GOVERNMENT OF KERALA

PERFORMANCE BUDGET

2023-2024

Water Resources Department

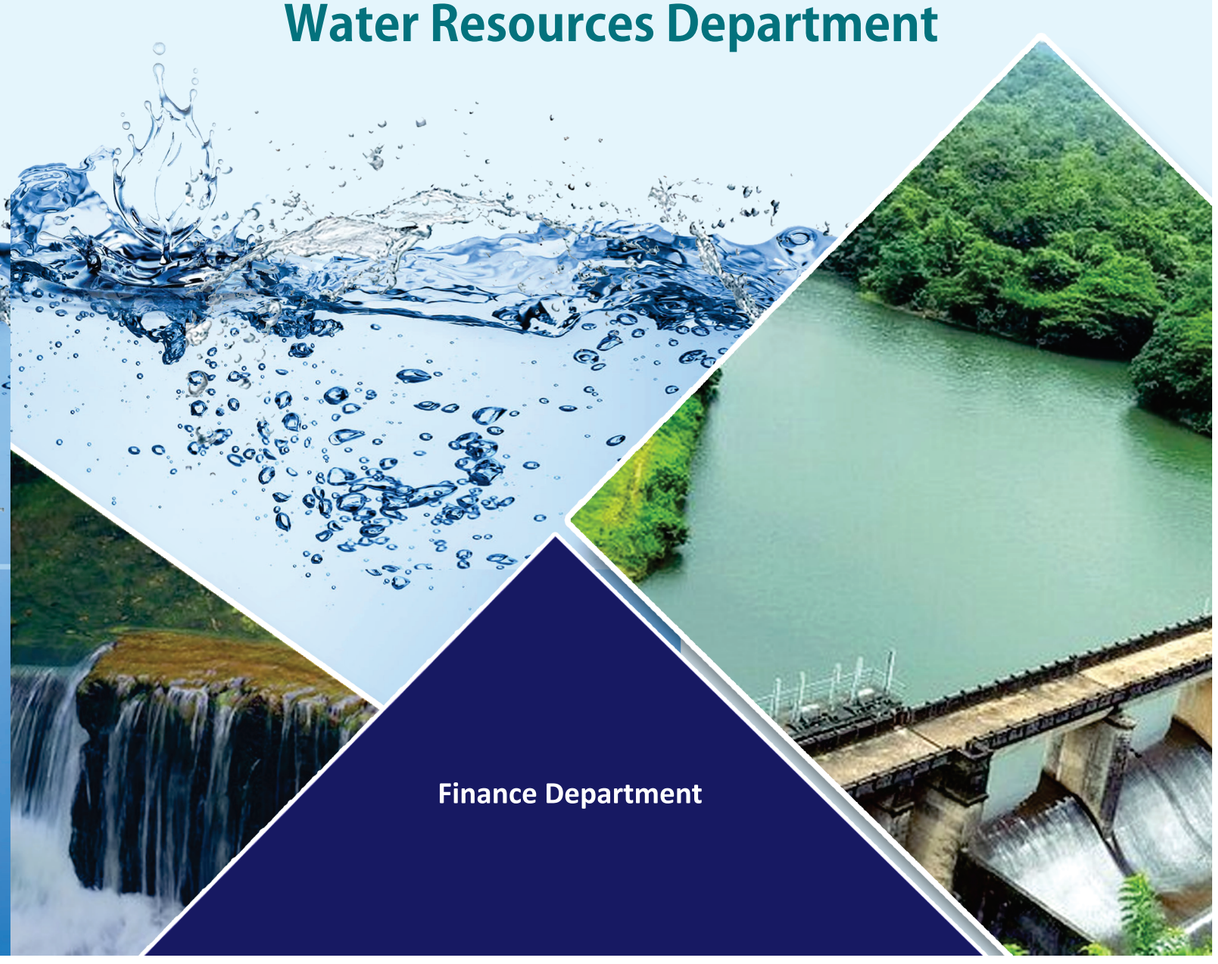
GOVERNMENT OF KERALA

PERFORMANCE BUDGET

2023-2024

Water Resources Department

Government Central Press, Thiruvananthapuram-2024



Finance Department

PERFORMANCE BUDGET 2023-24

WATER RESOURCES DEPARTMENT

FINANCE DEPARTMENT

CONTENTS

FOREWORD

The main objective of Performance Budgeting is to co-relate the physical and financial aspects of the programmes and their activities. It sets out in terms of physical targets, the programmes that have to be executed by the Government along with an indication of their cost performance. It ties the allocation of funds to measurable objectives, outputs, and outcomes, rather than simply distributing resources based on historical spending patterns. This method aims to improve accountability, efficiency, and effectiveness in public spending by linking financial resources to the actual results achieved. By focusing on measurable output/outcomes, performance budgeting aims to ensure that government resources are used effectively to achieve goals, enhancing public service delivery and maximising value for taxpayers.

On the recommendation of the Public Accounts Committee for the period 2008-11, in its 140th Report, three departments have been selected for performance budgeting, and the Water Resources Department is one among them. The Performance Budget document, which is duly placed in the Legislative Assembly along with other budget documents, showcase the actual performance of selected departments/Public Sector Undertakings for the previous financial year, i.e. 2023-24. It gives necessary information regarding the performance of the department in the implementation of various schemes and programmes earmarked under plan heads.

The Performance Budget 2023-24 of Water Resources Department consists of the details of Irrigation Department, Groundwater Department and two autonomous bodies, namely, Kerala Water Authority and Kerala Rural Water Supply and Sanitation Agency (Jalanidhi). The details of autonomous bodies are included in the sixth chapter. Based on the reports furnished by the Departments/Autonomous bodies and data collected by conducting field visits in implementing offices, Finance Department has prepared the Performance budget 2023-24. The findings and recommendations of the performance budgeting are to be taken for corrective measures and thus lead to the improvement of financial management of the departments/institutions and help to achieve the goal in time by speedy implementation of the scheme.

The structure of the performance budget report 2023-24 is given below:

Chapter 1
Introduction

In Chapter I, a brief introduction of the Water Resources Department has been included. The vision, mission and the organisational set up of the department has also been included in this chapter.

Chapter 2
Comments of Finance Department

Recommendations are made based on diagnostic studies and field visits pertaining to selected schemes of the Water Resources Department. During the year, some plan schemes have randomly been selected for evaluation. During the diagnostic stage, problems were analysed through verification of files and field visits, questionnaires and group discussions with stakeholders and study of documents such as Government Orders, Circulars, detailed project reports and other available documents. Recommendations include process changes, leveraging on technology and work related suggestions, etc.

Chapter 3
Financial Outlays and Quantifiable Deliverables

The chapter reflects the budgetary allocations provided for major schemes in the Water Resources Department. These allocations are juxtaposed with physical output and their projected outcomes. The main objective is to establish a one-to-one correspondence between the financial budget 2023-24 and the Performance / Outcome budget 2023-24 of various schemes and programmes implemented by the Water Resources Department. Details are furnished in Annexure I.

Chapter 4
Reform Measures and Performances

The details of reform measures, policy initiatives, and innovative technologies taken by the department and how these relate to the immediate outputs and financial outcome in various areas/ fields, such as public-private partnerships, alternate delivery mechanisms, social and women empowerment processes, greater decentralisation, transparency etc are discussed in this chapter.

Chapter 5

Financial Review

Chapter 5 highlights overall trends in expenditure vis-a-vis Budget Estimates/Revised Estimates/Actual Expenditure in recent years, and the position of unspent balances with the department. The details are included in Annexure II.

Chapter 6

Review of Performances of Autonomous Bodies

The chapter includes the review of the performance of autonomous bodies under the administrative control of the Water Resources Department. Details of Kerala Water Authority and Kerala Rural Water Supply and Sanitation Agency (Jalanidhi) are included in this chapter.

Thiruvananthapuram
February 2025.

CHAPTER 1

INTRODUCTION

Formation of Irrigation Department

In Kerala, the Irrigation department was initially a part of the Public Works Department. Based on the recommendation of the Retrenchment Committee, the staff of the Public Works Department underwent reduction and led to the formation of Irrigation Division, with three sub-divisions and nine sections on 19/3/1934 to carry out the irrigation works of the State. Later, as per the G.O (P) No 27/90/PW & T dated 29th March 1990 the Irrigation department was spun off from the Public Works Department with effect from 1st April 1990.

Kerala, being a state with a network of rivers, has several irrigation projects aimed at enhancing agricultural productivity and ensuring water availability. Though there are various methods for providing water for irrigation, the best and the most reliable method which can be used for Kerala is the construction of storage reservoirs for impounding water during the monsoon and utilising the water in the reservoir for critical periods of the crops when there is insufficiency. Hence, major and medium projects were taken up and a major portion of the cultivable land could be made ayacut under these projects. The oldest irrigation project in Kerala is the Peechi Irrigation Project, built across Manali river in Thrissur district. This straight concrete gravity dam was completed in 1959 which serves as an irrigation dam for nearly 17555 ha of land and also caters the drinking water needs of the population. Numerous irrigation projects like the Vazhani, Malampuzha, Mangalam, Gayathri, Pothundy, and Neyyar were taken up for enhancing the irrigation potential of Kerala. Out of these the Malampuzha Irrigation Project in Palakkad district is the first large-scale irrigation system attempted in the State.

Minor Irrigation (MI) Schemes play an important role in Kerala where average farm size is small and land labour ratio is low. With a view to enhance irrigation efficiency and to accelerate crop productivity, measures for implementing micro

irrigation projects across the state have been initiated. Modernisation of canals and expansion of irrigation in water deficient areas is also an important priority.

In the present situation almost all projects are being converted into multipurpose projects in order to maximise the utilisation of existing resources. In order to improve the irrigation potential, innovative MI Schemes have also been implemented in almost all parts of the state.

IRRIGATION (I & A)

Irrigation & Administration wing deals with the Major & Minor Irrigation works across the state, Inter-State Water sharing, Flood Control & Coastal Zone Management and Salt water extrusion apart from the general administration of the department. The Chief Engineer, Irrigation & Administration is the administrative head of the department. The hierarchy is given at Figure 1.1. The Chief Engineer is assisted by a Law Officer, Senior Finance Officer, and Senior Administrative Officer for dealing the areas related to legal, financial and administrative matters respectively.

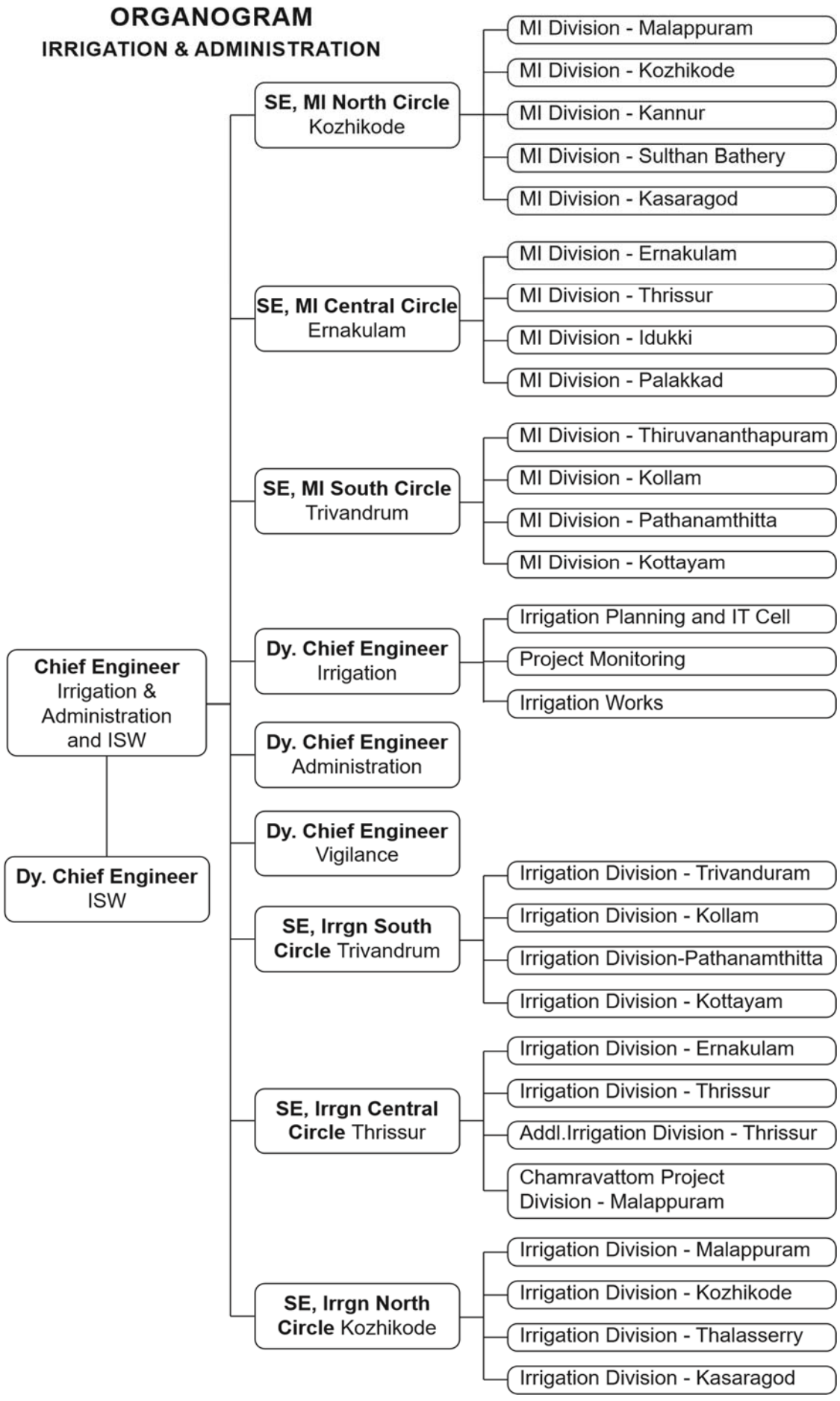
Vision

Conservation and management of Water Resources in a sustainable, scientific and equitable manner to provide Irrigation facilities for agriculture development.

Mission

- ✓ To Harness, Protect and Regulate the Water Resources by formulating effective plans through the principles of Integrated Water Resources Management, Agricultural Water Management and Disaster Risk Management.
- ✓ Construction, Operation and Maintenance of irrigation structures for the conservation, storage, abatement of pollution in water resources, providing irrigation facilities, flood control and coastal protection.
- ✓ Judicious usage of water for irrigation by ensuring farmers participation.
- ✓ To build a team of water experts.

Fig. 1.1 : Organogram of Irrigation & Administration



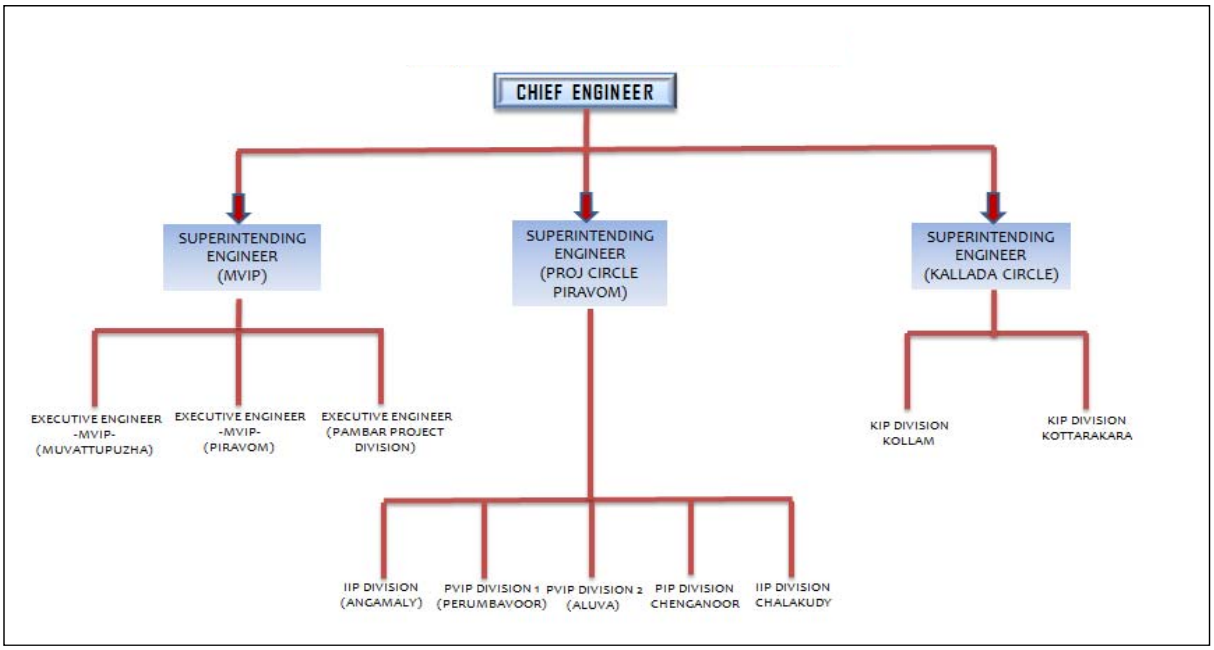
PROJECT- 1 (CAUVERY CELL)

All the major and medium irrigation projects in the northern parts of the state, i.e from Palakkad to Kasaragod come under Irrigation Projects-1, Kozhikode. Chief Engineer (Project I) is the head of the department. At present there are 11 completed projects in the region viz. Malampuzha, Mangalam, Pothundy, Meenkara, Chulliyar, Walayar, Chitturpuzha, Kuttiyadi, Pazhassi, Kanhirapuzha and Regulator cum Bridge at Thrithala. Besides increasing irrigation facilities, these projects have helped the overall development of the region to a greater extent by way of improving infrastructure, irrigation facilities, employment opportunities and availability of drinking water. The ongoing projects under the control of this office are Karapuzha Project, Banasurasagar Project and Chamravattom Project.

PROJECT II

Irrigation Project II which is a part of the Irrigation Department is entrusted with the responsibility of implementation of major and medium irrigation projects in central and southern parts of Kerala. The ongoing Projects under Plan head are Muvattupuzha Valley Irrigation Project, Idamalayar Irrigation Project, Pambar Basin Project and Meenachil River Valley Project. Maintenance of the completed projects in this region is also the responsibility of this wing.

Fig. 1.2 : Organisational Chart of Project II



Objectives and Functions:-

The main function of the Project II Wing of the Irrigation Department includes planning, designing, execution and monitoring of the major and medium irrigation projects and maintenance of commissioned projects. The main projects under the Project II are Idamalayar Irrigation Project, Periyar Valley Irrigation Project, Muvattupuzha Valley Irrigation Project, Kallada Irrigation Project, Pamba Irrigation Project, Vazhani Irrigation Project, Pambar Basin Project, Chimmini Irrigation Project, Meenachil River Valley Project, Cheerakuzhy Irrigation Project and Neyyar Irrigation Project.

KUTTANAD PACKAGE & INLAND NAVIGATION

The Chief Engineer (Inland Navigation & Kuttanad Package) is the project head of Kuttanad Package & Inland Navigation. During 2018-19, as per

GO(MS)No:31/2018/WRD dated 29.06.2018, the post of Chief Engineer (Kuttanad Package) is redesignated as Chief Engineer (Inland Navigation & Kuttanad Package) and the full jurisdiction of development of Inland Waterways is transferred from Chief Engineer (Irrigation & Administration) to Chief Engineer (Inland Navigation & Kuttanad Package).

The Kuttanad Wetland System which spreads over 32 Grama Panchayats of Alappuzha District, 27 Grama Panchayats of Kottayam district and 5 Grama Panchayats of Pathanamthitta District, is predominantly agriculture belt of Kerala, where people depend on farming and allied activities like fishing, animal husbandry etc for their livelihood. The cultivation is done on continuous blocks or padasekharams or polders bounded by rivers and canals. Before sowing, the flooded water is pumped out using engine pumps after the reparation of bunds. But during monsoon and heavy showers, the flow of water in the canals and also the intrusion of water from the river to the bunds increases, which may lead to the breakage of weak bunds causing flood in the paddy field and resulting in heavy crop loss. Also the standing crops are subjected to extensive damage due to the saline water intrusion from the estuaries to the paddy field during the dry seasons. The people in the Kuttanad region have been facing severe agrarian distress for the past many decades owing to these problems and also due to a variety of other factors. Later, based on the request from the Government of Kerala, the Union Government entrusted Dr. M. S. Swaminathan Research Foundation (MSSRF), Chennai to conduct a scientific study of the region and to suggest suitable measures to mitigate the agrarian distress in Kuttanad. Hence MSSRF recommended a variety of interventions to be implemented as a package, with a total cost of ₹1,840 crore (2007 Price Level) which was accepted by the Union Government for funding under central sector ongoing schemes. Of which those related to Flood Control, Salinity Management and drainage with a total cost of ₹1517.90 crore are undertaken by the Irrigation Department under the Chief Engineer (Kuttanad Package and Inland Navigation) Alappuzha.

Functions and objectives

The strategy is to manage flood by erecting strong bunds along the periphery of the padasekharams of Kuttanad wetland with clay obtained from deepening the

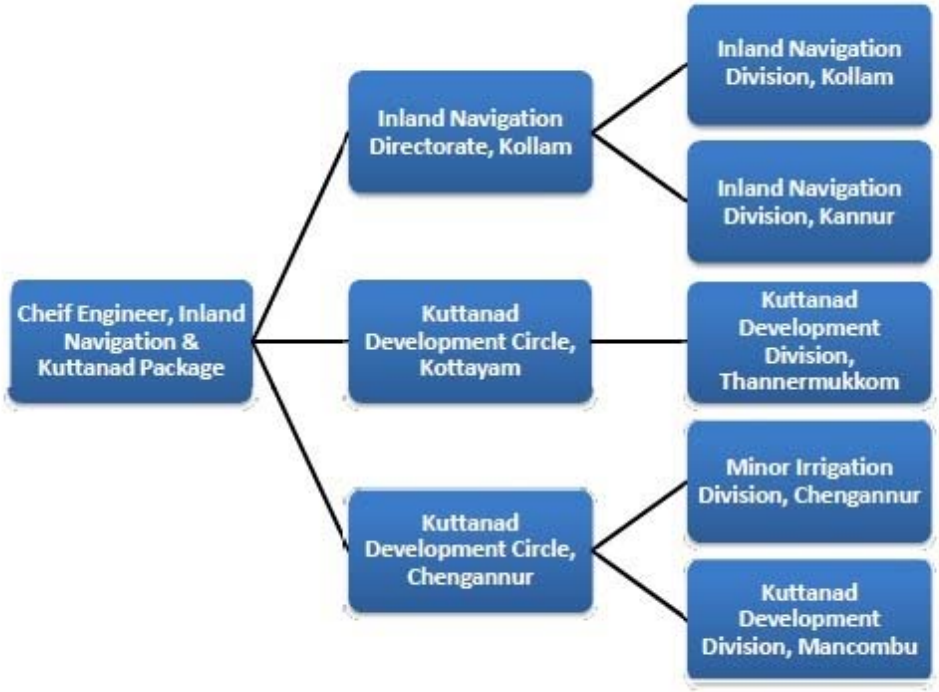
channels all around and protecting the clay bund thus formed by constructing retaining wall using rubble masonry or Pile & Slab along the channel side where the existing bund is very weak. Also modernization of Thanneermukkom Barrage (TMB) which regulates intrusion of saline water during dry season is also taken up for execution which includes construction of RCB at the IIIrd stage replacing existing earthen bund and replacing old shutters with stainless steel shutters in the 1st & 2nd stage etc. This will contribute immensely to managing floods efficiently. A scheme for improving the efficiency of Thottappally Spillway (TSW) which diverts the excess flood water directly to the sea has also been taken up for alleviating problems caused by flood in Kuttanad Region.

The Central Government while accepting the report of M.S Swaminathan foundation has reiterated that proposals made in the report shall be put forward for funding under appropriate schemes of the ministries concerned. Accordingly all the schemes under Kuttanad Package were proposed for funding under 'Flood Management Programme'.

Organisational structure

The office is headed by the Chief Engineer at Alappuzha with three circle offices at Chengannur, Kottayam & Kollam (Inland Navigation Directorate). There are also five divisional offices which are situated at Mancombu, Chengannur, Thanneermukkom, Kollam and Kannur, 12 Sub divisions and 35 Sections along with supporting staff. In addition to these, a Quality Control and Monitoring wing is functioning under the Chief Engineer with an Executive Engineer and two Assistant Engineers at Chief Engineer's office, Alappuzha. There is also a Quality Control Lab at Thanneermukkom.

Fig. 1.3 : Organisational structure of Kuttanad Package & Inland Navigation



IRRIGATION DESIGN AND RESEARCH BOARD (IDRB)

The Irrigation Design and Research Board (IDRB) is the Central Design and Research Organization of Water Resources Department, Government of Kerala. The Design, Research, Quality Control, Coastal Erosion studies, Field Studies Circle and Investigation wing of the institution are under the control of the Chief Engineer (Investigation and Design) with headquarters at Thiruvananthapuram. IDRB was formed in August 1986 vide G.O.(MS) No.24/86/Irrgn dated 14-08-1986 and subsequently started functioning under the Chief Engineer, IDRB vide G.O. (MS) No. 7/1987/Irrgn dated 24/03/1987.

Vision

Towards a dynamic centre, striving continuously in pursuit of excellence in the field of quality design and innovative research for water resources management of the State.

Objectives of IDRB

IDRB, the pioneering institution of Water Resources Department, is entrusted with the activities of investigation and design of all irrigation projects, all water retaining structures like dams, check dams, regulators and other various irrigation structures. The Chief Engineer (Investigation and Design) co-ordinates, monitors and reviews all the works relating to investigation, design, research, quality control, coastal erosion, water resources and hydrology.

The primary objective is to bring IDRB as one of the best institutions in the country for design, research, investigation, hydrology and other related works. For carrying out these activities, the following schemes were incorporated:

- Modernization of IDRB
- Formation of River Basin Organization
- Dam Rehabilitation and Improvement Project

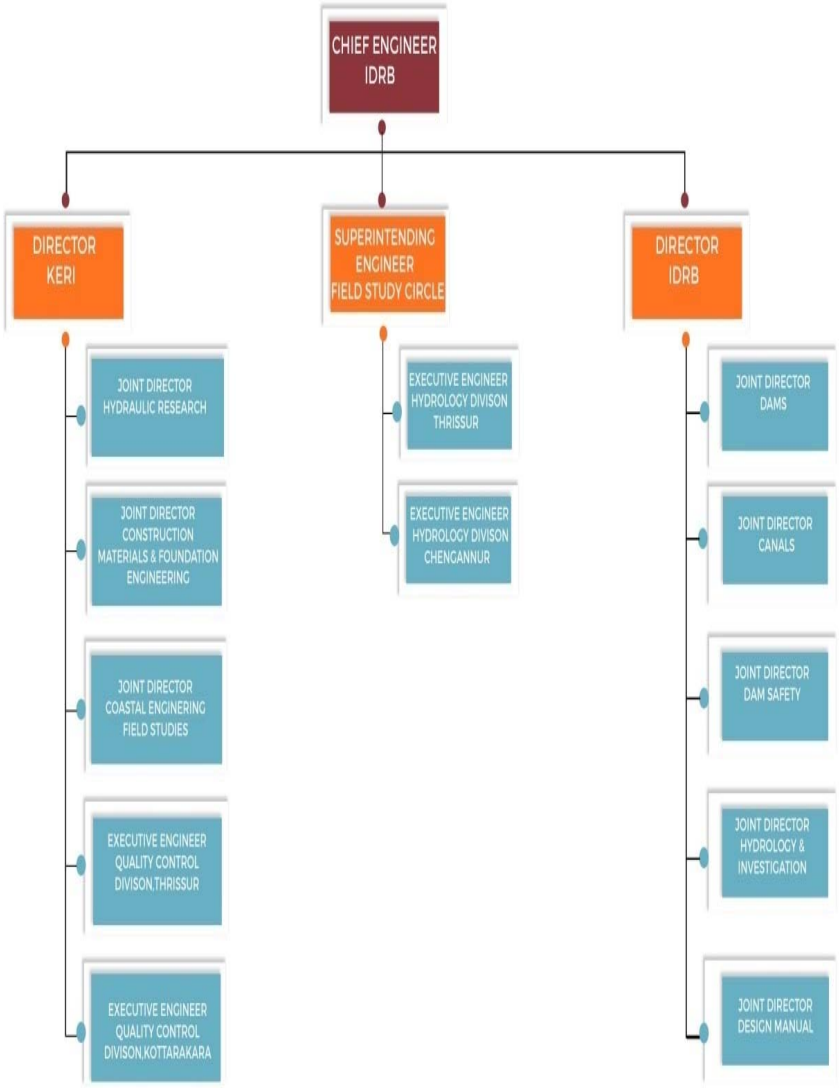
The major works include:

- ❖ Examination and formulation of project reports of medium irrigation projects for getting clearances from CWC.
- ❖ To conduct trainings for the capacity building of officers of Irrigation Department
- ❖ Receiving and submitting of design indent of various works and submission of drawings of design
- ❖ Online monitoring of dams.
- ❖ To conduct investigation works for the design of irrigation Structures.

Functions of IDRB

The office of the Director (Designs) at Thiruvananthapuram is in charge of designs, while the office of the Director (Research) stationed at Peechi is in charge of research. Works related to water resources and hydrology are being dealt with by the office of the Superintending Engineer – (Field Studies) stationed at Thrissur. The monitoring of Peechi Irrigation Project is done by Chief Engineer (I & D)

Fig. 1.4 : Organogram of IDRB



GROUNDWATER DEPARTMENT

Groundwater Department is the nodal agency for groundwater investigation and construction of groundwater extraction structures in the State. The department started functioning as a part of the Agriculture Department and later evolved as an independent department in 1978. The initial focus of the department was to provide solutions to the irrigation needs and later extended to domestic and industrial needs also. Ever since its inception, the Groundwater Department has been dealing with various groundwater related issues and has been a key service provider to all the sectors across the State. The department also presently engages in implementing mini

water supply schemes, conservation and management of groundwater resources and monitoring of groundwater regime.

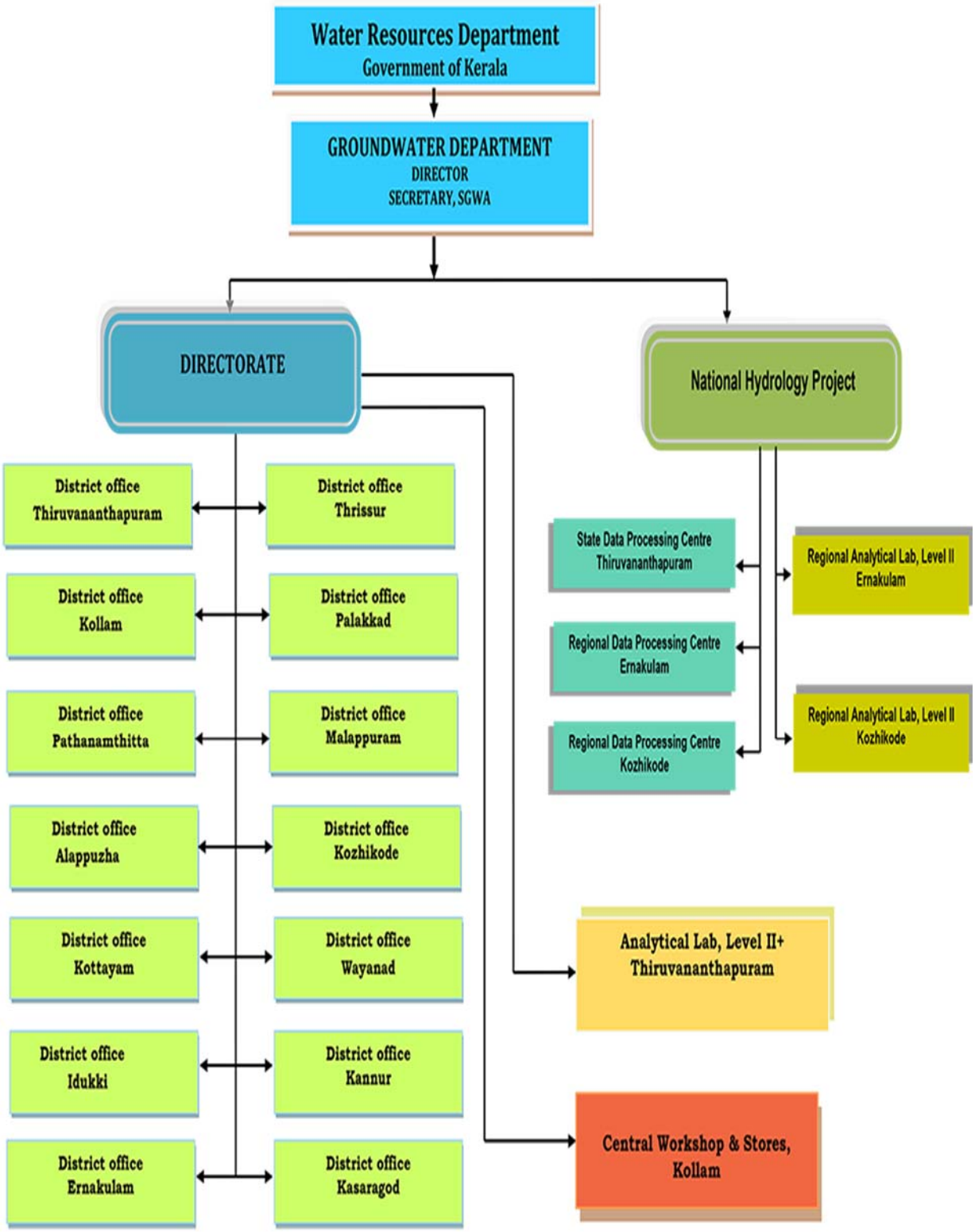
Vision of the department

Moving forward to watershed based groundwater management to support water security and sustainable groundwater utilisation.

The main activities of the department are:

- Groundwater resource estimation
- Groundwater investigation
- Construction of groundwater abstraction structures (Bore well, Tube well, Filter point well)
- Implementation of mini drinking water supply schemes and Hand pump schemes for Plan and Deposit schemes.
- Providing Functional Household Tap Connection (FHTC) under Jal Jeevan Mission
- Implementation of groundwater conservation structures
- Implementation of Kerala Groundwater (Control & Regulation) Act 2002
- Water quality analysis
- Pumping test for groundwater regulation and groundwater studies
- Data collection for various scientific studies
- Specific studies on disputes pertaining to groundwater resource exploitation
- Renovation of mini drinking water supply schemes and repair of Hand pump.
- Rapid risk assessment studies for Kerala State Disaster Management Authority as and when required
- Activities under Navakerala Mission
- Water Conservation activities under Jal Shakti Abhiyan (Catch the Rain Programme)
- Implementation of National Hydrology Project (100% Central Sector Scheme)

Fig. 1.5 :Organisational structure of Groundwater Department



CHAPTER 2
COMMENTS OF FINANCE DEPARTMENT

Water is one of the most fundamental substances on Earth, essential not only for life but also for the functioning of ecosystems and human civilizations. Water is a critical driver of economic development. It supports agriculture, which relies heavily on irrigation for crop production. Industries, from manufacturing to energy generation, depend on water as a resource for processing and cooling. Moreover, water bodies are vital for transportation and trade, facilitating the movement of goods across regions. The tourism sector also thrives on water-related activities, from beach resorts to house boats and waterfalls to boat races, contributing significantly to the economy. Water is much more than a mere resource; it is the essence of life that connects all living beings. Its importance transcends biological necessity, encompassing cultural, economic, and environmental dimensions.

Kerala is blessed with abundant water resources that sustain its lush greenery, diverse ecosystems, agriculture, and communities. With its unique geography and a tropical monsoon climate, Kerala experiences significant rainfall and is characterised by a rich network of rivers, lakes, wetlands, and groundwater reserves. Kerala is home to 44 rivers, all of which flow westward and drain into the Arabian Sea, except for three that flow eastward into the neighbouring states of Tamil Nadu and Karnataka. Despite Kerala's abundance of water resources, the state faces several challenges that threaten the sustainability of its water supply. Water management in Kerala is a difficult task due to high spatial and temporal rainfall variations, undulating topography with steep slope towards sea, high population density, lengthy coastal stretch with saline backwaters and estuaries, climate change, etc. The Water Resources Department has a big role in water management in Kerala.

Water Resources Department comprises Irrigation Department, Ground Water Department, and three autonomous bodies - Kerala Water Authority, Kerala Rural Water Supply and Sanitation Agency (KRWSA), and Kerala Irrigation Infrastructure Development Corporation (KIIDC). These departments/autonomous bodies perform various functions to preserve the Water resources, to give irrigation facilities, and to

supply pure drinking water in Kerala. Irrigation department was initially a part of the Public Works Department. Later, as per the G.O (P) No.27/90/PW&T dated 29th March 1990, the Irrigation department was spun off from the Public Works Department with effect from 1st April 1990. Kerala Water Authority was constituted on 1st April 1984 through the promulgation of the Kerala Water and Waste Water Ordinance, 1984 by converting the erstwhile Public Health Engineering Department to provide for the development and regulation of water supply and management of public drainage system in the state. The ordinance was later ratified by the enactment of the Kerala Water Supply and Sewerage Act 1986. Kerala Water Authority is the implementing agency of the Jal Jeevan Mission which is the biggest project under the Water Resources Department.

Jalanidhi or Kerala Rural Water Supply and Sanitation Agency (KRWSA) is another autonomous body functioning under the Water Resources Department. KRWSA implements 'Jalanidhi', a world bank assisted programme, and small water supply schemes and sanitation services in rural Kerala. Currently, there is no plan scheme allocation to KIIDC ltd.

Plan Allocation to Water Resources Department

The main functions of the Water Resources department is irrigation and flood control sewage and water supply.

Finance (Performance Budget) Department mainly evaluates the works under Plan Schemes. The plan outlay provided for the Irrigation and Flood Control during the financial year 2023-24 was ₹51485 lakh. The total outlay consists of state plan schemes, state share for CSS, EAP (External Aided Project) and NABARD-RIDF. Details of outlay provided for the sector during the financial year 2023-24 are as follows:

Table 2.1 Plan allocation to Irrigation and Flood Control

Sl No	Name of the sub sector	Amount (₹ in lakh)
1	**Major & Medium Irrigation**	**18400**

2	**Minor Irrigation**	**16918**
	a. Ground Water Development	3018
	b. Surface Water Development	13900
3	**Command Area Development**	**200**
4	**Flood Control & Coastal Zone Management**	**15967**
	a. Flood Control	14260
	b. Coastal Zone Management	1707
	Total	**51485**

The plan outlay for the Water supply and Sewage during the financial year 2023-24 is ₹90951 lakh. Kerala Water Authority and Jalanidhi (Kerala Rural Water Supply and Sanitation Agency) are the two main agencies involved in the supply of drinking water in Kerala. Details of allocation are given below:

Table 2.2 : Plan allocation to Water supply and sewage

Sl No	Name of the agency	Amount (₹ in lakh)
1	Kerala Water Authority	85965
2	Jalanidhi	4986
	Total	90951

As part of the Performance Budgeting of the Water Resources Department- 2023-24, Finance (Performance Budget) Department has evaluated the following schemes:

I. Muvattupuzha Valley Irrigation Project
II. Minor Irrigation Class I
III. Minor Irrigation Class II
IV. Coastal Zone Management
V. Renovation of Tanks and Ponds Under Haritha Keralam

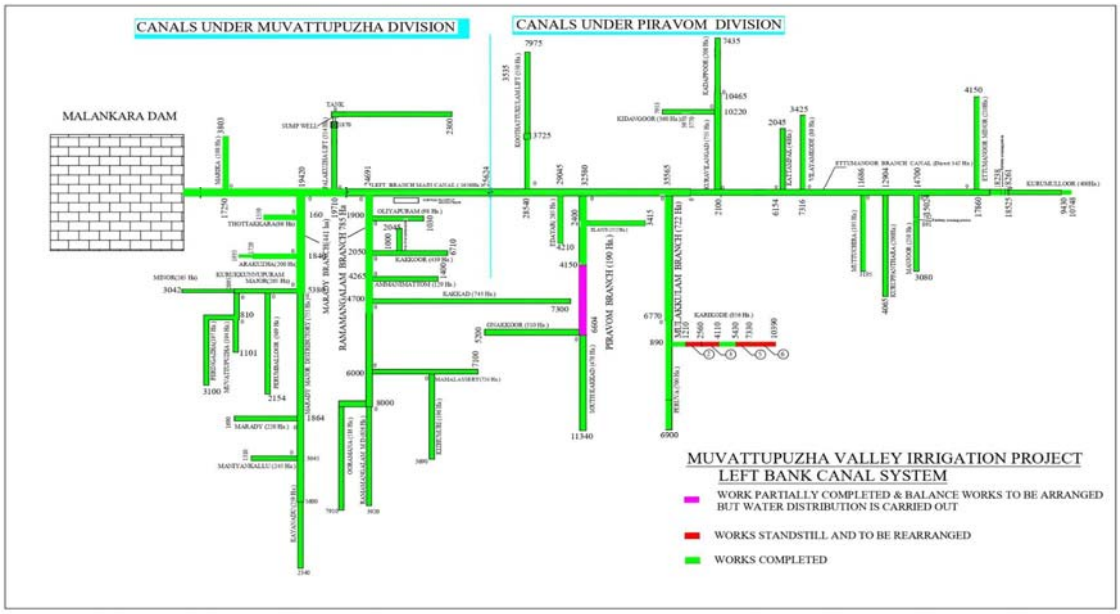
In addition to the above the Finance Department has visited the office of the Superintending Engineer, Kallada Irrigation Project for the evaluation of issuance of

NoC pertaining to the private works on the canal. Scheme- wise details are given below:

I . Muvattupuzha Valley Irrigation Project

The Muvattupuzha Valley Irrigation Project (MVIP), a major irrigation project in Kerala, envisages the utilisation of the tailrace discharge from the Moolamattom Power House of the Idukki Hydro Electric Project as well as the dependable run off from the catchments of the Thodupuzha river. Its reservoir is located at Malankara in the Thodupuzha taluk of Idukki district. The project comprises an earthen cum masonry dam at Malankara in Thodupuzha river and right bank canal and left bank canal systems.

Figure 2.1 : Canal system of MVIP



The MVIP was targeted to irrigate a cultivable command area of 19237 ha, spreads over the Thodupuzha taluk of Idukki district, Kothamangalam and Muvattupuzha taluks of Ernakulam district and Vaikom and Kottayam taluks of Kottayam district. The project was started in 1974. The estimated cost of the project was ₹20.68 crore. The project was approved by the State Planning Board of Kerala in

June 1983 at an estimated cost of ₹48.08 crore. The MVIP was partially commissioned in 1994 and since then water distribution through the completed canal network has been started during the summer season. In addition to the irrigation facilities, enhancement in the ground water level in the command area provides solutions to addressing water shortages without incurring any additional expenditure.

Table 2.3 : Current status of MVIP

Sl No	Name of the canal	Envisaged ayacut area (ha)	Status
Right bank canal system			
A	Right bank main canal	2237	Completed
1	Muvattupuzha Branch Canal	425	Completed
2	Kizhakkekara distributary	100	Completed
3	Anicadu major distributary	200	Completed
4	Anicadu East minor distributary	100	Completed
5	Karimattom distributary	120	Completed
6	Vazhakulam distributary	90	Completed
7	Madakkathanam distributary	350	Completed
8	Maruthoor distributary	70	Completed
9	Varapetty distributary	250	Completed
10	Inchoor distributary	350	Completed
Left bank canal system			
B	Left bank main canal	1656	Completed
1	Ramamangalam branch canal	400	Completed
2	Marady branch canal	225	Completed
3	Ettumanoor branch canal	342	Completed
4	Mulakulam branch canal	722	Completed
5	Piravom branch canal	190	Presently water distribution is done in

			full length, but some balance works are pending. DPR has been submitted for approval
6	Onakkoor distributary	310	Completed
7	South Kakkad distributary	476	Completed
8	Elanji distributary	152	Completed
9	Edayar distributary	265	Completed
10	Karikode distributary	856	Out of 6 reaches, 1st and 4th reaches have been completed. DPR for balance work has been submitted for getting approval under NABARD RIDF XXIX
11	Peruva distributary	700	Completed
12	Koothattukulam distributary	630	Completed
13	Vilayamcode distributary	80	Completed
14	Kattampack distributary	40	Completed
15	Kadappoor distributary	200	Completed
16	Kuruvilangadu distributary	755	Completed
17	Kuruppanthara distributary	200	Completed
18	Muttuchira distributary	195	Completed
19	Manjoor distributary	250	Completed
20	Ettumanoor distributary	210	Completed
21	Karumalloor distributary	400	Completed
22	Kidangoor distributary	360	Completed
23	Thottakara distributary	44	Completed
24	Arakuzha distributary	102	Completed
25	Kurukkunna puram major distributary	135	Completed
26	Kurukkunna puram minor distributary	135	Completed
27	Peringaza distributary	100	Completed

28	Muvattupuzha minor distributary	53	Completed
29	Perumbavoor minor distributary	188	Completed
30	Maniyankallu distributary	125	Completed
31	Kayanadu minor distributary	132	Completed
32	Marady major distributary	385	Completed
33	Marady minor distributary	112	Completed
34	Naduvakkad distributary	665	Completed
35	Oliyappuram distributary	50	Completed
36	Kakkoor distributary	224	Completed
37	Valiyapadam distributary	22	Completed
38	Kizhumury distributary	100	Completed
39	Mamalassery distributary	369	Completed
40	Ramamangalam distributary	421	Completed
41	Kakkad distributary	379	Completed
42	Ammanamattom distributary	66	Completed
43	Ooramana distributary	263	Completed
44	Palakuzha distributary	160	Completed
45	Illikunnu distributary	145	Not done
46	Moongamkunnu distributary	80	Not done
47	Kozhipally distributary	125	Not done
48	Palakuzha North distributary	130	Not done
49	Valayikunnu distributary	50	Not done
50	Ambalamkunnu distributary	150	Not done
51	Uppukandam distributary	110	Not done
52	Marika distributary	101	Completed
53	Muthalakodam distributary	56	Not done
54	Kanjiramattom distributary	154	Not done
	Grand Total	**19237**	

An amount of ₹160.00 lakh has been earmarked in the financial year 2023-24 for rectification and maintenance works and for expenditure in connection with approved spillover works. Under the MVIP, there are two divisions - Muvattupuzha Division and Piravom Division.

The officials of Finance Department have visited the Piravom Division of MVIP and selected some of the plan works for assessment randomly. No major irregularities were noticed while assessing the works carried out. Plan head expenditure for establishment and works under MVIP, Piravom division for the past five years is tabulated below:

Table 2.4 : Expenditure under plan head for establishment and works

Financial Year	Expenditure (₹)
2019-20	10,57,54,490
2020-21	7,40,29,383
2021-22	9,74,44,247
2022-23	10,50,82,008
2023-24	6,70,66,326

During 2023-24, expenditure of works has been met from the head of accounts of MVIP, CADA , and MLA ADS.

Table 2.5 : Details of works for which expenditure has been incurred during 2023-24 in Piravom division

Sl. No.	Name of the Work	% of completion	Gross Amount (₹)
Plan works			
4700-22-800-87-02-00- AIBP			
1	Construction of Edayar distributary from ch.0m to ch 4215m including Cross Drainage (CD) works (Balance Work)	100%	5678369

2	Piravom Branch Canal from ch.4150 m to ch 6604m including CD works (Balance work)- (2nd & Final)	50%	1992793
	Total		**7671162**
4700-22-800-90-00-00- P V			
1	Restoration of Smasanam road and construction of tar road for connecting Smasanam road with Peruva Thalayolaparambu road	100%	2367324
2	Elanji distributary rectification on various chainages between 110 m and 1500m for the year 2021-22	100%	301711
4	Urgent rectification works to the damaged lining between ch. 5000m and ch. 5200m of Kadappoor distributary	100%	656563
5	Construction of a culvert at ch 7721 m of South Kakkad distributary	100%	377582
6	Elanji distributary -Construction of protection wall between ch.2128m and ch 2248m and construction of a culvert at ch.2348m and providing cover slab for under tunnel (UT) at ch.2248m including works at ch.2548 of Elanji distributary (3rd & Final)	100%	101743
7	Urgent rectification works to the breached portion of Kadappoor distributary from Ch.1410m to ch 1505m	100%	5333020
8	Cleaning site of 2nd, 3rd and 5th reach of Karikode distributary - General Civil Work	100%	107350
9	Peruva distributary canal- Annual maintenance from ch.0m to ch 6900m for the year 2022-23	100%	299448
10	Annual maintenance of Koothattukulam distributary canal after lift irrigation scheme for the year 2022-23	100%	182795
11	South Kakkad distributary- Annual maintenance from Ch.0m to Ch.11340m for the year 2022-23	100%	99082
12	Karikode distributary- Clearing site between Ch.7330m and ch 10390m	100%	92705

13	Manjoor distributary -Annual maintenance from ch. 0m to ch 3080m for the year 2022-23	100%	61976
14	Annual maintenance of Ettumanoor distributary from ch. 0m to ch 4150m for the year 2022-23	100%	153997
15	Annual maintenance of Kurumulloor distributary from ch. 0m to 10363m for the year 2022-23	100%	291997
16	Kuravilangadu distributary - Annual maintenance from ch. 0m to ch 10465m for the year 2022-23	100%	311464
17	Annual maintenance of Kadappoor distributary from ch. 0m to ch 7435m for the year 2022-23	100%	236552
18	Mutuchira distributary-Annual maintenance from ch. 0m to ch 3195m for the year 2022-23	100%	68123
19	Kuruppanthara distributary -Annual maintenance from ch.0 to ch 4065m for the year 2022-23	100%	124594
20	Annual maintenance of Vilayamcode distributary from ch. 0m to ch 3425m for the year 2022-23	100%	117928
21	Annual maintenance of Kidangoor distributary from ch. 0m to ch 7953m for the year 2022-23	100%	336339
22	Edayar distributary- cleaning of canal at various chainages and providing shutter and locking arrangements to sub canal ch 1260 m, -General civil works	100%	92447
23	GENERAL-Water distribution-MVIP-Engaging labour for removing floating materials and other obstructions during water distribution through LBMC and its branches and distributaries from ch 25624m to ch 37100m for the year 2022-23-Phase 1-General civil works	100%	197803
24	GENERAL-MVIP-Koothattukulam distributary-pumping operation 2022-23-MVIP - Engaging Pump operators for Lift Irrigation scheme of Koothattukulam distributary canal including Labours for shutter operation and clearing floating material stagnated	100%	93386
25	Onakkoor distributary -Annual maintenance from ch 0m to 5200m for the year 2022-23	100%	89086

26	Koothattukulam Distributary- L I Scheme- Electrification of Pump house	100%	204897
	Total		**12299912**
4700-22-800-91-00-00-P V			
1	Piravom branch canal- Annual maintenance from Ch.0m to ch 6604m for the year 2022-23	100%	179884
2	Rectification work to EBC for prevention of leakage between ch. 14700m and ch 14750m	100%	399970
3	Rectification works to outlet drain of UT near ch 11500m of EBC to prevent blockage.	100%	601179
4	Removal of slipped earth near ch 700m, ch 4600m to ch 4650m, and between ch 7300m and ch 7500m of Ettumanoor branch canal (EBC)	100%	108610
	Total		**1289643**
4700-22-800-92-00-00-P V			
1	MVIP-Engaging labour for removing floating materials and other obstructions during water distribution through LBMC and its branches and distributaries from ch 25624 m to 37100 m for the year 2021-22	100%	26542
	Total		**26542**
4700-22-800-93-00-00-P V			
1	Maintenance of Inspection Bungalow & construction of room for watchman at Piravom for the year 2019-20	100%	264383
2	Upkeeping works of office complex and IB at Piravom for the year 2021-22	100%	242647
3	Upkeeping works of Office complex and IB at Piravom for the year 2022-23	100%	246465
	Total		**753495**
4700-22-800-84-00-00-P V CADA			

1	MVIP- CADWM- Construction of field channel from Vilayamcode distributary spout at ch.850m to Punnathanam Padashekharam (1st & Final)	100%	1130483
2	MVIP- CADWM- System correction to Ettumanoor distributary between ch.500m and ch 3947m (1st & Final)	100%	1977601
3	MVIP-CADWM-System correction to Kurumulloor distributary between ch.150m and ch 8000m	100%	1179520
	Total		**4287604**
4700-80-800-89-00-00-00 NV (MLA- ADS)			
1	Improvement to canal bund road near Madathiparambil Kurisupally Jn (Ist and Final Bill)	100%	1896435
Total			**1896435**
Total Work Expenditure In 2023-24			**28224793**

(i) Urgent rectification works at the breached portion of Kadappoor distributary from ch 1410m to 1505m

Kadappoor minor distributary takes off from the tail end of Kuravilangadu major distributary. This distributary has a length of 7425m and its tail end is Kattachira thodu which is a tributary of Meenachil river. It serves an ayacut of 392 ha. The entire length of the distributary passess through the Kanakkary Grama Panchayat. The construction of the distributary was completed in 2006. While water distribution was continuing through the canal,a breach occurred at ch 1410 and the flow through the canal was plugged on 27.02.2017. Local people submitted a mass petition for reconstruction of this breached portion and the Grama Panchayat also passed a resolution to reinstate the water distribution. Hence, the work was taken for implementation.

Administrative sanction was issued for an amount of ₹ 98.58 lakh on 16.10.2019 and the technical sanction for the same was issued on 06.05.2022. An

inordinate delay of 30 months occurred in issuing technical sanction. Even though COVID out break was during this period the delay of 30 months cannot be justified. The work was awarded to Sri. Ginesh K Sankar on 28.06.2022. The time of completion of work as per the agreement was 18 months from the date of handing over the site. The work was completed on 29.09.2023. No irregularity was found during the field visit.

Photo 2.1 : Urgent rectification works at the breached portion of Kadappoor distributary from ch 1410m to 1505m

Recommendation :

1. **Delay in the issuance of technical sanction for a project has several adverse effects, particularly on the project's timeline, cost, and overall execution. With passage of time, the cost of materials, labour, and equipment tends to increase. Hence, the Chief Engineer should ensure that technical sanction should be issued without delay and in a time bound manner after the issuance of administrative sanction.**

(ii) Construction of Piravom branch canal from ch 4150m to ch 6604m including cross drainage works

The work was awarded to the contractor Sri. Samuel Varghese on 08.06.1995 based on 1992 SoR under own material system. The agreed PAC of the work was ₹1,34,72,777 (Tender excess 54%). The site was handed over to the contractor on 24.06.1995. The time of completion of work as per the agreement was 12 months from the date of handing over the site. The time of completion was extended up to 31.12.1996 based on the request of the contractor. The Government ordered enquiry by Vigilance on all works arranged under 'own material system' during the course of work. Hence the work was held up since 1996. In the meantime six part bills were paid and the 7th and the 8th part bills were pending. These bills could not be settled due to the enquiry. The Vigilance Department raised serious allegations regarding the payments which have already been effected. Under the circumstances the MVIP could not make any further commitments till the settlement of cases. But, the contractor filed petition before the Hon'ble High Court. Thus, the MVIP had to comply with the Hon'ble High court order to pay ₹30 lakh to the contractor. Owing to the seizure of all records and files by the Vigilance authorities, the work could not be carried out since 1996. After the return of the documents, the balance work was entrusted to the same contractor at 45% above the estimate rate on 1999 SoR. The agreed PAC of the balance work was ₹62,01,120.

Supplementary agreement was executed on 09.01.2007 for executing balance work with ToC one year (up to 08.01.2008). But during this period, there was no progress in the work. Hence, MVIP issued final notice to the contractor and later the contract was terminated at risk and cost of the contractor on 12.07.2012. Against this order, the contractor filed a writ petition before the Hon'ble High Court. Again the case also went in favour of the contractor. In compliance with the judgement, the government revoked the termination order and also directed to rearrange the balance work as per 2012 SoR. Then supplementary agreement was executed with the contractor on 17.08.2015. The time of completion extended up to 16.02.2016. The time of completion was again extended up to 31.05.2017.

Photo 2.2 Construction of Piravom branch canal from ch 4150m to ch 6604m including cross drainage works

During the execution of work, local people demanded additional work. By incorporating the additional works, the estimate was revised to ₹1,05,92,610. The revised estimate was modified on 08.09.2020 by avoiding all additional quantities or items other than those which were already executed and recorded. The contractor requested for revision of rates based on the 2016 DSR. The MVIP turned down the

request. The contractor again filed WP before the Hon'ble High Court. The Hon'ble court has directed the government to take immediate steps to foreclose the work without risk and cost of the contractor and to release the sum due to him based on the work undertaken, assessed measurements and the bills submitted and release of due statutory retention amounts within the stipulated time. Now, the MVIP is taking steps to complete the remaining work by inviting a new tender.

The lack of contract provisions covering all legal aspects and the lack of assessment of the performance of the contractor since the beginning of work, which always resulted in a court ruling in favour of the contractor. Contractors are often guilty of delaying work for no clear reason. They stop work claiming the rates to be awarded under the most recent DSR. Even though the Department can blacklist erring contractors, they return to the bidding process in new/benami names. They also approach the courts for every small reason and stall work as a bargaining chip with the department. Government loses cases against PWD contractors due to poor documentation, weak legal arguments, flawed contracts and procedural failures and in some cases for political influence and corruption. If the government officials fail to monitor the performance of the contractor properly and keep the records and registers promptly, they lack the evidence to prove the contractor's fault in the court. Drafting contracts without loopholes, monitoring the performance of the contractors, following proper procedures, and employing competent legal representation can mitigate these issues in the future.

Recommendation :

2. **Analysing the performance of a Public Works Department (PWD) contractor is essential to ensure public infrastructure projects are delivered on time, within the budget, meeting the required quality standards.**

   When a project has been completed, the government may conduct a formal review to analyse the overall performance of the contractor regarding challenges met, collaboration with government officials, and the final output of the project. An online tracking system for the performance of PWD contractors may be explored with the cooperation

of PWD. This tracking system may also include a feedback option for the community or end users. Issues in the design of infrastructure and the early wear and tear of the structures constructed should reflect adversely in the grading system.

Retention of Unclaimed Securities

The Finance Department verified the Security Register maintained in Piravom Division of MVIP and noticed that 5 security deposits in the form of treasury deposit amounting to ₹73,300 have been retained in the office. The details of the security deposits kept in the office are given below:

Table 2.6 : Retention of unclaimed securities

Year	Name of the Contractor	Mode of Security deposit	Amount (in ₹)
1996	P Subramanian	TSA 231 of Sub Treasury, Piravom	3450
1996	M.S Radhakrishnan	TSA -236 of Sub Treasury, Piravom	2050
2001	The President, Kollam Dist Congs Working Labour Contract Co-op Society	TSB 186856 of District Treasury Kollam	45000
2002	The President, Kollam Dist Congs Working Labour Contract Co-op Society	TSD 11653 of District Treasury Kollam	20000
	Total		**73,300**

As per the rules, the security deposits have to be released after the expiry of Defect Liability Period. Even after the DLP, the Division has neither released the same to the account of the contractor concerned nor deposited the amount to the government account. On enquiry, the officials of MVIP, Piravom division have reported that steps are being taken to release the securities to the contractors concerned, as directed by the CAG, Kerala.

As per article 282 of Kerala Financial code Vol I "Lapse of deposits to the Government"- All deposits unclaimed for more than three complete financial years should be credited to the Government at the close of March in each year.

Recommendations :

3. **Action may be taken to credit the unclaimed Security Deposit amount to the Government under the appropriate revenue head of account.**
4. **Periodical physical verification of the security deposits should be conducted as per the para 8.32 of the Store Purchase Manual 2013 (Revised edition)**

Deplorable condition of Inspection Bungalow

There is a 5000 sq ft inspection bungalow under the control of MVIP division, Piravom. As part of Performance Budgeting, the team from Finance Department visited the Inspection bungalow and it is observed that the building has not been designed to serve its intended purpose. There are several rooms in the building, which are all interconnected. This interconnection restricts the privacy of the occupants. Hence people are reluctant to occupy the rooms. Some of the rooms are dusty and cluttered. The furniture is getting crumbled. Presently a portion of the building is being used as the camp office of Digital Survey. The Conference Hall which is a part of the inspection bungalow is being used by the MVIP for conducting review meetings by the MLAs. The condition of most of the inspection bungalows under the control of the Irrigation Department, the photo of which is shown below, is pathetic.

Photo 2.3: Inspection bungalow under the control of MVIP division, Piravom

Recommendations :

5. **The Conference Hall of the Inspection Bungalow under the control of MVIP, Piravom division may be rented out on a daily basis to the Public or other government departments/ institutions for conducting functions / meetings so that additional revenue can be generated.**
6. **The administrative department should give necessary instructions to the officials concerned under the Irrigation Department to keep all Inspection Bungalows clean and tidy.**

Lack of adequate number of computers in the division.

e-office is implemented in the office of Chief Engineer, Superintending Engineer and Executive Engineer of the irrigation Department and it will be implemented in subordinate offices also. Hence the adequate number of computers is essential for the proper functioning of the office through e office since a lot of software such as SPARK, BIMS, BAMS, PRICE, e Tender, E-Monit, Easy Dusk, PRISOM,

EMLI, E district, CMO Portal are to be applied. Presently, officers access the e-office in the limited computers available on a turn basis. More computers have to be made available for the proper implementation of e-office.

Recommendation

7. **The Chief Engineer (Project II) shall submit a proposal for the computerisation of offices under his control for approval of Government.**

Encroachment of canal

The process of land acquisition of MVIP was done through the Revenue Department. Hence the sketches of land acquired are not under the possession of MVIP. In some areas of the canal system, boundary stones have not been available in the canal. In such areas the department is unable to take immediate action on suspected encroachments due to the non availability of the sketches. Hence the officials of the Irrigation Department have to take necessary action for getting the boundaries of the canals demarcated. There is inordinate delay in getting the service of Taluk Surveyor.

Canals are vital components of water distribution networks, especially in areas under irrigation. Demarcation of boundaries prevents misuse, reduces pollution, and degradation. It also ensures the needs of future generations. If boundaries are well demarcated, it becomes easier for the Irrigation Department to detect and stop any attempt of encroachment before causing major damages.

Recommendation

8. **The issue of canal encroachment is complex and requires coordinated efforts among local communities, Irrigation Department, and Survey and Land Records Department to ensure both water resource management and sustainable development. The Water Resources Department may initiate steps to make available the survey sketches of the entire land along the canal stretches from the Survey and Land Records Department.**
9. **The Irrigation Department should monitor canal areas more closely to detect and prevent encroachment in the early stage itself. The officials concerned should strictly inspect the whole stretch of the canal at least**

once in a month to spot and identify the encroachments. If any encroachment is noticed, urgent and speedy action should be taken with the assistance and coordination of Revenue and Police authorities to evict/ clear such encroachments.

Unused land available in Canal areas

Unused land in and around canals can be creatively, productively and sustainably utilised to benefit local communities by improving the environment, and thus contribute to the economic development. In urban or peri-urban setting, unused land around canals can be transformed into public parks, playgrounds, or green spaces. This helps to improve the quality of life of local residents, provides recreational opportunities and green lungs for the city. Unused land can be converted into community gardens where residents can cultivate vegetables, fruits, or flowers. This ensures food security for local people, engages the community in sustainable horticulture, and can also generate income for low-income residents. Small eco-friendly businesses such as cafes, vegetable stores, or handicraft stores can also be established on the unused land, and thus provides economic opportunities while encouraging sustainable tourism and recreation.

Recommendation

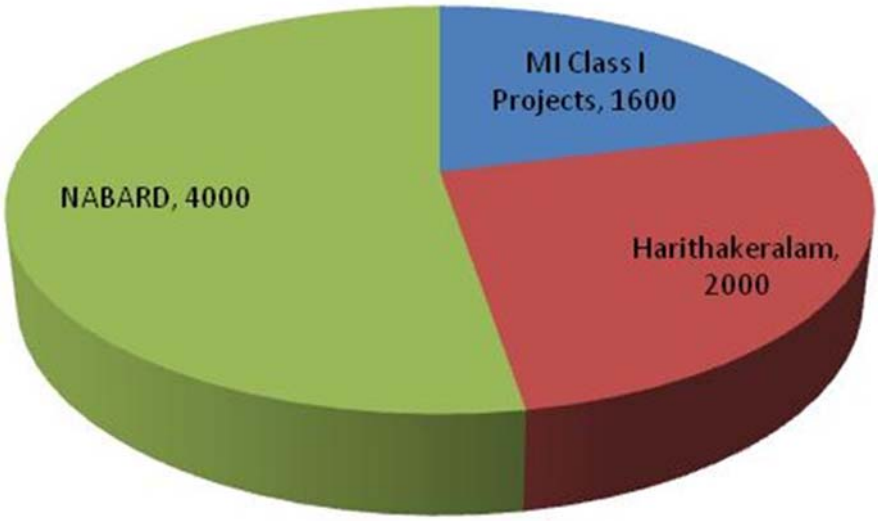
10. **A master plan may be prepared at the level of the Superintending Engineer in collaboration with the local self-governments and private entrepreneurs for the effective utilisation of the unused land along the canal areas focusing on generation of revenue.**

II. Minor Irrigation Class I

Irrigation schemes are classified into three categories on the basis of cultivable command area (CCA); 1) Major Irrigation, 2) Medium irrigation, and 3) Minor Irrigation. Major Irrigation schemes are implemented in areas (CCA) which have more than 10,000 ha of land, Medium Irrigation schemes in areas between 2,000 ha and 10,000 ha and Minor irrigation schemes up to 2000 ha. Minor Irrigation Class 1

projects typically refer to small-scale irrigation projects with a command area between 50 hectares and 2,000 hectares. Minor irrigation schemes have equal importance as that of major and medium irrigation systems due to many features such as small capital investments, less gestation period, and friendliness of farmers, and so forth. The scheme aims to enhance the availability of water, optimise water distribution, and increase agricultural productivity in the irrigated area. Minor Irrigation Class 1 projects include various types of irrigation systems, such as check dams, diversion weirs, lift irrigation schemes, and small-scale canal networks. These projects cater the irrigation needs of small and marginal farmers and support sustainable agricultural practices under MI class I scheme. A total outlay of ₹7600.00 lakh was earmarked to the scheme during the financial year 2023-24. A graphical representation of the same is given in the following figure :

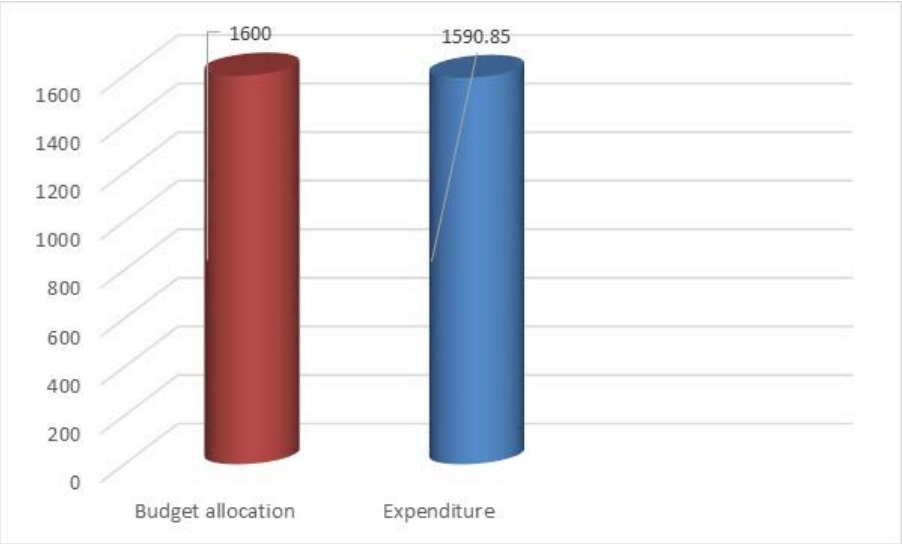
Fig 2.2 : Component-wise allocation to MI Class I



Of the total allocation for the scheme, an amount of ₹1600.00 lakh was earmarked under the head of account 4702-00-101-99 for undertaking Minor Irrigation Class I works during the financial year 2023-24. The amount was allocated for incurring the expenditure towards the completion of ongoing works and for taking

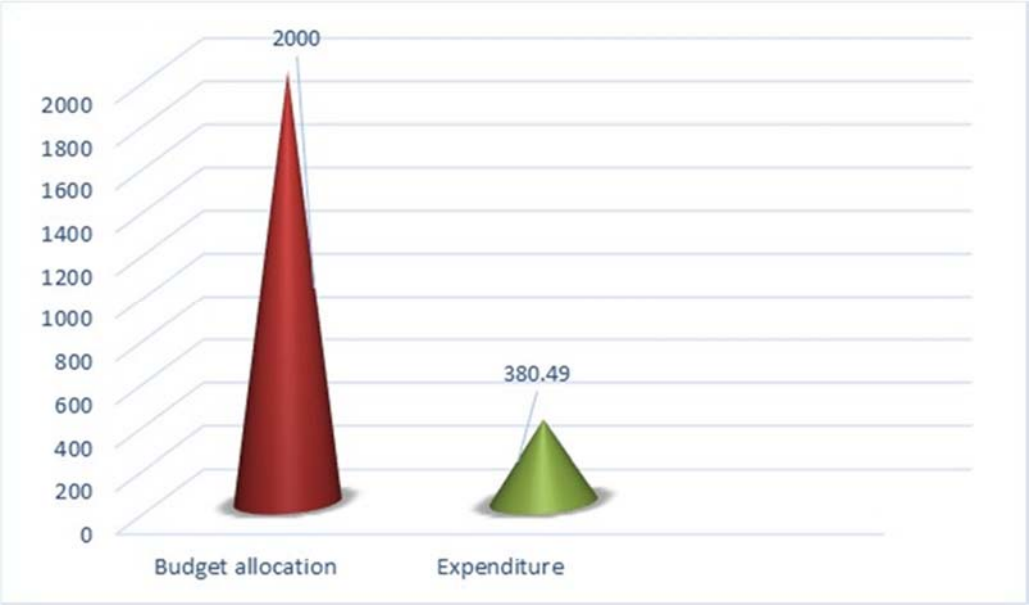
up new works such as construction of check dams, sluices, bunds, vented cross bars, salt water barriers etc. An amount of ₹1590.85 lakh has been utilised for the MI works which includes spill-over works also. Details of Budget allocations and expenditure under the above head of account during 2023-24 are represented in the figure below:

Fig 2.3: Details of Budget Allocation and Expenditure under the h/a 4702-00-101-99 (MI Class I Projects) Amount (₹ in lakh)



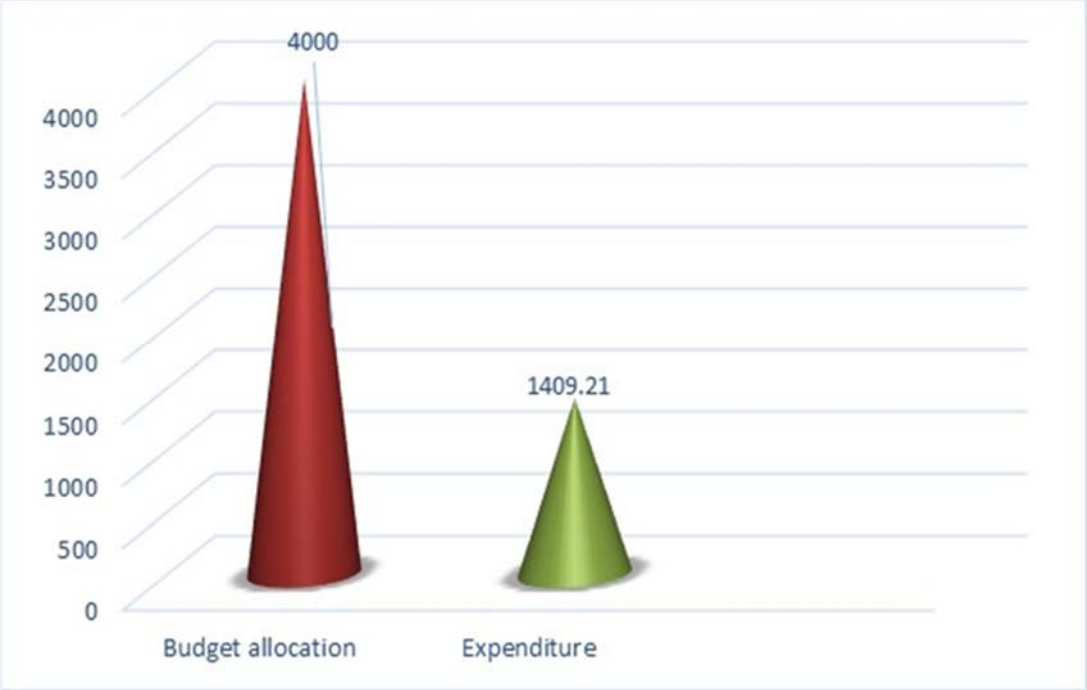
An amount of ₹ 2000.00 lakh has been provided for undertaking works under Minor Irrigation Class I- Haritha Keralam. Under the Harithakeralam scheme, works pertaining to the conservation of water and soil are being carried out with the assistance of various departments and farmers. An amount of ₹380.49 lakh has been utilised which includes spill over works also. Details of Budget Allocation and Expenditure under the h/a 4702-00-101-99 is depicted in the figure below:

Fig 2.4: Details of Budget Allocation and Expenditure under the h/a 4702-00-101-99 (MI Class I - Harithakeralam) Amount (₹ in lakh)



NABARD has been providing loan assistance for Minor Irrigation works under RIDF. Minor irrigation works assisted by NABARD includes construction of Regulator cum Bridges (RCBs), Salt Water Extrusion cum Bridges (SWECBs), ponds, Vented Cross Bars (VCBs), check dams, storage weirs, cross bars and protection works etc. During the financial year 2023-24, an outlay of ₹4000.00 lakh was earmarked for Minor Irrigation Class I works under NABARD RIDF. Of this, an amount of ₹1409.21 lakh has been utilised. Allocation and expenditure are graphically represented below:

Fig 2.5 : Details of Budget Allocation and Expenditure of MI Class I Works under NABARD RIDF



The officials of Finance Department visited MI division, Malappuram and selected some of the works for assessment randomly. No major irregularities were noticed in works. Details are given below:

(i) Construction of SWE VCB across Madathil thodu at Kanchiramukku in Maranchery Grama Panchayat in Malappuram.

Administrative sanction was issued for an amount of ₹75.00 lakh on 04.02.2021 and the technical sanction issued for the same amount on 18.02.2021. The work was awarded to the contractor - Sri Aboobacker A P- on 31.03.2021. The time of completion of work as per the agreement was 12 months from the date of handover of the site. The site was handed over to the contractor on 09.04.2021 and the contractor started the earthwork excavation. It was found that the condition of soil was very clayey. Hence it was decided to reduce the proposed depth of 3m to 2.5m. As per the request of local people dry rubble masonry side protection was changed to PCC (Plain cement concrete) side protection. A revised estimate was sanctioned according to the above on 14.03.2022. Time of completion of work was extended two times up to 30.04.2023. The work was completed on 28.04.2023. No irregularity has been found during the field visit. Local people has good judgement over the work.

Photo 2.4 : Construction of SWE VCB across Madathil thodu at Kanchiramukku in Maranchery Grama Panchayat in Malappuram.

It has come to the attention of the Finance Department that there is a practice of revising the estimate after tendering the work, taking into account of the poor condition of the soil. During the financial year 2023-24, estimates have been revised in another five works due to the condition of soil, the details of which are given in the table below:

Table 2.7 : Details of Revised estimates

Sl No	Name of the work
1	Improvements to the Mangattukulam in Veliyankode Grama Panchayat
2	Construction of VCB in Varadur kayal across Chekannur padam / Varadur kayal thodu and side protection work in Vattamkulam Grama Panchayat

3	Renovation of Public Pond at Kakkattuppara In Valanchery Municipality
4	Renovation of Aambalkulam in ward No 11 of Kalpakanchery Grama Panchayat
5	Construction of VCB across Mattayipadi thodu in ward No 4 of Valanchery Municipality

Kerala has varied soil types, high rainfall, and coastal zones prone to erosion, all of which make soil analysis fundamental for infrastructure development. Soil investigation plays an indispensable role in ensuring the safety, stability, cost-effectiveness, and longevity of irrigation works in Kerala. Soil testing allows engineers to interpret the composition, properties, and strength of the ground on which structures will be built. By identifying characteristics like soil type, moisture content, density, compaction, and load-bearing capacity, engineers can determine whether the soil is capable of supporting the structure. Inadequate soil analysis leads to improper design, resulting in differential settlement, foundation cracking, or even structural collapse.

Recommendations :

1 **Before issuing administrative sanction the Chief Engineer should ensure that the detailed estimates are prepared after the soil investigation.**

2 **The Irrigation Department should provide sufficient fund for soil investigation works before issuing administrative sanction.**

(ii) Construction of VCB with tractor slab across Kooriyad thodu at Ayyankollypadam in Kottakkal Municipality in Malappuram District

Administrative sanction was issued for an amount of ₹75.00 lakh on 13.11.2018 and the technical sanction issued for the same amount on 18.12.2019. The work was tendered on 24.12.2019. The work was awarded to the contractor - Sri K Abdul Rahim. The date of completion of work as per the agreement was 12 months

from the date of handover of the site. ToC was extended two times up to 30.04.2022 without fine. The work was completed on 29.04.2022. No irregularity was found during the field visit.

Photo 2.5: Construction of VCB with tractor slab across Kooriyad thodu at Ayyankollypadam in Kottakkal Municipality in Malappuram District

During the field visit, it was noticed that the wooden shutters of VCB were kept negligently in an open place. Thambakam wood is used for the shutter. Keeping the wooden shutters negligently in an open place increases the degree of damage and also raises the possibility of theft.

Photo 2.6: Thambakam wood shutter

If FRP (Fiber Reinforced Polymer) shutters are used instead of wooden shutters, chances of theft are less. FRP shutters are better than wooden shutters in many ways. FRP shutter offers durability and low maintenance in harsh environments, while wood shutter provides a traditional, cost-effective solution with aesthetic value but requires more maintenance. FRP shutters are known for high tensile strength and exceptional durability. FRP resists corrosion and degradation from moisture and chemicals making them suitable for long-term use in wet environments. Wood shutter is more susceptible to rot, pests, and decay, especially in moist conditions. Treatment can enhance its durability, but it typically requires more maintenance. Even though FRP shutters are more expensive due to its complex process of manufacturing, its maintenance cost is less.

Recommendation :

3 **FRP (Fiber Reinforced Polymer) shutters have gained popularity in irrigation works due to their durability, lightweight design, and resistance to environmental and chemical factors. The Chief Engineer shall explore**

the possibility to use FRP shutter as much as possible instead of traditional wood shutters.

III Minor Irrigation Class II

Irrigation works having ayacut below 50 ha come under the Minor Irrigation Class I scheme. The purpose of the scheme is to support and manage small-scale irrigation projects, focusing on rural and agricultural areas to provide water availability and support agricultural activities. The scheme includes construction, repair, and maintenance of small check dams, wells, ponds, and canal networks to capture and distribute water for irrigation, especially in regions which are not benefited from larger irrigation systems. An outlay of ₹2250.00 lakh has been provided for Minor Irrigation Class II works in the financial year 2023-24. An amount of ₹1683.56 lakh has been expended for new minor irrigation class II works and an amount of ₹395.83 lakh has been expended for the works under Haritha Keralam.

The officials of Finance Department visited the Minor Irrigation Divisions of Malappuram, Pathanamthitta, and Irrigation Division of Thalassery and selected some works for assessment randomly. No major irregularities were noticed. Details are depicted below:

(i) Construction of Peringalchira Vented Cross Bar in Ponmala Grama Panchayat in Malappuram

Administrative sanction was issued for an amount of ₹45.00 lakh on 31.03.2022 and technical sanction issued for the same amount on 06.05.2022. The work was tendered on 19.05.2022 and subsequently awarded to Sri. Aboobacker C P on 14.06.2022 .The time of completion of work as per the agreement was 12 months from the date of handover of the site. The work was completed on 28.04.2023. No irregularity was found during the field visit.

Photo 2.7. Construction of Peringalchira Vented Cross Bar in Ponmala Grama Panchayat in Malappuram

(ii) Providing Irrigation facilities to Panakery padasekharam and Sankarapadam at Peringara Grama Panchayat in Pathanamthitta.

Administrative sanction was issued for an amount of ₹85.00 lakh on 28.03.2018 and technical sanction issued for the same amount on 04.02.2019. The work was tendered on 04.02.2019. The work awarded to Sri. Anil Varghese on 28.02.2019. The site was handed over to the contractor on 05.03.2019. Date of completion of the work as per the agreement was 16.04.2022. The ToC of work was extended six times due to various reasons such as COVID 19, monsoon, Water stagnation etc. No fine was imposed on the contractor. The work was completed on 16.04.2022.

Photo 2.8 : Providing Irrigation facilities to Panakery padasekharam and Sankarapadam at Peringara Grama Panchayat in Pathanamthitta.

During the field visit, it was observed that the work site was a water-logged area and also lies adjacent to the Padasekharam. Owing to these reasons work could not be carried out continuously. It could be executed during favourable conditions only. Work has been accomplished only on one side of the canal. The work on the other side of the canal has not been incorporated as per the agreement. Therefore, the Finance Department is of the view that the work has been executed in order to benefit the person whose land in lies adjacent to the canal where the work was done. A motor

shed has been constructed over there. Finance Department is of the opinion that it is too high compared to other motor sheds.

Photo 2.9 : Motor shed

Recommendation

1 **The Chief Engineer shall evaluate the work to provide irrigation facilities to Panakery padasekharam and Sankarapadam at Peringara Grama Panchayat in Pathanamthitta closely and to submit a report whether any nepotism or malpractices have been committed by the officials in the case.**

In MI division, Pathanamthitta, the agreements executed by the contractors for all works are under the custody of the clerk concerned which is against the Kerala PWD Manual. The custodian of agreement is the Divisional Accounts Officer concerned. Safe custody of agreement ensures that it can be referred to in case of disputes, resolve issues based on legally agreed terms and conditions therein.

Part I administrative provision 202.6 (29) of Kerala PWD Manual stipulates that agreement for works executed in Division and Circle offices shall be handed over to the Divisional Accounts Officer for safe custody.

Recommendation

2 The Chief Engineer should issue strict direction to all Superintending Engineers and Executive Engineers for keeping the agreements under safe custody as per the Kerala PWD manual.

(iii) Providing Irrigation facilities to Manjathanam Puncha at Mallappally Grama Panchayat in Pathanamthitta

Administrative sanction was issued for an amount of ₹64.38 lakh on 31.03.2022 and technical sanction issued for the same amount on 27.04.2022. The work was tendered on 29.04.2022. The time of completion (ToC) of work as per the agreement was 9 months from the date of handover of the site. ToC was extended several times due to flood and water stagnation.

Photo 2.10 : Irrigation facilities to Manjathanam Puncha at Mallappally Grama Panchayat in Pathanamthitta

During the field visit by the officials of Finance Department it is observed that 90% of the work was completed. It has also been confirmed that the work site was a water-logged area and it also lies very adjacent to the Padasekharam. Irrigation works can only be carried out during the absence of monsoon and also during non agricultural seasons. This stresses the need for a separate Irrigation manual. Irrigation projects require disaster management protocols that focus on flood control and drought mitigation, which differ from PWD structures such as roads and bridges. A separate irrigation manual can provide protocols for seasonal adjustments, water allocation schedules, and maintenance for minimal water loss, tailored specifically to irrigation needs.

Recommendation

3 **The Administrative Department may explore the possibility of bringing out a separate manual for irrigation works.**

(iv) Rejuvenation of Kanampuzha River in Kannur district (Providing irrigation facilities from Cheeppupalam to Thilanur Shishu Mandiram road in Kannur Corporation)

Administrative sanction was issued for an amount of ₹4.40 crore on 08.11.2019 and technical sanction issued for the same amount on 12.02.2020. The work was tendered on 09.03.2020. Selection Notice was sent to the lowest bidder on 19.03.2020 and the agreement was signed on 07.05.2020. The difference between the above two dates is about 49 days. On verification of the file, it is found no fine has been imposed by the Irrigation Division, Thalassery. Site was handed over to the contractor on 15.05.2020.

The tendering of work was done before ensuring whether the land is encumbrance free or not. After the handover of the site only, the Department has taken steps to clarify whether the land is encumbrance free. This is against the provisions of Kerala PWD manual. No tendering of works is done before getting encumbrance free land.

The time of completion (ToC) of work as per the agreement was 12 months from the date of handover the site. The ToC of work was extended several times due to various reasons such as COVID 19, monsoon, Water stagnation etc. ToC was extended two times, as per the request of the contractor, up to 30.06.2022 without imposing fine and extended three times up to 29.08.2023 with imposing fine, and further two times up to 29.01.2024 without imposing fine. Thereafter the estimate was revised and ToC was again extended up to 29.02.2024 without imposing fine. The work was completed on 29.02.2024

No irregularity has been found during the field visit. The side of the river has been protected using rubble, earthen bund and coir geo textile. A pathway has been provided using laterite stone along one side of the bund for village walking. Apart from irrigation, the project is mainly designed for tourism and beautification.

Photo 2.11 : Rejuvenation of Kanampuzha River in Kannur district (Providing irrigation facilities from Cheeppupalam to Thilanur Shishu Mandiram road in Kannur Corporation)

As per section 2009.6 of the Kerala Public Works Department (KPWD) Manual, successful bidder shall execute an agreement within a maximum period of 14 days from the date of acceptance of the tender. Fine at the rate of one percent of the contract amount subject to a minimum of ₹1000 and a maximum of ₹25000 shall be levied if agreement is not executed within 10 days after the notified period of 14 days.

Part I administrative provision 202.6 (29) of Kerala PWD Manual stipulates that the Executive Engineer should ensure that no tendering of works is done before getting encumbrance free land for a project.

Recommendation :

4 All works should be carried out in accordance with the provisions contained in the Kerala PWD manual.

IV Coastal Zone Management

Coastal zone management in Kerala is essential for protecting biodiversity, ensuring sustainable livelihoods, mitigating disaster risks, and fostering resilience against climate change, ultimately supporting the well-being of both the environment and local communities. Kerala has a coastline of 590 km. Out of 590 km, 370 km is protected by seawall and groynes. Several unprotected stretches have been identified as vulnerable to wave attack and are subject to continuous erosion. An amount of ₹ 154.00 lakh has been provided in the Budget 2023-24 for Coastal Zone Management. The amount has been provided for the construction of new sea wall and reformation of old sea wall. Moreover, the stabilisation of the structure requires proper and timely maintenance and repair. It is proposed to utilise modern technologies like geo-textiles, polyethylene fabrics/sheets, and nourishment of foreshore with bio materials for coastal protection.

The officials of Finance Department visited the Irrigation division, Thalassery and selected the work - Reformation of the damaged sea wall between Mattool south in Mattool Grama Panchayat and Puthiangadi in Madayi Grama Panchayat - for assessment. No major irregularities were noticed in the work.

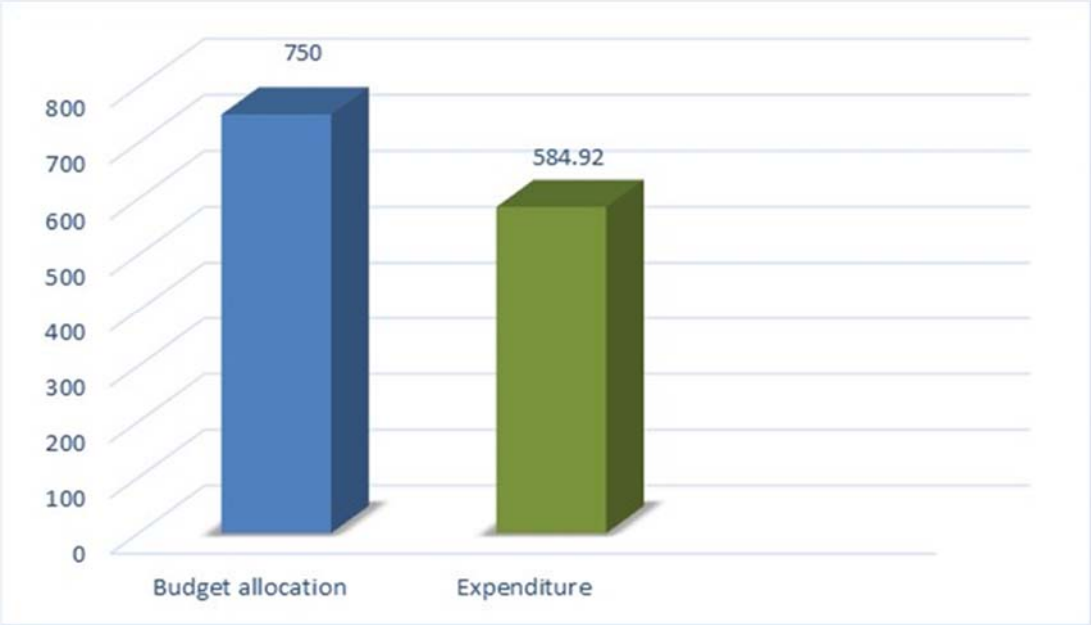
Administrative sanction was issued for an amount of ₹16 crore on 31.12.2019 and technical sanction issued for an amount of ₹15.6 crore on 04.08.2020. A delay of 8 months was occurred in issuing technical sanction. The officials of Irrigation Division, Thalassery explained that it was a natural delay during the COVID outbreak period. The work was tendered on 06.11.2020 and awarded to M/s Forsha Builders & Developers (Pvt) limited on 15.02.2021 (Tender excess 9.99%). The time of completion of work as per the agreement was 18 months from the date of handover of the site. Since the contractor could not complete the work within the stipulated period of time, the time of completion was extended 5 times up to 04.07.2024 with imposing fine. 48% of the work was completed at the time of the field visit by the Finance Department.

Photo 2.12 : Reformation of the damaged sea wall between Mattool south in Mattool Grama Panchayat and Puthyangadi in Madayi Grama Panchayat.

V Renovation of Tanks and Ponds under Haritha Keralam

Tanks and ponds play a crucial role in the ecology, culture, and economy of Kerala. Tanks/ponds have been the main source of irrigation in several parts of the State. The objective of the scheme is to undertake renovation and revamping of major existing public/community ponds in the State. The main activities envisaged through the scheme are renovation of ponds, linking of ponds with irrigation canals and so on. An outlay of ₹750.00 lakh is provided in the Budget 2023-24 for implementing the activities under Haritha Keralam. Of this, an amount of ₹584.92 lakh has been utilised. Details of allocation and expenditure are graphically represented below:

Fig 2.6 : Details of budget allocation and expenditure



The officials of Finance Department visited MI division, Malappuram and selected the work - Renovation of Public Pond at Kakkattuppara in Valanchery Municipality in Malappuram - for assessment. No major irregularities were noticed in the work.

Renovation of Public Pond at Kakkattupara in Valanchery Municipality in Malappuram

Administrative sanction was issued for an amount of ₹50.00 lakh on 30.10.2020 and the technical sanction issued for the same amount on 25.01.2021. The work was tendered on 25.02.2021. Selection Notice was sent to the lowest bidder on 15.03.2021 and the agreement was signed on 21.04.2021. The difference between the above two dates is about 37 days. On verification of the file, no fine is collected for the delay occurred in this regard. The time of completion of work as per the agreement was 6 months from the date of handover of the site. During the execution of the work, huge quantities of rock were found in the bottom and sides of the pond. Hence the estimate was revised and ToC of the work extended up to 30.05.2023 without fine.

The work was completed on 29.03.2023. No irregularity has been found during the field visit.

Photo 2.13 : Renovation of Public Pond at Kakkattupara in Valanchery Municipality in Malappuram

As per section 2009.6 of the Kerala Public Works Department (KPWD) Manual, successful bidder shall execute an agreement within a maximum period of 14 days from the date of acceptance of the tender. Fine at the rate of one percent of the contract amount subject to a minimum of ₹1000 and a maximum of ₹25000 shall be levied if agreement is not executed within 10 days after the notified period of 14 days.

1 **Recommendation : All works should be carried out in accordance with the provisions contained in the Kerala PWD manual.**

Issuance of No Objection Certificate with regard to the construction of private works in the irrigation canals

The issuance of No-Objection Certificate (NOC) for private construction works near or on irrigation canals is a multi-step process involving document submission,

site inspection, and technical assessment which aims to ensure the proposed construction should not interfere with the functioning, safety, or environmental sustainability of the irrigation infrastructure. Along with the application, the following documents are generally required:

1. Detailed project plan or blueprint of the proposed construction.
2. Location sketch issued by Village Officer
3. Location sketch obtained from Irrigation Department
4. Receipt of payment (Challan) of ₹110
5. Land tax receipt
6. Hydraulic certificate
7. Technical feasibility certificate
8. Field inspection report by Assistant Engineer
9. Possession certificate
10. Copy of Aadhar
11. Copy of deed
12. Any other department-specific documents, such as environmental impact assessment report (if required).

The above documents are verified by the Assistant Executive Engineer, Sub-Divisional Office and submitted it to the Superintending Engineer concerned for approval with clear recommendation. The NOC is issued by the Superintending Engineer after the verification of documents and necessary field inspection.

A team of Finance Department has visited the office of the Superintending Engineer, Kallada Irrigation Project and its subordinate offices for the evaluation of issuance of NOC pertaining to the private works on the canal. Finance Department comprehended that there is a lack of uniformity in the process of issuance of NOC based on the evaluation of the same conducted by the team of Finance Department in the various offices of Irrigation Department in Kerala.

On evaluation, Finance Department has observed that in Kottarakkara Sub-Division, the officers concerned have not levied non-refundable security deposit for works with an estimated cost of the structure up to ₹2 lakh, but in the case of Kollam

sub-division a minimum of ₹10000 or 1% of estimate cost of the structure, whichever is higher, is levied

In the case of the process of inclusion of GST also, Finance Department has noticed incompatibility among various offices of the Irrigation Department. In many works, the estimate amount was prepared by adding GST. But for some works, it has not been included. During evaluation at the office of Kottarakkara Sub-Division, an amount of ₹30658 is incorporated into the estimate amount of the structure thereby the total estimate amount increased from ₹170326 to ₹200984. Consequently an amount of ₹10000 was levied as security deposit. (Name of the work : General - KIP(LB)- Construction of proposed own cost culvert across Meeyannoor distributary in ward II - owned by Mr Subeesh Soman, Poikavila veedu, Kottara, Meeyannoor P.O). On inquiry, the officials concerned of the Kottarakkara Sub division, replied that it was an error occurred on their part.

The process of obtaining NOC for private works near or on irrigation canals is complicated due to the lack of uniformity in the issuance of NOC across various divisions and circles of the Irrigation Department. The non-uniformity leads to inefficiency, delay, and considerable loss to the state exchequer. The officials exercise their discretionary power in determining fees, due to the absence of a consistent fee structure. There is a possibility of nepotism and corruption as some applicants may be asked to remit lower fees based on subjective judgement. Inconsistent fee structure reduces the accountability and transparency since the applicant feels that fee is arbitrarily set rather than based on transparent, and objective criteria. Various subdivisions often charge different fees for similar projects, making it difficult for the applicants to estimate cost of their projects accurately. The unpredictability makes it difficult for financial planning for private projects particularly for small landowners and local businessmen. The lack of non uniformity leads to complaints and erodes public confidence in the NOC issuance process. By adopting a standardised fee structure and by implementing digital solutions in Irrigation Department, a more predictable, equitable, and efficient NOC application process can be achieved. The simplification in the process of fee calculation would benefit both applicant and

department. It also ensures consistent revenue to the government and confidence among the public.

Recommendations

1. **Adopt a fixed fee structure based on objective criteria, such as the type of project, proximity to the canal, and land area affected. It should be applied uniformly across the state, ensuring consistent fees for similar types of work.**
2. **A tiered fee system may be implemented to account for different project scales while ensuring consistency. For example, small/ simple projects should have a lower fee, while large/complex projects should have a higher fee.**
3. **Conduct regular audits on NOC fee collection across various offices of Irrigation Department to identify and address any discrepancy or irregularity. It increases accountability and transparency.**
4. **Publication of guidelines and processes of obtaining NOC on government websites increases the awareness among the public.**

Summary of Recommendations:

1. **Delay in the issuance of technical sanction for a project has several adverse effects, particularly on the project's timeline, cost, and overall execution. With passage of time, the cost of materials, labour, and equipment tends to increase. Hence, the Chief Engineer should ensure that technical sanction should be issued without delay and in a time bound manner after the issuance of administrative sanction.**
2. **Analysing the performance of a Public Works Department (PWD) contractor is essential to ensure public infrastructure projects are delivered on time, within the budget, meeting the required quality standards.**

   When a project has been completed, the government may conduct a formal review to analyse the overall performance of the contractor regarding challenges met, collaboration with government officials, and the final output of the project. An online tracking system for the performance of PWD contractors may be explored with the cooperation of PWD. This tracking system may also include a feedback option for the community or end users. Issues in the design of infrastructure and the early wear and tear of the structures constructed should reflect adversely in the grading system.
3. **Action may be taken to credit the unclaimed Security Deposit amount to the Government under the appropriate revenue head of account.**
4. **Periodical physical verification of the security deposits should be conducted as per the para 8.32 of the Store Purchase Manual 2013 (Revised edition)**
5. **The Conference Hall of the Inspection Bungalow under the control of MVIP, Piravom division may be rented out on a daily basis to the Public or other government departments/ institutions for conducting functions / meetings so that additional revenue can be generated.**
6. **The administrative department should give necessary instructions to the officials concerned under the Irrigation Department to keep all Inspection Bungalows clean and tidy.**

7. **The Chief Engineer (Project II) shall submit a proposal for the computerisation of offices under his control for approval of Government.**
8. **The issue of canal encroachment is complex and requires coordinated efforts among local communities, Irrigation Department, and Survey and Land Records Department to ensure both water resource management and sustainable development. The Water Resources Department may initiate steps to make available the survey sketches of the entire land along the canal stretches from the Survey and Land Records Department.**
9. **The Irrigation Department should monitor canal areas more closely to detect and prevent encroachment in the early stage itself. The officials concerned should strictly inspect the whole stretch of the canal at least once in a month to spot and identify the encroachments. If any encroachment is noticed, urgent and speedy action should be taken with the assistance and coordination of Revenue and Police authorities to evict/ clear such encroachments.**
10. **A master plan may be prepared at the level of the Superintending Engineer in collaboration with the local self-governments and private entrepreneurs for the effective utilisation of the unused land along the canal areas focusing on generation of revenue.**
11. **Before issuing administrative sanction the Chief Engineer should ensure that the detailed estimates are prepared after the soil investigation.**
12. **The Irrigation Department should provide sufficient fund for soil investigation works before issuing administrative sanction.**
13. **FRP (Fiber Reinforced Polymer) shutters have gained popularity in irrigation works due to their durability, lightweight design, and resistance to environmental and chemical factors. The Chief Engineer shall explore the possibility to use FRP shutter as much as possible instead of traditional wood shutters.**
14. **The Chief Engineer shall evaluate the work to provide irrigation facilities to Panakery padasekharam and Sankarapadam at Peringara Grama Panchayat in Pathanamthitta closely and to submit a report whether any nepotism or malpractices have been committed by the officials in the case.**

15. **The Chief Engineer should issue strict direction to all Superintending Engineers and Executive Engineers for keeping the agreements under safe custody as per the Kerala PWD manual.**
16. **The Administrative Department may explore the possibility of bringing out a separate manual for irrigation works.**
17. **All works should be carried out in accordance with the provisions contained in the Kerala PWD manual.**
18. **Adopt a fixed fee structure based on objective criteria, such as the type of project, proximity to the canal, and land area affected. It should be applied uniformly across the state, ensuring consistent fees for similar types of work.**
19. **A tiered fee system may be implemented to account for different project scales while ensuring consistency. For example, small/ simple projects should have a lower fee, while large/complex projects should have a higher fee.**
20. **Conduct regular audits on NOC fee collection across various offices of Irrigation Department to identify and address any discrepancy or irregularity. It increases accountability and transparency.**
21. **Publication of guidelines and processes of obtaining NOC on government websites increases the awareness among the public.**

CHAPTER 3

FINANCIAL OUTLAYS AND QUANTIFIABLE DELIVERABLES

The chapter contains a tabular format which is visualized as vertical compression and horizontal expansion of Statement of budget estimates. The objective is to establish a one to one correspondence between the financial budget 2023-24 and output budget 2023-24.

The Irrigation department has implemented a vast number of schemes pertaining to major and medium irrigation. The present strategy is adopted to focus operation and maintenance of already existing major and medium irrigation systems along with focus in developing various minor irrigation schemes.

Salinity ingress has always been a major issue being addressed by the department. Various flood control works including maintenance and protection of river banks have been carried out. Erosion of coastal areas and tidal attacks are other challenges faced by the department. The works related to construction of new sea-wall and refurbishment of existing seawall have been completed.

Under Minor Irrigation, various check dams have been constructed for improving water availability in rivers during lean season and to recharge groundwater. Construction of minor irrigation structures was also initiated under MIRPA (Malabar Irrigation and Rehabilitation)

The highlight of the department is the introduction of the SMS Alert system. Initially, a pilot project which has been carried out in PVIP (Periyar Valley Irrigation Project). This system enables the water users to receive the pattern of water distribution in canals.

The scheme wise financial outlay and quantifiable deliverables are explained in **Annexure-I.**

CHAPTER - 4

REFORM MEASURES AND PERFORMANCES

Coastal Protection From Sea Erosion - Using Innovative Technologies

Kerala has a coastline of 590 kilometers, which forms 10% of the total coastline of the Indian mainland. Out of the total coastline, stretches of 370 km have been protected. 10 hotspots were identified as highly vulnerable due to climatic variations and influence of repeated cyclones in Arabian Sea. The works proposed under the scheme include coastal protection works for ten identified hotspots namely Shangumugham, Kollemcode, Alappad, Chellanam, Ottamassery, Kodungallur, Ponnani, Kappad, Thalassery and Valiyaparamba. This includes construction/refurbishment of sea walls, groynes, construction of offshore breakwater systems, beach nourishment etc.

The status of coastal studies in the hotspots are given below:

Name of the hotspots (Stretches)	**Progress**
Shangumugham - Thiruvananthapuram	Detailed Project Report (DPR) has been prepared for an amount of ₹71.50 crore and submitted to the government for administrative sanction
Kollamkode - Thiruvananthapuram	Coastal protection measures in Kollemcode (Pozhiyur): In Principle Sanction has been obtained for KIIFB funding. The amount proposed is ₹51 crore. Construction of seawall using tetrapod from Panathurakkara in Samudra beach to Poonthurapozhi stretches: Proposal has been submitted to Government for KIIFB funding. The amount proposed is ₹70.00 crore

Name of the hotspots (Stretches)	Progress
Alappad - Kollam	Refurbishment of damaged sea walls using tetrapods- DPR is under scrutiny for KIIFB assistance. In-Principle Sanction has been obtained. The amount proposed is ₹ 172.50 crore
Chellanam -Ernakulam	For the first phase, works of administrative sanction for an amount of ₹344.2 core are being completed with the assistance of KIIFB. Proposal for the second phase has been submitted to Government. The amount proposed is ₹307.00 crore
Kodungallur-Thrissur	The site was visited by NCCR (National Centre for Coastal Research) in September 2023. Design is under preparation.
Ponnani-Malappuram	The site was visited by NCCR (National Centre for Coastal Research) in September 2023. Design is under preparation.
Kappad-Kozhikode	DPR is under preparation.
Thalassery-Kannur	The site was visited by NCCR (National Centre for Coastal Research) in September 2023. Design is under preparation.
Valiyaparamba-Kasaragod	The site was visited by NCCR (National Centre for Coastal Research) in September 2023. Design is under preparation.

Modernization of Department and E- governance

Department has taken steps to integrate its entire office with structured Local Area Network (LAN) connectivity and integration with Kerala State Wide Area Network (KSWAN) and also to adopt e-filing system. The enhanced use of IT, strengthening of infrastructure, revamping of departmental website and redesigning of incorporated online project monitoring platform [e-monit and Human Resource Management Software (HRMS)] have been adopted as a part of modernization.

E-Asset management and Information System includes the interlacing of geo-tagging of assets of the department with cadastral survey map using Geographic Information Systems (GIS) techniques. Infrastructure facilities such as Laptops, Tabs, Desktops and Printers have been provided for all officers across the state, for the

smooth functioning of e office, an online file processing system. Aadhar Based Biometric Attendance system, and submission of Confidential Reports through SCORE, etc. have also been adopted.

Pollution Abatement Programme

As per the order of the National Green Tribunal (NGT), an action plan for the mitigation of pollution in the 21 stretches of rivers has been prepared and the same has been submitted to the Central Pollution Control Board (CPCB). The time frame for the execution of work in the action plan was fixed to be two years w.e.f 01.04.2019. The estimated amount for the work was ₹110.81 crore. However, the State couldn't comply with the order of the NGT due to adverse climatic conditions and also due to various other reasons. Later, the CPCB through the State Pollution Control Board addressed the department to comply with the orders of NGT and also to submit the revised action plan. Based on the revised action plan, the analysis of water samples has been done. The result of the analysis shows that out of the 21 stretches, water quality of 10 stretches has been improved. As per the present state plan, the department aims to execute specific works to abate pollution in all the rivers with special attention to 21 stretches of rivers.

In Kerala, nearly 35 per cent of the total population depends on tap water for their day-to-day use. Rivers are the main source of water for the rural and urban water supply schemes. The improvement in the quality of water in watercourses invariably increases the quality of water distribution. The water supply schemes are managed and operated by KWA and LSGIs. Moreover, the increase in the quality of surface water keeps the quality of subsurface/groundwater in a good state. The quality of water in rivers improves the quality as well as increases the quantity of fish in rivers. The animal husbandry sector also benefits from the improved quality of water.

Micro Irrigation

As per the study of NCAP (National Centre for Agricultural Economics and Policy), the potential area of micro irrigation in Kerala is 2.7 lakh hectares. The

department aims to cover 60000 ha. in the ayacuts for the micro irrigation projects in the next five years, incorporating assistance with the other stakeholder departments.

The department has started implementing Community Micro Irrigation Projects (CMIP) with the help of Agriculture department. In conventional methods, about 60 % of water is lost due to conveyance, evaporation, percolation and seepage. By adopting CMIP, the loss can be prevented. The micro irrigation method consists of a closed pipe network right from the source to the root zone of crops resulting in huge savings of water and also substantial increase in the yield of crops.

Agricultural department and Irrigation department jointly identified 21 projects so far, for which CMIP is to be implemented. In the first phase a total of 6 projects in Pathanamthitta, Idukki, Wayanad and Thrissur districts have been taken up and are at different stages of design and implementation. The government also formed a drafting committee for State Micro Irrigation Policy with Chief of Agriculture Division (Planning Board) as Chairman and Chief Engineer (I&A) as convenor and members from various stakeholder departments. The draft ToR was prepared by Centre for Water Resources Development and Management (CWRDM), Kozhikode.

Room for River Projects

Major rivers which drain into Kuttanad i.e Manimala, Pamba and Achankovil have been silted up since 2018 due to flood. A holistic approach to reduce flooding is to be implemented in Kuttanad for which proposals have been submitted with respect to the 'Room for River' concept. The main proposals include improvement of the leading channel which has a length of 11 km from Veeyapuram to Thottappally spillway by desilting the channel and protecting the sides.

Veeyapuram is the point of confluence of Pamba river and Achankovil river. A major portion of water in these rivers flows through a leading channel. After passing the leading channel it bifurcates into two branches. One branch goes to Thottappally spillway and the other to Kuttanad through a network of canals. So flooding in Kuttanad can be prevented to a greater extent by clearing the obstructions and

encroachments in the leading channel and also by protecting the two sides of the leading channel thereby preventing overtopping of water in the nearby padasekharams and dry lands.

Hydrodynamic study of the Thottappally Basin

Administrative Sanction has been issued for the preparation of Detailed Project Report for the Room for River project at a cost of ₹4.50 crore vide G.O (Rt) No.918/2019/WRD dated 07.12.2019 under the Rebuild Kerala Initiative. An amount of ₹1.6284 crore has been sanctioned for the hydrodynamic study in connection with the Room for River Project. Kerala Engineering Research Institute has conducted an inspection on site regarding the preparation of estimate for hydrodynamic study.

Capacity Building

The focus of all aspects of the programme is to develop the most superior workforce so that the organization and employees can accomplish their work goals in service to the customers. It also aims to provide training to new employees which will give them awareness about the department. It is also intended for the quality improvement of the technical and non-technical employees of the department. Proper quality improvement programmes should be given to all officers for carrying out all the above works efficiently.

For this, training as per the needs have to be arranged to the Engineers and to other officers in consultation with management institutions, IITs etc. Thus, short-term courses have been conducting in management institutions and IITs as per requirements of engineers working in the department. Various training for the administrative staff will also be conducted in association with the management institutions in the state.

Rejuvenation of Rivers

The responsibility to maintain 44 rivers in the state and also for their rejuvenation have been entrusted to the Executive Engineers of Irrigation Department

vide order No PL1 (B)Mon/ 23349/2021 of CE, I&A, TVM. The main duties assigned to each officer includes ensuring room for river, upkeep, maintenance, fortnightly inspection and data collection. The main aim of the Rejuvenation of Rivers is to remove the sediments which were deposited due to the devastating flood that happened in the years 2018, 2019, and 2021. With the active participation of field staff the desiltation work was fully completed in 30 rivers and partially completed in the remaining 13 rivers (except Kallayi river). The total sediments removed so far is 98,35,939 m^3 (32%) against an estimated quantity of 3,01,65,570m^3. The District Collector who is the ex-officio chairman of District Disaster Management Authority is entrusted to dispose the desilted sediments through auction.

CHAPTER 5

FINANCIAL REVIEW

The chapter contains a financial review covering overall trends in the expenditure vis-a-vis budget estimate/revised estimate in recent years, which is detailed in Annexure-II

CHAPTER - 6

REVIEW OF PERFORMANCE OF AUTONOMOUS BODIES

Kerala Water Authority

Kerala Water Authority was established on 1st April 1984 as an autonomous body of Government of Kerala under the Kerala Water Supply and Waste Water Ordinance 1984 as a successor to the erstwhile Public Health Engineering Department of the Government of Kerala for the development and regulation of water supply and wastewater collection and disposal in the State of Kerala. The ordinance was replaced by the Kerala Water Supply and Sewerage Act, 1986

Responsibilities

- Design, construction, execution, promotion, operation, maintenance and financing of schemes for the supply of water and for the collection and disposal of waste water.
- Rendering all necessary services to the Government relating to water supply and collection and disposal of the wastewater in the State of Kerala.
- Establishment of standards for water supply and waste water services.
- Fixation and revision of rates for water supply and sewerage maintenance with the approval of Government.
- Taking other measures necessary to ensure water supply in times of emergency.

Vision

To provide quality water supply and wastewater services in an environmental friendly processes and in a sustainable manner.

Mission

To transform ourselves into a customer friendly organization providing services at the doorstep. To achieve 100% Functional Household Tap Connections and to achieve 100 % networked sewerage all over Kerala.

Organizational setup

Kerala Water Authority has its headquarters in Thiruvananthapuram. The three regional offices at Thiruvananthapuram, Kochi, and Kozhikode are headed by Chief Engineers. In addition, there are 3 Chief Engineers with Chief Engineer (HRD&GL) looks after the Human Resources Development & general matters, Chief Engineer (P&O) the Projects and Operations and the Chief Engineer (Sewerage, PPD& WASCON) the Sewerage facilities, Investigation, Planning and Design and also the Consultancy Services. The Finance Manager & Chief Accounts Officer deals with the funds, accounting and related matters of Kerala Water Authority.

Under each region, there are Circle Offices headed by Superintending Engineers, Division Offices by the Executive Engineers, Sub Division Offices by Assistant Executive Engineers and Section Offices by Assistant Engineers. State Referral Institute, Kochi and the Quality Control Divisions look after the quality aspects of the water supplied by KWA.

The activities of the Authority are handled in the following offices:

SL No	Offices	Head of the Office	Function
1	Head Office	Managing Director	Chief Executive of the Authority
2	Regional Offices	Chief Engineer	Region Head
3	Circle Offices	Superintending Engineer	Supervision
4	Division Offices	Executive Engineer	Execution (Operation & Maintenance/Projects/Quality Control/Sewerage)

5	Subdivision Offices	Assistant Executive Engineer	-Do-
6	Section Offices	Assistant Engineer	-Do-

FINANCIAL OUTLAY AND QUANTIFIABLE DELIVERABLES

Under the State Plan an amount of ₹85965 lakh was provided as budget outlay during 2023-24 under 21 heads including Jal Jeevan Mission. For Jal Jeevan Mission (Centrally Sponsored Schemes) the total outlay was ₹100000 lakh with 50% sharing of ₹50000 lakh each by Central and State Government.

Annexure I contains head wise details of financial budget 2023-24 and Physical outputs.

REFORM MEASURES AND PERFORMANCE

Kerala Water Authority is the key implementing agency for water supply and sanitation related works in Kerala under the following funding heads:

1. STATE PLAN
2. KIIFB
3. AMRUT
4. RKI (Rebuild Kerala Initiative)
5. JNNURM
6. JJM/NRDWP
7. NWQSM
8. RIDF – NABARD
9. SMART CITY
10. External Aided (JICA/ ADB/ WB)
11. Deposit Works (LSGD/SC&ST/ DD)
12. MPLADS
13. MLA ADF
14. MLA SDF
15. NITI AYOG FUNDS

FINANCIAL REVIEW

Government of Kerala releases fund to Kerala Water Authority for implementation of water supply schemes throughout the State and can be mainly classified into three categories:

1. State Plan Schemes.
2. NABARD assisted Water Supply Schemes
3. Jal Jeevan Mission / NRDWP schemes including matching central share.

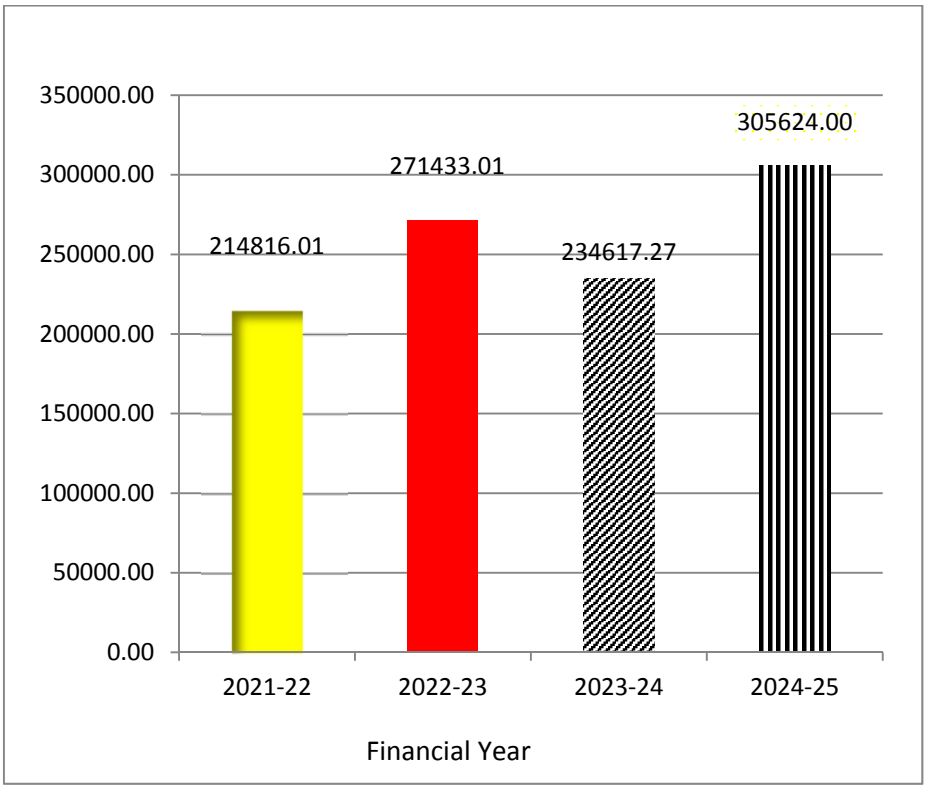
(A).Revised Estimate / Budget Estimate

The details of Revised Estimate for the last three years and Budget Estimate for 2024-25 are shown below:

Table 6.1 : Details of Revised estimate/ Budget estimate

Category	Revised Estimate (₹ in lakh)			Budget (₹ in lakh)
	2021-22	**2022-23**	**2023-24**	**2024-25**
STATE PLAN	26014.22	9906.24	11901.26	23624.00
NABARD	8342.71	3897.66	2000.60	7000.00
JJM/NRDWP	180459.08	257629.11	220715.41	275000.00
TOTAL	**214816.01**	**271433.01**	**234617.27**	**305624.00**

Fig 6.1: Graphical representation of revised estimate/ budget estimate (₹in lakh)



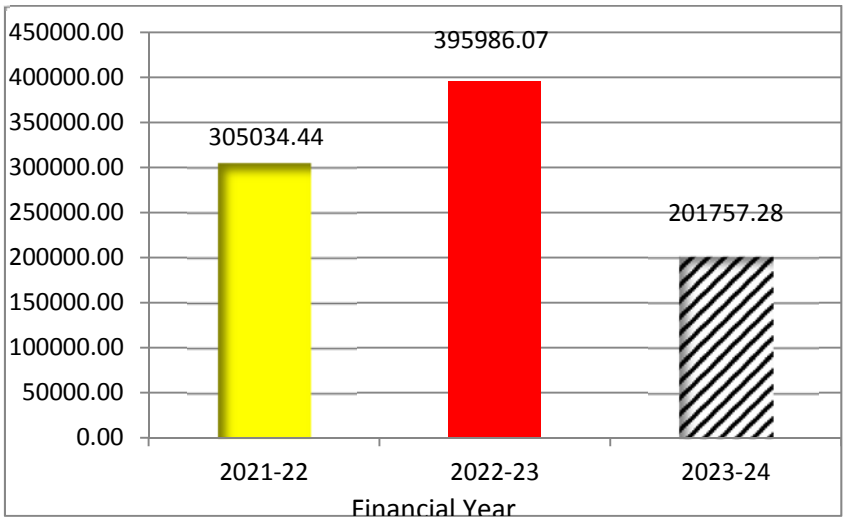
(B). Details Of Fund Release Against Each Scheme

The details of fund released against budget provision by Government of Kerala to Kerala Water Authority for the last three years are shown below:

Table 6.2: Details of fund released against each scheme

Category	Release (₹ in lakh)		
	2021-22	**2022-23**	**2023-24**
STATE PLAN	26003.11	9805.22	11901.18
NABARD	8342.71	3897.66	2022.69
JJM/NRDWP	270688.62	382283.19	187833.41
TOTAL	**305034.44**	**395986.07**	**201757.28**

Fig 6.2: Graphical representation of fund released (₹ in lakh)



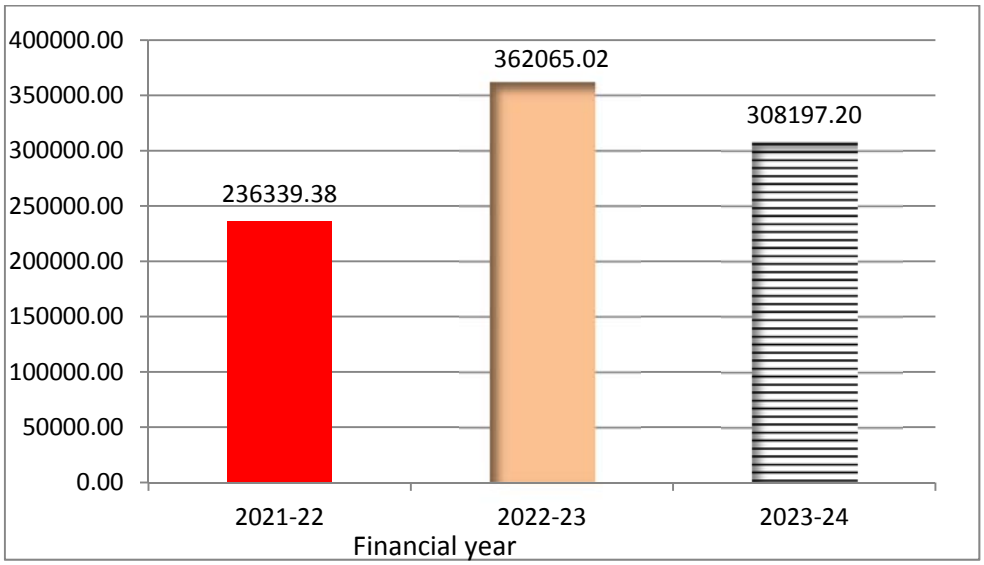
(C) Details Of Expenditure

The category wise details of expenditure met by Kerala Water Authority for the last three years are shown below :

Table 6.3 : Details of expenditure

Category	Expenditure (₹ in lakh)		
	2020-21	**2022-23**	**2023-24**
STATE PLAN	26053.57	9805.15	11898.58
NABARD	8526.16	3899.35	4904.62
JJM/NRDWP	201759.65	348360.52	291394.00
TOTAL	**236339.38**	**362065.02**	**308197.20**

Fig 6.3: Graphical representation of expenditure (₹ in lakh)



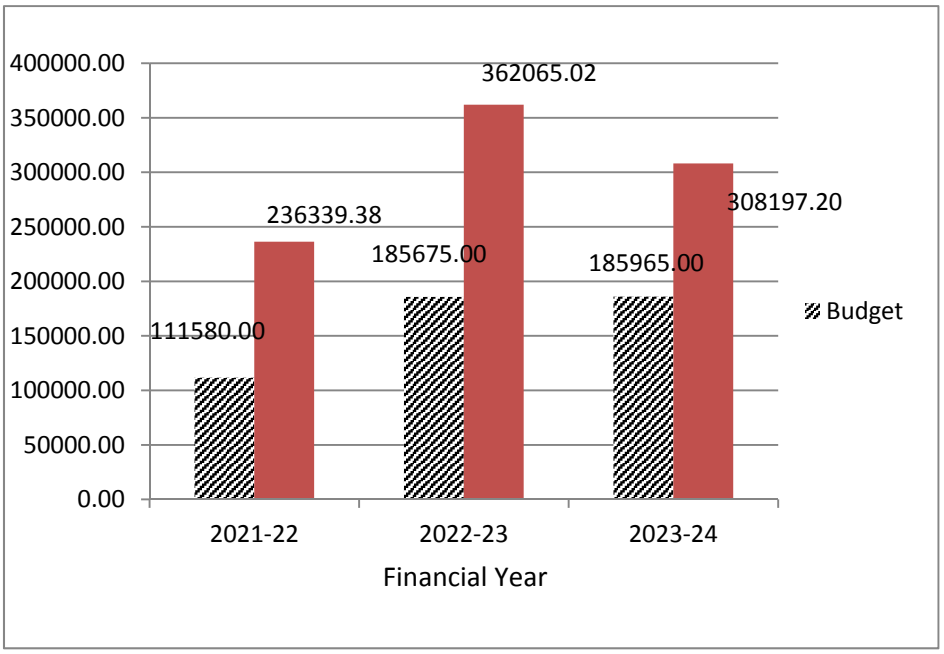
(D) Comparison Between Budget And Expenditure

The comparison between the budget and actual expenditure met by KWA for the last three years is given below:

Table 6.4: Comparison between Budget and Expenditure (₹ in lakh)

Category	2021-22		2022-23		2023-24	
	Budget	Expenditure	Budget	Expenditure	Budget	Expenditure
STATE PLAN	26400.00	26053.57	27655.00	9805.15	27965.00	11898.58
NABARD	5180.00	8526.16	8020.00	3899.35	8000.00	4904.62
JJM/NRDWP	80000.00	201759.65	150000.00	348360.52	150000.00	291394.00
TOTAL	**111580.00**	**236339.38**	**185675.00**	**362065.02**	**185965.00**	**308197.20**

Fig 6.4: Graphical representation of comparison between budget and expenditure (₹ in lakh)



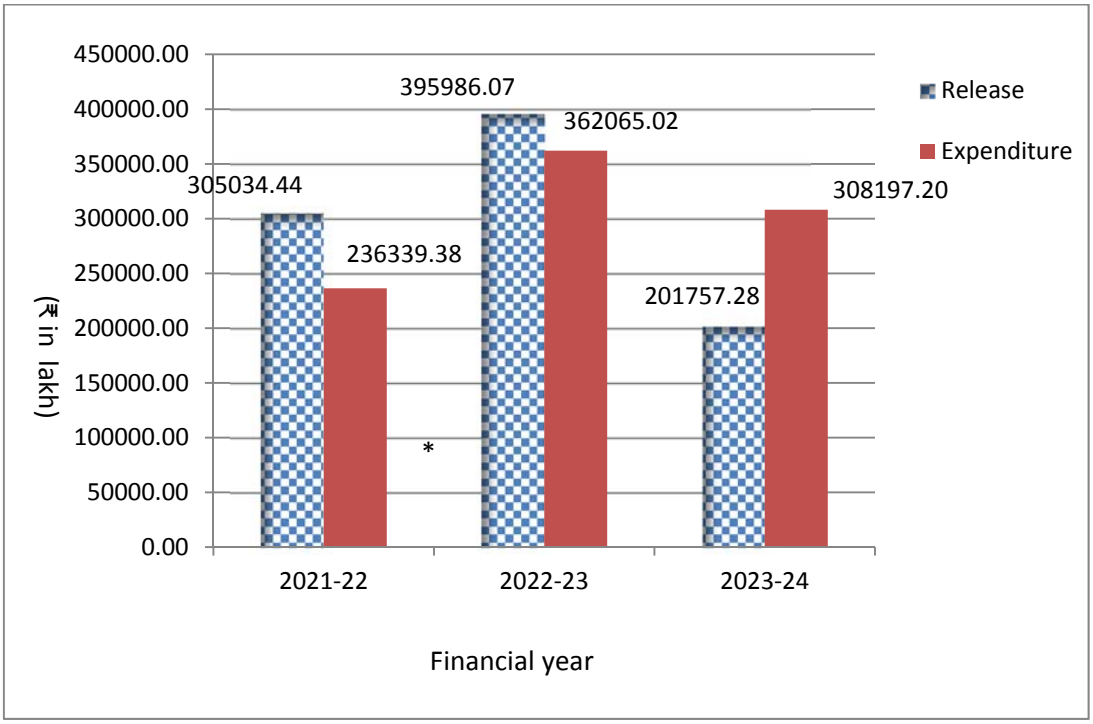
(E) Comparison Among Budget Release And Expenditure

The details of budget release and actual expenditure met by KWA is given below:

Table 6.5: Comparison among budget release and expenditure (₹ in lakh)

Category	2021-22		2022-23		2023-24	
	Release	Expenditure	Release	Expenditure	Release	Expenditure
STATE PLAN	26003.11	26053.57	9805.22	9805.15	11901.18	11898.58
NABARD	8342.71	8526.16	3897.66	3899.35	2022.69	4904.62
JJM/NRDWP	270688.62	201759.65	382283.19	348360.52	187833.41	291394.00
TOTAL	**305034.44**	**236339.38**	**395986.07**	**362065.02**	**201757.28**	**308197.20**

Fig 6.5 : Graphical representation of comparison among budget release and expenditure



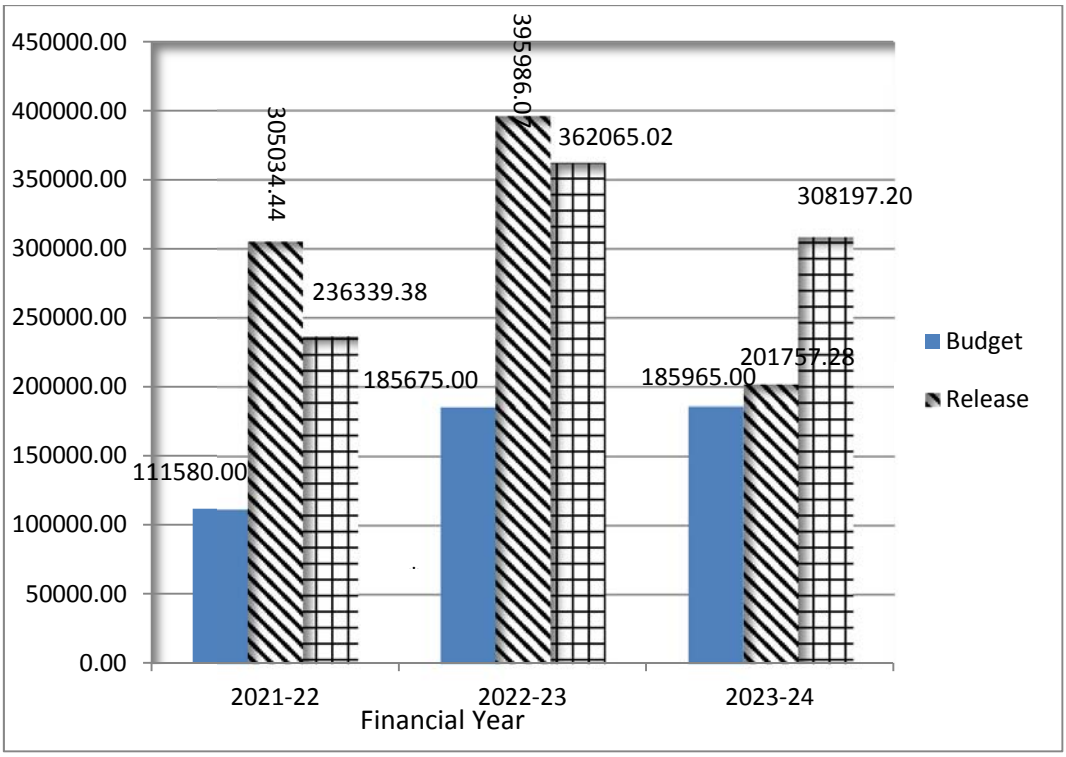
(F) Comparison Among Budget Estimate, Release And Expenditure

The statement of budget estimate, release and actual expenditure met by KWA is given below :

Table 6.6: Comparison among budget estimate, release and expenditure (₹ in lakh)

Category	2021-22			2022-23			2023-24		
	Budget	Release	Expenditure	Budget	Release	Expenditure	Budget	Release	Expenditure
STATE PLAN	26400	26003.11	26053.57	27655	9805.22	9805.15	27965	11901.18	11898.58
NABARD	5180	8342.71	8526.16	8020	3897.66	3899.35	8000	2022.69	4904.62
JJM/ NRDWP	80000	270688.62	201759.65	150000	382283.19	348360.52	150000	187833.41	291394
TOTAL	111580	305034.44	236339.38	185675	395986.07	362065.02	185965	201757.28	308197.20

Fig 6.6: Graphical representation of comparison between budget estimate, release and expenditure (₹ in lakh)



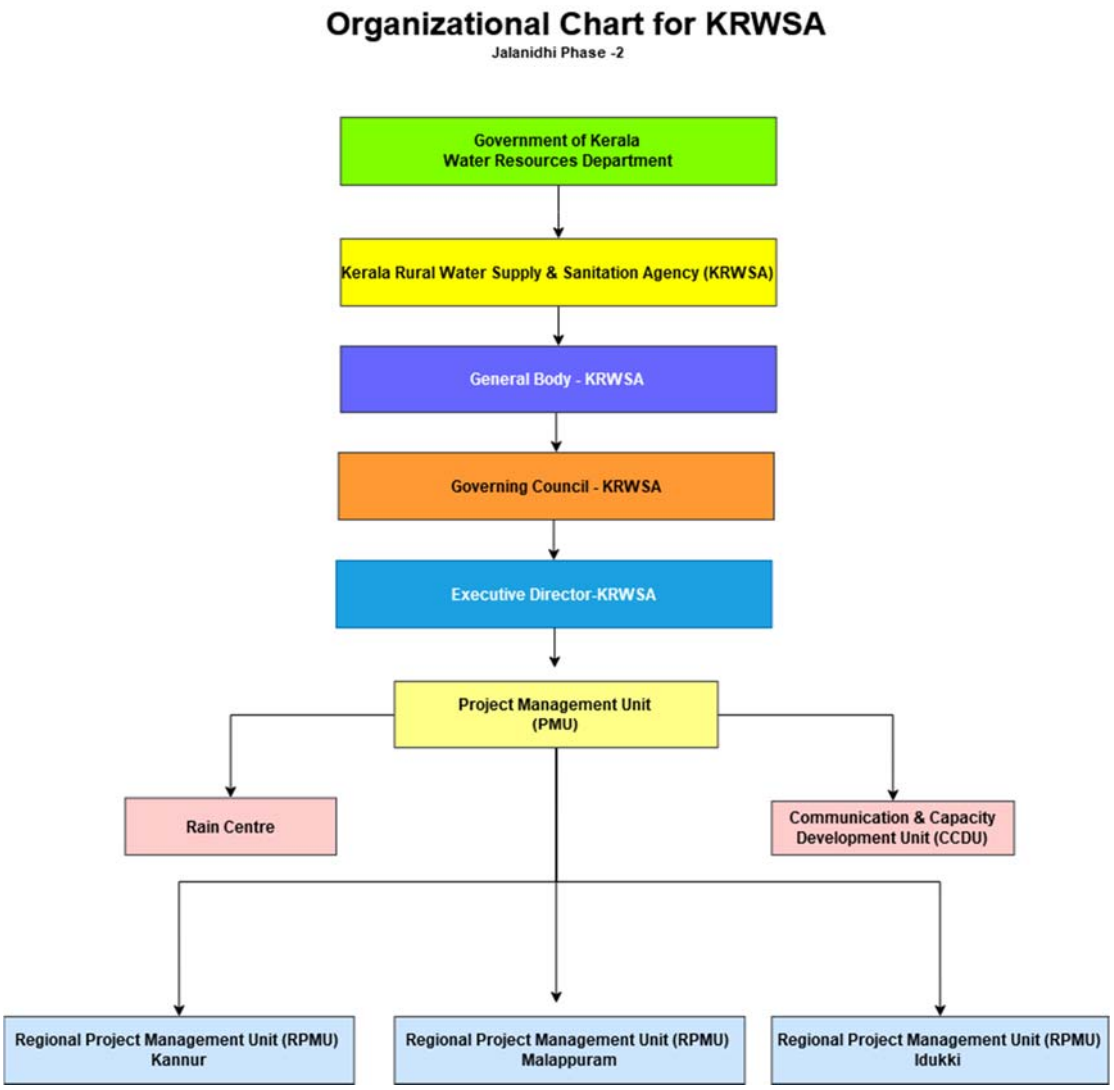
Jalanidhi (Kerala Rural Water Supply and Sanitation Agency)

Government of Kerala was a signatory State on the "Cochin Declaration on Drinking Water Sector" that brought in reforms in rural water supply sector in the Country in 1999, which advocates three key principles, i.e. changing the role of Government from provider to facilitator, increasing the role and participation of rural communities in the planning and management of their own water supply facilities, increasing cost recovery form user and management of operation and maintenance by users. Subsequent to this, Government of Kerala has created an autonomous institution "Kerala Rural Water Supply and Sanitation Agency (KRWSA)"- as a special purpose vehicle to implement the World Bank aided community managed demand driven water supply and sanitation project named as Jalanidhi project.

KRWSA was registered on 17-11-1999 under Travancore Cochin Literary, Scientific and Charitable Societies Registration Act 1955 (Act XII of 1955). KRWSA has successfully implemented two phases of Jalanidhi project, i.e. Jalanidhi Phase-1 during 2000-2008 & Phase-2 during 2012-2019. Grama panchayats have a pivotal role in implementing community based water supply projects under Jalanidhi. KRWSA has also established a wide network of NGOs in mobilizing communities towards implementing the participatory, community driven water supply & sanitation facilities owned and managed by them. This model of scheme implementation under JALANIDHI has demonstrated successfully an equitable, inclusive and decentralized delivery system mainly benefiting the SC, ST and BPL category of rural households in Kerala.

KRWSA is the nodal Agency of the State Government for the implementation of Rain Water Harvesting Programme. Further, KRWSA is designated as Water and Sanitation Support Organisation (WSSO) of Govt of India to coordinate drinking water related support activities in the State. Government of Kerala has selected KRWSA as one of the implementing agencies for the implementation of central flagship programme of Govt. of India, Jal Jeevan Mission Programme (JJM) in the state during the period 2020-2024.

Organizational chart of KRWSA is given below:



Currently KRWSA is engaged in the implementation of the undermentioned project/programmes by utilising funds as provided in the state budget under state plan schemes.

Popularization of Rain Water Harvesting and GWR measures through KRWSA

As a nodal agency for the implementation of Rain Water Harvesting (RWH) Programme in the State, a separate cell –Rain Centre was functioning under KRWSA for undertaking the activities under RWH Scheme and from 18-12-2021 onwards, all

activities of the cell have been merged with KRWSA and implementation activities arranged through its RPMUs.

The scheme is being implemented from the year 2012-13 onwards, mainly for providing household and government institutional RWH units in rural areas where scarcity of water is at large. Open well recharge is also being carried out as part of the implementation of the scheme. It is being implemented by utilising the state plan funds allocated in the State Budget annually. The Physical Achievements made under the scheme, as on 31-03-2024, are as follows:

Setting Up of Household RWH Units	10606 Nos
Setting of RWH Units in Aided Schools	840 Nos
Installation of Open Well Recharge System	2936 Nos.

Sustainability support to Community Managed Water Supply Schemes

Kerala Rural Water Supply and Sanitation Agency (KRWSA) has implemented 3710 schemes in phase-1 project covering 112 grama panchayats. Structurally, once the schemes are commissioned, the assets created are to be handed over to the Beneficiary Groups (BGs) for Operation and Maintenance (O&M). However, later during the Performance Audit of Jalanidhi-Phase-I schemes by the Accountant General in the year 2016-17, it was observed that nearly 35% of the schemes have become partially or fully defunct. Therefore, post implementation support to the community merged schemes for the sustainability of the project is a critical one.

As such, the Government have launched a new scheme under the State Plan namely -Sustainability support to Community Managed Water Supply Schemes in order to extend technical and financial support to the beneficiaries for rejuvenating the schemes and making them functional. Accordingly, it is being implemented by providing necessary funds in the State Budget – under the State Plan from the year

2018-19 onwards. As on 31-03-2024 a total number of 1264 partially /fully defunct water supply schemes were rehabilitated & restored and made functional.

Conversion of Domestic Wells into Protected and Sustainable Drinking Water Sources.

Objective of the scheme is to protect and recharge domestic wells in order to convert them as reliable sources of drinking water and to replenish dwindling groundwater table. As on 31-03-2024, a total number of 365 domestic wells have been converted into protected and sustainable sources of drinking water.

Water Quality Monitoring and Surveillance and Grey Water Management.

The aim of the scheme is to set up regular monitoring and timely mitigation in the case of Water Quality issues of the community managed small water supply schemes. It has also been proposed to take up grey water management in colonies of vulnerable groups. As on 31-03-2024, a total number of 62 schemes have been completed under Water Quality Monitoring and 2 numbers of schemes under Grey Water Management.

Research and Development in Rural Water Technologies.

The under privileged and vulnerable sections of the people are still have no access to large organized water supply schemes, it is necessary to provide them drinking water supply by using appropriate and innovative technologies and O&M models. KRWSA have tried and tested several technological options and management models in the Jalanidhi schemes. It is observed that failure of the scheme is due to the water quality issues during the continued operations. It is absolutely essential to identify both the success and failure models both in technology and management for developing innovative ideas in the sector. The programme has been launched since 2022-23, for research and development in rural water technologies. As on 31-03-2024, 12 numbers of LORA units (sensor based automatic pumping system) have been installed in the community managed water supply schemes.

IEC, Capacity Building & Training and Jalasree Club.

The programme is envisaged Information Education and Communication (IEC) activities in water sector by building capacities of different stakeholders especially local communities, responsible and responsive leadership to own, manage, operate and maintain in village water supply systems .It is also proposed to create awareness among population, especially younger generation by establishing Jalasree clubs in schools to inoculate the value of water at young age. As on 31-03-2024, 21 numbers of IEC & Capacity Building activities have been carried out in connection with the implementation of various rural water supply and sanitation schemes. Total number of Jalasree Clubs have also been formed in Government Schools for creating awareness on the value of water among the younger generation.

Implementing Agency of JJM

KRWSA has been selected as one of the implementing agencies for the implementation of JJM program in the State by Government of Kerala. Total number of 25367 (Functional Household Tap Connections) FHTCs and 8960 HTCs have been installed as on 31-03-2024 under the aegis of this agency

FINANCIAL OUTLAYS AND QUANTIFIABLE DELIVERABLES

1. Completion of Jalanidhi-II Schemes under State Plan

The World Bank Aided Jalanidhi- Phase II Project has completed 2173 Water Supply Schemes and provided drinking water to 2.54 lakh households in selected 115 Grama panchayats. Even though the credit period of the EAP was over on 31-12-2019, the works related to some Large and Small Water Supply Schemes were spilled over to subsequent periods and the same have been carried out by utilising the funds provided in the state budget from the financial year 2020-21 onwards and all those works have been completed by 2021-22. But bills in respect of construction were pending for settlement. An amount of ₹ 125.00 lakh was provided for the year 2023-24 for the settlement of pending bills in respect of completed works. The entire amount of ₹125.00 lakh was released during the year 2023-24 but ₹ 58.85 lakh was resumed by Government from the balance with the PSTSB as on 31.03.2024. As such

a total amount of ₹66.15 lakh was incurred as expenditure for the scheme for the year 2023-24. But the bills for a total amount of ₹766.00 lakh was pending for payment as on 31.03.2024.

2. Popularization of Rain Water Harvesting and GWR measures through KRWSA

Government of Kerala had provided an amount of ₹1000 lakh for the year 2023-24 for this scheme. Out of this an amount of ₹612.14.00 lakh was released but ₹84.83 lakh was resumed from the PSTSB account on 31.03.2024. As such, a total amount of ₹527.31 lakh has been expended during the year from the amount released from the budget provision. Out of the 1533 RWH units structures taken up for construction, 734 RWH units were completed as on 31.03.2024 and works in respect of 740 Nos have been spilled over to 2024-25, excluding the schemes dropped for various reasons.

3. Sustainability support to Community Managed Water Supply Schemes

For the year ₹3090 lakh was allocated for the scheme in the state budget and ₹1080.52 lakh has been released during the year 2023-24. But a total amount of ₹ 564.75 lakh was resumed from the PSTSB account on 31-03-2024. As such, a total amount of ₹515.77 lakh has been expended, during the year 2023-24, from the amount released from the budget provision. Out of the 579 partially /fully defunct schemes taken up for restoration, 119 schemes have been restored as on 31.03.24 and works in respect of 422 schemes have been spilled over to the next financial year and the remaining schemes were dropped off due to various reasons.

4 **Conversion of domestic wells into protected drinking water sources.**

An amount of ₹400 lakh was provided for the scheme and ₹259.69 lakh was released during the year 2023-24. But a total amount of ₹100.64 lakh was resumed from the PSTS B account on 31.03.2023. As such, a total amount of ₹159.05 lakh has been expended during the year 2023-24, from the amount released from the budget provision. Out of the 696 Nos of wells taken up, conversion works in respect of 147 Nos were completed as on 31.03.24 and works related to 528 Nos have been spilled

over to the next financial year and the remaining schemes were dropped off due to various reasons.

5 Water Quality Monitoring and Surveillance and Grey Water Management

Even though an amount of ₹350 lakh was provided for the scheme, no amount was released during the year 2023-24. Administrative sanction was obtained on 22-09-2022 and works for installation of plants for mitigation of water quality issues- 84 Nos, were taken up during the year 2023-24. Out of this 51 schemes have been completed as on 31.03.2024 and works related to 33 Nos have been spilled over to the next financial year including the backlog of the previous years. 4 Nos of Grey Water Management scheme were taken for setting up during the year 2023-24. Out of which 2 Nos have been completed and the remaining works have been spilled over to next year

6 Research and Development in Rural Water Technologies.

An amount of ₹6.00 lakh was provided for the scheme and ₹3.72 lakh was released during the year 2023-24. Expenditure to the tune of ₹2.97 lakh was incurred and an amount of ₹0.75 lakh was resumed on 31.03.2024, from the PSTSB Account. As part of implementing the programme, 12 numbers of LORA units (sensor based automatic pumping system) have been installed in the community managed water supply schemes.

7 IEC, Capacity Building & Training and Jalasree Club

An amount of ₹15.00 lakh was provided for the scheme and ₹7.95 lakh was released during the year 2023-24. Out of this an amount of ₹5.40 lakh was utilized and ₹2.55 lakh was resumed from the PSTSB account on 31.03.2024. The target in the formation of 561 Nos of Jalasree clubs in schools has fully been achieved during the year 2023-24. Besides, 21 Nos of IEC& Capacity Building Programmes have also been conducted during the year under report.

REFORM MEASURES AND PERFORMANCES

In Jalanidhi–I and II, there are greater integration in rural water supply at village levels. The up-front setting up of an operating institutional mechanism at the grama panchayat level will provide sustainable O&M backup support to all rural water supply schemes (not only Jalanidhi schemes) in the grama panchayat.

The schemes -Sustainability Support to Community Managed water Supply Schemes- is highly helpful to the community for synergising the strength of community and local governments in order to build sustainable water supply through appropriate technology and resources. Capacity building measures are also being carried out for the empowerment of the communities for sustainable operation and maintenance of drinking water supply and sanitation assets. It has also been decided, from the year 2022-23 onwards, to set up a revolving fund, by depositing the grama panchayats' and Beneficiaries' contributions for O&M expenses of the water supply schemes.

The programme -Popularisation of Rain Water Harvesting and GWR Measures- is well accepted by the people in the State, especially those who are living in hilly, coastal and remote areas with limited access to potable water. Many of the grama panchayats, especially those in the hilly and coastal regions are actively implementing Rain Water Harvesting as a technology option to solve the drinking water issues of their GPs. The need and importance of Rain Water Harvesting programme in view of the severe flood that hit the State has once again been accelerated. The rate of beneficiary contribution has been changed during the year by extending exemption for the same to the BPL families.

Conversion of Domestic Wells into protected drinking water sources scheme has been started during the year 2022-23 with prime importance to recharge domestic wells in order to convert as reliable sources of drinking water and to replenish dwindling groundwater table. If properly protected and recharged, the dug wells can serve as a dependable source of drinking water.

One of the major issues facing the community managed water supply schemes is the absence of a mechanism for regularly testing and monitoring of the water quality

concerns. Being a public water supply agency, the beneficiary groups which manage small water supply schemes need regular monitoring and timely mitigation of water quality issues. KRWSA wants to fill up the gap and started to function as a Water Quality Monitoring and Surveillance agency for all rural community managed water supply schemes. KRWSA will impart operators and beneficiaries for field testing and also establish a network of water quality labs by tying up with educational institutions and also set upon an IT based monitoring system.

In some measures of Grey Water Management, the agency has started the implementation of a Grey Water Treatment Unit in the tribal hostel of the Rajiv Gandhi Memorial Residential High School at Noolpuzha in Wayanad district. The hostel has been set up by the Government to provide educational aid to the poor tribal students. The hostel has 250 inmates and 600 students are being attended for lunch. Only one tank was being used for collecting water and no waste water treatment system was in place. The new treatment plant will help treat the waste water collected from bath rooms, kitchen sinks and other washing areas.

As part of creating awareness among the population, especially for the younger generation, the agency launched a programme for formation of "Jalasree Clubs" in schools to inculcate the value of water at young age.

Being an implementing agency of the JJM project, the agency could provide altogether 3706 Functional Household Tap Connections (FHTCs) and 6713 HTCs in the rural sector all over Kerala during the year 2023-24.

FINANCIAL REVIEW

The Budget Estimates/Revised Estimates for the year 2023-24 was almost the same as that in 2022-23. Even though a total amount of ₹4986.00 lakh was provided for the agency altogether, a total amount of ₹2089.02 lakh was only released for implementation. The actual plan expenditure of the agency for the year 2023-24 was ₹1276.65 lakh and the balance amount has been resumed on 31-03-2024.

The details are shown as Annexure II.

Annexure I

FORMAT OF TABLES IN CHAPTER III OF PERFORMANCE BUDGET 2023-24

Irrigation (I&A) **Rupees in lakh**

Sl. No.	Name of the Scheme	Objectives	Outlay 2023-24				Quantifiable Deliverables / Physical outputs	Target Fixed		Target achieved		Projected Outcomes	Period of Implementation	Remarks/Risk factor
			Non Plan Budget	Plan Budget	Complementary Extra Budgetary Resources	Central Assistance if any		Physical	Financial	Physical	Financial			
1	2	3	4(i)	4(ii)	4(iii)	4(iv)	5	6		7		8	9	10
1	Coastal Zone Management	The scheme envisaged for the the construction of new sea walls in the balance portion of unprotected coastal area and improvements to the damaged sea walls.		154			AS has been accorded for ₹126 lakh for 3 works	Reformation of 55 m sea wall, rubble mount protections works for 170 m etc	126	All works are ongoing	846.68	improvements to the damaged sea walls.		The budget allocaction for the coastal protection work was in suffient to meet the actual requiremen ts.
2	Specialised Training Programme	Under the scheme, trainings are being provided to technical and non-technical officers of the department on advanced technologies including computer skills.		40			To equip the officers to use modern technology in formulating schemes and familiarise the officers in the use of design tools in vogue.	85 trainings	40	85 training programmes were conducted	38.36	Equipped the officers to use modern technology in formulating schemes and familiarise the officers in the use of design tools in vogue.		

Annexure I

FORMAT OF TABLES IN CHAPTER III OF PERFORMANCE BUDGET 2023-24

Irrigation (I&A) **Rupees in lakh**

Sl. No.	Name of the Scheme	Objectives	Outlay 2023-24				Quantifiable Deliverables / Physical outputs	Target Fixed		Target achieved		Projected Outcomes	Period of Implementation	Remarks/Risk factor
			Non Plan Budget	Plan Budget	Complementary Extra Budgetary Resources	Central Assistance if any		Physical	Financial	Physical	Financial			
1	2	3	4(i)	4(ii)	4(iii)	4(iv)	5	6		7		8	9	10
3	Modernisation and e-governance	Modernization of department and e-governance		80			Purchase and maintenance of IT equipment, implementation of eoffice, establishment of inter-instance communication with Secretariat, KSCSTE, Planning Board, KSEB, Treasury,LSGD, Health, Law and Justice Departments and Intra-Office communication using CRUs, Training to all Irrigation offices on e-Office implementation	100%	80	All headquarters, Circle offices and Division Offices have been onboarded to the eoffice system. An intensive drive to communicate all correspondence through e-Office is nearing completion. Switching to a complete digital file management system is in progress. Implementation up to sub-division and section offices is in the pipeline.	76.46	As part of implementing e Governance, in eoffice and Price software 3rd phase with new features has been included. It made work environment more ease. Better and faster communication between Government and public and also these achievements made paperless documentation.		

Annexure I

FORMAT OF TABLES IN CHAPTER III OF PERFORMANCE BUDGET 2023-24

Irrigation (I&A) **Rupees in lakh**

Sl. No.	Name of the Scheme	Objectives	Outlay 2023-24				Quantifiable Deliverables / Physical outputs	Target Fixed		Target achieved		Projected Outcomes	Period of Implementation	Remarks/Risk factor
			Non Plan Budget	Plan Budget	Complementary Extra Budgetary Resources	Central Assistance if any		Physical	Financial	Physical	Financial			
1	2	3	4(i)	4(ii)	4(iii)	4(iv)	5	6		7		8	9	10
4	Study on coastal protection measures.	Carrying out studies for implementation of appropriate anti- sea erosion activities		53					53	The state has signed an MoU with NCCR, Chennai, an expert body for coastal studies and suggesting suitable coastal protection methods, based on this, studies are going on	47.45			

Annexure I

FORMAT OF TABLES IN CHAPTER III OF PERFORMANCE BUDGET 2023-24

Irrigation (I&A) **Rupees in lakh**

Sl. No.	Name of the Scheme	Objectives	Outlay 2023-24				Quantifiable Deliverables / Physical outputs	Target Fixed		Target achieved		Projected Outcomes	Period of Implementation	Remarks/Risk factor
			Non Plan Budget	Plan Budget	Complementary Extra Budgetary Resources	Central Assistance if any		Physical	Financial	Physical	Financial			
1	2	3	4(i)	4(ii)	4(iii)	4(iv)	5	6		7		8	9	10
5	Thottappally Spillway	Renovation of Thotapalli spillway		500					500	AS has been issued for ₹500 lakh for 2 works.	0.00			
6	Repair and Maintenance of MI Structures	To carry out urgent repair works on the high number of non–functioning schemes under minor irrigation. Maintenance of the canals in the LI Schemes and MI structures are also included in the scheme.		250			AS has been accorded for ₹248.90 lakh for 16 works	100%	250	Total work-39 Completed -18 ongoing-21	446.68	By proper maintenance of check dams and other water holding structures ensures the rise of groundwater and thereby reduce the scarcity of water in nearby areas. Increase in crop output which includes paddy, grains and vegetables		

Annexure I

FORMAT OF TABLES IN CHAPTER III OF PERFORMANCE BUDGET 2023-24

Irrigation (I&A) **Rupees in lakh**

Sl. No.	Name of the Scheme	Objectives	Outlay 2023-24				Quantifiable Deliverables / Physical outputs	Target Fixed		Target achieved		Projected Outcomes	Period of Implementation	Remarks/Risk factor
			Non Plan Budget	Plan Budget	Complementary Extra Budgetary Resources	Central Assistance if any		Physical	Financial	Physical	Financial			
1	2	3	4(i)	4(ii)	4(iii)	4(iv)	5	6		7		8	9	10
7	MI Class I	Under the scheme minor works like construction and improvements to tanks and rivulets, construction of check dams, sluice, regulators, bunds, VCB, SWB, lay out of channels and drainage structures are being carried out.		1600			AS has been accorded for ₹1313.32 lakh for 22 works	100%	1317.96	Total work-80 Completed -26 Ongoing-54	1617.89	Improvement in ground water table. Increase in yield. Increase farmers profit and Efficient use of water. These projects aim to irrigate small command areas by diverting water from rivers and canals and to implement proper drainage by constructing sidewalls, sluices, cross bars etc.		Works are under different stages of execution

Annexure I

FORMAT OF TABLES IN CHAPTER III OF PERFORMANCE BUDGET 2023-24

Irrigation (I&A) **Rupees in lakh**

Sl. No.	Name of the Scheme	Objectives	Outlay 2023-24				Quantifiable Deliverables / Physical outputs	Target Fixed		Target achieved		Projected Outcomes	Period of Implementation	Remarks/Risk factor
			Non Plan Budget	Plan Budget	Complementary Extra Budgetary Resources	Central Assistance if any		Physical	Financial	Physical	Financial			
1	2	3	4(i)	4(ii)	4(iii)	4(iv)	5	6		7		8	9	10
8	MI Class I Schemes under Haritha Keralam	For the conservation of water and soil, a number of works have been identified and prioritised in the plan with the assistance of various departments. Also, Infrastructural development of paddy fields and development of irrigation facilities are targeted.		2000			AS has been accorded for₹2165.39 lakh for 17 works. AS has been accorded for 2 works (₹498 lakh and ₹150 lakh)	100%	2000	Total work-43 Completed -13 Ongoing-30	434.17	Under MI Class I an ayacut of 1200 ha has been achieved/ stabilised by implementing projects including works which were sanctioned in previous year. As the first step of revitalization of rivers through public participation, the Irrigation Department has facilitated grassroots campaigns for revitalization of rivers. Watershed projects of 914 panchayats out of total 941 panchayats have been completed.		Community micro irrigation Projects are also included in the scheme. 8 CMI projects amounting to ₹2208 lakh has been handed over to KIIDC for implementation. All works are under different stages of execution.

Annexure I

FORMAT OF TABLES IN CHAPTER III OF PERFORMANCE BUDGET 2023-24

Irrigation (I&A) **Rupees in lakh**

Sl. No.	Name of the Scheme	Objectives	Outlay 2023-24				Quantifiable Deliverables / Physical outputs	Target Fixed		Target achieved		Projected Outcomes	Period of Implementation	Remarks/Risk factor
			Non Plan Budget	Plan Budget	Complementary Extra Budgetary Resources	Central Assistance if any		Physical	Financial	Physical	Financial			
1	2	3	4(i)	4(ii)	4(iii)	4(iv)	5	6		7		8	9	10
9	MI Class II	The scheme envisaged to provide water availablity in rain shadow areas of Palakkad, Idukki and Wayanad Districts. Construction of check dams and water harvesting works are also included.		1600			AS has been accorded for ₹2168.57 lakh for 33 works. AS has been accorded for 3 works (₹500 lakh, ₹260 lakh and ₹100 lakh)	100%	1317.96	Total work-90 Completed -22 Ongoing - 68	1683.56	Under MI Class II an ayacut of 1900 ha has been achieved/stabilised.		Work can be carried out seasonally only. Protest from public during the execution of work. Problem of land aquisition .

Annexure I

FORMAT OF TABLES IN CHAPTER III OF PERFORMANCE BUDGET 2023-24

Irrigation (I&A) **Rupees in lakh**

Sl. No.	Name of the Scheme	Objectives	Outlay 2023-24				Quantifiable Deliverables / Physical outputs	Target Fixed		Target achieved		Projected Outcomes	Period of Implementation	Remarks/Risk factor
			Non Plan Budget	Plan Budget	Complementary Extra Budgetary Resources	Central Assistance if any		Physical	Financial	Physical	Financial			
1	2	3	4(i)	4(ii)	4(iii)	4(iv)	5	6		7		8	9	10
10	MI Class II Schemes under Haritha Keralam	The scheme envisaged to provide funding for all class-II works included in Watershed Plans which was prepared under Haritha Keralam		650			AS has been accorded for ₹647.40 lakh for 16 works . Spillover works are also included.	100%	650	Total work-51 Completed -12 Ongoing-39	395.83	Tthe scheme will benefit an ayacut area of 650 ha		
11	MI Class I NABARD	Aims to Construct RCBs, SWECBs, ponds, VCBs, check dams, storage weirs, cross bars, and protection works etc.		4000			6 proposals have been submitted to government for an amount of ₹21540 lakh	100%	3294.9	There are a total of 23 works amounting to ₹332.59 crore from tranche XXV to XXIX. Out of which, 2 works in tranche XXVI have been completed.	1417.57	The works sanctioned in tranche XXVII to XXIX are in good progress. The Financial Expenditure of projects from tranche XXV to XXIX stands at ₹4547 lakh		Works are under different stages of execution

Annexure I

FORMAT OF TABLES IN CHAPTER III OF PERFORMANCE BUDGET 2023-24

Irrigation (I&A) **Rupees in lakh**

Sl. No.	Name of the Scheme	Objectives	Outlay 2023-24				Quantifiable Deliverables / Physical outputs	Target Fixed		Target achieved		Projected Outcomes	Period of Implementation	Remarks/Risk factor
			Non Plan Budget	Plan Budget	Complementary Extra Budgetary Resources	Central Assistance if any		Physical	Financial	Physical	Financial			
1	2	3	4(i)	4(ii)	4(iii)	4(iv)	5	6		7		8	9	10
12	Lift Irrigation	Works involving lifting of water by mechanical means with a command area not less than 40 ha come under this category		1900			AS has been accorded for ₹1597.70 lakh for 13 works. AS has been accorded for 2 works (₹394 lakh and ₹200 lakh). Spillover works are also included.	100%	1565.27	Total work-55 Completed -8 Ongoing-47	558.95	An ayacut of 950 ha has been achieved by implementing projects including works which were sanctioned in the previous year.		Works are under different stages of execution
13	Rehabilitation of LI Scheme	The main works to be carried out under the scheme are repairs/replacement of pumps,electrical installation,repairs to pump houses, pipe system and all the maintenance of fixtures for upkeeping of LI Scheme.		500			AS has been accorded for ₹411.50 lakh for 22 works. Spillover works are also included.	100%	411.86	Total work-55 Completed -22 Ongoing-33	608.17	The renovation & repair of defunct Lift Irrigation schemes will increase the efficiency of Lift irrigation appurtinances and will also stabilize the existing ayacut.		

Annexure I

FORMAT OF TABLES IN CHAPTER III OF PERFORMANCE BUDGET 2023-24

Irrigation (I&A) **Rupees in lakh**

Sl. No.	Name of the Scheme	Objectives	Outlay 2023-24				Quantifiable Deliverables / Physical outputs	Target Fixed		Target achieved		Projected Outcomes	Period of Implementation	Remarks/Risk factor
			Non Plan Budget	Plan Budget	Complementary Extra Budgetary Resources	Central Assistance if any		Physical	Financial	Physical	Financial			
1	2	3	4(i)	4(ii)	4(iii)	4(iv)	5	6		7		8	9	10
14	MI Projects in Cauvery Basin	To utilise a portion of water allocated by cauvery water dispute tribunal to Kabani and Pambar basin of Kerala and also store water in Kabani river for facing acute drought situations in rainshadow areas.		260			AS has been accorded for ₹214 lakh for two works . Spillover works are also included.	100%	214.17	Total work-16 Completed -2 Ongoing-14	581.86	By implementing the scheme an ayacut of 415 ha can be achieved. Implementation of the scheme will improve the groundwater recharge, drinking water supply and to provide irrigation facilities in Wayanad and Idukki Districts.		
15	Pradhan Manthri Krishi Sinchayee Yojana	To achieve convergence of investments in irrigation at the field level by amalgamating different schemes related to irrigation, agriculture, soil conservation, groundwater development and rural development.		200		300	No sanction	0%	0	DPR for 4 works for a total amount of ₹1407 lakh has been submitted to the government for approval.	0.00	Four DPRs have been submitted to government.	1 year	

Annexure I

FORMAT OF TABLES IN CHAPTER III OF PERFORMANCE BUDGET 2023-24

Irrigation (I&A) **Rupees in lakh**

Sl. No.	Name of the Scheme	Objectives	Outlay 2023-24				Quantifiable Deliverables / Physical outputs	Target Fixed		Target achieved		Projected Outcomes	Period of Implementation	Remarks/Risk factor
			Non Plan Budget	Plan Budget	Complementary Extra Budgetary Resources	Central Assistance if any		Physical	Financial	Physical	Financial			
1	2	3	4(i)	4(ii)	4(iii)	4(iv)	5	6		7		8	9	10
16	Bhavani Basin Projects	MI projects such as check dams and LIS are taken up under Bhavani basin for utilising water alloted to Bhavani basin by the Cauvery water dispute tribunal.		180			AS has been accorded for ₹148.27 lakh for 7 works . Spillover works are also included.	100%	148.27	Total work-15 Completed -1 Ongoing-14	213.09	Once the project is implemented, it will create an ayacut of about 100 ha. The project envisaged to enhance the groundwater recharge,drinking water supply and irrigation facilities in Attappady		

Annexure I

FORMAT OF TABLES IN CHAPTER III OF PERFORMANCE BUDGET 2023-24

Irrigation (I&A) **Rupees in lakh**

Sl. No.	Name of the Scheme	Objectives	Outlay 2023-24				Quantifiable Deliverables / Physical outputs	Target Fixed		Target achieved		Projected Outcomes	Period of Implementation	Remarks/Risk factor
			Non Plan Budget	Plan Budget	Complementary Extra Budgetary Resources	Central Assistance if any		Physical	Financial	Physical	Financial			
1	2	3	4(i)	4(ii)	4(iii)	4(iv)	5	6		7		8	9	10
17	Renovation of Tanks & Ponds Schemes under Haritha Keralam	Scheme envisaged to undertake renovation and revamping of major existing public/ community ponds in the State.		750			AS has been accorded for ₹747.12 lakh for 25 works. AS has also been accorded for ₹50 lakh for a work . Spillover works are also included.	100%	747.12	Total work-69 Completed -24 Ongoing-45	598.78	Ponds are the main source of Irrigation in several parts of the state. The revival, conservation and upgradation of these traditional water sources will help to attain self-sufficiency in food security, augmentation of food production, conservation and upgradation of local water sources,better water management etc.		

Annexure I

FORMAT OF TABLES IN CHAPTER III OF PERFORMANCE BUDGET 2023-24

Irrigation (I&A) **Rupees in lakh**

Sl. No.	Name of the Scheme	Objectives	Outlay 2023-24				Quantifiable Deliverables / Physical outputs	Target Fixed		Target achieved		Projected Outcomes	Period of Implementation	Remarks/Risk factor
			Non Plan Budget	Plan Budget	Complementary Extra Budgetary Resources	Central Assistance if any		Physical	Financial	Physical	Financial			
1	2	3	4(i)	4(ii)	4(iii)	4(iv)	5	6		7		8	9	10
18	Restoring polluted stretches of rivers based on National Green Tribunal (NGT)	The scheme envisaged for the implementation of action plan proposed for rejuvenation and pollution abatement in 21 stretches in rivers of the state based on the Hon'ble NGT order		200			CE, I& A has issued administrative sanction for 10 works amounting to ₹145.46 lakh. Spillover works are also included.	100%	145.46		18.36			
19	Detailed Investigation of MI structures	Scheme is for the deatiled investigation of projects		50			AS has been accorded for ₹49.81 lakh for 9 works . Spillover works are also included.	100%	50	Total work-16 Completed -11 Ongoing-5	42.73			Works are ongoing
	Total			**14967**					**12911.97**		**9626.59**			

Annexure I

FORMAT OF TABLES IN CHAPTER III OF PERFORMANCE BUDGET 2023- 24

Irrigation (Project I) **Rupees in lakh**

Sl.No.	Name of the Scheme	Objectives	Outlay 2023-24				Quantifiable Deliverables/Physical outputs	Target Fixed		Target Achieved		Projected outcomes	Period of implementation	Remarks/Risk factors
			Non plan Budget	Plan Budget	Complementary Extra Budgetary Resources	Central Assistance if any		Physical	Financial	Physical	Financial			
1	2	3	4(i)	4(ii)	4(iii)	4(iv)	5	6		7		8	9	10
1	Banasurasagar irrgation project	The project is envisaged to provide irrigation facilities in Wayanad district. The project is proposed to irrigate an ayacut of 2800 ha. As per the recommendation of planning board, the partial commissioning of project is proposed for an ayacut of 840 ha in revised proposal.	0	1800	0	0		16 works	1800	Work in progress	1399.45	Work in progress	2 years	1.Shortage of technical staff and current staff pattern in sufficient to do all works in time 2.Unique topographical and climatic condition of wayanad 3. Shortage of working season. 4. Since alignment of canal runs through valley portion, huge side protection work is needed 5. Delay in permission for road cutting and electrical post shiftting 6. Over hyped rates for trees in canal alignment by social forestry department 7. Delay in land aqusition 8. Deep earth work excavation is needed at various chainages of canal which in turn causes fearing labours since earlier there was a mishap.
2	Chitturpuzha project	Stabilization of 20440 ha ayacut area of Chitturpuzha	300.00	1200.00	0.00	0.00	Maintaineance of canal - 37 works	37	1200	18	0	18 works completed	1 year	

Annexure I

FORMAT OF TABLES IN CHAPTER III OF PERFORMANCE BUDGET 2023- 24

Irrigation (Project I) **Rupees in lakh**

Sl.No.	Name of the Scheme	Objectives	Outlay 2023-24				Quantifiable Deliverables/Physical outputs	Target Fixed		Target Achieved		Projected outcomes	Period of implementation	Remarks/Risk factors
			Non plan Budget	Plan Budget	Complementary Extra Budgetary Resources	Central Assistance if any		Physical	Financial	Physical	Financial			
1	2	3	4(i)	4(ii)	4(iii)	4(iv)	5	6		7		8	9	10
3	CADA field chanels	Modernisation of CADA Field channel	0	800.00	0	0	Rectification & Renovation of field chanels	75 works	788	67	665.91	67 works completed	1 year	Remaining works are under various stages of completion.
4	Karapuzha Irrigation Project	To irrigate ayacut area of 5221 ha. through canal system	0	2000	0	0	Water Distribution is ongoing through total length of 8.805km LBMC-16.74 km, Kariambady Branch canal 8.500 km (Trial run) from RBMC and Arimunda Distributory from RBMC 2.12 km and Trial run (100%) up to 2.801 km Kolliyil Branch canal also. Arrangements made to start the formation of 5 distributory canals offtaking from RBC- Branch canal.	44 works	2000	22	871.60	3 works have been completed	Project was partially commissioned in 2010. Project is proposed to be completing in December 2025 as per the direction of State Planning Board.	Slow Progress in Land Acquisition Process

Annexure I

FORMAT OF TABLES IN CHAPTER III OF PERFORMANCE BUDGET 2023- 24

Irrigation (Project I) **Rupees in lakh**

Sl.No.	Name of the Scheme	Objectives	Outlay 2023-24				Quantifiable Deliverables/Physical outputs	Target Fixed		Target Achieved		Projected outcomes	Period of implementation	Remarks/Risk factors
			Non plan Budget	Plan Budget	Complementary Extra Budgetary Resources	Central Assistance if any		Physical	Financial	Physical	Financial			
1	2	3	4(i)	4(ii)	4(iii)	4(iv)	5	6		7		8	9	10
5	Kuttiyadi irrigation project	Improvement of Canal	289.15	500	0	0	Completion of 49 works for Improvement of Canal	48 works	300	48	269.38	47 works completed	1 years	All canal improvement works has been completed.
6	Pazhassi Irrigation Project	Introduction of re-commissioning project by the end of december 2025	50	1000	0	0	Re- commissioning project	34 works	1000	31 works	671.59	11 works completed	Recommissioning may be made by end of the december 2025	36 works have been awarded and 9 works completed. Remaining works are in progress.
7	Kanhirappuzha Irrigation Project	Works relating to Kanhirappuzha Irrigation Projects	150	1000	0	0	Works for smooth water distribution & improve (efficiency of canal and strengthening related structures)	23 works	1000	23 Works Tendered, 6 works completed, 17 works in progress	0	0		

Annexure I

FORMAT OF TABLES IN CHAPTER III OF PERFORMANCE BUDGET 2023- 24

Irrigation (Project I) **Rupees in lakh**

Sl.No.	Name of the Scheme	Objectives	Outlay 2023-24				Quantifiable Deliverables/Physical outputs	Target Fixed		Target Achieved		Projected outcomes	Period of implementation	Remarks/Risk factors
			Non plan Budget	Plan Budget	Complementary Extra Budgetary Resources	Central Assistance if any		Physical	Financial	Physical	Financial			
1	2	3	4(i)	4(ii)	4(iii)	4(iv)	5	6		7		8	9	10
8	Attappady Irrigation Project	AIP Construction of protection wall and providing safety measures to Goolikkadavu Chittur road	0	50	0	0	Construction of protection wall and providing safety measures to Goolikkadavu Chittur road work	2 works	50	2	72.02		1 year	
9	Chamravattom Project	Routine maintenance	0	250	0	0	Maintenance of RCB	4 works	250	0	947.29			
	Total		**789.15**	**8600**	**0**	**0**			**8388**		**4897.24**			

Annexure I

FORMAT OF TABLES IN CHAPTER III OF PERFORMANCE BUDGET 2023-24

Irrigation (Project II) **Rupees in lakh**

Sl. No	Name of the scheme	Objectives	Outlay 2023-24				Quantifiable Deliverables / Physical outputs	Target fixed		Target Achieved		Projected Outcomes	Period of implementation	Remarks/ Risk factors
			Non Plan Budget	Plan Budget	Complementary Extra Budgetary Resources	Central Assistance if any		Physical	Financial	Physical	Financial			
1	2	3	4 (i)	4(ii)	4 (iii)	4 (iv)	5	6		7		8	9	10
1	Muvattupuzha Valley Irrigation Project	To achieve 18237 ha		487				856 ha	487		1146.11			DPR for balance works of 4 reaches of Karikode distributary amounting ₹3650 lakh has been submitted to NABARD for approval
2	Pambar Basin Projects	Utilisation of 3 TMC water allocated as share of Kerala from Pambar basin as per final verdict of Cauvery Water Dispute Tribunal.- Pattissery Dam		1450				240 ha	1450		136.16			Govt have accorded sanction to a rate enhancement in the manner of DSR 2018 estimate +20% excess + GST to the Contractor. Accordingly TS committee meetting held on 15/03/2024, and approved the 4 th Revised Estimate for a total amount of ₹6035 lakh -. Now the works of Pattissery dam is in progress.
3	Idamalayar Irrigation Project	Idamalayar Irrigation project is a diversion scheme to the right side of Bhoothathankettu barrage in Periyar river for utilising water of Periyar river for irrigating 14394 ha of ayacut coming in Periyar and Chalakudy basins.		489.32			To acheive an ayacut of 8393 ha and construction of 74m LLC and link canal. Fund utilised for the rectification and maintenace of canals and reconstruction works of office building and quarters	8393 ha		4315 ha.	489.32	Irrigated 8393 ha ayacut area		The Government have declared to complete and commission IIP in the year 2025 for which link canal is required to be completed on war footing. Steps are being taken to submit a revised detailed project report to obtain NABARD assistance within the specified time frame.
4	Wadakkanchery	To increase the drinking water facility & agricultural purpose	69.9				9 works	100%	69.9	4 works completed	6.79			

Annexure I

FORMAT OF TABLES IN CHAPTER III OF PERFORMANCE BUDGET 2023-24

Irrigation (Project II) **Rupees in lakh**

Sl. No	Name of the scheme	Objectives	Outlay 2023-24				Quantifiable Deliverables / Physical outputs	Target fixed		Target Achieved		Projected Outcomes	Period of implementation	Remarks/ Risk factors
			Non Plan Budget	Plan Budget	Complementary Extra Budgetary Resources	Central Assistance if any		Physical	Financial	Physical	Financial			
1	2	3	4 (i)	4(ii)	4 (iii)	4 (iv)	5	6		7		8	9	10
5	Chimmoni Scheme - Maintenance	To increase the drinking water facility & agricultural purpose	75				10 works	100%	75	Ongoing				
6	Cheerakuzhy Scheme Maintenance	To increase the drinking water facility & agricultural purpose	147				17 works	100%	147	15 works completed	42.86			
7	Maintenance & Repair of irrigation works	Improving Irrigation facilities	273.88				63 works	100%	273.88	31 works completed	87.484			
8	Kallada Irrigation Project	To increase the drinking water facility & agricultural purpose	210.426					100%						
9	Neyyar Irrigation Project	Improving Irrigation facilities	350					7500 ha	350	1500	25	7500 ha	1 year	Heavy growth of vegetation and siltation of canals. Change in bed levels of canals which requires bed correction.
	Total		**1126.21**	**2426.32**					**2852.78**		**1933.724**			

Annexure I

FORMAT OF TABLES IN CHAPTER III OF PERFORMANCE BUDGET 2023-24

Irrigation (Kuttanad Package) **Rupees in lakh**

Sl No	Name of Scheme	Objectives	Outlay 2023-24				Quantitiable Deliverables/ Physical Outputs	Target Fixed		Target Achieved		Projected Outcomes	Period of Implementation	Remarks/ Risk Factors
			Non Plan Budget	Plan Budget	Complementary Extra Budgetary Resources	Central Assistance if any		Physical	Financial	Physical	Financial			
1	2	3	4(i)	4(ii)	4(iii)	4(iv)	5	6		7		9	9	10
1	PMSKY-Kuttanad Flood Management Competent 50%	Mitigation of flood and prevention of salinity in 5587 ha Paddy field in Kuttanad	0	120	0	0	construction of outer bund including Crossdrainage structures	Nil	Nil	Nil	151.85		Upto 2019	The scheme was completed on 31.12.2019.The expenditure incurred is to clear the previous pending bills
	Kuttanad Package--Modernisation of Thanneermukkom Barrage-Construction of Central Portion (3rd stage)	Mitigation of Flood, Prevention of Salt Water Intrusion.					Mitigation of Flood, Prevention of Salt Water Intrusion.					Protection of 7076.37 ha area of paddy from flood. Prevention of salt water intrusion of 39400 ha area of paddy.	1 year	97% work completed. Balance work can be executed only after decision of the government regarding ownership of soil.

Annexure I

FORMAT OF TABLES IN CHAPTER III OF PERFORMANCE BUDGET 2023-24

Irrigation (Kuttanad Package) **Rupees in lakh**

Sl No	Name of Scheme	Objectives	Outlay 2023-24				Quantitiable Deliverables/ Physical Outputs	Target Fixed		Target Achieved		Projected Outcomes	Period of Implementation	Remarks/ Risk Factors
			Non Plan Budget	Plan Budget	Complementary Extra Budgetary Resources	Central Assistance if any		Physical	Financial	Physical	Financial			
1	2	3	4(i)	4(ii)	4(iii)	4(iv)	5	6		7		9	9	10
2	Flood Management Programme in Kuttanad	Mitigation of flood, providing infrastructural facilities to padashekarams.		3700		0	Contruction of outer bund includin gcross drainage structures and other infrastructure facilities for improving irrigation	Outer bund-35555 m,desilting 3500m.	3700	3765m length of bund completed.	2087.9	Protection of 7076.37 ha area of paddy from flood damages	1 year	Out of 117 total works 45 works are on going.1 work completed. The remaining are under tender process.
3	NABARD-RIDF Assistance for Kuttanad	Mitigation of flood, providing infrastructural facilities to padashekarams.	0	10000		0	DPR has been submitted for AS	NA	NA	0	1332.1			Expenditure incurred is for spillover works
	TOTAL			**13820**							**3571.93**			

Annexure I

FORMAT OF TABLES IN CHAPTER III OF PERFORMANCE BUDGET 2023-24

Irrigation Design and Research Board (IDRB)

Rupees in lakh

Sl. No.	Name of Scheme/ Programme	Objective	Outlay 2023-2024				Quantifiable / Deliverable / Physical outputs	Target fixed		Target Achieved		Projected outcomes	Period of implementation	Remarks/Risk factor
			Non Plan Budget	Plan Budget	Complementary Extra Budgetary Resources	Central Assistance if any		Physical	Financial	Physical	Financial			
1	2	3	4 (i)	4 (ii)	4 (iii)	4 (iv)	5	6		7		8	9	10
1	Modernisation of hydrology information system	Modernisation of the existing Hydro-Meterological stations for collecting data in time for developing warning systems for extreme events like flood and drought. Procurement of hydro-meterological equipments and renovation of data centers, and annual maintenance of Kerala WRIS website are planned under this scheme.	Nil	110	Nil	Nil	FS has been issued for ₹ 79.016 lakh		110.00					

Annexure I

FORMAT OF TABLES IN CHAPTER III OF PERFORMANCE BUDGET 2023-24

Irrigation Design and Research Board (IDRB)

Rupees in lakh

Sl. No.	Name of Scheme/ Programme	Objective	Outlay 2023-2024				Quantifiable / Deliverable / Physical outputs	Target fixed		Target Achieved		Projected outcomes	Period of implementation	Remarks/Risk factor
			Non Plan Budget	Plan Budget	Complementary Extra Budgetary Resources	Central Assistance if any		Physical	Financial	Physical	Financial			
1	2	3	4 (i)	4 (ii)	4 (iii)	4 (iv)	5	6		7		8	9	10
2	Modernisation of Design Wing	Institutional strengthening of IDRB,KERI & Subordinate offices viz quality control wings,Coastal Erosion Field Studies	Nil	200	Nil	Nil	No of items/works -88 completed-52 ongoing -36	Completion of 52 Nos of work out of 88 sanctioned	200.00	*Purchase of modern equipments for labs,renovation of lab buildings under quality control wing, *Purchasing of Softwares for GIS and Topographic Survey *Routine Activities of various offices * upkeep of office building * Training on reservoir sedimentation analysis using remote sensing methods *Procurement of concrete cover meter and rebar locator *Purchase of survey equipments including hand-held GPS ,Electronic self recording Staff gauge for Coastal Engineering Sections	184.63	Infrastructure development of KERI&IDRB ,Quality control wing and CEFS .Conducted 1619 nos of quality control inspections and conducted 1324 quality control tests.		Due to treasury regulations, adequate funds were not received in time.
3	Dam safety Organisation & Dam Safety Measures	Inspection of dams,technical visits, expenditure of training programmes, conducting seminars	NIL	10	Nil	Nil	Inspection of dams,technical visits, conducting /attending training programmes	Various trainings & technical visits	10.00	Expenses related to trainings	5.13	Capacity building	2023-24	Since major training and inspections are carried out under DRIP, expenditure is less

Annexure I

FORMAT OF TABLES IN CHAPTER III OF PERFORMANCE BUDGET 2023-24

Irrigation Design and Research Board (IDRB)

Rupees in lakh

Sl. No.	Name of Scheme/ Programme	Objective	Outlay 2023-2024				Quantifiable / Deliverable / Physical outputs	Target fixed		Target Achieved		Projected outcomes	Period of implementation	Remarks/Risk factor
			Non Plan Budget	Plan Budget	Complementary Extra Budgetary Resources	Central Assistance if any		Physical	Financial	Physical	Financial			
1	2	3	4 (i)	4 (ii)	4 (iii)	4 (iv)	5	6		7		8	9	10
4	Mullaperiyar Project- Dam and appurtenant works	This scheme intends to the Environmental Impact Assessment(EIA) study of Proposed new dam at Mullaperiyar and other works related to Mullaperiyar Dam.	Nil	50	Nil	Nil	Completion of EIA study of New Mullaperiyar Dam	EIA study of new Mullaperiyar Dam	50.00	Payment made for the submission of draft EIA report	33.63	EIA study of new Mullaperiyar Dam		The work of EIA study of new Mullaperiyar Dam has been awarded to M/s Pragathi Labs & Consultants. As per agreement conditions ,payment is scheduled on the completion of each milestone.
5	Investigation of Irrigation Schemes	Main objective of the Scheme is the Investigation Works of various projects/schemes coming under Irrigation department.	Nil	220	Nil	Nil	Issuing Financial sanction for investigation works as per the budget allocation	Issuing Financial sanction for allocated amount	220.00	FS issued for 42 investigation works	217.72	Sanctioning investigation estimates	1 year	

Annexure I

FORMAT OF TABLES IN CHAPTER III OF PERFORMANCE BUDGET 2023-24

Irrigation Design and Research Board (IDRB)

Rupees in lakh

Sl. No.	Name of Scheme/ Programme	Objective	Outlay 2023-2024				Quantifiable / Deliverable / Physical outputs	Target fixed		Target Achieved		Projected outcomes	Period of implementation	Remarks/Risk factor
			Non Plan Budget	Plan Budget	Complementary Extra Budgetary Resources	Central Assistance if any		Physical	Financial	Physical	Financial			
1	2	3	4 (i)	4 (ii)	4 (iii)	4 (iv)	5	6		7		8	9	10
6	Dam Safety Organisation & Dam Safety Measures-4700-80-800-97	Rectification of urgent emergency work of Dams	NIL	240	Nil	Nil	Rectification/urgent emergency works and other safety works in dams	Targeted to achieve expected progress	240.00	Rectification/maintenance works in dams/barrages/regulator viz. Neyyar,Maniyar,Malankara,Chimmoni,Peechi,Malampuzha,Mangalam, Pothundi, Karapuzha,Kanjirapuzha,Walayar,Kuttiyadi,Meenkara,Chulliyar, Moolathara and Pazhassi were arranged	214.43	Rectification of urgent emergency works and other safety works of Dams	2023-24	Since major works are being undertaken under DRIP, minor and other emergency maintenance works are being carried out under this head of Account.

Annexure I

FORMAT OF TABLES IN CHAPTER III OF PERFORMANCE BUDGET 2023-24

Irrigation Design and Research Board (IDRB)

Rupees in lakh

Sl. No.	Name of Scheme/ Programme	Objective	Outlay 2023-2024				Quantifiable / Deliverable / Physical outputs	Target fixed		Target Achieved		Projected outcomes	Period of implementation	Remarks/Risk factor
			Non Plan Budget	Plan Budget	Complementary Extra Budgetary Resources	Central Assistance if any		Physical	Financial	Physical	Financial			
1	2	3	4 (i)	4 (ii)	4 (iii)	4 (iv)	5	6		7		8	9	10
7	Dam Rehabilitation and Improvement Project (DRIP PHASE II)	DRIP Phase II- Rehabilitation and Improvement of basic facilities of 15 Dam projects	NIL	4000	-	NIL	Works to be completed: 1. Spillover work under DRIP Phase I- Construction of DSHQ building at PMG, TVM 2. Spillover works- Rehabilitation works of Kallada Dam - Epoxy plastering - Civil work 3. Rehabilitation works of Maniyar Barrage (Mechanical & Electrical) 4. Rehabilitation of Karapuzha Dam - Civil Work 5. Rehabilitation works of Malankara 6. Spillover work under DRIP Phase I viz Instrumentation of 16 dams under Irrigation Department (Operational Testing)	Completion of works under A; Achieving milestones for works under B; Tendering/re-tendering of works under C	4000.00	2 Works have been completed. 7 Works are in progress . 1 work was awarded	1132.50	Rehabilitation and Improvement of basic facilities of Dam projects	2021-27	Delay from part of Contractor & unexpected rainfall delayed the progress

Annexure I

FORMAT OF TABLES IN CHAPTER III OF PERFORMANCE BUDGET 2023-24

Irrigation Design and Research Board (IDRB)

Rupees in lakh

Sl. No.	Name of Scheme/ Programme	Objective	Outlay 2023-2024				Quantifiable / Deliverable / Physical outputs	Target fixed		Target Achieved		Projected outcomes	Period of implementation	Remarks/Risk factor
			Non Plan Budget	Plan Budget	Complementary Extra Budgetary Resources	Central Assistance if any		Physical	Financial	Physical	Financial			
1	2	3	4 (i)	4 (ii)	4 (iii)	4 (iv)	5	6		7		8	9	10
8	Flood Early Warning System	Installation of Real Time Data Acquisition System (RTDAS) in river basins of Kerala	Nil	90	Nil	Nil	Installation of ARG- 2 no.s Installation of RLS- 8 no.s Installation of AWS- 1 no.	Completion of all 11 stations	85.30	Nil	0.00	The subject work would have improved the hydro-met data collection and disaster management capabilities of Irrigation Department	4 months	
9	Formation of River Basin Organisation	Physical Survey and collecting the Field Data for coastal erosion studies.	Nil	100	Nil	Nil	Physical Survey and collecting the Field Data for coastal erosion studies.	*Study of Kerala Coastal belt -Conducting Physical Survey and Collecting field data under various section offices of CEFS Division , Thrissur	100.00	Study of Kerala Coastal belt	71.00	Shore line datas,Wave data,Littorial drift,Particle size distribution of soil samples of Kerala coast.Datas used for coastal protection work by different agencies like NCCR,CWPRS	1 year	Due to treasury regulations, adequate funds were not received in time

Annexure I

FORMAT OF TABLES IN CHAPTER III OF PERFORMANCE BUDGET 2023-24

Irrigation Design and Research Board (IDRB)

Rupees in lakh

Sl. No.	Name of Scheme/ Programme	Objective	Outlay 2023-2024				Quantifiable / Deliverable / Physical outputs	Target fixed		Target Achieved		Projected outcomes	Period of implementation	Remarks/Risk factor
			Non Plan Budget	Plan Budget	Complementary Extra Budgetary Resources	Central Assistance if any		Physical	Financial	Physical	Financial			
1	2	3	4 (i)	4 (ii)	4 (iii)	4 (iv)	5	6		7		8	9	10
10	Development of Kerala Engineering Research Institute - Stage II	Upgradation of KERI and Research activities	Nil	110	Nil	Nil	Total works -29 completed-20		110.00	*Procurement and up gradation of modern equipments * Purchase of software *Physical Infrastructure Development of Coastal Engineering Division *Routine maintenance of Meterological station , Kerala model *Soil investigation works for the irrigation/ water storage structures, *Sedimentation of various reservoirs * Training programmes *Model study of Dams, *Investigation survey using smart station * Topographic survey works *Topography survey of dams etc. *Charges towards NABL Accreditation 2023-24	76.88	*Soil investigation works for the proposed irrigation/ water storage structures *Up gradation of construction materials and soil mechanics laboratories to NABL accreditation standards*Qty of Sediment calculation of reservoirs * Trained staff *Model study of Dams * Investigation reports of Topographic survey works	1 year	* KERI is executing works departmentally, Treasury regulations in sanctioning work advance affected the smooth execution of projects. * National level suppliers are not willing to participate in the Government tenders (Pending bill amount of 18.7792 lakhs during FY 23-24)
	Total			**5130**					**5125**		**1,935.92**			

Annexure - 1

FORMAT OF TABLES IN CHAPTER III OF PERFORMANCE BUDGET 2023-24

Groundwater Department **Rupees in lakh**

Sl.No.	Name of the Scheme	Objectives	Outlay 2023-24				Quantifiable Deliverables/ Physical outputs	Target fixed		Target achieved		Projected outcomes	Period of impementation	Remarks /Risk Factor
			Non Plan Budget	Plan Budget	Complementary Extra Budgetary Resources	Central Assistance if any		Physical	Financial	Physical	Financial			
1	2	3	4(i)	4(ii)	4(iii)	4(iv)	5	6		7		8	9	10
1	Groundwater investigation and development	Investigation of groundwater resources, estimation of groundwater, construction of groundwater abstraction structures (borewell, tube well, Filter point well), preparation of hydrogeological reports, pumping test analysis, data collection of groundwater, data analysis and water quality studies are being carried out under the scheme. Procurement of machineries and accessories and materials for well construction, maintenance of machineries and vehicles, procurement of new vehicles, procurement of IT hardware and softwares,Geophysical equipment and other field related instruments, chemicals for labs has also been included under the scheme	Nil	1500	Nil	Nil	All the programmes are demand based. The physical outputs proposed are Groundwater Investigation , Drilling Well logging Pumping test Analysis, Bore well developing Water sample analysis, Repair and Maintenance of existing machinery, puchase of stores and routine works of the Department	Groundwater Investigation - 9060 Drilling -1296 Well logging - 92 Geophysical - 84 Pumping test Analysis - 964 Bore well developing - 522 Water sample analysis - 4268	1500	Groundwater Investigation - 8060 Drilling - 1184 Well logging Geological- 80 Geophysical- 79 Pumping test Analysis - 880 Bore well developing - 462 Water sample analysis - 4086	1303.59	The groundwater investigation and drilling help the public to obtain suitable locations for constructing bore wells/tube wells and other schemes for achieving a safe drinking water source.	1 year.	

Annexure - 1

FORMAT OF TABLES IN CHAPTER III OF PERFORMANCE BUDGET 2023-24

Groundwater Department **Rupees in lakh**

Sl.No.	Name of the Scheme	Objectives	Outlay 2023-24				Quantifiable Deliverables/ Physical outputs	Target fixed		Target achieved		Projected outcomes	Period of impementation	Remarks /Risk Factor
			Non Plan Budget	Plan Budget	Complementary Extra Budgetary Resources	Central Assistance if any		Physical	Financial	Physical	Financial			
1	2	3	4(i)	4(ii)	4(iii)	4(iv)	5	6		7		8	9	10
2	Scheme for Control & Regulation of Ground Water	The objective of the scheme is to enforce Kerala groundwater (control & regulation) Act 2002 to avoid groundwater depletion and to ensure equitable distribution of resources to all sections of the society. Issuance of permits, granting NOCs to drinking water bottling plants and other industries which use groundwater as raw material. Conducting mass awareness programmes on groundwater conservation & management are also included under this scheme.	Nil	50	Nil	Nil	Proper enforcement of ground water act to avoide ground water depletion to ensure equitable distribution of resources to all section of the society.	Mass awareness programmes- 70 nos	50	Issued permits for construction of new well in notified areas- 297 nos Permits issued for conversion -133 nos Conducted Mass awareness programmes - 70 nos GWA Meeting - 2 As part of the 2nd anniversary of the state govt, stalls are arranged in Kannur, Palakkad, Pathanamthitta, Thiruvananthapuram, Idukki & Wayanad district	35.47	Implementing ground water (control and regulation) act 2002	Through out the year	

Annexure - 1

FORMAT OF TABLES IN CHAPTER III OF PERFORMANCE BUDGET 2023-24

Groundwater Department **Rupees in lakh**

Sl.No.	Name of the Scheme	Objectives	Outlay 2023-24				Quantifiable Deliverables/ Physical outputs	Target fixed		Target achieved		Projected outcomes	Period of impementation	Remarks /Risk Factor
			Non Plan Budget	Plan Budget	Complementary Extra Budgetary Resources	Central Assistance if any		Physical	Financial	Physical	Financial			
1	2	3	4(i)	4(ii)	4(iii)	4(iv)	5	6		7		8	9	10
3	Scheme for training personnal	The objectives of the scheme is to provide training	Nil	10	Nil	Nil	To get scientific and administrative skills to Departmental Personnel	Demand based	10	9 numbers of training conducted	3.16	The trainings helped the officers to expose various modern techniques in groundwater investigation and administration	Within the financial year.	

Annexure - 1

FORMAT OF TABLES IN CHAPTER III OF PERFORMANCE BUDGET 2023-24

Groundwater Department **Rupees in lakh**

Sl.No.	Name of the Scheme	Objectives	Outlay 2023-24				Quantifiable Deliverables/ Physical outputs	Target fixed		Target achieved		Projected outcomes	Period of impementation	Remarks /Risk Factor
			Non Plan Budget	Plan Budget	Complementary Extra Budgetary Resources	Central Assistance if any		Physical	Financial	Physical	Financial			
1	2	3	4(i)	4(ii)	4(iii)	4(iv)	5	6		7		8	9	10
4	Scheme for groundwater conservation and recharge	This scheme envisages construction of artificial recharge structures to augment ground water level, borewell recharge. Small check dams are being constructed under the scheme.	Nil	900	Nil	Nil	Constuction of different groundwater conservation structures to achieve sustainable groundwater development	Constuction of 224 nos of different groundwater conservation structures to achieve sustainable groundwater development	900	Open well recharge/ Recharge pit scheme- 70 nos. Borewell recharge - 5 nos small check dam -3 nos renovation of pond - 1.	272.76	The recharge structures helps to recharge the groundwater and thereby enhance water table of the area through which aquifer sustainability can be attained		

Annexure - 1

FORMAT OF TABLES IN CHAPTER III OF PERFORMANCE BUDGET 2023-24

Groundwater Department **Rupees in lakh**

Sl.No.	Name of the Scheme	Objectives	Outlay 2023-24				Quantifiable Deliverables/ Physical outputs	Target fixed		Target achieved		Projected outcomes	Period of impementation	Remarks /Risk Factor
			Non Plan Budget	Plan Budget	Complementary Extra Budgetary Resources	Central Assistance if any		Physical	Financial	Physical	Financial			
1	2	3	4(i)	4(ii)	4(iii)	4(iv)	5	6		7		8	9	10
5	Groundwater based drinking water scheme (2702-02-103-99)	The main objective of the scheme is to provide drinking water supply to non-covered/partially covered habitats, 25 to 100 families benefited by one scheme. Renovation of Mini Water Supply Schemes, Hand Pump Repair under the scheme.	Nil	158	Nil	Nil	To provide drinking water in non covered or partially covered habitats	Renovation of MWSS-28 Nos, Hand Pump repair - 25 nos Renovation of existing ground water conservation structures - 60	158	Renovation of MWSS - 20 nos Hand Pump repair - 21 nos, Hand pump scheme - 2 nos renovation of artificial Recharge Scheme: 17	69.89	1100 families, 4 institutions	Within the financial year.	
6	Groundwater based drinking water scheme (4702-00-102-94)	Mini water supply schemes are implemented where the bore wells drilled have high yield whereas hand pump schemes are implemented in low yielding wells. The completed schemes will handed over to the beneficiary committee who in turn operate and maintain the schemes.	Nil	400	Nil	Nil	To provide drinking water in non covered or partially covered habitats	Implementation of MWSS-60 nos, borewell / Tube well construction-90 nos etc..HP Scheme 15 nos	400	Mini water supply schemes - 49 nos, Bore well construction - 75 nos.	325.17	956 families, 12 institution,	Within the financial year.	
	Total			**3018**					**3018**		**2010.04**			

Annexure II

Trends in Expenditure vis-a-vis Budget Estimates/Revised Estimates/ Actual Expenditure in recnet years of PLAN Schemes

Irrigation (I &A) **Rupees in lakh**

Sl No.	Scheme/Programme	Major Head	Budget Estimates				Revised Estimates			Actual Expenditure		
			2021-22	2022-23	2023-24	2024-25	2021-22	2022-23	2023-24	2021-22	2022-23	2023-24
1	2	3	4	5	6	7	8	9	10	11	12	13
1	Medium Irrigation-Plan	2701	120	120	120	120	130	85	52	125	85	115
2	Flood Control and Drainage-Capital Outlay - Plan	4711	10150	1654	1654	154	3831	4682	1654	4071	4681	3525
4	Major Head Flood Control	2711	57	53	53	1553	0	57	53	0	37	47
5	Medium Irrigation-Capital Outlay-Plan	4701	500	500	500	500	0	500	500	0	0	0
6	Minor Irrigation-Plan	2702	700	500	500	500	815	900	789	1165	897	600
7	Minor Irrigation-Capital Outlay - Plan	4702	14640	14140	14140	12900	14374	17499	18140	13584	17288	18418
Total			**26167**	**16967**	**16967**	**15727**	**19149**	**23723**	**21188**	**18944**	**22987**	**22705**

Annexure II

Trends In Expenditure vis-a-vis Budget Estimates/Revised Estimates/Actual Expenditure in recent years of PLAN schemes

Irrigation (Project I) **Rupees in lakh**

Sl.No	Scheme/Programme	Major Head	Budget Estimate				Revised Estimates			Actual Expenditure		
			2021-22	2022-23	2023-24	2024-25	2021-22	2022-23	2023-24	2021-22	2022-23	2023-24
1	2	3	4	5	6	7	8	9	10	11	12	13
1	Banasura sagar project	4700	1200	1200	1800	2500	1200	1200	1500	400	543	1414
2	Chittur puzha project	4700	1300	1200	1200	1200	1300	1200	1200	0	0	0
3	Karapuzha Project Division	4701	1600	1700	2000	3200	1222	1800	1300	1263	1613	882
4	Renovation of KyIP	4700	200	300	500	500	640	300	500	636	269	500
5	Pazhassi Project	4700	500	1000	1000	1300	450	800	900	446	672	860
6	CADA Works - Modernisation of field channels in Irrigation Projects	4701	600	800	800	1110	1050	800	1250	1029	666	1230
7	Cheramangalam Scheme (NIRA) -Improvements to anicut and its allied structures and improvements of canals	4701	0	250	250	250	500	200	250	494	202	215
8	Attappady Irrigation Project	4701	100	50	50	50	80	100	50	79	72	45
9	Kanhirappuzha Irrigation Project	4700	1200	1000	1000	1000	150	100	1000	0	16	0
10	Chamravattom RCB	4701	400	250	250	250	166	950	650	122	947	625
Total			**7100**	**7750**	**8850**	**11360**	**6766**	**7450**	**8600**	**4470**	**5000**	**5772**

Annexure II

Trends in Expenditure vis-a-vis Budget Estimates/ Revised Estimates / Actual Expenditure in recent years of PLAN Schemes

Irrigation (Project II) **Rupees in lakh**

No.	Scheme/Programme	Major Head	Budget Estimates				Revised Estimates			Actual Expenditure		
			2021-22	2022-23	2023-24	2024-25	2021-22	2022-23	2023-24	2021-22	2022-23	2023-24
1	2	3	4	5	6	7	8	9	10	11	12	13
1	Idamalayar Project	4700	2000	2100	1000	500	2011	1844	1637	2422	2001	1645
2	Muvattupuzha Valley Irrigation Project	4700	2349	407	372	365	3307	2998	2359	3051	3196	2238
3	Pambar Basin Project	4701	1600	1450	1450	3900	1480	817	2120	1402	770	170
4	Meenachil River Valley Project	4700	0	0	300	300	0	0	300	0	8	0
Total			**5949**	**3957**	**3122**	**5065**	**6798**	**5659**	**6416**	**6875**	**5975**	**4053**

Annexure II

Trends in Expenditure vis-à-vis Budget Estimates/Revised Estimates /Actual Expenditure in recent years of PLAN Schemes

Irrigation (Kuttanad Package) **Rupees in lakh**

Sl No.	Scheme/Programme	Major Head	Budget Estimates				Revised Estimates			Actual Expenditure		
			2021-22	2022-23	2023-24	2024-25	2021-22	2022-23	2023-24	2021-22	2022-23	2023-24
1	2	3	4	5	6	7	8	9	10	11	12	13
1	PMKSY	4711	1100	1100	1120	800	1100	1100	1120	1265	454	152
2	Kuttanad Flood Management Programme	4711	3000	3300	3700	5700	3000	5300	4700	3191	2327	2088
3	NABARD -RIDF	4711	2900	5400	10000	10000	2900	5400	10000	0	1245	1332
4	Border Area Programme	4711	5000	0	0	0	50	0	0	0	0	0
Total			**12000**	**9800**	**14820**	**16500**	**7050**	**11800**	**15820**	**4457**	**4026**	**3572**

Annexure II

Trends in Expenditure vis-a-vis Budget Estimates/ Revised Estimates / Actual Expenditure in recent years of PLAN Schemes

Irrigation Design and Research Board **Rupees in lakh**

No.	Scheme/Programme	Major Head	Budget Estimates				Revised Estimates			Actual Expenditure		
			2021-22	2022-23	2023-24	2024-2025	2021-22	2022-23	2023-24	2021-22	2022-23	2023-24
1	2	3	4	5	6	7	8	9	10	11	12	13
1	Modernisation of Hydrology Information System	2701	100	100	110	110	100	100	110	99	46	64
2	Modernisation of Design Wing	2701	150	200	200	200	150	200	200	109	89	185
3	Investigation and Design	2701		0				0	0	4	0	
4	Dam safety Organisation & Dam Safety Measures	2701	10	10	10	5	10	10	10	3	3	5
5	Mullaperiyar Project- Dam and appurtenant works	4700	100	50	50	50	100	50	50	3	16	34
6	Investigation of Irrigation Schemes	4700	250	220	220	234	250	220	220	135	149	106
7	Dam safety Organisation & Dam Safety Measures	4700	230	240	240	495	230	240	240	246	237	214
8	Flood Early Warning System	4701	-	50	90	100	-	50	90	0	50	-
9	Dam Rehabilitation and Improvement Project Phase II	4701	4000	3000	4000	3000	4000	3000	4000	732	1972	1133
10	Dam Rehabilitation and Improvement Project-Phase I	4701	2500	0	0		2500		0	772		
11	Bench marking of Irrigation Systems	4701	50	40			50	40	0	0	0	
12	Formation of River Basin Organisation	4701	150	100	100	100	150	100	100	100	62	71

Annexure II

Trends in Expenditure vis-a-vis Budget Estimates/ Revised Estimates / Actual Expenditure in recent years of PLAN Schemes

Irrigation Design and Research Board **Rupees in lakh**

No.	Scheme/Programme	Major Head	Budget Estimates				Revised Estimates			Actual Expenditure		
			2021-22	2022-23	2023-24	2024-2025	2021-22	2022-23	2023-24	2021-22	2022-23	2023-24
1	2	3	4	5	6	7	8	9	10	11	12	13
13	Post Facto Evaluation Studies	4701	105	70	50	26	105	70	50	0	0	21
14	Development of KERI-Stage -II	4701	150	100	110	110	150	100	110	141	65	77
Total			**7795**	**4180**	**5180**	**4430**	**7795**	**4180**	**5180**	**2344**	**2690**	**1909**

Annexure II

Trends in Expenditure vis-à-vis Budget Estimates / Revised Estimates / Actual Expenditure in recent years of PLAN Schemes

Groundwater Department **Rupees in lakh**

Sl No	Scheme / Programme	Major Head	Budget Estimates				Revised Estimates			Actual Expenditure		
			2021-22	2022-23	2023-24	2024-25	2021-22	2022-23	2023-24	2021-22	2022-23	2023-24
1	2	3	4	5	6	7	8	9	10	11	12	13
1	Groundwater investigation & development	2702	1150	1500	1500	2200	1150	1500	1500	851	836	1304
2	Scheme for groundwater control & regulation	2702	25	50	50	50	25	50	50	22	33	35
3	Scheme for training of personnel	2702	5	10	10	10	5	10	10	5	1	3
4	Groundwater based drinking water scheme	2702	100	158	158	158	100	158	158	100	131	70
5	Scheme for groundwataer conservation and recharge	4702	1000	900	900	600	898	900	900	475	541	273
6	Groundwater based drinking water scheme	4702	300	400	400	400	402	400	400	398	397	325
7	Modernisation of three labs and NABL accreditation	4702	0	0	0	100	0	0	0	0	0	0
Total			**2580**	**3018**	**3018**	**3518**	**2580**	**3018**	**3018**	**1851**	**1937**	**2010**

Annexure II of Chapter VI

Trends in Expenditure vis-a-vis Budget Estimates/ Revised Estimates / Actual Expenditure in recent years of PLAN Schemes

Kerala Water Authority **Rupees in lakh**

Sl No.	Scheme/ Programme	Major Head	Budget Estimates				Revised Estimates			Actual Exenditure		
			2021-22	2022-23	2023-24	2024-25	2021-22	2022-23	2023-24	2021-22	2022-23	2023-24
1	2	3	4	5	6	7	8	9	10	11	12	13
1	Survey & Investigation	2215	100	110	110	110	91	71	69	91	71	69
2	NABARD Assisted RWSS	4215	5180	8020	8000	7000	8343	3898	2001	8526	3999	4905
3	Manufacturing units for Bottled water	2215	90	90		64	63	0	38	63		38
4	Renovation of Existing Civil structures owned by KWA	2215	300	500	500	300	771	186	311	767	186	311
5	Sewerage scheme of Kerala Water Authority	4215	2460	3005	3405	3500	1758	1025	2212	1758	928	2212
6	Rehabilitation /Improvement of UWSS	4215	4500	4500	4500	3400	645	326	2663	645	326	2663
7	Modernisation of Aruvikkara Pumping Station	4215	100	100	100	100	99	4	75	99	4	75
8	Rural Water Supply Scheme	4215	1000	1000	1000	1000	5620	432	1438	5619	432	1438
9	E.governance, GIS and information management	2215	100				90			99		
10	Innovative technologies and Modern Management Practices	2215	100	100	100	100	90	23	80	91	23	80
11	Drinking water Drought Mitigation	2215	1000	1000	1000	750	1000	627	649	997	627	649
12	Source Improvement and water Conservation	4215	200	200	200	200	190	18	174	180	18	174
13	ADB assisted Kerala Urban Water Supply improvement Project - KUWSIP (EAP)	4215	10000	10000	10000	7500		0				
14	Human Resources Devt. Research & Devt & qlty control	4215	100	100	100	100	32	28	48	30	28	48
15	Water Supply Scheme to Specified Inst/ locations	4215	100	200	200	500	96	71	122	96	71	121
16	Optimisation of production and transmission	4215	5000	5000	5000	4500	14724	1929	2714	14774	1929	2712
17	JICA assisted Projects	4215	750	500	500	300	744	163	859	744	163	859

Annexure II of Chapter VI

Trends in Expenditure vis-a-vis Budget Estimates/ Revised Estimates / Actual Expenditure in recent years of PLAN Schemes

Kerala Water Authority **Rupees in lakh**

Sl No.	Scheme/ Programme	Major Head	Budget Estimates				Revised Estimates			Actual Exenditure		
			2021-22	2022-23	2023-24	2024-25	2021-22	2022-23	2023-24	2021-22	2022-23	2023-24
1	2	3	4	5	6	7	8	9	10	11	12	13
18	Works for the prevention of river pollution and creating awareness for the compliance	2215	500	250	250	250		78	118		78	118
19	E -governance GIS and information management	2215		100	100	100		53	38		53	38
20	Energy Efficiency Improvement , Optimisation of Electromechanical items. Safety Audit and Ensuring safety inoperation of WTP and	4215		500	500	500		61	135		61	135
21	Infrastructure development and surveillence activities under quality control wing of KWA	4215		300	300	250		12	95		12	95
22	Enterprise Resource Planning (ERP)	2215		100	100	100		4	63		4	63
23	Jala Jeevan Mission/ NRDWP - Central share	4215	40000	100000	100000	220000	45115	100000	100000	105975	174193	146541
24	Jala Jeevan Mission/ NRDWP - State share	4215	40000	50000	50000	55000	135344	157629	120715	95784	174168	144853
25	Scheme for Special Assistance to States for capitral investment - Water Supply Projects	4215						4793			4793	
TOTAL			**111580**	**185675**	**185965**	**305624**	**214816**	**271433**	**234617**	**236339**	**362169**	**308197**

Annexure II of Chapter VI

Trends in Expenditure vis-a-vis Budget Estimates /Revised Estimates /Actual Expenditure in recent years of PLAN Schemes

Kerala Rural Water Supply and Sanitation Agency **Rupees in lakh**

Sl. No	Scheme/ Programme	Major Head	Budget Estimates				Revised Estimates			Actual Expenditure		
			2021-22	2022-23	2023-24	2024-25	2021-22	2022-23	2023-24	2021-22	2022-23	2023-24
1	2	3	4	5	6	7	8	9	10	11	12	13
1	Scaling up of Rain Water Harvesting and GWR Programme through KRWSA	2215	1000	1000	1000	1000	1000	1000	1000	489	568	527
2	Sustainability Support in Community manged Water Supply Schemes	4215	3000	3000	3090	3090	3000	3000	3090	1008	1911	516
3	Completion of Schemes under Jalanidhi-II project	4215	125	125	125	125	839	125	125	803	123	66
4	Conversion of Homestead Wells into Protected and Sustainable Drinking Water Sources	4215	0	400	400	400	0	400	400	0	35	159
5	Water Quality Monitoring and Subservience & Grey Water Management	4215	0	350	350	350	0	350	350	0	0	0
6	R&D in Rural Water Technologies and Management	4215	0	6	6	6	0	6	6	0	0	3
7	IEC , Capacity Building and Training & Jalasree club	2215	0	15	15	15	0	15	15	0	6	5
8	Rejuvenation of Water bodies for ensuring Source Sustainability of Water Supply Schemes	4215	0	0	0	100	0	0	100	0	0	0
Total			**4125**	**4896**	**4986**	**5086**	**4839**	**4896**	**5086**	**2300**	**2643**	**1277**