the officer in-charge of the work. Thus, the department had rightly deducted an amount of ₹3.50 crore from the payment claimed by the contractor.

Thus, due to the non-inclusion of the use of steel liners in RCC work in the tender specification, the contractor had claimed and received the payment of ₹6.48 crore up to September 2015, though he was not eligible for the same. The decision of the Government to release the payment was also not in order as the payment is always made for the execution of actual work executed, measured and certified by the department and not merely on the basis of rates mentioned in the estimate. As such, the excess payment of ₹6.48 crore made for the work relating to steel liners, which was actually not executed by the contractor, requires to be recovered from the contractor.

(ii) While revising the estimate (April 2014) and executing supplementary agreement (May 2014) for execution, three items of works were included as

²¹ 1,738.97 m of 1,000 mm diameter piles and 1,795.27 m of 500 mm diameter piles

‘extra items’. One such ‘extra item’²², was providing MS Sheet piling work using sheet pile with sufficient anchorage for protecting nearby industries and buildings while excavating right side abutment and lock wall foundation. An amount of ₹56.97²³ lakh was paid (September 2015) for the item of work. As the rate agreed by the contractor in the original tender agreement was after ascertaining the site conditions as per clause 47 of MDSS²⁴, the above item of work cannot be treated as ‘extra item’. As such, the payment of ₹56.97 lakh made was irregular.



**Thiruvananthapuram,
The 5 MAY 2016**

**(AMAR PATNAIK)
Principal Accountant General
(Economic and Revenue Sector Audit), Kerala**

Countersigned



**New Delhi,
The 12 MAY 2016**

**(SHASHI KANT SHARMA)
Comptroller and Auditor General of India**

²² Extra item 2 of Supplementary Agreement II dated 2 May 2014.

²³ ₹58.85 lakh less tender rebate of 3.20 per cent.

²⁴ Madras Detailed Standard Specification is part of tender documents.

APPENDICES

Appendix 1.1
Year-wise break up of outstanding Inspection Reports as on 30 June 2015
(Reference: paragraph 1.7.1; Page:6)

Year	Agriculture Department				Forest Department				Total			
	No. of outstanding IRs	No. of outstanding paras	No. of paras for which first reply has not been received		No. of outstanding IRs	No. of outstanding paras	No. of paras for which first reply has not been received		No. of outstanding IRs	No. of outstanding paras	No. of paras for which first reply has not been received	
			IR	Paras			IR	Paras			IR	Paras
Upto 2010-11	4	6	0	0	12	26	0	0	16	32	0	0
2011-12	17	41	0	0	10	25	0	0	27	66	0	0
2012-13	0	0	0	0	3	4	0	0	3	4	0	0
2013-14	16	53	0	0	27	99	5	17	43	152	5	17
2014-15	122	463	38	191	55	300	42	215	177	763	80	406
Total	159	563	38	191	107	454	47	232	266	1017	85	423

Appendix 2.1
Encroachments on West Coast Canal, as on October 2015
(Reference: Paragraph 2.5.2(ii); Page:16)

Sl. No.	Place	Chainage			Extent of encroachment, if known	No. of families residing therein	No. of families evicted	Reasons for non-eviction of encroachers, and other remarks
		From	To	Length				
		(km)	(km)	(km)		(Nos.)	(Nos.)	
1	Thiruvananthapuram & Kollam District (jurisdiction of IN Division, Kollam)							
	Pallithura bridge to Kadinamkulam kayal (falling under jurisdiction of IN Section, Kazhakootam)	Ch. 21.05 km (Pallithura bridge)	Ch. 22.55 km (Arattuvazhi Bridge)	1.50	Not assessable, as demarcation not yet completed by Survey Department	56	nil	Demarcation not yet completed. Hence, assessment of encroachments, and resultant evictions required, was not possible.
		Ch. 22.55 km (Arattuvazhi Bridge)	Ch. 26.00 km (Anakkapillai Bridge)	3.45		192	nil	
		Ch. 26.00 km (Anakkapillai Bridge)	Ch. 26.90 km (Channamkara Bridge)	0.90		53	nil	
		Ch. 26.90 km (Channamkara Bridge)	Ch. 27.45 km (Kadinamkulam kayal begins)	0.55		3	nil	
	Kadinamkulam kayal to Anjengo kayal (falling under jurisdiction of IN Section, Chirayinkeezhu)	Ch. 33.63 km (Kadinamkulam Kayal ends)	Ch. 35.23 km (Kadakam Road)	1.60		20	nil	Demarcation not yet completed. Hence, assessment of encroachments, and resultant evictions required, was not possible.
		Ch. 35.23 km (Kadakam Road)	Ch. 36.56 km (Vadakke Arayathuruthu Road)	1.33		32	nil	
		Ch. 36.56 km (Vadakke Arayathuruthu Road)	Ch. 37.29 km	0.73		17	nil	
	Anjengo kayal to Nadayara kayal (falling under jurisdiction of IN Section, Varkala)	Ch. 42.46 km (Anjengo kayal)	Ch. 43.78 km (Thazhevettloor)	1.32		5	nil	Demarcation not yet completed. Hence, assessment of encroachments, and resultant evictions required, was not possible.
		Ch. 50.90 km (Sivagiri)	Ch. 52.20 km (Nadayara)	1.3		40	nil	
		Ch. 52.20 km (Nadayara)	Ch. 55.17 km (Nadayara)	2.97		10	nil	

Sl. No.	Place	Chainage			Extent of encroachment, if known	No. of families residing therein	No. of families evicted	Reasons for non-eviction of encroachers, and other remarks
		From	To	Length				
		(km)	(km)	(km)		(Nos.)	(Nos.)	
			kayal)					
	Kovalam to Pallithura (falling under jurisdiction of IN Section, Thiruvananthapuram)	0.00 km (Kovalam)	21.05 km (Pallithura bridge)	21.05		700	nil	Demarcation not yet completed. Hence, assessment of encroachments, and resultant evictions required, was not possible.
				36.70	TOTAL	1128	nil	
2	Thrissur District (jurisdiction of Addl. Irrigation Division, Thrissur) **							
	Kodungallur	-	-		4.92 Ha	214	nil	Demarcation not yet completed. Hence, assessment of encroachments, and resultant evictions required, was not possible.
	Mukundapuram	-	-		3.44 Ha	78	nil	
	Thrissur	-	-		3.02 Ha	97	nil	
	Chavakkad	-	-		6.6 Ha	443	nil	
	** Data provided by the Division as available in Report for year 2011 of Distt. Collector, Thrissur				TOTAL	832		
3	Malappuram District (jurisdiction of Irrigation Division, Malappuram)			-	-	nil	-	No family is to be rehabilitated, but 18 shops are to be removed from the banks of PC Canal in Ponnani Taluk.
					GRAND TOTAL	1960	nil	

Appendix 2.2
Details of Feeder canals improved without adequate width and having bridges of low vertical clearance
(Reference: Paragraph 2.5.3(i);Page:18)

Sl.No.	Division	Name of Feeder canal	Width (m)	No. of bridges with low vertical clearance	Amount (₹ in lakh)
1.	Alappuzha	Kumbalathankarythodu	10.85	-	63.06
2.		Kattachirathodu	1.80	-	76.10
3.		Chandiroorthodu	2	1	37.73
4.		Chethipozhy	8	-	6.50
5.	Kottayam	Lappalam	-	1	195.77
6.		Muttom- Changanacherry canal	-	5	53.85
7.		Chethipuzha	-	1	58.05
8.		Muttar- Neelamperoor canal	-	3	74.61
9.		Kodur river	-	11	110.14
10.		Neendoor canals	-	1	146.99
11.		Kallara canal	-	3	82.62
12.		Chullithodu	-	1	28.91
13.		Appanchira canal	-	2	57.78
14.		Perinjillathodu	-	3	110.66
15.		Valiyathodu	-	4	142.81
16.		Kariyar link canal	-	1	157.88
17.	Thrissur	Shanmugham canal	6 to 8	-	114.50
Total					1517.96

Appendix 2.3
Details of feeder canal where joint inspection was conducted by Audit
(Reference: Paragraph 2.5.3(ii);Page:18)

Sl. No.	District	Name of FC	Nature of work	Date of completion	Amount (₹ in lakh)	Present Condition (November 2014)
1.	Alappuzha	Madayanthodu	Desilting, removal of water hyacinth	24 October 2008	82.21	Completely covered with water hyacinth. Width and depth of the canal in most places were less than the standard required.
2.	Do	Kumbalathankary	Side protection, deepening	30 July 2009	63.05	Getting thick with water hyacinth. Width is only 10.85 m and depth 0.80 m
3.	Do	Ambalapuzhathodu	Desilting, side protection, and removal of water hyacinth	27 September 2008	65.80	Thickly covered with water hyacinth, low bridges, no navigability
4.	Thrissur	Shanmughamthodu	Desilting, side protection	30 January 2010	114.50	No connectivity throughout the year. A salt water barrier is there between WCC and the Feeder Canal (FC). Narrow canal.
5.	Kottayam	Valiyathodu	Protection of left bank, desilting.	19 July 2014	142.81	Two low railway bridges, work done on one side alone while other side of Kaduthuruthy bridge is shallow, full of dirt. Water weeds are fastly growing in the recently improved area.
6.	Do	Perinchillathodu	Side protection and desilting	19 January 2013	110.66	Thickly covered with water hyacinth and waste thrown in to the FC.
7.	Do	Mannanam-Chuzhalykkuzhy	Deepening	31 August 2011	115.94	Three km towards Mannanam was full of water weeds, rock preventing navigability.
TOTAL					694.97	

Appendix 2.4
Details showing delay in repair of barges and their disposal
(Reference: Paragraph 2.6.1; Page:22)

Sl. No.	Barge and year of construction	Withdrawal from service	Details of action taken after withdrawal of the vessel from service	Ultimate impact
1	Bhavana, 1992	June 2009	Estimates for dry dock repair were prepared in June 2009 (₹18.06 lakh), and re-estimated in December 2011 (₹58.09 lakh) and in June 2012 (₹129 lakh) but repair was not carried out.	After withdrawal from service, the vessel remained idle for 3.5 years and later found in severely corroded condition. Finally, it became unviable for repair and was disposed of in December 2012, for ₹15.09 lakh
2	Aiswarya	June 2009	Estimate for dry dock repair was prepared in June 2009 (₹17.51 lakh). But repair was not carried out.	After one year, the vessel was found in severely corroded condition. Disposed of in September 2011 for ₹30 lakh.
3	Bhagya, 1991	January 2011	Estimates for dry dock repair were prepared and approved by Board of Directors frequently since December 2010 (₹22.67 lakh). Finally repaired at a cost of ₹78 lakh and released in August 2012.	On account of idling of barge for long time without repair, the quantum of steel replacement increased by 29 MT which led to additional expenditure of ₹55.33 lakh.

Appendix 3.1
The details of extent of EFL area notified by Forest Department
(Reference: Paragraph 3.1; Page:27, 29)

Extent of EFL area

Sl. No.	District	Division	Total Notified	
			No. of bits	Extent (Ha)
1	Kollam & Thiruvananthapuram	Thiruvananthapuram	55	929.33490
2	Kollam	Achencovil	1	133.05090
3	Kollam	Punalur	1	15.71000
4	Kollam	Shendurney (Wild life)	4	35.43900
5	Kollam	Thenmala	3	45.45320
6	Idukki	Munnar	14	898.01250
7	Idukki	Marayur	75	248.74000
8	Idukki	Kottayam	89	265.06737
9	Thrissur	Chalakudy	3	4.56200
10	Thrissur	Thrissur	19	75.48019
11	Palakkad	Mannarkkad	54	713.04420
12	Palakkad	Nenmara	140	1,417.69070
13	Palakkad	Palakkad	289	3,060.80693
14	Palakkad & Malappuram	SVNP (Wild life)	8	114.45000
15	Malappuram	Nilambur North	25	948.05070
16	Malappuram	Nilambur South	13	298.93700
17	Kozhikode	Kozhikode	104	1,544.99140
18	Kannur & Kasargod	Kannur	75	1,154.17850
19	Wayanad	Wayanad North	74	903.54010
20	Wayanad	Wayanad South	65	2,098.62577
21	Wayanad	Wayanad (Wild Life)	1	5.23058
		Total	1,112	14,910.39594*

** Out of the total 14910.39 Ha of the notified EFL area, 14,905.17 Ha was notified u/s 3 of EFL Act and an extent of 5.23 Ha (Serial No.21) was notified u/s 4 till July 2015.*

Appendix 3.2
Details showing delay in notifying as EFL in respect of proposals received in
Custodian's Office
(Reference: Paragraph 3.5.2;Page:30)

Sl. No.	Division	Date of receipt of proposal	Area (in Ha)	Delay as on 31 December 2015 (in years)	Reason for delay
1	Nenmara	27.11.2008	0.9120	7	Sample plot details sought from sub office
2	Palakkad	20.05.2010	12.9800	5.5	Report sought from CCF (Eastern Circle)
3	Thrissur	08.10.2010	2.1034	5	Sample plot details sought from sub office
4	Palakkad	23.12.2011	7.6100	4	Sample plot details sought from sub office
5	Palakkad	20.11.2012	2.1450	3	Court Stay
6	South Wayanad	31.12.2013	6.0000	2	Sample plot details sought from sub office
7	Nilambur South	05.03.2014	1.9230	1.8	Sample plot details sought from sub office
8	Thrissur	25.03.2014	0.6072	1.8	Sample plot details sought from sub office
9	Nilambur North	04.06.2014	4.0480	1.5	Sample plot details sought from sub office
10	Kozhikode	30.06.2014	6.8790	1.5	Under enquiry by Custodian
11	Mannarkkad	28.10.2014	21.2120	1	Sample plot details sought from sub office
12	Mannarkkad	28.10.2014	4.8562	1	Sample plot details sought from sub office
13	Palakkad	12.11.2014	0.3346	1	Sample plot details sought from sub office
14	Thrissur	22.11.2014	2.5334	1	Sample plot details sought from sub office
15	Marayoor	27.11.2014	79.5000	1	Sample plot details sought from sub office
16	Palakkad	06.03.2015	6.0703	0.8	Sample plot details sought from sub office
17	Nenmara	20.06.2015	2.8210	0.5	Sample plot details sought from sub office
18	Nilambur North	09.12.2015	0.6550	-	Sample plot details sought from sub office
Total			163.1901		

Appendix 4.1
Statement showing reduction in required amount
(Reference: Paragraph 4.5.3; Page:41)

Sl. No.	Name of Watershed	Project cost (₹ in crore)	Item	Quantity approved (m ²)	Rate approved (₹ per m ²)	Prevalent rate (₹ per m ²)	Difference in rate (₹ per m ²)	Amount reduced (₹ in crore)
RIDF XIX								
1.	Potta, Thrissur	1.65	Stone pitched contour bund (with quarried stone)	44100	143.52	225.446	81.926	0.36
2.	Kavungal thodu, Malappuram	0.92	Stone pitched contour bund (with quarried stone)	12700	143.52	225.446	81.926	0.10
3.	Areeckal thodu, Kottayam	1.39	Stone pitched contour bund (with quarried stone)	40000	143.52	225.446	81.926	0.33
			Stone pitched contour bund (with non quarried stone)	10000	114.84	180.39	65.55	0.07
4.	Chathirur-Mangad, Kannur	1.38	Stone pitched contour bund (with quarried stone)	61000	143.52	225.446	81.926	0.50
5.	Alachakonam, Trivandrum	0.74	Stone pitched contour bund (with quarried stone)	35000	143.52	225.446	81.926	0.29
6.	Kochukoyikkal, Pathanamthitta	1.00	Stone pitched contour bund (with quarried stone)	50000	143.52	225.446	81.926	0.41
7.	Valliyankavu, Idukki	1.10	Stone pitched contour bund (with quarried stone)	65000	165.048	259.26	94.212	0.61
8.	Meenmutty, Idukki	1.15	Stone pitched contour bund (with quarried stone)	50000	165.048	259.26	94.212	0.47
9.	Mylapra, Pathanamthitta	1.69	Stone pitched contour bund (with quarried stone)	50000	143.52	225.446	81.926	0.41
10.	Adukkalampady, Kasargod	1.01	Stone pitched contour bund (with quarried stone)	37000	143.52	225.446	81.926	0.30
11.	Blavady, Kollam	1.25	Stone pitched contour bund (with quarried stone)	309000	143.52	225.446	81.926	0.25
			Stone pitched contour bund (with non quarried stone)	4400	114.84	180.39	65.55	0.03
12.	Kozhimalakandam, Idukki	0.85	Stone pitched contour bund (with quarried stone)	45000	165.048	259.26	94.212	0.42
13.	Kappathodu, Thrissur	2.78	Stone pitched contour bund (with quarried stone)	15000	143.52	225.446	81.926	0.12
14.	Kunduthodu-chiramanangad, Thrissur	2.17	Stone pitched contour bund (with quarried stone)	3000	143.52	225.446	81.926	0.02

Sl. No.	Name of Watershed	Project cost (₹ in crore)	Item	Quantity approved (m ²)	Rate approved (₹ per m ²)	Prevalent rate (₹ per m ²)	Difference in rate (₹ per m ²)	Amount reduced (₹ in crore)
15.	Anayankunnu Parathodu, Kozhikode	1.00	Stone pitched contour bund (with quarried stone)	41518	143.52	225.446	81.926	0.34
16.	Nelliyeri, Kozhikode	0.65	Stone pitched contour bund (with quarried stone)	16000	143.52	225.446	81.926	0.13
17.	Cherukad, Kozhikode	0.60	Stone pitched contour bund (with quarried stone)	20000	143.52	225.446	81.926	0.16
18.	Rajagiri, Kannur	1.65	Stone pitched contour bund (with quarried stone)	78000	143.52	225.446	81.926	0.64
			Stone pitched contour bund (with non quarried stone)	2000	114.84	180.39	65.55	0.01
19.	Randamkadavu, Kannur	1.80	Stone pitched contour bund (with quarried stone)	73000	143.52	225.446	81.926	0.60
			Stone pitched contour bund (with non quarried stone)	3300	114.84	180.39	65.55	0.02
20.	Kuzhikkalthodu ,Kannur	0.75	Stone pitched contour bund (with quarried stone)	30000	143.52	225.446	81.926	0.25
21.	Kolanchithodu, Kannur	0.96	Stone pitched contour bund (with quarried stone)	45500	143.52	225.446	81.926	0.37
			Stone pitched contour bund (with non quarried stone)	3300	114.84	180.39	65.55	0.02
22.	Kanhirakolly, Kannur	1.49	Stone pitched contour bund (with quarried stone)	8300	143.52	225.446	81.926	0.07
			Stone pitched contour bund (with non quarried stone)	2000	114.84	180.39	65.55	0.01
23.	Edappuzha Manchodu, Kannur	1.11	Stone pitched contour bund (with quarried stone)	42000	143.52	225.446	81.926	0.34
24.	Addakkathodu, Kannur	1.50	Stone pitched contour bund (with quarried stone)	70000	143.52	225.446	81.926	0.57
			Stone pitched contour bund (with non quarried stone)	2000	114.84	180.39	65.55	0.01
Total		30.59						8.23
25.	Adampara watershed, Kannur	1.95	Stone pitched contour bund (quarried stone)	1,00,000	143.52	281.0774	137.5574	1.38
			„ (without quarrying)	2000	114.84	224.9089	110.0689	0.02
			Agrostological measures	30000 /RM	8.80/ RM	10.9673/ RM	2.1673/ RM	0.007
26.	Karalam–Mankayam (Vellarikundu) watershed, Kasargod	2.05	Stone pitched contour bund(quarried stone)	60000	143.52	281.0774	137.5574	0.83
			„ (without quarrying)	5000	114.84	224.9089	110.0689	0.06

Sl. No.	Name of Watershed	Project cost (₹ in crore)	Item	Quantity approved (m ²)	Rate approved (₹ per m ²)	Prevalent rate (₹ per m ²)	Difference in rate (₹ per m ²)	Amount reduced (₹ in crore)
			Agrostological measures	30000 / RM	8.80/ RM	10.9673/ RM	2.1673/ RM	0.007
			Earthen Bund	2500 / RM	61.83/ RM	77.0848/ RM	15.2548/ RM	0.004
27.	Poyyamala – Illimukku, Kannur	1.95	Stone pitched contour bund (quarried stone)	22000	143.52	281.0774	137.5574	0.30
			Agrostological measures	20000 / RM	8.80 / RM	10.9673/ RM	2.1673 / RM	0.004
Total		5.95						2.61

Appendix 4.2
Details of NABARD assisted RIDF schemes under implementation by the
Directorate of Soil Survey and Soil Conservation
(as on 30 November 2015)
(Reference: paragraph 4.8.4; Page:45)

Sl No.	RIDF Tranche	No. of project sanctioned	Project area (Ha)	Project cost (₹ in crore)	Cumulative achievement		Achievement		Completed/ Ongoing
					Physical (Ha)	Financial (₹ in crore)	Physical (%)	Financial (%)	
1	RIDF I	40	5,902	10.13	5,718	9.96	97	98	completed
2	RIDF II	32	8,725	12.93	7,859	10.87	90	84	completed
3	RIDF III	40	13,423	21.61	10890	18.45	81	85	completed
4	RIDF VI	20	6,220	10.23	4,627.5	8.45	74	83	completed
5	RIDF VII	40	13,694	17.79	9,768.92	16.17	71	91	completed
6	RIDF VIII	12	6,128	6.47	3,562.8	5.55	58	86	completed
7	RIDF IX	7	3,199	4.65	2503	3.78	78	81	completed
8	RIDF X	51	28,537	35.52	16,641	27.52	58	77	completed
9	RIDF XI	3	1,200	2.49	639	0.89	53	36	completed
10	RIDF XII	25	10,577	18.58	8,987.5	17.03	85	92	completed
11	RIDF XIII	10	4,088	7.14	3,952.97	6.87	97	96	completed
12	RIDF XIV	13	4,338	9.5	4,135.56	9.04	95	95	ongoing
13	RIDF XV	22	8,158	15.6	7,245.98	13.76	89	88	ongoing
14	RIDF XVI	11	4,049	9.84	3763	8.73	93	89	ongoing
15	RIDF XVII	31	12,554	26.2	10,709.84	22.83	85	87	ongoing
16	RIDF XIX	68	33,320	87.53	14,830.73	37.77	45	43	ongoing
17	RIDF XX	6	5,816	27.35	0	0.005	0	0	ongoing
		56 ponds	1,458						
	Grand total	431	1,71,386	323.56	1,15,834.8	217.67			

Appendix 5.1
Statement showing the works executed during the period 2011-15 treating as
ordinary repairs
(Reference: paragraph 5.6; Page:52)

Sl. No.	Name of work	Division	Total claim disallowed (₹ in lakh)
1.	Renewal/IRQP from km 231/000 to km 263/444 of NH-17	Kozhikode	1251.14
2.	Resurfacing NH-212 km 66/00 to km 76/00	Kozhikode	656.18
3.	Periodical renewal (PR) of NH-17 providing 50mm BM and 25mm BC km 194/610 to km 206/500	Kozhikode	1,042.86
4.	Repairs to Railway overbridge at Vengali, Vengalam and Chengathukavu on NH-17	Kozhikode	179.82
5.	PR 2010-11, providing BM and BC in km 29/000 to km 41/000 of NH-17	Kannur	664.56
6.	Resurfacing of NH-17 from km 58/000 to km 63/000	Kannur	464.05
7.	Improvements to Kondotty town km 27/500 to km 29/150 of NH-213	Malappuram	330.90
8.	Widening of NH-213 between Angadipuram and Perinthalmanna	Malappuram	336.46
9.	Monsoon work NH-49 Madurai-Kochi road 40mm BC between km 279/000 to km 286/610	Muvattupuzha	349.99
10.	NH-17 2013-14 providing 1.20 x 1.50 span slab culvert and drainage facilities (km 331/500 to km 331/750)	Malappuram	19.93
11.	NH-212 – resurfacing work between km 97/600 to km 117/600 in Wayanad district	Kozhikode	580.53
12.	NH-213 for 2013-14 extension of culvert drain (km 41/040 and km 40/700) and (km 42/800 and km 43/200)	Malappuram	4.62
13.	NH-213 for 2013-14 extension of culvert drain at km 79/200 (left side)	Malappuram	4.98
14.	NH-213 for 2013-14 extension of culvert at km 46/800	Malappuram	4.95
15.	NH-47 Resurfacing work from Vadakkancherry to Vaniyampara (km 240/000 to km 249/000 and Vazhukumpara to Mannuthy)	Kodungallur	1,526.00
16.	Repairs to damaged drain in providing cover slabs between km 70/800 to km 70/900 (right side)	Malappuram	2.99
17.	Repairs to damaged drain in providing cover slabs between km 70/900 to km 71/000 (right side)	Malappuram	3.00
Total			7,422.96