KOTTAYAM

One Health
Kerala

KOTTAYAM

Health and Family Welfare Department
Government of Kerala

KERALA HEALTH

Centre for One Health - Kerala
Thycaud, Thiruvananthapuram- 14

January 2026

ONE HEALTH@KOTTAYAM

Health and Family Welfare Department
Government of Kerala

KERALA.HEALTH

Smt. Veena George

Minister for Health &
Family Welfare
and Woman & Child Welfare
Development
Government of Kerala

Message

Kerala's public health achievement is built on a strong foundation of prevention, equity, scientific learning and intersectoral collaboration.   Now it is increasingly evident that the health of humans are deeply interconnected with the animal health and the environment. The *One Health* approach provides a comprehensive framework to address these shared challenges. One Health activities at the district level translates these principles into locally relevant, mutually inclusive, and actionable strategies.

The preparation of this *District One Health* document is a commendable initiative. This document showcases the coordinated surveillance, early warning systems, joint risk assessment, information sharing and integrated response mechanisms involving the health, animal husbandry, environment, agriculture, local self-government and allied departments in the district.

I congratulate the dedicated efforts of all the departments, professionals, academic institutions and partners who have contributed to the successful implementation of One Health activities in the district. Appreciation is due for those who worked to develop this document which will serve as a practical guide for administrators, planners and field-level functionaries.

Together, let us strengthen the One Health approach to protect the health of our people, animals and environment, and to build a safer, more resilient Kerala.

Veena George

Foreword

During COVID pandemic the challenge was accepted and ONE HEALTH program was launched in the four districts of Pamba river basin under Rebuild Kerala Initiative assisted by the World Bank. There were series of actions taken at the State and district level to develop the structures and processes to take up the actions.

The District One Health Document represents a significant step towards our collective commitment to safeguarding the health of people, animals, and the environment. The One Health approach recognizes that these are deeply interconnected, and that sustainable solutions to today's health challenges can only be achieved through collaboration across sectors.

This document showcases our district's journey towards the preparedness, response, and innovations against emerging health threats. It emphasizes the importance of integrated surveillance, coordinated action, and community engagement in addressing zoonotic diseases, environmental hazards, and public health concerns. By strengthening the partnerships among health professionals, veterinarians, environmental experts, and local communities, we aim to build a robust system that protects and promotes well-being for all.

This document further reiterates that the health of humans, animals, and the environment is inseparable, and our future depends on it. We appreciate all stakeholders and contributors who made One Health in the district a reality to safeguard the health of the people, animals and environment.

We acknowledge the dedication of the stakeholders whose contribution, expertise and commitment have ensured that this document is both practical and visionary, offering a roadmap for healthier lives and a safer environment.

The state has already taken a decision to scale up the ONE HEALTH program in all the districts of the State. This document will be handy for the district to go through series of activities and build the capacities in the district. It will act as a tool to achieve the same level of capacity in shorter time period. Through such collective actions the outbreak, epidemic or pandemic, forecasting as well as control and mitigation will be scientific and effective. I look forward to whole hearted cooperation and coordinated efforts of all the functionaries of all the Departments to safeguard human and animal health as well as environment.

Dr Rajan Khobragade IAS
Additional Chief Secretary
Health & Family Welfare and
AYUSH Department
Govt of Kerala.

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OVERVIEW

INTRODUCTION

- Situated in south-central part of the state of Kerala with an area about 2,208 km^2
- Shares boundary with North: Ernakulam district
- East: Idukki district
- South: Pathanamthitta district
- West: Alappuzha district and the backwaters (via Vembanad Lake)
- Low Land, Mid Land, High Land
- Population 2.04 million
- Literacy rate 97.21% hence called Akshara Nagari.
- Major crops are rubber, coconut, cashew, tapioca, paddy and spice

GEOGRAPHY

- Highlands towards the east and Midlands, lowlands and backwaters towards the west.
- Major rivers include the Meenachil River, Muvattupuzha River and Manimala River
- No coastline (i.e., no direct sea-shore)
- Forest area 98 Kha
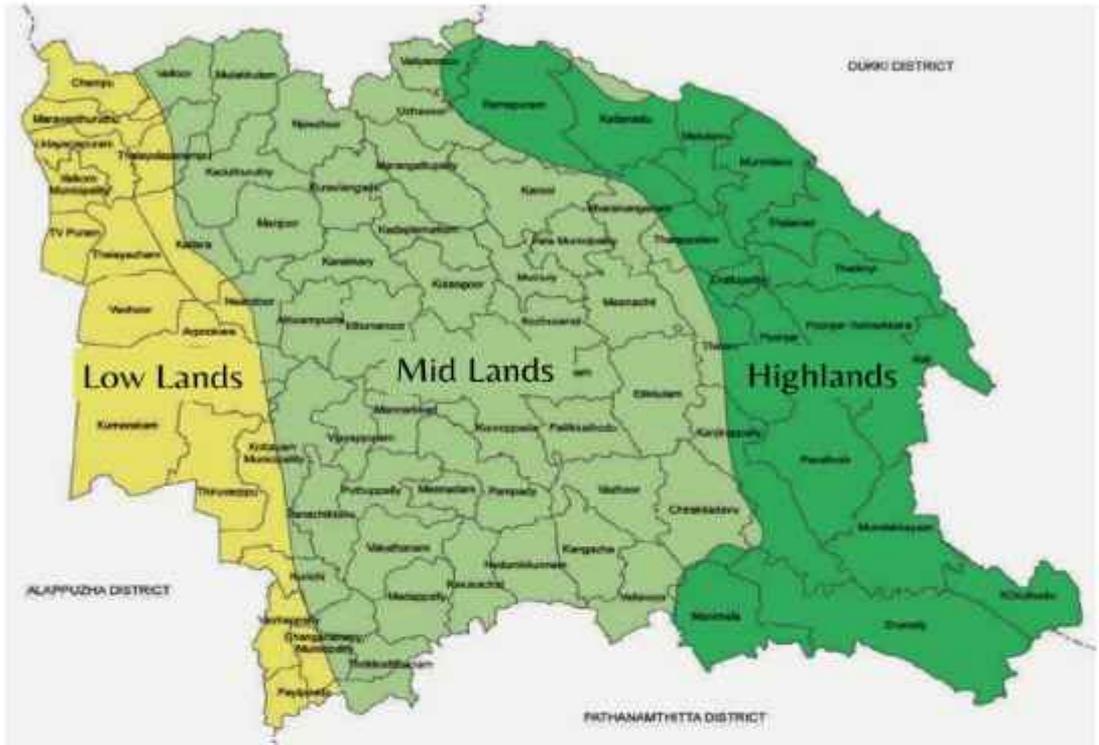
ADMINISTRATION
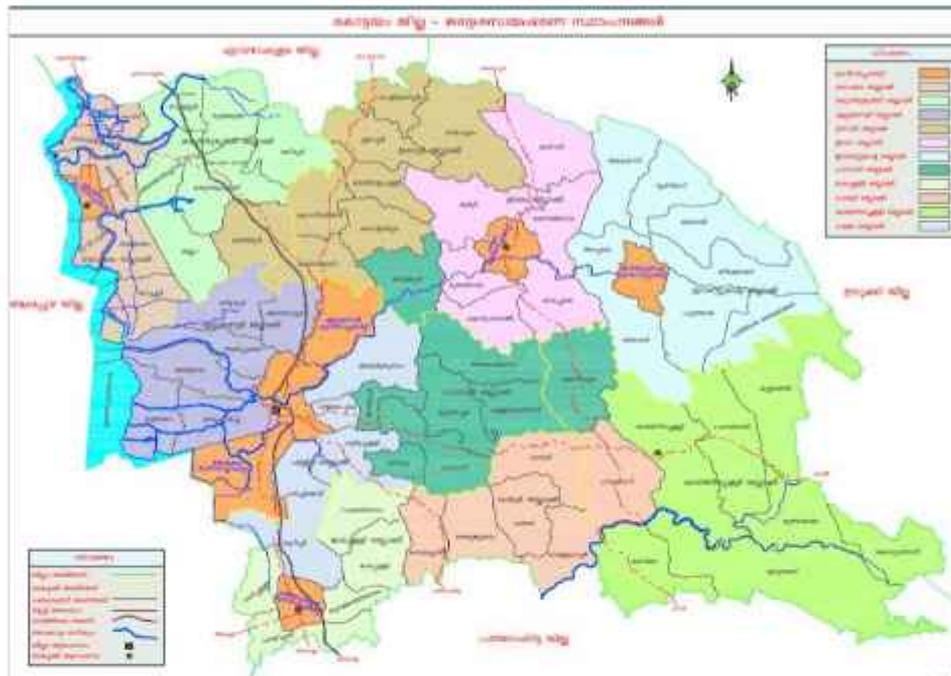
- Revenue Divisions- 2
- Taluks- 5
- Municipalities - 6
- District Panchayats - 1
- Block Panchayats - 11
- Grama Panchayats - 71
- Village- 160
- Wards- 1431
  - Rural - 1223
  - Urban - 208

HEALTH BLOCKS
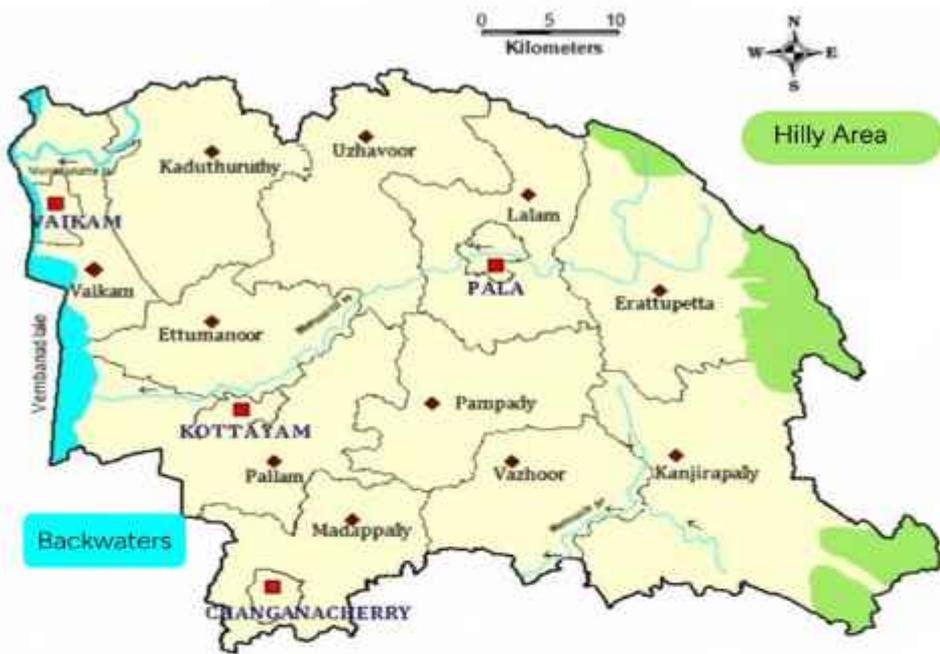
1. Athirampuzha	9. Koodalloor
2. Panachikkad	10. Kumarakom
3. Arunoottimangalam	11. Mundankunnu
4. Edamaruku	12. Paika
5. Edayazham	13. Ramapuram
6. Edayarikkapuzha	14. Thalayolaparambu
7. Erumely	15. Ullanadu
8. Karukachal	16. Ettumanoor

HEALTH INFRASTRUCTURE

Type of Health Facility	Number	Type of Health Facility	Number
Medical College	1	Community Health Centre	3
Institute of Child Health	1	Urban Primary Health Centre	3
General Hospital	4	Urban Health and Wellness Centre	17
Taluk Hospital	3	Block Public Health Unit	11
Specialty Hospital	1	District Public Health Lab	1
Block FHC	16	District Vector Control Unit	1
Family Health Centre	60		

LEADERSHIP AND ADMINISTRATION

Chetan Kumar Meena IAS

Hon. District Collector, Kottayam

Chairman, NHM Kottayam

Dr. Priya N

District Medical Officer, Kottayam

Dr. Vyas Sukumaran

District Program Manager NHM Kottayam

CHAPTER 1

BACKGROUND

1.1 Introduction

Kottayam is a city in the Indian state of Kerala. It is located in central Kerala and is also the administrative capital of Kottayam district. Bordered by the lofty and mighty Western Ghats on the east and the Vembanad Lake and paddy fields of Kuttanad on the west. Panoramic backwater stretches, lush paddy fields, highlands, hills and hillocks, extensive rubber plantations, places associated with many legends and a totally literate people have given Kottayam District the enviable title: The land of letters, legends, latex and lakes. The city is an important trading centre of spices and commercial crops, especially rubber. Most of India's natural rubber originates from the acres of well-kept plantations of Kottayam, also home to the Rubber Board. Kottayam is also called "Akshara Nagari," which means the "City of Letters," considering its contribution to print media and literature.

1.2 Geography and demography

Kottayam district has a total area of 2208 sq. km. The district is naturally divided into high land, midland and lowland, the bulk being constituted by the midland regions. Meenachil and Kanjirappally Taluks have high land and midland areas while Kottayam, Changanasserry and Vaikom Taluks have midland and lowland areas. Kanjirappally and Meenachil Taluks have Laterite soil, whereas Vaikom Taluk, part of Changanasserry and Kottayam Taluks have Alluvial soil. The district has no coastal area.

Table 1.2.1: Demographic Details of Kottayam District

DEMOGRAPHIC LABEL	VALUE
Area	2208 Sq. Km
Population	19,74,551
Revenue Divisions	2
Block Panchayats	11
Taluks	5

Municipalities	6
Villages	100
Gram Panchayats	71
Literacy Rate	97.21%
Constituencies	9

The district's major rivers include the Meenachil, Muvattupuzha, and Manimala rivers. The 78-kilometer-long Meenachil River passes through the Taluks of Meenachil, Vaikom, and Kottayam. It has a catchment area of 1272 km2 and a usable water resource of 1110mm3.

Pala, Poonjar, Ettumanoor, and Kottayam are the major towns in the basin. The Meenachil Medium Irrigation project has a net ayacut of 9960 hectares, a catchment area of 155 sq. km, and a water spread area of 228 hectares. The Muvattupuzha River originates in Idukki district, flows through Vaikom Taluk, and drains into the Vembanad Lake. The Manimala River passes through Kanjirappally and Changanasserry Taluks. The Chittar merges with it as it travels further west toward Alappuzha district. The important town in the basin is Mundakkayam.

1.3 Administrative framework
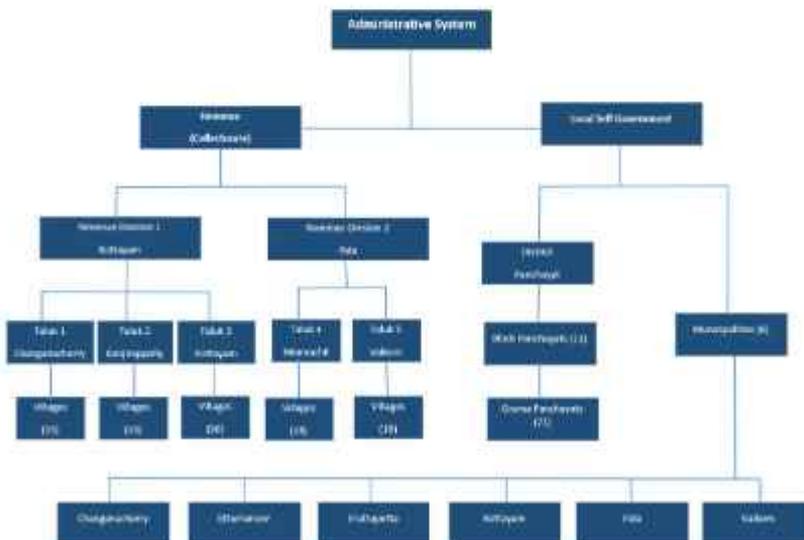
1.4 Taluks and major health institutions

Table 1.4.1 Taluks and Major Health Institutions

1. Changanasserry	4. Vaikom
GH Changanasserry	THQH Vaikom
2. Kanjirappally	5. Kottayam
GH Kanjirappally	GH Kottayam
3. Meenachil	THQH Pampady
GH Pala	Medical College Kottayam
THQH Kuravilangad	ICH Kottayam
Specialty Hospital Uzhavoor	District TB Centre

Table 1.4.2: Details of Health Facilities

Health Facility	Number	Health Facility	Number
Medical College	1	Community Health Centre	3
Institute of Child Health	1	Urban Primary Health Centre	3
General Hospital	4	Urban Health and Wellness Centre	17
Taluk Hospital	3	Block Public Health Unit	11
Speciality Hospital	1	District Public Health Lab	1
Block FHC	16	District Vector Control Unit	1
Family Health Centre	60		

Figure 1.2: District Health Map of Kottayam District

Kerala's overall health status, reflected through district-level communicable disease patterns from 2023–2025, shows strong surveillance capacity and effective disease control despite seasonal challenges. Vector-borne diseases such as dengue, rise sharply during the monsoon months but remain within manageable levels due to sustained public-health interventions. Viral hepatitis A contributes a notable disease burden, indicating the need of improvements in water quality. Vaccine-preventable diseases remain largely under control reflecting high immunization coverage. Water- and food-borne illnesses show a mixed pattern: food poisoning and typhoid continue to surface, highlighting ongoing gaps in food hygiene. Scrub typhus, snakebite, and other zoonotic or environmental conditions occur intermittently, and chronic infections like leprosy remain limited.

Antimicrobial resistance puts a hardship on healthcare systems. In India, AMR is rising due to the rapid spread of bacteria resistant to antibiotics and other drugs. This leads to increased hospital admissions, longer treatment, higher healthcare costs, and the need for stronger, costlier antibiotics with potential side effects. Misuse and overuse of antibiotics in humans, animals, aquaculture, and veterinary farms such as taking

antibiotics for viral infections or using them as growth promoters in animals are the main drivers of AMR.

1.5 Health initiatives in Kottayam

- **CaN Kottayam**

  Cancer Care Detection Programme under the name of CaN KOTTAYAM is implemented as a panchayath project from 2022 onwards. This programme helps to detect cancer in the community in the very early stage itself. The programme targets the screening for breast & cervical cancer and hence the early detection and treatment of cases. This project was submitted by health institutions to LSGD/District Panchayath for financial assistance for mammogram/PAP smear and later taken up by the state as Arogyam Anandam - cancer screening programme.

- **AMRITH (Anti-Microbial Resistance Intervention for Total Health)**

  The Antimicrobial Resistance (AMR) program will encompass several coordinated activities to combat this critical health threat. Key components include a prescription audit to monitor and evaluate antibiotic usage, targeted sensitization efforts for health workers, medical and para-medical students, and professional associations on AMR goals, current treatment guidelines etc. Simultaneously, the program will focus on creating awareness among patients, bystanders, and the general public regarding the issues of antimicrobial resistance and the threat of a future AMR pandemic, which will make it increasingly difficult to treat infections. To guide clinical practice, the program will also involve generating and regularly updating the Antibiogram for the District. Finally, the effort will mobilize major stakeholders, including student volunteers, for joint action to ensure a unified and effective response.

1.6 Significance of one health

Kottayam's unique mix of highlands, midlands, lowlands, rich agriculture, and active livestock farming creates constant interaction between humans, animals and the environment. These interconnected systems make the One Health approach essential for preventing zoonotic and vector-borne diseases, protecting environmental health, and ensuring stronger coordination between humans, animals, and the environment. By

integrating efforts across sectors, the district can build a healthier, safer and more resilient community.

Table 1.6.1: One Health threats and domains in Kottayam

Threat Category	Details
Zoonotic disease	Like rabies, avian/swine influenza
Infectious diseases	Fever outbreaks, Nipah virus, Leptospirosis,
Natural disasters	Floods, landslides, pandemics
Pollution	Air/water/soil pollution, biomedical waste
Food adulteration	Use of harmful chemicals in food
Antimicrobial resistance	Resistance to antibiotics and antimicrobials
Biological invasives	Spread of invasive species affecting ecosystem balance
Climate changes	Climate-driven ecological disruptions and diseases
Human wildlife conflicts	Interactions causing risk to humans and animals

CHAPTER 2

INTRODUCTION TO ONE HEALTH INITIATIVE

2.1 Introduction to one health initiative

One Health is an integrated, transdisciplinary framework that recognizes the interdependence of human, animal, and environmental health, and promotes collaborative action across sectors to achieve optimal health outcomes at local, national, and global levels The One Health Triad, comprising human health, animal health, and environmental integrity, underscores that threats such as zoonotic diseases, antimicrobial resistance, and climate-driven ecological disruptions arise from interactions among these domains and therefore require coordinated, multisectoral solutions.

Globally, the One Health approach has gained prominence as agencies including the World Health Organization and the Quadripartite partnership emphasize its necessity for pandemic preparedness, food system resilience, and biodiversity conservation, particularly in light of recent outbreaks such as COVID-19, avian influenza, and Ebola, which demonstrate the consequences of ecosystem disturbance and increased human–animal contact.
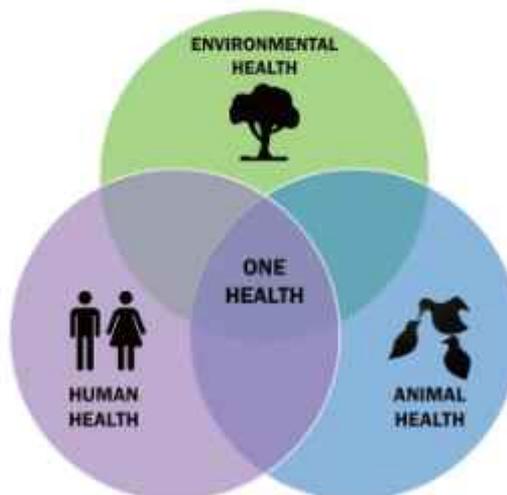
Figure 2.1: Epidemiological Triad

In Kerala, the approach has been operationalized more robustly due to the state's strong public health infrastructure and its experiences managing recurring Nipah virus outbreaks, which necessitated close coordination among health, veterinary, and forest departments (Kerala Health Department, 2023). Kerala's initiatives emphasize integrated surveillance, interdepartmental communication mechanisms, and community engagement to limit zoonotic transmission and safeguard ecosystem health.

The following diagram illustrates the One Health framework, which is highly applicable to Kottayam due to the district's strong interlinkages between human populations, animal ecosystems, and the natural environment. Kottayam's geography dominated by the Pamba basin and Meenachil river, extensive paddy fields, rubber plantations, and water-logged areas creates conditions where environmental, animal, and human health intersect. The left segment of the diagram aligns with Kottayam's multisectoral landscape, where environmental factors such as monsoon flooding and rodent activity, alongside livestock and domestic animal presence, contribute to zoonotic and vector-borne disease risks like leptospirosis and dengue. The central portion, highlighting collaboration, communication, coordination, and capacity building, reflects Kottayam's operational approach: health, animal husbandry, agriculture, forest, local self-government departments, and other departments jointly engage in surveillance, outbreak response, and risk communication. The societal component on the right resonates with Kottayam's mixed demographic profile, including rural communities, plantation labour, urban residents, and seasonal Sabarimala-bound mobile populations, all of whom rely on equitable access to public health services. Together, these interconnected elements support the One Health goal shown at the bottom of the diagram—maintaining healthy ecosystems, healthy animals, and healthy humans within the district.

ONE HEALTH PROMOTES A SUSTAINABLE AND HEALTHY FUTURE THROUGH COLLABORATION, COMMUNICATION, COORDINATION AND CAPACITY BUILDING

SOURCE: FAO, UNEP, WHO, and WOAH. 2022. One Health Joint Plan of Action (2022–2026). Working together for the health of humans, animals, plants and the environment. Rome. https://doi.org/10.4060/cc2289en

Figure 2.2: One Health Joint Plan of Action Framework

2.2 Genesis of the one health initiative in Kerala

Kerala's One Health journey formally began in 2021, driven by lessons from Nipah outbreaks, Kyasanur Forest Disease (KFD), avian influenza, and the COVID-19 pandemic. The state recognized that traditional siloed responses were insufficient for emerging zoonotic threats. A landmark state-level meeting was convened on 10 December 2021 under the chairmanship of the Hon'ble Minister for Health, Women & Child Development. This meeting resulted in directives for establishing One Health committees at the state, district, and local self-government (LSGD) levels. The decision represented a shift towards structured, multi-sectoral health governance, rooted in evidence and global best practices and a shift towards structured, multi-sectoral health governance, rooted in evidence and global best practices.

2.2.1 Pre-2021 foundations strengthening the initiative

Figure 2.3: Envisioning One Health Emergence in Kerala

Although officially launched in 2021, Kerala had longstanding foundations that supported a One Health ecosystem. The Centre for One Health Education, Advocacy, Research and Training (COHEART) was established in 2014 in Wayanad, focusing on human–animal–environment linkages. In 2018, the state implemented a pioneering Antimicrobial Resistance (AMR) Strategic Action Plan rooted in One Health principles. Multi-sectoral outbreak responses to KFD involved cohesive departmental coordination, joint surveillance, and community awareness programs. Similarly, Kerala's experiences with COVID-19 and avian influenza strengthened laboratory capacity, rapid response

mechanisms, and interdepartmental communication channels, enabling a more formal One Health model.

2.2.2 Launch and formalization of the one health programme (2021–2022) in Kerala

Figure 2.4: State launch of One Health Programme

State Level Launch of One Health by Hon Chief Minister, Shri. Pinarayi Vijayan Chaired by Hon Health Minister Smt. Veena George on 17/05/22 Tuesday at 2pm - District level streaming. Hon District Collector, ADM, DMO, DPM, Jamo, AA, TA, DNO, DLO, Mass media officer, and, Deputy director panchayath, Ast Agri officer attending live streaming.

The One Health Programme in Kerala moved from conceptualization to structured implementation during the period from 2021 to 2022. In June 2021, the Government of Kerala allocated ₹1.28 Crores to launch the state-led initiative, integrating it into the second phase of the Aardram Mission. Implementation began in four ecologically sensitive districts along the Pamba Basin- **Pathanamthitta, Alappuzha, Kottayam, and Idukki**- chosen due to their high human- animal interface, recurring zoonotic outbreaks, and environmental risk factors. Pilot activities in these districts focused on integrated surveillance and coordinated outbreak investigations for key conditions such as leptospirosis, scrub typhus, avian influenza, waterborne illnesses, and KFD. This early phase demonstrated the feasibility and impact of joint, multi-sectoral action at the field level.

The programme was further strengthened and formally institutionalized in 2022 through **G.O (Rt) No. 399/2022/H&FWD**, issued on 19 February 2022 by the Directorate of Health Services. This Government Order provided clear statewide guidelines for implementation, operationalizing the One Health approach through structured mechanisms. The order emphasized formation of committees at different levels, early surveillance, prevention-focused interventions, seamless communication between departments, and district-level reviews

2.3 Kottayam -one health -initiative

Kottayam district initiated One Health implementation in 2021 as one of four priority districts (Pathanamthitta, Alappuzha, Kottayam, Idukki) in the Pamba River Basin under the World Bank-aided Rebuild Kerala Initiative and Nava Kerala Karma Padhathi-2.

Meeting & Discussion: The Hon. District Collector of Kottayam convened a crucial discussion meeting to initiate the One Health Programme, bringing together the nodal department – Health Service and other key departmental heads to ensure a coordinated, multi-sectoral approach, including the Joint Director LSGD, District Drug Inspector, District Animal Husbandry Officer, DD Fisheries, DD Agriculture, Assistant Commissioner of Food Safety, and the DFO (District Forest Officer).

Figure 2.5: District Level One Health Committee Meeting

District-Level One Health Committee has been established to enhance coordinated action among the nodal department, Health and other line departments aligning with Kerala's One Health guidelines under G.O (Rt) No. 399/2022/H&FWD.

Prior to the official launch of the One Health programme, a comprehensive District Level Workshop was conducted on January 10th, 2022. **The very first One Health activity in**

Kerala, started in Kottayam, commenced with a pivotal District Level Workshop. This key event showcased the strong support and collaborative spirit of the district administration, as it was inaugurated by the Honourable District Collector Dr. P. K. Jayasree and chaired by the District Panchayat President.

The workshop convened representatives from the Health Department, all relevant line departments, and Local Self-Government Institutions (LSGDS), alongside an important presence of Dr. Ajan M. J, State One Health Nodal Officer from the Centre for One Health-Kerala (COH-K) and World Bank Consultant Sri. Satheesh. This multi-stakeholder gathering set a significant benchmark for coordinated, multi-departmental action under the One Health framework in the region.

This was immediately followed by a series of Block Level Sensitisation Programmes from January 11th to 12th, specifically targeting Local Self-Government Institutions (LSGDS) and Panchayati Raj Institutions (PRIs). These sessions were designed to build understanding among PRI members, ward-level committees, community workers, and sectoral officers. The core focus areas included zoonotic disease prevention, environmental health management, safe agricultural practices, and the necessity of coordinated multi-departmental action under the One Health framework.

Date	Location
10/01/2022	District Level
11/01/2022	Uzhavoor Block
11/01/2022	Erattupetta, Kanjirappally Blocks
12/01/2022	Pallom, Madappally Blocks
12/01/2022	Vazhoor, Laalam, Pampady Blocks

Figure 2.6: District level workshop inauguration by Hon. District Collector. P.K. Jayasree

Figure 2.7: One Health District Level Workshop - PRI (Panchayath Raj Institutions) Sensitisation Block Level-(Ettumanoor, Vaikom, Kaduthuruthy Blocks) at Krishi Vigyan Kendram, Kumarakom on 10/01/25. Topic - Good Agricultural Practice for Better Human Health.

Figure 2.8:12/01/22 PRI sensitisation and

Block Level: Pallom and Madappally blocks

Figure 2.9:PRI Sensitisation- Pallom and Madapally blocks

2.3.1 One health mela campaign across revenue blocks

The district-level inauguration of the Health Mela, marking the launch of the One Health initiative, was performed by the **Hon. Minister of Cooperation, Shri V. N. Vasavan.** The event was chaired by **Member of Parliament, Shri. Thomas Chazhikadan**, and saw broad participation from prominent figures across Local Self-Government Institutions (LSGDs), the district administration, the Health Department, and other line departments. To strengthen grassroots awareness and ensure active participation of Local Self-Government Institutions in the One Health programme, the district conducted a series of One Health Melas. These melas and PRI sensitisation programmes, held across all major

revenue blocks in May-June 2022, were each inaugurated by the respective Assembly Constituency's MLA.

Health Mela Campaign - Block wise Summary

Date	Block	Programme
28/05/2022	Laalam Block	Launch of One Health with Health Mela
30/05/2022	Pallom Block	Launch of One Health with Health Mela
30/05/2022	Vaikom Block	Launch of One Health with Health Mela
31/05/2022	Kaduthuruthy Block	Launch of One Health with Health Mela
31/05/2022	Kanjirappally Block	Launch of One Health with Health Mela
02/06/2022	Uzhavoor Block	Launch of One Health with Health Mela
04/06/2022	Madappally Block	Launch of One Health with Health Mela
06/06/2022	Erattupetta Block	Launch of One Health with Health Mela

Figure 2.10: District Level Launch of One Health with Health Mela - Inauguration by Shri V N Vasavan (Hon Minister for cooperation, Govt of Kerala) on 25/05/22

Figure 2.11: Block level inauguration by Kanjirappally MLA Shri. Jayarajan

Figure 2.12: Block Level Inauguration- Pampady Block

Figure 2.13: Vilambara Rally Pampady Block

A total of **12 district mentors were selected,** primarily retired Health Inspectors (HI), Public Health Nurses (PHN), and similar cadres given their extensive experience and familiarity with the health system. From the 1,344 wards across the district, selection and training of **56 individuals for each ward** - 49 community volunteers and 7 community mentors were completed.

COH-K portal - registration of community volunteers and community mentors completed.

Training and coordination efforts have been initiated across multiple levels. Specifically, training of trainers (TOT) was conducted at the district level, followed by block-level training sessions for Medical Officers, Health Supervisors (HS), Health Inspectors (HI) and JAK teams. Furthermore, a District Action Plan, which integrates planning from all line departments, has been submitted. Furthermore, a joint outbreak investigation was launched at Kumarakom for leptospirosis, a practice which was subsequently adopted for all subsequent outbreaks.

Subsequently, the cadre of 12 district One Health mentors was dissolved, and the routine health system absorbed One Health functions by reallocating responsibilities: Technical Assistant Grade II at the district level, Health Supervisors at the block level, Health Inspectors under the LSGD, and JAK Teams at the ward level. Although multiple departments are part of the One Health framework, the Health Department initially

undertook most of the focused activities, with participation from other sectors expected to strengthen progressively.

Figure 2.14: Training of Community Mentors and Volunteers
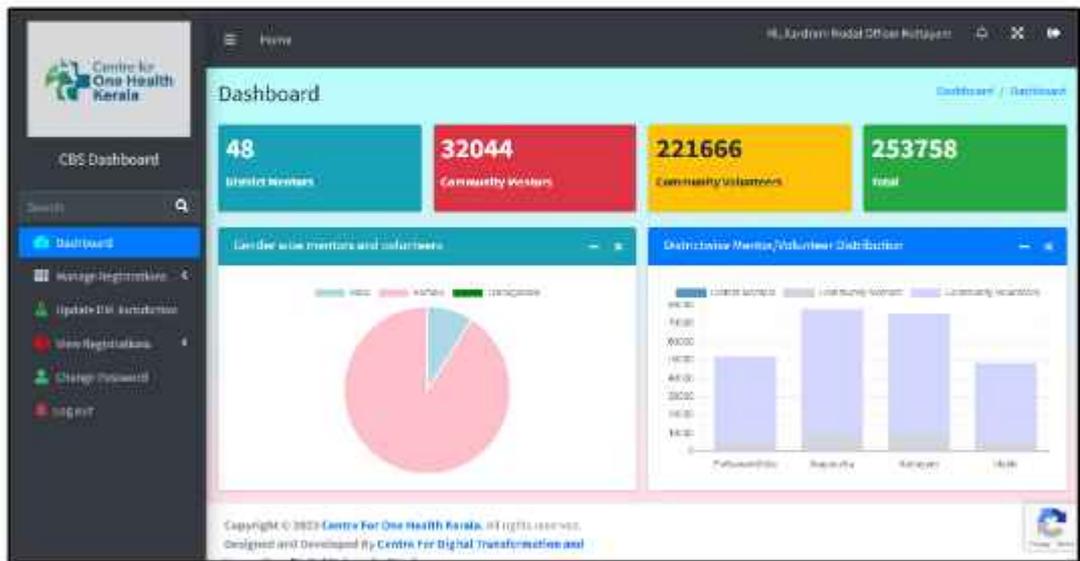

Figure 2.15: Centre for One Health – Kerala Portal

Figure 2.16: Joint Outbreak Investigation launch by intersectoral meeting at Kumarakom

Figure 2.17: Starting Joint Outbreak Investigation Kumarakom for Leptospirosis

CHAPTER 3

GOVERNANCE AND PROGRAMME MANAGEMENT SYSTEMS

The Department of Health and Family Welfare (H&FW) acts as the nodal department for the overall One Health Programme.

3.1 Governance structure, programme implementation and management

State-level coordination is entrusted to the Centre for One Health - Kerala **(COH-K)**, which operates under the direct oversight of the Director of Health Services (DHS).

- **Implementation Support:** The actual implementation of the programme is strategically supported by two key units:

- The **State Programme Management Unit (SPMU)**, located at COH-K, handles central management functions.

- **District Programme Support Units (DPSUs)** are established at the district level to drive localized efforts.

- **Monitoring and Oversight:** Progress across all One Health initiatives is centrally **monitored** by the **Public Health Division** of the Health Department, ensuring accountability and effective execution.

3.1.1 State Programme Management Unit (SPMU)

Key Areas of One Health Programme Management

- **Programme Implementation:**
  - Planning, executing and monitoring One Health activities across the State.

- **Policy Development:**
  - Formulating and advocating for policies that fully support the One Health framework.

- **Financial Management:**
  - Ensuring the efficient allocation and utilization of resources dedicated to the One Health Programme.

- **Knowledge Sharing:**

  - Facilitating the exchange of information, best practices, and research findings among all stakeholders.

- **Institutional Collaboration:**

  - Building and nurturing strong partnerships with key entities, including government agencies, academic institutions, research organizations, and other relevant bodies.

- **Advocacy and Awareness:**

  - Raising awareness about the critical importance of One Health among policymakers, professionals, and the general public.

- **Community Engagement:**

  - Actively involving local communities and civil society organizations in both the design and the implementation of One Health activities.

The State-Level One Health Committee is formally constituted with the Hon'ble Minister (Health, Woman & Child Development) serving as the Chairperson, and the Principal Secretary, Health and Family Welfare Department as the Vice Chairperson. The committee's extensive membership ensures inter-sectoral representation, including key departmental heads such as the State Mission Director (NHM), the Director of Panchayats, the Director of Urban Affairs, and directors from the allied fields of Animal Husbandry, Fisheries, and Agriculture. Critical officials like the Principal Chief Conservator of Forests, the Commissioner of Food Safety, and the Managing Director of Kerala Medical Services Corporation Ltd are also members, alongside officials from the Health Department, the Project Director (eHealth), and the Director General of KILA. The Director of Health Services acts as the Convener, ensuring procedural efficiency, with the inclusion of the NKKP State-level Nodal Officer i/c of ONE Health and a Civil Society Representative to broaden its scope and governance.

Functions of the State Level Committee:

1. Provide overall leadership and oversight for the One Health program in the state.

2. Ensure timely initiation of One Health program issuing necessary Government Orders and policy directives to ensure effective coordination and collaboration

among respective line departments and organizations to mainstream One Health program.

3. Guide the planning for the state level launch of One Health program and in the 4 Pamba basin districts and provide oversight for roll out in remaining 10 districts by issuing required instructions/orders.

4. Review and advise on capacity building strategy proposed under the One Health Program.

5. Meet once a quarter and monitor the program performance including: (a) achievement of agreed results; (b) facilitate prompt resolution of inter-departmental coordination issues; and (c) address bottlenecks in multi-sectoral response systems for potential One Health threats during implementation.

3.1.2 District programme support units (DPSU)

The DPSU acts as the operational hub for implementing the state-level One Health strategy within the district located in District Medical Office (Health). The day-to-day implementation is spearheaded by the District NKKP2 Nodal Officer, who serves as the Convener of the District Level Committee, working in conjunction with the District Medical Officer and the District Surveillance Officer.

The DPSU acts as the executive arm of the District Committee, with the District NKKP2 Nodal Officer serving as the Convener.

Rollout Facilitation: Directly facilitates the launch and rollout of the program across the district and its local self-governments (LSGs).

Implementation Support: Works closely with the District Medical Officer (DMO) and PRI institutions to ensure ground-level activities, such as community volunteers/mentors training, are executed in coordination with the LSGD.

Resource Management: Identifies and manages district and sub-district level resource persons to support program monitoring and capacity building.

Capacity Building: To build the capacity of Local Self Governments (LSGs), line departments and communities to plan, implement and monitor disease control activities scientifically, as part of One Health Programme in their local area.

Community Participation: Activating Community Based Surveillance of diseases, detection of outbreaks and their management through capacity building of the community.

Joint Outbreak Investigation: Conduct joint outbreak investigations and site visits to high-risk areas.

Inter-departmental Coordination: Promote inter-departmental collaboration for various activities like AMR, Zoonotic disease control programmes etc.

Lab Strengthening: To strengthen the lab systems and surveillance systems and to set up integrated lab surveillance and community surveillance systems for epidemic management

Pandemic Preparedness: Pandemic preparedness plan for each LSG ensures to identify a threat early and the local administration can respond quickly and in a coordinated, inter-sectoral manner.

District-Level One Health Committee

The district-level One Health Committee is spearheaded by the District Collector who serves as the Chairperson, providing essential administrative authority and inter-departmental leverage. This committee is a localized mirror of the state body, bringing together key district heads from allied sectors. The members include the District Medical Officer, the Deputy Director of Panchayats, and the respective District Officers for Agriculture, Animal Husbandry, Fisheries, and Forests. Oversight of critical public health areas is ensured by the District Food Safety Officer and the District Surveillance Officer. The committee's coordination and procedural management are handled by the District NKKP2 Nodal Officer, who functions as the Convener, and a Civil Society Representative is included to integrate local community perspectives.

Functions of District Level Committee:

1. Provide leadership and oversight for the One Health Programme within the district.

2. Constitute and approve the district-level One Health Management Team (including their Terms of Reference) to:

a. Promote inter-departmental collaboration (especially for Anti-Microbial Resistance - AMR).

b. Share information/surveillance data to identify potential One Health risks.

c. Undertake joint visits to monitor program implementation, conduct outbreak investigations, and visit high-risk areas (like wet markets) with potential for zoonotic disease transmission.

3. Review and approve operational plans for:

   a. Program launch in Panchayati Raj Institutions (PRIs) / Municipalities.

   b. Capacity building for the district.

4. Identify district and sub-district level resource persons to support the program's capacity building and monitoring, ensuring effective convergence.

5. Ensure the prompt rollout of the program, providing guidance on launch and reviewing/approving the plan for PRI-level orientation training in coordination with the Local Self-Government Department (LSGD).

6. Monitor implementation progress:

   a. Meet monthly initially to closely monitor the capacity building program.

   b. Meet quarterly thereafter to review implementation progress, evaluate achievement of key results, and promptly resolve implementation and inter-sector coordination issues.

3.1.3 PRI Level Committee

The Panchayati Raj Institutions (PRI) Level Committee is designed for implementation at the grassroots level and is chaired by the President/Chairman of the Panchayat, Municipality, or Corporation. Key members include the Secretary of the respective local body and the Health Standing Committee Chairperson. The Medical Officer of the local health facility (PHC/FHC/CHC/TH) serves as the Convener, ensuring a strong public health linkage. The committee also integrates frontline functionaries from various line departments operating within the PRIs. To effectively support implementation at both the urban and rural levels, the Kerala Institute of Local Administration (KILA) acts as the Nodal Agency for providing essential capacity building support to the Local Self-

Governments (LSGs), while strengthening the existing LSG administrative systems to ensure programme success.

Functions of PRI Level Committee:

1. Provide leadership for the successful implementation of the One Health Programme within the concerned PRI/Local Self-Government (LSG) area.

2. Orient PRI representatives on the core concept and objectives of the One Health Programme.

3. Finalize the PRI-level coordination mechanisms for program implementation through a consultative process, including the selection of the Medical Officer to serve as the local nodal person.

4. Plan and coordinate the official launch of the One Health Programme at the PRI level.

5. Plan and implement capacity building programs for communities to effectively undertake One Health Surveillance, in coordination with the Local Self-Government Department (LSGD).

CHAPTER 4

INTERSECTORAL COLLABORATION

Inter-sectoral collaboration is a fundamental pillar of the One Health approach because public-health threats originate from multiple interconnected domains, and no single department has the capacity to address them independently. Diseases to humans are often influenced by animal health, environmental quality, waste management systems, water safety, food handling practices and ecological disturbances. Therefore, coordinated action between departments such as Health, Animal Husbandry, Forest, Local Self-Government, Pollution Control Board, Agriculture, Fisheries, Irrigation, Food Safety, Environment and Climate Change, Education and Disaster Management becomes essential for effective surveillance, prevention and response. Compared to isolated departmental operations, the district can identify early warning signs such as unusual animal fatalities, water contamination, waste accumulation, vector proliferation, and foodborne concerns more quickly by pooling information, expertise, and resources across sectors.

Collaborative mechanisms ensure timely verification of alerts, joint field investigations and swift implementation of control measures such as sanitation drives, animal vaccination, environmental remediation and community awareness. Furthermore, inter-sectoral partnerships reduce duplication of efforts, promote efficient use of manpower and improve communication pathways during emergencies like outbreaks, floods or zoonotic spillover events.

4.1 Key partner departments

Table 4.1.1 Key Partner Departments

1. Department of Local Self Government	1. Department of Homoeopathy
2. Department of Animal Husbandry	2. Indian Systems of Medicine
3. Department of Fisheries	3. Commissionerate of Food Safety
4. Kerala Forests & Wildlife Department	4. Kerala Water Authority (KWA)
5. Irrigation Department	5. Pollution Control Board (PCB)
6. Drugs Control Department	6. Directorate of Environment and Climate Change
7. Dairy Development Department	7. Department of Agriculture Development & Farmers' Welfare

The functions and standard operating protocols of the line departments are detailed below.

4.1.1 Local Self Government Department

Municipality
6

LSGD Kottayam

District Panchayat

Block Panchayat
11

Grama Panchayat
71

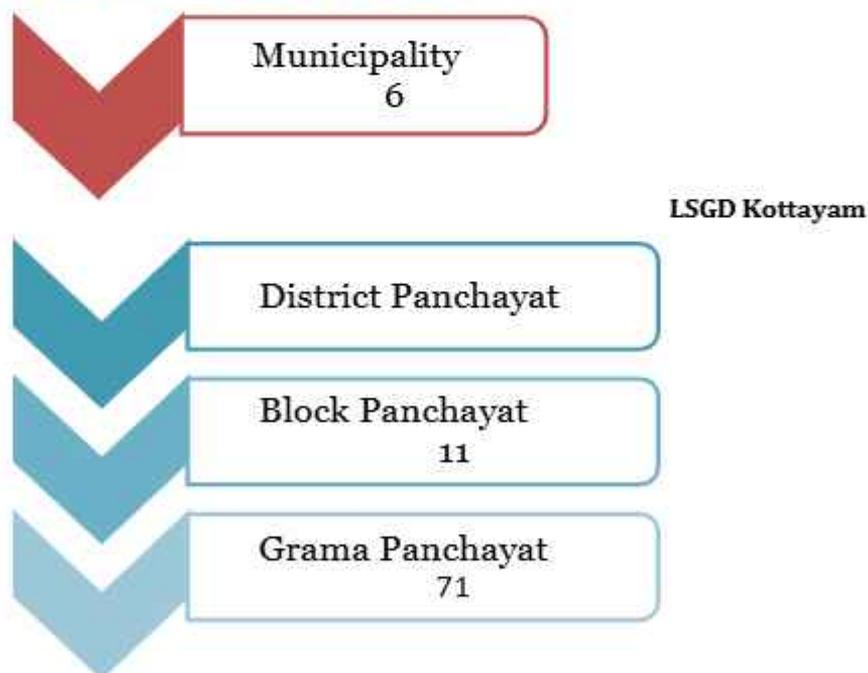Figure 4.1: Structure of LSGD Kottayam

Standard Operating Procedures for LSGD Panchayat Directorate

1. To realise self-reliant local self-governments committed to function as people's institutions, driven by democratic principles and seamless participation of citizens in decision making, planning and creation of a vibrant environment where concerns of each and every one are valued.

2. To ensure Fund and Freedom to achieve constitutionally mandated responsibilities, Local development and Social Security. To develop mechanisms for community participation in decision making and sustainable development. To realize an equitable and caring society with special focus on marginalized and weak.

Urban affairs

1. Enhance quality of life by providing complete sanitation through sustainable liquid and solid waste management practices, ample housing and livelihood opportunities to every household to eradicate urban poverty. E governance and ICT Solutions for service delivery, conservation of nature and heritage. Create platform for ease of doing business to ensure economic growth of cities.

Rural Development

1. The Rural Development Department gives primary priority to providing sustainable income to the rural people, construction of houses, health training and development of infrastructure.

2. To eliminate poverty among the poor by developing self-employment schemes, providing training, basic facilities, credit to start businesses

3. To provide employment and income to the poor during times of non-agricultural and allied employment, thereby reducing poverty

4. To create basic facilities such as housing, transport facilities, public buildings, toilets etc. to improve the quality of life of the rural people

5. To create awareness among the rural people about their health habits, provide sanitation facilities and enable them to give importance to health care

The Local Self Government Department (LSGD) which includes Panchayats, Municipalities, and Corporations is directly linked with the Health Department because

both are responsible for maintaining public health, sanitation, and disease prevention at the community level. LSGD handles ground-level civic functions like waste management, sanitation, drainage systems, water supply, mosquito control, and licensing of food establishments, while the Health Department provides technical guidance, disease surveillance, outbreak management, and healthcare services.

Health Department's Role (Technical & Medical): Provides technical guidance, disease surveillance, outbreak management, healthcare services, and clinical identification of cases.

LSGD also collaborates with the Health Department during immunization campaigns (like polio or measles rubella), COVID-19 containment, health awareness programs, school health inspections, and community health surveys by providing manpower, public spaces, local coordination, and community mobilization. During food safety issues, the Health Department and FSSAI may inspect food outlets, but LSGD ensures hygiene standards in hotels, slaughterhouses, markets, and street-food areas through licensing and routine checks. In water-borne disease outbreaks, LSGD manages water pipeline repair, and sanitation improvements, while the Health Department handles chlorination, treatment and reporting.

Overall, LSGD provides the infrastructure, sanitation, civic action, and enforcement at local level, while the Health Department provides health expertise, surveillance, and medical response, making both departments interdependent for effective public health protection.

During outbreaks of diseases LSGD releases emergency funds to local bodies so they can quickly implement outbreak-control activities., LSGD also sets aside annual budgets for preventive health programs in coordination with the Health Department.

LSGD funds community-level public health initiatives such as constructing household toilets, supporting wastewater treatment, improving drainage, and providing grants for community health volunteers. The fund disbursement by LSGD enables the Health Department to effectively execute health programs, strengthen health infrastructure, manage outbreaks, and improve overall community health, making financial collaboration a critical link between these two departments.

LSGD also financially supports infrastructure in health institutions like Primary Health Centres (PHCs), Community Health Centres (CHCs), and sub-centres by providing funds for building repair, maintenance, water supply, sanitation facilities, and minor equipment.

Ongoing & Recent Initiatives:

- **Aardram Mission:** This mission focuses on transforming primary health centres into Family Health Centres that provide a comprehensive range of preventive, curative, and palliative care services. The active involvement and autonomy of LSGs in managing these FHCs is crucial for effective inter-sectoral coordination and addressing social determinants of health.

- **Sanitary and Hazardous Waste Management:** The LSGD has issued Standard Operating Procedures (SOPs) for the effective management of sanitary waste, requiring local bodies to set up community-level disposal facilities. This initiative involves cooperation between LSGD institutions and the Health Department to ensure public health and safety.

- **National Health Mission (NHM) Integration:** LSGD is involved in implementing National Health Mission activities, including the utilization of the 15th Finance Commission Health Grants for local self-government institutions. There have also been district-level meetings and training programs linking National AYUSH Mission (NAM) with LSGD officials.

Past Collaborative Programs:

- **COVID-19 Response:** During the pandemic, there was significant collaboration.

  - An LSGD "war room" coordinated local body activities based on data analysis from the Health Department.

  - Joint awareness programs were organized, including online webinars with medical experts for LSGI representatives and the public.

- **Arogya Jagratha Programme:** Launched in 2018, this program involved teams from the Health and LSGD departments visiting houses to create awareness and eliminate sources of pathogens.

Table 4.1.2 List of various Blocks of Kottayam District

1. **Erattupetta Block**

   (Block Phone: 04822 – 272356)

   - Thalanadu: 281031
   - Thalappalam: 272195
   - Thidanadu: 272068
   - Thekkoy: 281029
   - Poonjar: 272184
   - PoonjarThekkekkara: 272171
   - Melukavu: 211028
   - Monnilavu: 286279

2. **Ettumanoor Block**

   - (Block Phone: 0481-2537639)
   - Athirampuzha: 2731752
   - Arpookkara: 2597230
   - Aymanam: 2517072
   - Kumarakom: 2524322
   - Thiruvarppu: 2582266
   - Neendoor: 2712370

3. **Kaduthuruthy Block**

   (Block Phone: 04829-282393)

   - Kaduthuruthy: 282280
   - Kallara: 267341

7. **Pallom Block**

   - (Block Phone: 0481-2573055)
   - Ayarkunnam: 2542327
   - Kurichy: 2321539
   - Panachicadu: 2330365
   - Puthuppally: 2352493
   - Vijayapuram: 2578463

8. **Pampady Block**

   (Block Phone: 0481-2551060)

   - Akalakkunnam: 2551141
   - Elikkulam: 04828- 226475
   - Kooroppada: 2700243
   - Pallickathodu: 2551041
   - Pampady: 2505323
   - Meenadom: 2555307
   - Kidangoor: 254149
   - Manarcadu: 2372828

9. **Uzhavoor Block**

   (Block Phone: 04822-230254)

   - Uzhavoor: 240124
   - Marangattupally: 251037
   - Kadaplamattom: 230254
   - Kanakkary: 230337
   - Kuravilangadu: 230236

- Thalayolapparambu:236127
- Njeezhoor: 263660
- Mulakkulam: 251246
- Velloor: 257171

4. **Kanjirappally Block**

Block Phone: 04828-202450

- Erumely: 210337
- Kanjirappally: 202486
- Koottickal: 284127
- Koruthodu: 281100
- Parathodu: 202536
- Manimala: 247126
- Mundakkayam: 272490

5.**Lalam Block**

(Block Phone: 04822-248862)

- Kadanadu: 246337
- Karoor: 212514
- Kozhuvanal: 267037
- Bharananganam: 248856
- Meenachil: 236337
- Mutholy: 205511

6. **Madappally Block**

(Block Phone: 0481-2472056)

- Thrikkodithanam: 2441805

- Manjoor: 242337
- Ramapuram: 260248
- Veliyanoor: 244113

10. **Vaikom Block**

(Block Phone: 04829-221316)

- Udayanapuram: 222253
- Chempu: 273123
- T.V. Puram: 210287
- Thalayazham: 222391
- Maravanthuruthu: 236150
- Vechoor: 275124

11. **Vazhoor Block**

(Block Phone: 0481-2456355)

- Kangazha: 2494321
- Chirakkadavu:04828-221376
- Nedumkunnam: 2321539
- Vazhoor: 2456226
- Vellavoor: 04828-247125
- Karukachal: 2485145

• Paippadu: 2446087 • Madappally: 2472031 • Vakathanam: 2462243 • Vazhappally: 2720313	

4.1.2 Animal husbandary department

The animal health care and livestock and poultry production are the main objectives of the department. The major activities of the department are veterinary services and animal health care, disease eradication programmes, cattle, goat, pig, and poultry development programmes, control of zoonotic diseases, extension, training programmes for farmers and veterinarians and production of biologicals. The department has one District Animal husbandry office headed by District Animal Husbandry officer at the district headquarters. There are around 95 institutions like veterinary hospitals, veterinary dispensaries, veterinary sub centres etc. in Kottayam District.

Its role is vital because nearly 70% of emerging infectious diseases originate from animals, making veterinary surveillance the first line of defense in preventing human outbreaks. The department's activities-ranging from disease surveillance, vaccination, farm biosecurity, diagnostic testing, and outbreak containment-directly determine whether a pathogen remains confined within animals or spills over into human populations. By controlling zoonotic infections such as leptospirosis, brucellosis, rabies, avian influenza, TB, anthrax, and KFD-linked spillover, AHD plays an indispensable role in reducing human disease burden, preventing epidemics, and protecting high-risk occupational groups such as farmers, slaughterhouse workers, veterinarians, and forest-dependent communities.

Additionally, the Animal Husbandry Department significantly influences environmental health through waste management practices, prevention of carcass contamination, rodent control, and reduction of pathogen circulation in soil and water sources. Its regulatory oversight of meat production, slaughterhouses, dairy hygiene, and poultry operations has direct implications for food safety and prevention of foodborne illness outbreaks in humans. The department is equally vital in addressing antimicrobial resistance (AMR), as inappropriate antibiotic use in livestock can contribute to resistant pathogens that transfer to people through food, direct contact, or the environment.

In Kottayam, the Animal Husbandry Department worked closely with the Health Department during avian influenza alerts, pig farm morbidity events, and issues reported from hen farms. Their rapid field assessment, sample collection, and enforcement of biosecurity measures helped prevent potential zoonotic spillover. This collaboration ensured early detection, containment, and coordinated action between veterinary and public health teams, strengthening the district's One Health response.

Under district One Health governance, the District Animal Husbandry Officer (DAHO) serves as the nodal person for animal health–related actions. The department includes Veterinary Surgeons, Livestock Inspectors, Assistant Directors at Block/Range level, Disease diagnostic laboratories, Mobile veterinary units, Field surveillance teams and Poultry and dairy extension officers.

4.1.3 Department of fisheries

Standard Operating Procedures for Fisheries

1. To conserve resources for the sustainable development of the fisheries sector.

2. To ensure nutritional security through the adoption of novel technologies in culture and capture fisheries.

3. To ensure socio economic development of fishers.

4. To ensure safety and security of the fishing community.

5. To develop adequate infrastructure for the sector.

6. To deliver effective extension services to the society.

Key Fisheries Dept. Contact for Kottayam:

- Sri. Joice Abraham
  - Deputy Director, Kottayam
  - Phone: 0481-2566823
  - Mobile: 9745313740
  - Email: fisheriesktym@gmail.com
- Kumari Krishnakumari A.
  - Assistant Director, Kottayam

- Phone: 0481-2566823

- Mobile: 9447232051

- Email: fisheriesktym@gmail.com

4.1.4 Kerala forests and wildlife department

The Forest Department is responsible for a wide range of functions, including forest and wildlife protection, conservation, social forestry, Eco-development & Tribal Welfare, Law Enforcement.

Standard Operating Procedures for Forest Department

The primary mission is the scientific, ecosystem-based management and conservation of forests and wildlife, focusing on enhancing biodiversity and improving the water regime for community benefit. Furthermore, the goal is to manage forests using participatory principles to meet the livelihood needs of dependent communities and popularize tree planting to combat global warming.

Key Forest Department Offices in Kottayam

- Divisional Forest Office, Kottayam
  - Phone Number: +91 481 256 2276
  - Email Address: kottayamdivision@gmail.com
- Chief Conservator of Forest, High Range Circle, Kottayam
  - Phone Number: +91 481 231 2448
  - Email Address: ccf-hrc.for@kerala.gov.in
- Assistant Conservator of Forest (Social Forestry), Kottayam
  - Phone Number: +91 94479 79133
  - Email Address: acf.sf-ktym.for@kerala.gov.in
- Chief Conservator of Forests (WL) & Field Director Periyar Tiger Reserve, Kottayam
  - Phone Number: +91 481 231 1740
  - Email Address: fdpt@gmail.com

- Kerala Forest Development Corporation Ltd. (Head Office)

  o Phone Number: +91 481 258 1205

  o Email Address: md_kfdcktm@yahoo.co.in

4.1.5 Irrigation department

The Irrigation Department handles various schemes for water body protection, renovation of tanks and ponds, and maintenance of check dams and lift irrigation schemes.

Standard Operating Procedures For Irrigation Department

To Harness, Protect and Regulate the State's Water Resources by formulating effective Plans through the principles of Integrated Water Resources Management, Agricultural water management and Disaster risk management.

1. Construction, Operation and Maintenance of irrigation structures for the conservation, storage, abatement of pollution in water resource, providing irrigation facilities, flood control and coastal protection.

2. Judicious usage of water for irrigation by ensuring farmers participation.

3. To build a team of water experts.
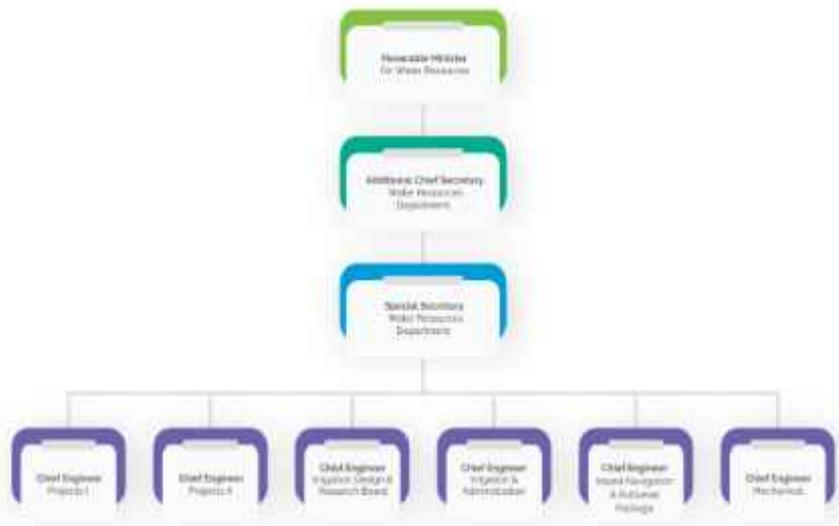
Figure 4.1: Organisational Structure of Irrigation Department

Irrigation Department Kottayam

The primary office details for the Irrigation Department (Minor Irrigation

Division) in Kottayam are:

- Minor Irrigation Division, Mini Civil Station, Kottayam

    o Phone: 0481-2562662.

    o Email: midivisionkottayam@gmail.com

- Sub Offices: Includes Minor Irrigation Subdivisions and Sections in Pala,

    Vaikom, Pampady and Changanasserry

    Details of the suboffice:

Office Name	Phone Number	Email Address
MI Sub Division, Pala	04822-213880	misdnpala@gmail.com
MI Section, Vaikom	9400510061	misnvaikom@gmail.com
MI Section, Changanasserry	0481-2411222	isdchry@gmail.com
MI Section, Pampady	9747820560	pmpdypdyktm@gmail.com
MI Section, Kuruppanthara	8281365349	misnkuruppanthara@gmail.com

4.1.6 Drugs control department

Standard Operating Procedures for Drug Control

1. To make available Drugs and Cosmetics of Standard Quality at controlled prices.
2. The quality of drugs is beyond the understanding of common man. It's the responsibility of the Department to ensure the availability of quality drugs to the public and the market is free from counterfeit, spurious and substandard drugs and no drugs are sold at a price higher than the retail price marked on the container.

Figure 4.2: Organisational Structure of Drugs Control Department

Kottayam District Drugs Control Office (Modern Medicine)

The main office for drug control (modern medicine) in the region is:

- Office of the Drugs Inspector, Kottayam

   Address: 4th Floor, Mini Civil Station, Thirunakkara, Kottayam, Kerala 686001,

   Phone Number: 0481-2303380, Email: diktm.drugs@kerala.gov.in

- Office of the Drugs Inspector,4th floor, Mini Civil Station, Thirunakkara,

   Kottayam. 686001

   Drugs Inspectors: Smt. Thara. S. Pillai, Smt. Jameela Helen Jacob

4.1.7 Dairy development department

The core objectives are to maximize profit and ensure the socio-economic stability of dairy farmers by increasing milk production to meet dietary needs, ensuring fresh and safe products for consumers, and strengthening the sector through co-operatives, technology transfer, and sustainable development.

Key Contacts: Deputy Director Office

- **Smt. Sarada C R:** Deputy Director, O/o the Deputy Director, Dairy Development Department, K M C – 13/1060 Erayilkadavu, Kottayam. 686001. Phone: 0481-2562768, Email: dd-ktm.dairy@kerala.gov.in, Mobile: 9447824520.

- **Smt. Viji Vishwanath:** Assistant Director / TA, Email: ad-Ktm.dairy@kerala.gov.in, Mobile: 9447758703.

- **Sri. Jojo Abraham:** Senior Superintendent, Email: ad-Ktm.dairy@kerala.gov.in, Mobile: 9747189472.

- **Smt. Yamuna M George:** SMS (Co-Operation), Email: ad-Ktm.dairy@kerala.gov.in, Mobile: 9446521303.

Quality Control Office

- **Smt. Jaqulin Dominic:** Assistant Director/Quality Control Officer, O/o The Quality Control Officer, K M C – 13/1060 Erayilkadavu, Kottayam, 686001. Phone: 0481-2562768, Email:qcoktm.dairy@kerala.gov.in,

Mobile: 9895716038.

- **Smt. Anu Kumaran:** Assistant Director/Senior Dairy Extension Officer, Email: qcoktm.dairy@kerala.gov.in, Mobile: 9846103888.

Dairy Extension Service Units (DESU)

- **Erattupetta DESU**
  - o **Dairy Extension Officer, Smt. Archana K:** Block Panchayath Building, Erattupetta, Aruvithura P O, Kottayam 686122. Email: deopjr-ktm.dairy@kerala.gov.in, Mobile: 9400338551.
  - o **Dairy Farm Instructor, Sri. Ronarld Wilson:** Block Panchayath Building, Erattupetta, Aruvithura P O, Kottayam 686122. Email: deopjr-ktm.dairy@kerala.gov.in, Mobile: 9497741776.

- **Ettumanoor DESU**
  - o **Dairy Extension Officer, Smt. Revathykutty K R:** Block Panchayath Building, Ettumanoor P O, Kottayam -686631. Phone: 0481 2539934, Email: deoetm-ktm.dairy@kerala.gov.in, Mobile: 8281915605.
  - o **Dairy Farm Instructor, Smt. Raveena Ravi:** Block Panchayath Building, Ettumanoor P O, Kottayam -686631. Email: deoetm-ktm.dairy@kerala.gov.in, Mobile: 8281267290.
  - o **Dairy Farm Instructor, Smt. Resmimol S:** Block Panchayath Building, Ettumanoor P O, Kottayam -686631. Email: deoetm-ktm.dairy@kerala.gov.in, Mobile: 8921696337.

- **Kaduthuruthy DESU**
  - o **Dairy Extension Officer, Sri. Ragesh M:** Block Panchayath Building, Kaduthuruthy, Kottayam 686604. Phone: 0482 9295080, Email: deokdt-ktm.dairy@kerala.gov.in, Mobile: 9745469600.
  - o **Dairy Farm Instructor, Sri. Jiss John:** Block Panchayath Building,

Kaduthuruthy, Kottayam 686604. Email: deokdt-ktm.dairy@kerala.gov.in, Mobile: 9074349951.

- **Dairy Farm Instructor, Smt. Silpamol P. S.**: Block Panchayath Building, Kaduthuruthy, Kottayam 686604. Email: deokdt-ktm.dairy@kerala.gov.in, Mobile: 9497667065.

- **Kanjirappally DESU**

  - **Dairy Extension Officer, Sri. Shihabudeen T. S.**: Mini Civil Station, Kanjirappally, Kottayam 686507. Phone: 0482 8201128, Email: deokjr-ktm.dairy@kerala.gov.in, Mobile: 9496622317.

  - **Dairy Farm Instructor, Sri. Kannan S. Pillai**: Mini Civil Station, Kanjirappally, Kottayam 686507. Email: deokjr-ktm.dairy@kerala.gov.in,

    Mobile: 9605988073.

- **Madappally/Changanassery DESU**

  - **Dairy Extension Officer, Sri. Jayakumari P B**: Block Panchayath Building, Madappally, Kottayam 686546. Email: deocgy-ktm.dairy@kerala.gov.in, Mobile: 9495445536.

- **Manjoor DESU**

  - **Dairy Extension Officer, Sri. Sibymon B.**: Kuruppanthara Po, Manjoor, Kottayam 686603. Phone: 0482 9243878, Email: deomjr-ktm.dairy@kerala.gov.in, Mobile: 8086624770.

  - **Dairy Farm Instructor, Smt. Anjana C. V.**: Kuruppanthara Po, Manjoor, Kottayam 686603. Email: deomjr-ktm.dairy@kerala.gov.in, Mobile: 9526661655.

- **Pampady DESU**

  - **Dairy Extension Officer, Sri. Kannan M. V.**: Pampady Panchayath

Shopping Complex, Pampady, Kottayam 686502. Phone: 0481 2506260, Email: deopmd-ktm.dairy@kerala.gov.in Mobile: 9447457179.

- o **Dairy Farm Instructor, Smt. Athira P. D.:** Pampady Panchayath Shopping Complex, Pampady, Kottayam 686502. Email: deopmd-ktm.dairy@kerala.gov.in, Mobile: 9447237991.

- o **Dairy Farm Instructor, Sri. Akhildev M.:** Pampady Panchayath Shopping Complex, Pampady, Kottayam 686502. Email: deopmd-ktm.dairy@kerala.gov.in, Mobile: 8289918932.

- **Pala DESU**

  - o **Dairy Extension Officer, Smt. Raji S. Moni:** Lalam Block Panchayat Building, Anthinad P O, Kottayam 686651. Email: deopla-ktm.dairy@kerala.gov.in, Mobile: 9495047872.

  - o **Dairy Farm Instructor, Sri. Christy John David:** Lalam Block Panchayat Building, Anthinad P O, Kottayam 686651. Email: deopla-ktm.dairy@kerala.gov.in, Mobile: 9496863764.

  - o **Dairy Farm Instructor, Sri. Anto Varghese:** Lalam Block Panchayat Building, Anthinad P O, Kottayam 686651. Email: deopla-ktm.dairy@kerala.gov.in, Mobile: 9495346381.

- **Pallom DESU**

  - o **Dairy Extension Officer, Sri. Martin Sanal Kumar G.:** Block Panchaayath Building, Vadavaathoor P O, Kottayam-686010. Phone: 0481 2573829, Email: deoplm-ktm.dairy@kerala.gov.in, Mobile: 9446036259.

  - o **Dairy Farm Instructor, Smt. Jayalekshmi N.:** Block Panchaayath Building, Vadavaathoor P O, Kottayam-686010. Email: deoplm-ktm.dairy@kerala.gov.in, Mobile: 9446024187.

- **Uzhavoor DESU**
  - **Dairy Extension Officer, Smt. Julie Jose**: Maranjattupilly, Uzhavoor, Kottayam 686635. Phone: 0482 22250994, Email: deouzr-ktm.dairy@kerala.gov.in, Mobile: 9048817465.
  - **Dairy Farm Instructor, Sri. Libeesh Mathew**: Maranjattupilly, Uzhavoor, Kottayam 686635. Email: deouzr-ktm.dairy@kerala.gov.in, Mobile: 9446120367.
  - **Dairy Farm Instructor, Smt. Soumya Sebastian**: Marangattupilly, Uzhavoor, Kottayam 686635. Email: deouzr-ktm.dairy@kerala.gov.in, Mobile: 8606611880.
- **Vaikom DESU**
  - **Dairy Extension Officer, Smt. Sunitha V.:** Vaikom Block Panchayath Building, Udayanapuram P O, Kottayam, -686143. Email: deovkm-ktm.dairy@kerala.gov.in, Mobile: 7907317469.
  - **Dairy Farm Instructor, Sri. Pratheesh Kumar**: Vaikom Block Panchayath Building, Udayanapuram P O, Kottayam, -686143. Email: deovkm-ktm.dairy@kerala.gov.in, Mobile: 9747320574.
  - **Dairy Farm Instructor, Smt. Ashida mayeen**: Vaikom Block Panchayath Building, Udayanapuram P O, Kottayam, -686143. Email: deovkm-ktm.dairy@kerala.gov.in, Mobile: 9526806495.
- **Vazhoor DESU**
  - **Dairy Extension Officer, Smt. Sreelekha N S**: Dairy Extension Service Unit, Vazhoor, Nedumkunnam P O, Kottayam 686542. Phone: 0481 2417722, Email: deovzr-ktm.dairy@kerala.gov.in, Mobile: 9847432817.
  - **Dairy Farm Instructor, Smt. Divyamol R. S.:** Dairy Extension Service

Unit, Vazhoor, Nedumkunnam P O, Kottayam 686542. Email: deovzr-

ktm.dairy@kerala.gov.in, Mobile: 7025600574.

4.1.8 Department of homoeopathy

The core mission is to establish and maintain accessible, affordable, and high-quality homoeopathic healthcare institutions that conform to accepted national standards through efficient administration, continuous staff development, and facility maintenance. This is supported by actively working to prevent disease, enrich specialized welfare projects, drive innovation through research, and engage the public to create awareness about Homoeopathy's potential.

The Homoeopathy Department's mission connects to the One Health concept through:

- **Public Health Focus:** Direct commitment to preventing communicable and non-communicable diseases in society, fulfilling the critical human health component of the One Health triad.

- **Evidence and Research:** Emphasis on research, documentation, statistical analysis, and evidence generation in treatment and prophylaxis, which provides the necessary data and knowledge base for interdisciplinary health management.

- **Community Engagement:** Actively engaging the public and creating awareness about health potentials, which is essential for successful local-level interventions that bridge the health of the community and its environment.

Table 4.1.8.1List of Govt Homoeo dispensaries of Kottayam District

1. 1.Aymanam Govt Homoeo Dispensary (05d01kottayam) Address: Govt Homoeo Dispensary Aymanam, Kudayampady, Mariyathuruth P O, Ktm-686017 Phone Number: 9447122345	29. Melukavu Govt Homoeo Dispensary (05d29kottayam) Address: Govt Homoeo Dispensary Melukavu, Chelakkunnu Kavala, Kottayam 686652 Phone Number: 9895171980
2. Changanasseri Govt Homoeo Dispensary (05d02kottayam)	30. Monippally Govt Homoeo Dispensary (05d30kottayam)

Address: Ghd Changanasseri, Mannam Women And Children Library Building Perunna Po Phone Number: 9526794430

3. Cherpunkal Govt Homoeo Dispensary (05d03kottayam) Address: Govt Homoeo Dispensary, Cherpunkal, Cherpunkal Church Road, Cherpunkal P O, 686584 Phone Number: 9961982067

4. Chirakkadavu Govt Homoeo Dispensary (05d04kottayam) Address: Govt Homoeo Dispensary Chirakkadavu, Ponkunnam P.O., Kottayam-686506 Phone Number: 9447416069

5. Elacadu Govt Homoeo Dispensary (05d05kottayam) Address: Government Homoeo Dispensary, Elackad, Mannackanad P. O 686633, Kottayam Phone Number: 9447214248

6. Elikulam Govt Homoeo Dispensary (05d06kottayam) Address: Governet Homoeo Dispensary Elikulam, Kooraly P O, Pin- 686522 Phone Number: 9446028598

7. Erattupettah Govt Homoeo Dispensary (05d07kottayam) Address: Government Homoeo

Address: Govt Homoeo Dispensary Monippally. Monippally Po.kottayam Pin - 686636 Phone Number: 9656294588

31. Moonnilavu Govt Homoeo Dispensary (05d31kottayam) Address: Govt Homeo Dispensary Moonnilavu, Moonnilavu P O, Kottayam. Pin-686586 Phone Number: 9400676920

32. Mulakkulam Govt Homoeo Dispensary (05d32kottayam) Address: Ghd Mulakkulam, Karikkod P.O, Peruva, Kottayam-686610 Phone Number: 9895512094

33. Mundakayam Govt Homoeo Dispensary (05d33kottayam) Address: Gov Homoeo Dispensary Mundakayam, Mundakayam P.O.-686513 Phone Number: 9446680439

34. Mutholy Govt Homoeo Dispensary (05d34kottayam) Address: Ghd Mutholy, Padinjattinkara – Kuruvinal Rd, Mudakkuzha, Kerala 686573 Phone Number: 9946012216

35. Myladikkara Govt. Homoeo Dispensary (05d35kottayam) Address: Myladikkara Govt. Homoeo Dispensary, Anickadu

Dispensary Erattupetta, Panchayath Shopping Complex, Market Road, Erattupetta P.O. Kottayam, Pin-686121 Phone Number: 9446263754

8. Erumeli Govt Homoeo Dispensary (05d08kottayam) Address: Government Homoeo Dispensary Erumeli, Erumeli P.O., Kottayam-686509 Phone Number: 9446529365

9. Ettumanoor Govt Homoeo Dispensary (05d09kottayam) Address: Government Homoeo Dispensary, Ettumanoor, Kottayam – 686631 Phone Number: 9446543932

10. Ezhachery Govt Homoeo Dispensary (05d10kottayam) Address: Govt Homoeo Dispensary, Ezhacherry P O, Kottayam, Pin-686651 Phone Number: 9447859776

11. Kadaplamattom Govt Homoeo Dispensary (05d11kottayam) Address: Govt Homoeo Dispensary Kadaplamattom, Kadaplamattom P O, Kottayam, 686571 Phone Number: 9995265674

12. Kaduthuruthy Govt Homoeo Dispensary (05d12kottayam) Address: Govt Homoeo

West P. O,, Pin-686503 Phone Number: 8129746081

36. Neendoor Govt Homoeo Dispensary (05d36kottayam) Address: Govt Homoeo Dispensary Neendoor, Moozhikulangara Po, Kottayam-686601 Phone Number: 9400355410

37. Paipad Govt Homoeo Dispensary (05d37kottayam) Address: Govt Homoeo Dispensary Paipad, Pallickachira P.O, Kottaym - 686537 Phone Number: 7736880065

38. Pampady Govt Homoeo Dispensary (05d38kottayam) Address: Govt Homoeo Dispensary, Pampady, Velloor Po, Kottayam-686501 Phone Number: 9446536859

39. Parathode Govt Homoeo Dispensary (05d39kottayam) Address: Gov. Homoeo Dispensary Parathode, Parathodu P.O., Kottayam-686512 Phone Number: 9446529365

40. Poonjar Govt Homoeo Dispensary (05d40kottayam) Address: Government Homoeo Dispensary Poonjar, Chennadu P.O., Poonjar, Pin-686581 Phone Number: 9446263754

Dispensary Kaduthuruthy, Mannar, Poozhikol P.O, Kottayam, Pin-686604 Phone Number: 9496953323

13. Kaduvakkulam Govt Homoeo Dispensary (05d13kottayam) Address: Govt Homoeo Dispensary, Kaduvakulam, Kollaad. P. O, Kottayam, Pin : 686004 Phone Number: 8547743293

14. Kallara Govt Homoeo Dispensary (05d14kottayam) Address: Gov.Homoeo Dispensary Kallara, Kallara South P.O., Kottayam-686611 Phone Number: 9447853418

15. Kanakkari Govt Homoeo Dispensary (05d15kottayam) Address: Govt .Homoeo Dispensary Kanakkary Phone Number: 9497274018

16. Kanjirapally Govt Homoeo Dispensary (05d16kottayam) Address: Govt Homoeo Dispensary Kanjirappally, Panchayath Shoping Complex, Kurisinkal, Kottayam 686507 Phone Number: 9656118465

17. Karimpani Govt Homoeo Dispensary (05d17kottayam) Address: Govt Homoeo Dispensary Karimpani, Karimpani

41. Poonjar-Thekkekkara Govt Homoeo Dispensary (05d41kottayam) Address: Govt Homoeo Dispensary Poonjar Thekkekara, Poonjar South P.O., Kottayam. 686582 Phone Number: 9895171980

42. Pravithanam Govt Homoeo Dispensary (05d42kottayam) Address: Govt Homoeo Dispensary Pravithanam, Pravithanam Po, 686651 Phone Number: 9447265162

43. Punnathara Govt Homoeo Dispensary (05d43kottayam) Address: Govt Homoeo Dispensary Punnathura, Kidangoor East P O 686573 Phone Number: 9947133129

44. Puthupally Govt Homoeo Dispensary (05d44kottayam) Address: Government Homoeo Dispensary Puthuppally, Payyapady P.O Puthuppally, Kottayam 686011 Phone Number: 9446536859

45. Teekoy Govt Homoeo Dispensary (05d45kottayam) Address: Government Homoeo Dispensary Teekoy P.O, Teekoy, Kottayam 686580 Phone Number: 9446880731

P.O., Kottayam 686564 Phone Number: 9940724101

18. Kidangoor Govt Homoeo Dispensary (05d18kottayam) Address: Govt Homoeo Dispensary, Kidangoor .Pin-686572 Phone Number: 9496230262

19. Kottumel Govt Homoeo Dispensary (05d19kottayam) Address: Govt Homoeo Dispensary Koottummel, Kulasekharamangalam P.O, Kottayam-Pin 686608 Phone Number: 9633128099

20. Kudakkachira Govt Homoeo Dispensary (05d20kottayam) Address: Govt Homoeo Dispensary Kudakkachira, Kudakkachira P.O, Kottayam, 686635 Phone Number: 9961632936

21. Kumarakam Govt Homoeo Dispensary (05d21kottayam) Address: Ghd Kumarakom, Kumarakom P O, 686563 Phone Number: 9567197320

22. Lakkattoor Govt Homoeo Dispensary (05d22kottayam) Address: Ghd Lakkattoor, Lakkattoor P.O., Kottayam-686502 Phone Number: 9447069522

46. Thalayazham Govt Homoeo Dispensary (05d46kottayam) Address: Government Homoeo Dispensary Thalayazham, Thalayazham P.O., Pin-686607 Phone Number: 7403036262

47. Thalayolaparambu Govt Homoeo Dispensary (05d47kottayam) Address: Govt Homoeo Dispensary, Thalayolaparambu, Thalayolaparambu P.O., Kottayam Phone Number: 7600018040

48. Thiruvarp Govt Homoeo Dispensary (05d48kottayam) Address: Govt. Homoeo Dispensary Thiruvarppu, Kummnam P. O, Kottayam Phone Number: 9446284917

49. Thrikkodithanam Govt.Homoeo Dispensary (05d49kottayam) Address: Govt.Homoeo Dispensary, Kottamury P.O, Behind Kseb, Thrikodithanam Pin -686105 Phone Number: 8111810894

50. Udayanapuram Gov. Homoeo Dispensary (05d50kottayam) Address: Gov. Homoeo Dispensary Udayanapuram, Udayanapuram P.O., Vaikom, Kottayam Phone Number: 9495714467

51. Vaikkam Govt Homoeo Dispensary (05d51kottayam)

23. Madapally Govt Homoeo Dispensary (05d23kottayam) Address: Govt Homoeo Dispensary Madappally, Madappally P.O., Mosco Junction, Thengana, Changanassery. 686546 Phone Number: 9400194101

24. Manarcad Govt Homoeo Dispensary (05d24kottayam) Address: Govt Homoeo Dispensary, Areeparampu.p.o, Manarcad 686501 Phone Number: 9495819130

25. Manjoor Govt Homoeo Dispensary (05d25kottayam) Address: Govt Homoeo Dispensary Manjoor, Manjoor P.O, Kuruppanthara, Kottayam, Pin: 686603 Phone Number: 8848874994

26. Mannanam Govt Homoeo Dispensary (05d26kottayam) Address: Govt.HomoeoDispensary, Mannanam P O, Kuttippady, Kottayam, Pin-686561 Phone Number: 9400011647

27. Meenachil Govt Homoeo Dispensary (05d27kottayam) Address: Govt Homoeo Dispensary Meenachil, Meenachil (P. O), Kottayam Pin- 686577 Phone Number: 9746966216

Address: Govt Homoeo Dispensary Vaikom, Chalaparambu, East Gate, Vaikom P O, Kottayam 686141 Phone Number: 9446542916

52. Vakathanam Govt Homoeo Dispensary (05d52kottayam) Address: Govt Homoeo Dispensary Vakathanam, Puthenchantha P O, Kottayam 686538 Phone Number: 9745115258

53. Veliyannur Govt Homoeo Dispensary (05d53kottayam) Address: Govt Homoeo Dispensary Veliyannoor, Thamarakkad. Veliyannoor Po, Kottayam Phone Number: 9400334037

54. Vijayapuram Govt. Homoeo Dispensary (05d54kottayam) Address: Govt. Homoeo Dispensary Vijayapuram, Vadavathoor P O, Kottayam - 686010 Phone Number: 9496276376

| 28. Meenadam Govt Homoeo Dispensary (05d28kottayam) Address: Govt. Homoeo Dispensary Meenadom, Meenadom P. O, Kottayam. Pin-686516 Phone Number: 9447705753 | |

4.1.9 Indian Systems Of Medicine

The central mission is to enhance the quality of primary, secondary, and tertiary health services by leveraging the protective, preventive, and curative aspects of traditional systems. This is achieved through the comprehensive **mainstreaming of Ayurveda, Yoga, Naturopathy, Siddha, and Unani** at every touchpoint of the health care system. A critical strategy involves setting up specialized wings at higher levels of care and actively promoting medicinal plants and natural resources.

Key Goals:

- Deliver high-impact health care through ISM institutions.

- Scale up institutional capacity progressively.

- Maintain a high standard of service delivery.
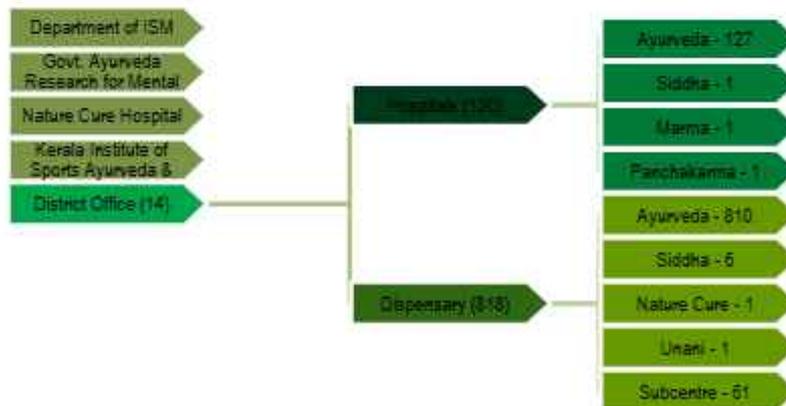
Figure 4.4: Structure of Ayush Department

4.1.10 Commission of food safety

Standard operating procedures for food safety

1. To ensure that food sold in the state is safe and fit for consumption
2. To ensure the compliance of best standards and practices for providing safe food at all levels from farm to fork
3. To help in the development and maintaining "Food safety culture" among the citizens of the state
4. To make "safe and nutritious food", a way of life in Kerala.
5. Issuance of license/registration to the food business operators so as to bring them within the regulatory framework of the food safety and rules/regulation.
6. Regulating manufacture, storage, sale, and distribution of food as per provisions of the food safety act and rules/regulation.
7. Keeping surveillance and monitoring over the food industry/market by lifting samples of food items which carry the potential risk of adulterants and creating awareness amongst the consumers regarding possible adulterants in food articles and the labelling requirements of food packages.
8. Educating and training the food business operators to enable them to comply with the food safety management systems prescribed under the food safety act/rules/regulations.
9. Analysis of food and water (statutory/surveillance/private) samples.
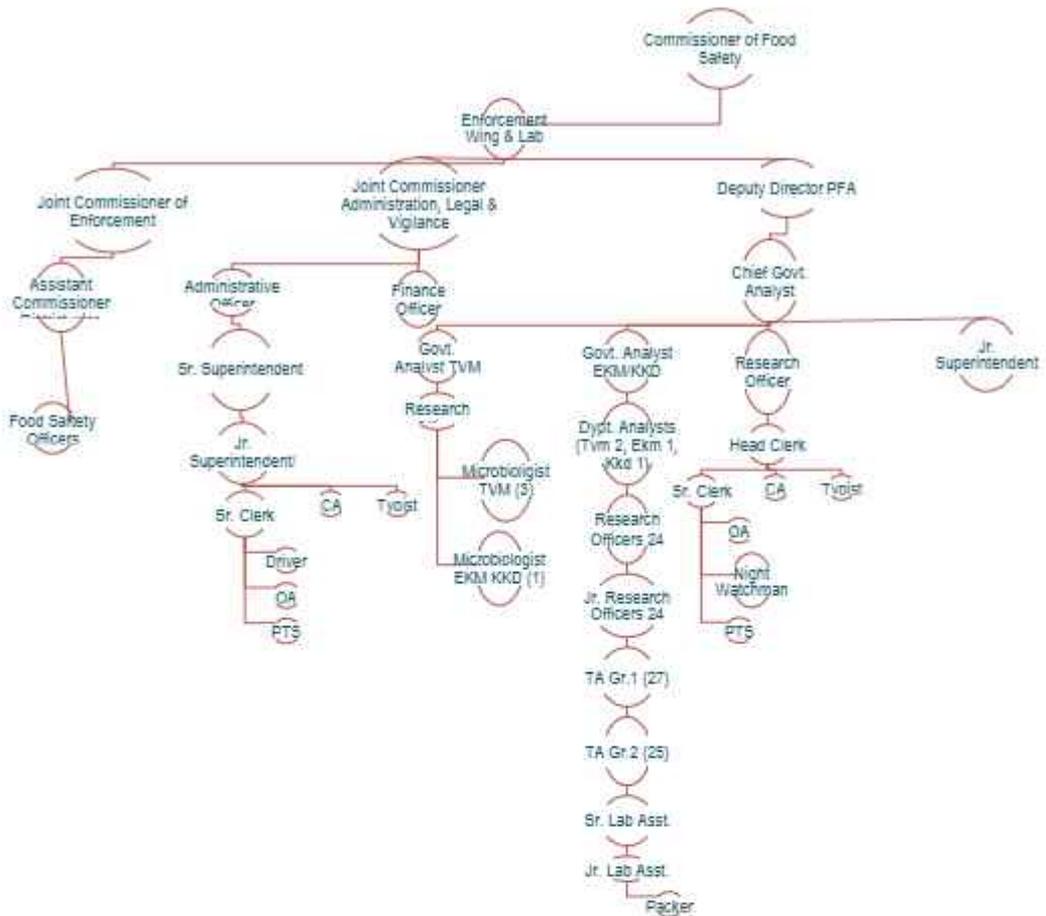
Figure 4.5: Organisational Structure of Food Safety Department

Key Contacts:

1. 1.**Changanasserry:** FSO Changanasserry Circle, 5th Floor, Revenue Tower, Changanasserry 686101, fsochry@gmail.com, 8943346587/ 8943346541, Landline: 0481-2425608

2. **Kaduthuruthy:** Kaduthuruthy circle, second Floor, Mini Civil Station, Kozha P O, Kuravilangadu, fsokduthy@gmail.com, 7593873339, Landline: 04822-232456

3. **Kottayam:** Pallom Block Building, Vadavathoor P O, Kottayam - 686010, fsoktm@gmail.com, 8943346586, Landline: 0481-2354050

4. **Pala:** O/o FSO, Kaduthuruthy Circle, 2nd Floor, Mini Civil Station, Kozha P O, Kuravilangadu-686633, fipala200052@gmail.com, 8943346543, Landline: 04822-200052

5. **Poonjar:** Food safety office, Poonjar circle, Panachikapara P O, Poonjar- 686581, fsooponjar2@gmail.com, 7593873319, Landline: No connection

6. **Puthuppally:** O/o the FSO, Puthuppally Circle, 1st Floor, SKM Building, Puthuppally 686011, fsoputhupally20@gmail.com, 8943346199, Landline: 0481-2354050

7. **Vaikom:** O/o FSO, Vaikom Circle, Basheer Samskarika Nilayam, Mithayikunnu P O, Pothi, Thalayolaparambu-686605, fsovkm@gmail.com, 7593873316/ 7593873339, Landline: 04829-236226

8. **Ettumanoor:** O/o FSO Ettumanoor Circle, Opp Family Court, Ettumanoor-686631, fsoetmr@gmail.com, 8943346542, Landline: 0481-2538616

9. **Kanjirappally:** O/o FSO, Kaduthuruthy Circle, 2nd Floor, Mini Civil Station, Kozha P O, Kuravilangadu-686633, fsoknply@gmail.com, 8943346541, Landline: 04828-206542

10. **Kottayam (Assistant Commissioner of Food Safety):** Assistant Commissioner of Food Safety, First Floor, Near DYSP Office, Civil Station, Kottayam- 686 001, dfiktm@gmail.com, 8943346185, Land phone: 04812564677

4.1.11 Water authority

Standard operating procedures for water authority

- Preparation, execution, promotion, operation, maintenance and financing of these schemes for the supply of water and the disposal of the waste water.

- Rendering all necessary services in regard to water supply and collection and disposal of waste water to the Government and on request to private institutions or individuals.

- Preparation of state plans for water supply and collection and disposal of waste water on the direction of the Government.

- Fixation & revision of tariffs, taxes and charges of water supply and maintenance services in the areas covered by the water supply & waste water systems of the Authority.

- Establishment of state standards for water supply and waste water services. The Kerala Water Authority (KWA) offices in the Kottayam district operate through a structured network of circles, divisions, and sub-divisions that serve all Local Self Government (LSGD) areas, including municipalities.

The Water Authority is responsible for managing water sources such as surface and groundwater, treating and purifying water, distributing it to households, industries, and institutions, maintaining pipelines, reservoirs, and treatment facilities, and implementing water safety plans with ongoing operational monitoring. The Health Department oversees public health surveillance, sets health-based water quality standards, independently verifies water quality results, investigates water-related disease outbreaks, and conducts environmental health inspections and enforcement. The main areas of linkage between the two institutions include water quality monitoring and surveillance, where joint sampling, periodic testing, validation of laboratory results, and the establishment of surveillance indicators ensure that water meets national and WHO standards. In disease outbreak investigation and response, the Health Department alerts the Water Authority when illnesses such as cholera, dysentery, typhoid, or hepatitis A occur, prompting joint investigations, rapid corrective actions like chlorination and repair of leakages, and coordinated public health education.

The main offices in Kottayam for the KWA are:

1. Public Health (PH) Circle, Kottayam, Office: Superintending Engineer, PH Circle, KWA, Collectorate P.O., Kottayam, Pin Code: 686002. Phone: 0481-2562745. Email: sephck@gmail.com.

2. Public Health (PH) Division, Kottayam Office: Executive Engineer, PH Division, KWA, Collectorate, Kottayam. Phone: 0481-2563711. Email: eephdivisionkwaktm@gmail.com.

3. Project Division, Kottayam Office: Executive Engineer, Project Division,

KWA, Collectorate, Kottayam. Phone: 0481-2566444.

Other KWA Sub-Divisions in Kottayam District which cover specific areas and LSGDs within the district:

1. PH Sub Division, Ponkunnam: Assistant Executive Engineer,

   Phone: 04828-224032.

2. Water Supply Project (WSP) Sub Division, Pala: Assistant Executive

   Engineer, Phone: 8547638562.

3. PH Sub Division, Kaduthuruthy: Assistant Executive Engineer,

   Phone: 8547638454.

PH Sections exist under the various Sub-Divisions and cater to local needs, including in areas like Vaikom, Uzhavoor, and Kidangoor.

4.1.12 Pollution control board

Standard Operating Procedures for Pollution Control Board

1. Important functions under the Water (Prevention & Control of Pollution) Act

   - to plan a comprehensive program for the prevention, control or abatement of pollution of streams and wells in the State and to secure the execution thereof;

   - to advise the State Government on any matter concerning the prevention, control or abatement of water pollution;

   - to collect and disseminate information relating to water pollution and the prevention, control or abatement thereof;

   - to encourage, conduct and participate in investigations and research relating to problems of water pollution and prevention, control or abatement of water pollution;

   - to collaborate with the Central Board in organising the training of persons engaged or to be engaged in programs relating to prevention, control or abatement of water pollution and to organise mass education programs;

- to inspect sewage or trade effluents, works and plants for the treatment of sewage and trade effluents and to review plans, specifications or other data relating to plants set up for the treatment of water, works for the purification thereof and the system for the disposal of sewage or trade effluents or in connection with the grant of any consent as required by this Act lay down, modify or annul effluent standards for the sewage and trade effluents and for the quality of receiving waters (not being water in an interstate stream) resulting from the discharge of effluents and to classify waters of the State.

2. Important functions under the Air (Prevention & Control of Pollution) Act

- to plan a comprehensive programme for prevention, control and abatement of air pollution

- to collaborate with the Central Board in organising the training of persons

- to inspect, at all reasonable times, any control equipment, industrial plant or manufacturing process

- to inspect air pollution control areas and assess the quality of air therein and take steps for the prevention, control or abatement of air pollution in such areas

- to lay down, in consultation with the Central Board and having regarding to the standards for the quality of air laid down by the Central Board, standards for emission of air pollutants into the atmosphere from industrial plants and automobiles or for the discharge of any air pollutant into atmosphere from any other source whatsoever not being a ship or an aircraft, provided that different standards for emission may be laid down under this clause for different industrial plants having regard to the quantity and composition of emission of air pollutant into the atmosphere from such industrial plants.

3. Important functions under the Environment (Protection) Act

- to implement measures for the protection and improvement of environment and the prevention of hazards to human beings, other living creatures, plants and property;

- to cause remedial measures to prevent or mitigate environmental pollution in case of accidents;

- to conduct inspections to check compliance and to collect or seize evidence thereof;

- to collect samples of air, water, soil or other substances;

- to provide service as Environmental Laboratory;

- to evolve standardised methods for sampling and analysis of various types of environmental pollutants;

- to analyse samples sent by empowered officers;
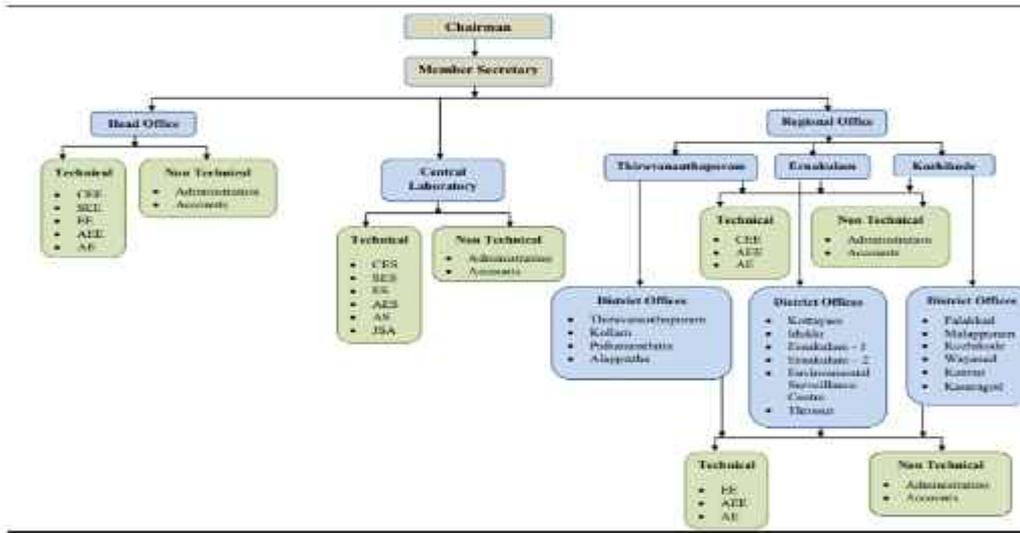
Figure 4.6: Organisational Structure of Pollution Control Board

- to carry out investigations to lay down standards, to monitor and to enforce standards.

- to carry out any other entrusted function.

- to take cognisance of offences.

4. To implement the Hazardous Wastes (Management, Handling and Transboundary Movement) Rules, particularly

- to process applications for and to issue/refuse/renew authorisation for collection, reception, treatment, storage and disposal of hazardous wastes.

- to monitor compliance with the provisions and conditions of authorisation.

- to process and forward to the Ministry of Environment & Forests applications for imports.

- to review matters pertaining to identification and notification of disposal sites.

5. To implement the Manufacture, Storage and Import of Hazardous Chemical Rules, particularly

- to enforce directions and procedures in respect of isolated storage of hazardous chemicals, regarding.

- to co-operate in preparation of on-site emergency plans.

- to enforce directions and procedures on import of hazardous chemicals on information regarding import.

- to issue direction to importer to take appropriate safety measures, including stoppage of import, if necessary.

- to inform concerned port authority on safety measures.

- to serve improvement notice on persons contravening the Rules.

6. To implement Rules for the Manufacture, Use, Import, Export and Storage of Hazardous Micro-organisms, Genetically Engineered Organisms or Cells, particularly

- to inspect, investigate and take punitive action on behalf of the State Biotechnology Co-ordination Committee in case of violations.

- to supervise, on behalf of the Genetic Engineering Approval Committee, implementation of the terms and conditions of approvals granted by the Committee.

7. To implement the Chemical Accidents (Emergency Planning, Preparedness and Response) Rules, particularly

- to serve in the State Crisis Group.

- to serve in the District Crisis Groups which are the apex bodies in the respective areas to deal with major chemical accidents and to provide expert guidance for handling chemical accidents.

8. To implement the Biomedical Waste (Management and Handling) Rules, particularly

- to receive from institutions generating, collecting, receiving, storing, transporting, treating, disposing and/or handling biomedical wastes applications for authorisation, to process the same and issue/ refuse/ renew/ cancel/ suspend authorisation.

- to compile and furnish to the Central Pollution Control Board annual reports from occupiers /operators.

- to inspect and verify facilities and records.

- to receive and act upon reports of accidents.

9. To implement the Plastics Manufacture, Sale and Usage Rules, particularly

- to receive and process applications for registration for manufacture of virgin/recycled or both plastic carry bags and containers and to issue/refuse/renew/cancel registration.

10. To implement the Municipal Solid Wastes (Management and Handling) Rules, particularly

- to monitor compliance with standards on ground water, ambient air, leachate quality, compost quality and incineration.

- to receive and process application for authorisation for setting up waste processing and disposal facility and to issue/refuse/renew/cancel authorisation.

- to furnish annual reports to the Central Pollution Control Board.

11. To implement the Noise Pollution (Regulation and Control) Rules, particularly

- to regulate and control noise of industrial origin.

- to monitor ambient sound levels.

- to advise the State Government on pollution control.

12. To implement the Batteries (Management and Handling) Rules, particularly

- to receive and verify half yearly returns on sale of new batteries and collection of old batteries.

- to receive and verify half yearly returns on sale and collection of batteries by dealers.

- to receive and verify annual returns from recyclers of used batteries.

- to receive and verify half yearly returns form bulk consumers of batteries.

- to receive and verify half yearly returns by auctioneers of used batteries.

- to ensure compliance with the Rules.

- to file annual compliance status report to the Central Pollution Control Board.

13. To implement the EIA notification, particularly

- to receive request for environmental public hearing.

- to notify the details of public hearing.

- to assist District Collector for public hearing and to furnish report thereof to the Ministry of Environment Forests and Climate Change.

14. To implement the Public Liability Insurance Act, 1991

- to make application to court to restrain owner under section 13(1) from handling hazardous substances, to implement the order of the Court under section 13(3)(b) and to recover cost thereof under section 13(4).

- to file complaint in Court

- to receive and act upon notice under section 18(b) of intention to make complaint to Court

Kottayam Pollution Control Board Office Details

- Kerala State Pollution Control Board, Kottayam District Office Address:

Sreenivasa Iyer Road, Near C.M.S College, Kottayam - 686 001

Phone Number: 0481-2302445 Email: keralapcb_ktm@yahoo.com

- Environmental Engineer (Contact Person): Er. Anikar K. R. (Mob: 9497719060)

Municipalities in Kottayam District

The Kottayam District Office of the KSPCB has jurisdiction over all the municipalities within the district, which include:

- Vaikom
- Pala
- Erattupetta
- Ettumanoor
- Kottayam

4.1.13 Directorate of environment and climate change

Standard Operating Procedures for Directorate of Environment & Climate Change

- Strengthening environmental governance for maintaining environmental sustainability of the state
- Investment in environmental management programmes in the state at community level
- Implementation of the policy of the Government of Kerala for the sustainability of development and care for environment.
- Sustainable use of resources and better natural resource management in tune with developmental needs of the community.
- Servicing as an agency for sustainable development and conservation of natural resources.
- Development and implementation of action plan on climate change.

- Take up State level environmental development programmes and implement them in collaboration with appropriate agencies.

- Activities related to Action on Climate Change.

- Administrative responsibilities of all environmentally related institutes being established in the State.

- Investigate and take appropriate action on complaints related to Environmental (protection) Act 1986.

- Conduct environment appraisal at planning level related to the developmental schemes of the State Government.

- Scrutinize the environmental related proposals prepared by Government/non-Governmental organizations.

- Participate in various environmental technology related activities of Local Self Government Institutions, information on environmental technologies and database systems.

- Act as nodal Department to co-ordinate with other departments on matters related to environment, awareness generation, climate change management and Wetland management.

- Develop, coordinate and cause to implement programme for Eco restoration of wetlands.

- Develop and cause to implement river action plans.

- Establishing Bhoomithrasena clubs (eco-clubs) in colleges of the State and provide financial support for undertaking awareness and environmental protection activities.

- Oversee and ensure the function of SEIAA & SEAC.

- Provide support for conducting seminar/workshop etc. on environment related subjects.

Kottayam District Municipalities Contact Information

The municipalities in Kottayam District have general contact details for their offices. Environmental concerns at the local level are often handled by specific departments within these offices (e.g., the Municipal Engineer or Health Inspector's office).

- Kottayam Municipality, Phone: 0481-2566665 Email:
  - ktmmunicipality@gmail.com
  - Website: kottayammunicipality.lsgkerala.gov.in
- Changanasserry Municipality
  - Phone: 0481-2420044
  - Email: secretarychsry@gmail.com
- Vaikom Municipality
  - Phone: 04829-222229
  - Email: munsecvkm@yahoo.co.in
- Pala Municipality
  - Phone: 04822-212328
  - Email: munsecpala12@gmail.com
- Erattupetta Municipality
  - Phone: 04822-272063
  - Email: etpamun@gmail.com
- Ettumanoor Municipality
  - Phone: 0481-2535565
  - Email: etmrmunicipality@gmail.com

General LSGD and District Contacts

- Kottayam District Panchayat

○ Website: panchayat.lsgkerala.gov.in/Kottayam
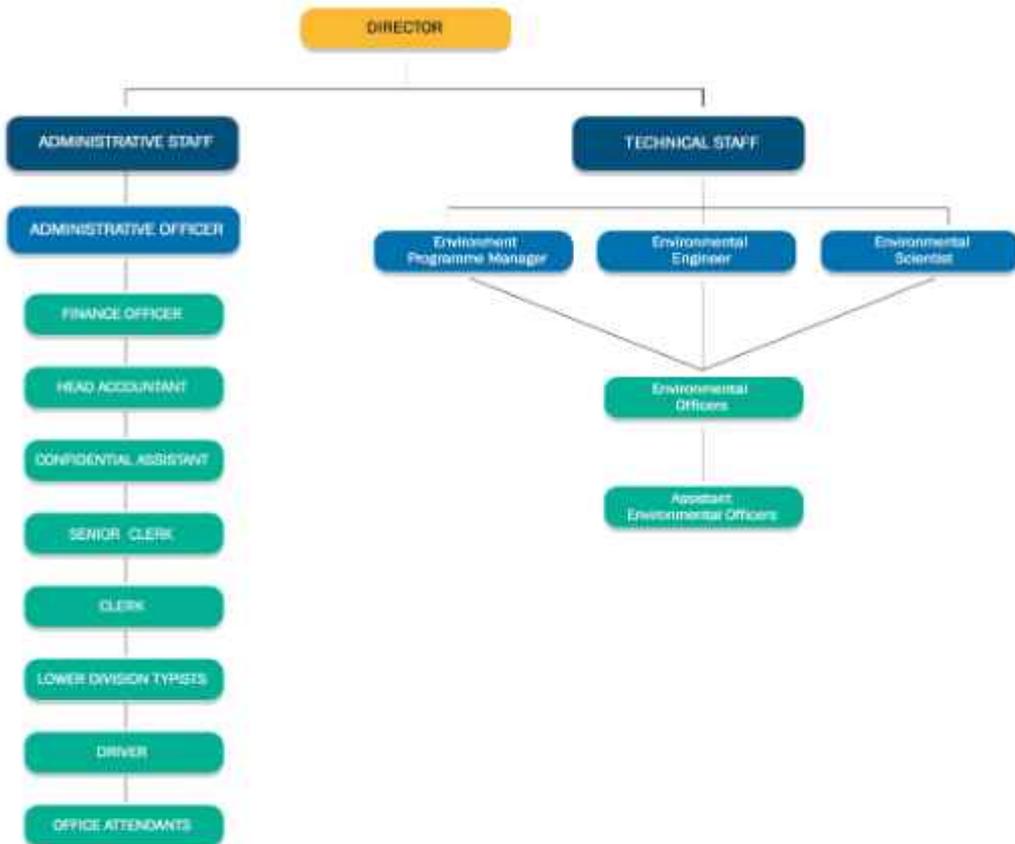
Figure 4.7: Organisational Structure of Environment and Climate Change Department

• Kottayam District Collectorate (for Disaster Management/Environmental issues)

○ Phone (District Emergency Operation Centre): 0481-2565400, 2566300

4.1.14 Department of agriculture development and farmers welfare

The primary mission of the department is to manage the entire planning process, which includes formulating and appraising Five-Year and Annual Plans and preparing all related budget and economic review documents in both English and Malayalam. Furthermore, it is responsible for monitoring and reviewing the implementation of all schemes and projects, providing advisory services to the Government and its

Departments on policy and technical matters, and conducting field visits to assess scheme effectiveness.

The Agriculture Department plays a pivotal role in advancing the One Health approach, which recognizes the interdependence of human health, animal health, and ecosystem health. Through its structured planni4ng processes such as formulating Five-Year Plans, Annual Plans, plan budgets, and district-wise fund allocations the department ensures that agricultural policies align with broader public health and environmental goals.

The Agriculture Department's functions such as monitoring and reviewing scheme implementation, providing technical advice, and assisting other departments in project preparation enable robust interdepartmental collaboration for controlling vector-borne and zoonotic diseases, improving farm biosecurity, strengthening surveillance of livestock–human–environment interfaces, and promoting safe agricultural practices.

Regular field visits at district and sub-district levels support real-time assessment of agricultural schemes that directly influence health outcomes such as pesticide management, soil health, integrated farming systems, and livestock housing. Feedback from these visits helps the Health Department understand ground-level vulnerabilities affecting community health, thereby facilitating coordinated risk mitigation strategies.

The department's role in conducting workshops, seminars, working groups, and need-based task forces provides a platform for multidisciplinary dialogue. These mechanisms bring together experts from agriculture, veterinary, environment, and public health sectors to vet projects, integrate cross-sectoral concerns, and ensure that initiatives are compliant with One Health principles. Quick assessments and summary documents prepared by the department also support rapid decision-making during public health events linked to agriculture such as crop-damaging pests, animal disease outbreaks, water contamination, or food supply disruptions.

Through these collaborative processes, the Agriculture Department strengthens the operational ecosystem of One Health by contributing technical expertise, evidence-based planning, and field-level insights.

In Kottayam, the linkage between the Agriculture and Health Departments is clearly seen during events like the African giant snail outbreak. Since the infestation primarily affects crops, soil, and household environments, the Agriculture Department leads the response,

carrying out field assessments, identifying hotspots, and implementing pest control measures. The Health Department supports by monitoring any related public health risks and issuing community advisories. This example demonstrates how both sectors work together under the One Health approach, with agriculture taking the primary technical role and health providing complementary surveillance and communication support."

Kottayam District Agriculture Office & Select Krishi Bhavans:

- Office Name: Principal Agricultural Office Kottayam

- Address: Collectorate, Kottayam, Kerala 686002

- Phone Number: 0481 2562263 or 9383470711

- Email: agri.alkm@gmail.com

  Pala Krishi Bhavan - Phone Number: 9383470756, Email Address:

  kbpalaktm.agri@kerala.gov.in

  Kanjirappally Krishi Bhavan - Phone Number: 9383470769, Email Address:

  kbkply@gmail.com

  Ettumanoor Krishi Bhavan - Phone Number: 9383470804, Email Address:

  krishibhavanetmrao@gmail.com

  Vechoor Krishi Bhavan - Phone Number: 04829 275238, Email Address:

  aokbvechoor@gmail.com

  Kaduthuruthy Krishi Bhavan - Phone Number: 9383470788, Email Address:

  aokaduthuruthy@gmail.com

  Pampady Krishi Bhavan - Phone Number: 9383470733, Email Address:

  agrlofficerpdy@gmail.com

4.2 Coordination mechanisms and functionality

The coordination mechanisms among key partner departments for the One Health Programme are designed for effective communication, joint action, and continuous monitoring across all administrative levels.

Key Coordination Mechanisms

Health and LSGD Mentorship: The Health Department provides Block Supervisors and LSGD mentors who facilitate the integration of One Health activities with local governance structures.

Resolution: Resolutions have been passed in all Local Self-Government Institutions (LSGIs)— Panchayats and Municipalities– to formally activate and implement the Community-Based Surveillance (CBS) system within their respective jurisdictions. Currently, **all Local Self-Government Institutions (LSGIs) in the Kottayam district have successfully passed** the necessary resolution to activate the programme in their jurisdiction.

Dedicated Nodal Officers in Line Departments: Each line department (e.g., Animal Husbandry, Fisheries, Agriculture) designates one nodal officer in every office at the Local Self-Government (LSG) level. This ensures a clear point of contact for inter-departmental collaboration at the grassroots.

One Health Committee at LSGD level: At the Local Self-Government (LSG) level, the One Health Committee conducts regular meetings, typically once every two months, to ensure continuous collaboration and responsiveness. These meetings involve the President/Chairman of the LSGI (or their representative) and Nodal Officers from all key line departments operating locally. The primary function of these sessions is to discuss various issues, including any recent disease outbreaks or emerging health risks in the community. Following a thorough discussion and evaluation of the situation, the committee works to formulate a necessary, inter-sectoral action plan to address the concerns. Finally, the meeting ensures the assignment and implementation of immediate actions and long-term preventive measures across all departments, thereby protecting community health through coordinated effort.

Figure 4.8: One Health Committee meeting- Karoor Grama Panchayat

Multi-Channel Communication: Communication regarding events and necessary actions is rapid and multi-channel, utilizing official email, phone, or WhatsApp when an event is alerted.

Joint Action: Meetings, Core field activities, including joint outbreak investigations, prevention, and control activities, are conducted in a coordinated, inter-sectoral manner, ensuring immediate and comprehensive response to threats.

Figure 4.9: Multichannel Communication

Inter-Sectoral Review: Review meetings involving all partner departments are held to evaluate and monitor the coordinated activities, identify bottlenecks, and determine further necessary actions.

Evaluation and Review function at the district-Level: District One Health Committee meeting is crucial for translating lessons learned into concrete solutions and preventive measures.

The District Committee, chaired by the District Collector and comprising heads of all key line departments, uses its regular review meetings to perform this vital evaluation:

1. Inter-Sectoral Review of Events:

   - The Committee examines detailed reports from joint outbreak investigations submitted by the District Programme Support Unit (DPSU).

   - They look beyond the immediate cause (the pathogen) to assess implementation gaps across all sectors involved (human health, animal health, and environment).

   - Example: If a leptospirosis outbreak occurred, the review assesses the timeliness of Animal Husbandry's rodent control efforts, the effectiveness of LSGD's solid waste management, and the coverage of Health's awareness campaigns and doxycycline prophylaxis is given.

2. Identifying Implementation Bottlenecks:

   - The meetings serve as a platform for line department heads to highlight coordination issues or resource limitations faced during the response.

   - The Committee collectively identifies systemic failures rather than blaming individual departments.

   - Solution Function: The District Collector, with the authority of the Committee, can immediately issue directives to resolve bottlenecks, such as reallocating funds or mandating specific joint field activities.

3. Approving Preventive Measures:

   - Based on the evaluation, the Committee formally approves new or enhanced preventive measures to be implemented across the district.

- These measures are inherently One Health in nature, requiring coordinated execution.

4.   Monitoring Progress on Solutions:

- The Committee monitors the implementation of these solutions and preventive measures and ensures that approved actions are not stalled and that the district's preparedness continuously improves.

In essence, the District Committee moves the system from a simple **response** to a cycle of **Evaluation >>> Solution >>> Prevention >>> Monitoring**, which is fundamental to successful One Health governance.

4.3 Intra departmental collaboration

Intra-departmental collaboration within the Health Department operates through a coordinated, multi-tier framework that connects district, block, PHC, and community levels. At the district level, the DMO, DSO and Deputy DMO guide surveillance, outbreak preparedness, laboratory coordination and rapid response. Daily reviews of alerts from hospitals, labs, and CBS are conducted, and the Rapid Response Team (RRT) is mobilised whenever verification is required.

At the block and PHC level, Medical Officers, HSs, PHNSs, HIs, PHNs, JHIs, JPHNs, MLSPs and laboratory staff work as a unified team to conduct fever surveillance, entomological monitoring, environmental assessments, water-quality checks and field investigations. They ensure immediate verification of signals coming from the community and timely updates to district officials.

Community-level collaboration is driven by ASHAs, AWWs and ward-level community mentors and volunteers who act as the frontline surveillance network. Through house visits and local interactions, they identify unusual events such as fever clusters, animal bites, waste accumulation or water contamination. These signals are rapidly escalated to the PHC teams through structured reporting channels.

Communication across all levels is maintained through, daily updates, weekly review meetings WhatsApp groups and rapid escalation pathways. This guarantees smooth information flow from CM-CV/ASHA→ JAK →MO → Block Public Health Unit→ DSO & One Health Nodal Officer → DMO strengthened by timely field response and verification. Joint

field visits, documentation, and feedback loops further strengthen the efficiency of the system.

This integrated internal coordination allows the Health Department to function as a single, cohesive unit, enabling early detection of public-health risks, rapid outbreak control and effective implementation of One Health activities.

CHAPTER 5

PRESENT STATUS OF ONE HEALTH PROGRAMME IN THE DISTRICT

Kottayam district initiated One Health implementation in 2021 as one of four priority districts (Pathanamthitta, Alappuzha, Kottayam, Idukki) in the Pamba River Basin under the World Bank-aided Rebuild Kerala Initiative and Nava Kerala Karma Padhathi-2.

World Bank Team Visit: The World Bank conducted a visit to Kottayam in 2022 specifically to observe and discuss the launch and implementation of the One Health Programme, which is supported under the Rebuild Kerala Initiative (RKI). The visit was critical because the One Health Programme's initial phase was being piloted in Kottayam and three other Pamba basin districts. The World Bank, as the supporting agency for the RKI, needed to assess the program's governance structure,

implementation readiness, and the level of inter-sectoral coordination being established in the field.

Figure 5.1: World Bank team visit on 02/06/2022

District Orientation for by KILA:

The Kerala Institute of Local Administration (KILA) conducted a 3 days One Health District Orientation Programme specifically for the elected representatives, Officials of the Health, other Line departments and NGOs of the Kottayam district from 22/08/2022 at Kottayam.

District-Level One Health Committee: In Kottayam district, a District-Level One Health Committee has been established to enhance coordinated action across human health, animal husbandry, agriculture, food safety, environmental sectors and other line departments, chaired by the District Collector. Key members include the District Medical Officer, Deputy Director of Panchayats, District Agriculture Officer, District Animal Husbandry Officer, District Fisheries Officer, District Forest Officer, District Food Safety Officer, District Programme Manager, and District Surveillance Officer, with the District NKKP2 Nodal Officer serving as convener and a Civil Society Representative ensuring community engagement. This multi-disciplinary platform facilitates integrated surveillance, rapid response mechanisms, and collaborative planning for emerging infectious and zoonotic diseases, aligning with Kerala's One Health guidelines under G.O (Rt) No. 399/2022/H&FWD. Since the launch, the District One Health Committee meeting has been held consistently once every three months to address various interdepartmental issues and collaboratively plan the future strategies of the health and relevant line departments.

Selection of District Mentors: A total of **12 district mentors were selected,** primarily retired Health Inspectors (HI), Public Health Nurses (PHN), and similar cadres given their extensive experience and familiarity with the health system.

Training of Community Mentors and Volunteers: District Mentors were strategically selected and assigned specific administrative blocks to oversee the initial groundwork. Their crucial role was to collaborate directly with the Elected Representatives of each ward to identify suitable Community Mentors and Volunteers - 56 individuals for each ward, 49 community volunteers and 7 community mentors - from the local populace. Following their identification, a rigorous training program was conducted for the Community Mentors and Volunteers during 2023-24. This entire process culminated in the registration of 9413 Community Mentors and 65859 Community Volunteers into the Centre for One Health-Kerala (COH-K) portal, officially establishing the foundational network for community-based disease surveillance and inter-sectoral coordination within the district.

Figure 5.2: Community Mentors- Community Volunteers Training

District AMR Lab: A crucial component of the One Health Initiative in Kottayam is the establishment of a dedicated District Antimicrobial Resistance (AMR) Lab at the General Hospital Kottayam. This facility supports the local strategy to combat drug-resistant pathogens by enabling better surveillance and diagnostics. To ensure the effective utilization of this resource, comprehensive training has been provided to medical officers, lab technicians and health workers. Furthermore, extensive awareness campaigns targeting the public and other line departments have been initiated to promote responsible antibiotic use. A key action resulting from this setup is the initiation of local antibiogram efforts, which involves tracking the susceptibility patterns of local bacteria to various antibiotics, providing critical data to guide prescription practices and combat AMR locally.

Figure 5.3: District AMR Lab - General Hospital Kottayam

Figure 5.4: Sensitisation of stakeholders regarding AMR goals, treatment guidelines antibiogram and other key issues
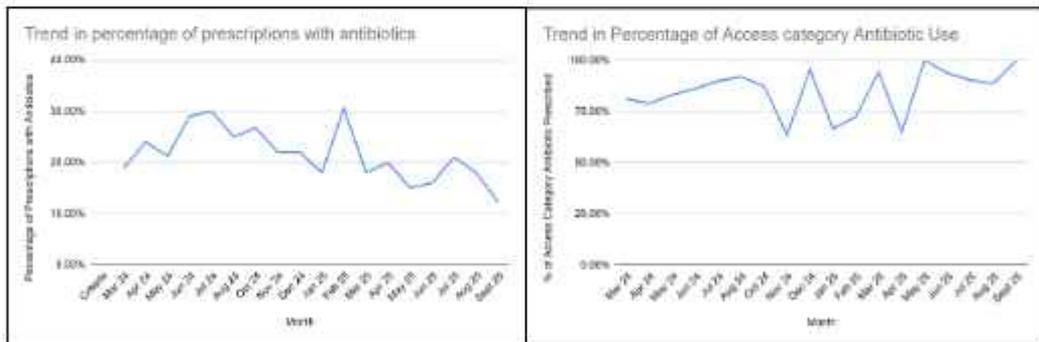
Figure 5.6: Prescription audit data analysis, General Hospital Kottayam in OPD- a. Use of antibiotics decreased, b. Use of access category antibiotics increased

District TOT: Trainings regarding setting up of CBS, implementation of One Health, Joint Outbreak Investigation and coordination efforts have been initiated across multiple levels. Specifically, **training of trainers (TOT)** was conducted at the district level for nodal officers of line departments and Health Supervisors followed by block-level training sessions for Medical Officers, Health Supervisors (HS), Health Inspectors (HI) and JAK teams.

Figure 5.7: District TOT for Block Supervisors and LSGD Mentors

District Action Plan: Furthermore, a **District Action Plan**, which integrates planning from all line departments, has been submitted.

One Health Resolution: Kottayam district has successfully **achieved a 100%** compliance rate for foundational political and institutional support for the One Health Programme: every Local Self-Government (LSG) body within the district has passed formal resolutions committing to the implementation of the One Health System and Community-Based Surveillance (CBS) within its respective jurisdiction.

Joint Outbreak Investigation: A joint outbreak investigation was launched at Kumarakom in November 2024 for leptospirosis, a practice which was subsequently adopted for all subsequent outbreaks. At present more than 50 joint outbreak investigations done successfully.

Figure 5.8: Launch of Joint Outbreak Investigation at Kumarakom for Leptospirosis

Table 5.1: Timeline of activities

	Year	Target	Activities
Year 1	June 2021- June 2022	District level OH coordination platform with trained and certified staff in Pamba Basin districts.	One Health District Committee with Hon. District Collector as chairperson & 12 District Mentors were selected
Year 2	June 2022- June 2023	Training to community mentors & volunteers on protocols for community based OH surveillance	Selection & training of 65859 community volunteers & 9413 community mentors completed and was entered in the one health portal - http://103.156.188.24/cohk-cbss/dashboard
Year 3	June 2023- June 2024	Routine joint disease outbreak investigations and inspections	Started at Kumarakom Later completed 43 joint outbreak investigations in different parts of the district Training to OH nodal officers of all line departments & health department completed

Year 4	June 2024- June 2025	Implement community based OH surveillance	District action plan was submitted to COH-Kerala. Training given to medical officers and health inspectors/health supervisors of all institutions. District ToT training completed Training to all staff of Line departments completed.
Year 5	June 2025- June 2026	Identify and control at least one zoonotic disease outbreak of human importance in a year.	Activities to control rabies being planned with various line departments.

Subsequently, the cadre of 12 district One Health mentors was dissolved, and the routine health system absorbed One Health functions by reallocating responsibilities: Technical Assistant Grade II at the district level, Health Supervisors at the block level, Health Inspectors under the LSGD, and JAK Teams at the ward level. Although multiple departments are part of the One Health framework, the Health Department initially undertook most of the focused activities, with participation from other sectors expected to strengthen progressively.

CHAPTER 6

LSG LEVEL INITIATIVES

The Local Self-Government (LSG) institutions in Kottayam district have demonstrated strong ownership and initiative in implementing the One Health Programme, making them central to its success at the grassroots level.

6.1 COORDINATION MECHANISM

The establishment of Local Self-Government **(LSG) One Health Committees** in all local bodies marks a critical achievement in institutionalizing the program at the grassroots level in Kottayam. These committees are formally **constituted by nodal officers** from key line departments, ensuring that a core multi-sectoral team is always in place locally. To maintain operational continuity and review progress, **routine committee meetings are held once in two months.** Crucially, the system is designed for rapid response: in the event of any outbreak or emerging issue, an immediate inter-sectoral meeting is convened to coordinate action. A persistent effort is also made to ensure continuous public awareness about the One Health approach, embedding the collaborative principle within community life.

6.2 KEY PROCESSES

The implementation of the One Health Programme in Kottayam began with a comprehensive sequence of strategic steps focused on institutionalizing the system through the Local Self-Governments (LSGs).

The foundational steps included:

Capacity Building for Leaders: A district-level workshop for PRI representatives was held from 22 – 24 August 2022, delivered by the Kerala Institute of Local Administration (KILA), to orient the elected officials on their core roles and responsibilities in the One Health framework.

Block Level Launch: The initiative was formally rolled out with the District Launch by a Health Mela in all blocks with Vilambara Rally (2022 May – June) which served as a major public awareness event and officially involved the LSGs in presenting the program to the community.

LSG One Health Committee: The formation of an LSG One Health Committee in every local body, comprising nodal officers from key departments, ensured a structured environment for joint outbreak investigation and inter-sectoral coordination meetings.

Selection of CM/CV: District Mentors were selected and tasked with operating in specific blocks. Their primary role was to work closely with the LSG representatives to systematically select Community Volunteers and Mentors in each ward, followed by their specialized training, to establish the vital grassroots surveillance network.

One Health Resolutions: Achieving a major milestone, all LSGs passed resolutions to officially implement the Community-Based Surveillance (CBS) and the One Health System within their respective jurisdictions, providing complete institutional commitment.

Table 6.1: Details of resolutions passed in the district

LSGD	Date Of Resolution	LSGD	Date Of Resolution
Akalamkunnam	18/06/2025	Poonjar	27/08/2025
Arpookara	27/06/2025	Mutholy	30/06/2025
Athirampuzha	08/08/2025	Nedumkunnam	11/08/2025
Ayarkunnam	30/06/2025	Neendoor	24/06/2025
Aymanam	24/06/2025	Njeezhoor	08/07/2025
Bharananganam	30/06/2025	Kooroppada	27/06/2025
Changanasserry Municipality	30/06/2025	Pala Municipality	24/06/2025
Chembu	27/06/2025	Pallickathodu	23/06/2025
Chirakadavu	26/06/2025	Pampady	12/06/2025
Vechoor	08/08/2025	Panachikkad	10/06/2025

Ettumanoor Municipality	30/06/2025	Koruthodu	30/06/2025
Kadanad	30/06/2025	Poonjar Thekkekkara	24/06/2025
Kadaplamattom	20/06/2025	Puthuppally	13/06/2025
Kaduthuruthy	30/06/2025	Ramapuram	02/07/2025
Kallara	27/06/2025	Teekoy	11/07/2025
Kanakkary	28/06/2025	Thalanadu	16/06/2025
Kangazha	24/06/2025	Thalayazham	27/06/2025
Erattupetta Municipality	30/08/2025	Meenadom	30/08/2025
Kanjirappally	06/08/2025	Mundakayam	30/06/2025
Kanjirappally	06/08/2025	Thrikkodithanam	23/06/2025
Karoor	30/06/2025	T V Puram	30/06/2025
Karukachal	27/06/2025	Udayanapuram	16/06/2025
Kidangoor	12/06/2025	Uzhavoor	21/06/2025
Koottickal	10/07/2025	Vaikom Municipality	18/06/2025
Koottickal	10/07/2025	Elikulam	26/08/2025
Erumely	11/08/2025	Paippad	02/09/2025
Kottayam Municipality	29/05/2025	Parathodu	11/08/2025
Kozhuvanal	30/06/2025	Thalappalam	18/08/2025

Kumarakom	18/06/2025	Veliyannoor	21/06/2025
Kuravilangad	16/06/2025	Thalayolaparambu	12/08/2025
Kurichi	02/07/2025	Velloor	27/06/2025
Madappally	26/06/2025	Vijayapuram	10/06/2025
Manarcadu	10/06/2025	Mulakulam	27/06/2025
Manimala	30/06/2025	Melukavu	13/08/2025
Manimala	30/06/2025	Thidanad	26/07/2025
Manjoor	27/06/2025	Chirakadavu	03/07/2025
Marangattupilly	18/06/2025	Thiruvarppu	19/09/2025
Maravanthuruthu	18/06/2025	Vakathanam	07/07/2025
Meenachil	13/06/2025	Moonnilavu	31/07/2025
Mulakulam	27/06/2025	Kottayam Municipality	29/05/2025
Vazhappally	30/07/2025	Vellavoor	29/07/2025
Puthuppally	13/06/2025	Puthuppally	13/06/2025
Vazhoor	15/07/2025		

Figure 6.1: One Health Committee meetings in Kuravilangad, Ramapuram and Puthuppally Grama Panchayat

Figure 6.2: One Health Resolution of Pala municipality being handed over to District Mentor Satheesh by Municipal Chairman Sri. Thomas Peter

Figure 6.3: Vaccination of dogs initiated by Ettumannoor Municipality

Figure 6.4: Vaccination of pet dogs and stray dogs and licensing of pets as a One Health initiative by Ettumanoor municipality

Figure 6.5: Intersectoral meeting at Kidangoor Gram Panchayat in Hepatitis A outbreak at Kidangoor

CHAPTER 7

COMMUNITY BASED SURVEILLANCE - CBS

It is the systematic detection and reporting of events of public health significance within the community, by community members. The One Health Plan for Kottayam district promotes Community based surveillance which includes Event based surveillance and Indicator based surveillance. Integrated Surveillance enables early detection and response to outbreaks, minimizing their impact through participatory efforts across sectors. Community-based surveillance forms a core component, supported by stakeholder training, capacity building, event reporting, monitoring, and evaluation.

Key steps in setting up the Community-Based Surveillance (CBS) system within the Local Self-Government Department (LSGD) in Kottayam, organized chronologically:

Public Awareness: The entire initiative was launched at the local level through PRI-level launches featuring a Health Mela in all blocks, maximizing public awareness and participation in the new program.

LSGD Sensitisation: Initial workshops were conducted to make the LSGDs aware of the necessity of CBS and the overall One Health Programme within their respective jurisdictions, securing their institutional commitment.

Consultation and Selection: Elected Representatives in each ward were consulted and utilized to help identify and select suitable Community Mentors (CM) and Community Volunteers (CV) from the local community.

Capacity Building: Training for the selected Community Mentors and Community Volunteers was provided at the ward levels to equip them with the necessary knowledge and skills for surveillance and reporting.

Figure 7.1: Training modules for Community mentors and volunteers

Political Endorsement: The process was formalized as all LSGs passed resolutions to

officially adopt and implement the CBS and the entire One Health System.

Capacity building of Health and other line departments:

It began with the essential step of selecting Nodal Officers from the Health Department and all other key line departments in each Local Self-Government (LSG) body. Following this, targeted training was provided to various officials, including Medical Officers, Block Supervisors, LSGD Mentors, and the Nodal Departments, a process crucial for effectively instilling the integrated "One Health concept and Community Based Surveillance" and its practical application across all sectors. This conceptual and administrative groundwork immediately transitioned into action through the conducting of joint outbreak trials and the establishment of formalized joint outbreak investigation protocols for all future outbreaks, ensuring a coordinated response involving the LSGD and the key line departments whenever a cross-sectoral health threat emerges.

WhatsApp Groups: Communication within the Community-Based Surveillance (CBS) network is maintained through decentralized digital channels, with WhatsApp groups

formed at the ward level to include the LSGD Mentor, Community Mentors (CM), and Community Volunteers (CV), enabling rapid communication via instant messaging or phone calls.

Figure 7.2: Communication in Community Based Surveillance System

Table 7.1 Training Schedule

Level	Target Groups	Focus Areas	Dates
Health Supervisors/ Inspectors	Supervisors, Inspectors	TOT, CBS toolkit, investigations, reporting	15/11/2024 &18/11/2024
Block Medical Officers	16 Health Blocks MOs	CBS toolkit, joint investigations	November 15, 2024
District/Taluk	All line departments	Nodal officer selection, training plans, CBS briefing	January 13, 2024 (16 blocks)
Block	All line departments	CBS basics, toolkit, outbreak roles	Weeks 2-3 January 2025

LSGD	11 Revenue Blocks departments	CBS basics, toolkit, investigations	Weeks 2-4 January 2025
Community	71 Grama Panchayats, 6 Municipalities mentors/volunteers	CBS toolkit, reporting, investigations	February 1 - March 31, 2025

Training rolls out progressively across levels to build skills in CBS toolkit use, event reporting, investigations, and intersectoral collaboration. Nodal guidance training for 77 LSGIs was conducted in early February 2025.

Reporting and Monitoring: Multi-channel reporting includes official emails, google forms for event categorization from facilities, departments, and mentors. Regular One Health committee meetings at LSG level ensure periodic assessment of the events reported.

Event-based meetings integrate into weekly IDSP sessions with nil reporting options, plus monthly One Health committees at LSGD and District levels for action reviews.

Figure 7.3: Communication in Community Based Surveillance System

CHAPTER 8

INNOVATIVE PROGRAMMES INITIATED UNDER ONE HEALTH IN THE DISTRICT

8.1 Lesson 1 – SNAIL (പാഠം ഒന്ന് – ഒച്ച്)

District have launched a week-long campaign, "Lesson One - Snail," from August 25 to 31 2022, to curb the rising population of giant African snails, which devastate over 300 types of vegetables and fruits while posing a meningitis risk to humans. Announced by District Collector Dr. P K Jayeshree, this initiative under the state government's **One Health project** aims to safeguard human, animal, environmental, and ecological health by empowering farmers and residents to trap and eliminate the invasive pests before they cause severe agricultural damage and economic losses.

Figure 8.1: Picture-
https://www.onmanorama.com/news/kerala/2022/08/23/african-snail-menace-kottayam.html

Traps set using chopped cabbage, cauliflower, or papaya leaves placed in wet sacks or sheets around homes in the evenings; once snails gather overnight especially in hotspots like Uzhavoor, Pampady blocks and Melukavu panchayat, they will be killed in saltwater and buried in nearby pits. It empowered farmers, Kudumbashree groups, and Haritha karma Sena and Padasekara Samiti. Awareness campaigns and hands-on training to prevent uncontrolled proliferation post-2018 floods. Recent reports confirm ongoing African snail issues in areas like Erumely (October 2025) and Kaduthuruthy, underscoring sustained One Health surveillance needs.

Figure 8.2: Intersectoral meeting by Hon DC on 22/08/22 Health, Agriculture, Krishi Vigyan Kendra, Agriculture University, Animal Husbandry, Forest, Kudumbashree & LSGD

Another biological method to control the snail population is duck farming as snails are a favourite food. The programme will be implemented in all gram panchayats and municipalities in the district in collaboration with the Departments of Agriculture, Health, Local Self Government, Animal Welfare and Forest as well as Kumarakom Agriculture Knowledge Centre and Kudumbashree.

Figure 8.3: 23/08/22 Campaign Launch by District Administration

Figure 8.4: Snail Trap Demonstration

Figure 8.5: African Snail Mitigation Activities

8.2 AMRITH

In Kottayam, the AMRITH (Antimicrobial Resistance Intervention for Total Health) initiative plays a vital role in Kerala's comprehensive AMR control efforts under the Kerala Anti-Microbial Resistance Strategic Action Plan (KARSAP). Initiated at Kottayam in 2023, later rolled out across the state by the Kerala Drugs Control Department in January 2024, it curbs over-the-counter antibiotic dispensing via unannounced pharmacy inspections, mandates prescriptions, and encourages community alerts through a toll-free line (18004253182). Locally in Kottayam, it supports decentralized actions like block-level AMR committees set up in all 191 blocks by 2023, alongside surveillance, Antibiotic Literate Kerala awareness drives,

and cross-sector partnerships addressing human, animal, and environmental health to combat resistance.

District AMR lab started at General Hospital Kottayam on 23/12/2022

Activation of Hub and Spoke AMR lab system. Hub lab uses WHO NET.

Sensitisation of major stake holders including medical officers, health workers, para medical staff, lab technicians and other departments regarding the importance and goals of AMR.

Creating and Sensitizing a **Student Volunteer Brigade** to be trained in the district for the same and use them as arms to reach public.

Generating and regularly updating **Antibiogram for the District** for the primary and secondary level.

Sample transportation and testing: arranged **cold boxes** to 45 spoke institutions for transportation of Urine/Stool/ Sputum Samples to Hub Lab for Culture & Sensitivity. Arranged transportation boxes to all institutions (85 no's) to transport other samples for C&S. The **District Medical Officer issued a circular** to all health institutions mandating that samples must be sent for Culture and Sensitivity (C&S) testing for all Inpatient (IP) cases requiring intravenous antibiotics and for Outpatient (OP) cases presenting with

recurrent infections such as Upper Respiratory Tract Infections (URI) or Urinary Tract Infections (UTI).

Figure 8.6: Image of Clinical Microbiology Laboratory

Figure 8.7: Box for transporting samples to AMR labs

District and Block AMR committee were established.

Creating awareness among the patients, bystanders, and general public on the issues of antimicrobial resistance and future AMR pandemic which will make it difficult to treat infection in the future.

    (a) Hoardings in 10 important spots

    (b) FM jingles

    (c) Posters for Medical Stores

    (d) Sticker for Medical Stores

    (e) Pamphlets for consumers/stakeholders

(f) Flash mob by AMRITH Brigade

(g) TV Scroll

(f) Social Media Campaigns and #Hashtag

An **"ANTIBIOTIC Seal"** will be placed on the covers dispensing antibiotics from all medical stores and hospital pharmacies—including Private, Neethi, Karunya, and Jan Oushadhi Medical Stores, as well as Government and Private hospital pharmacies—to immediately inform the patient that the dispensed medicine is an antibiotic, emphasize the necessity of taking the full course, and explain that failure to do so risks the development of antibiotic resistance.
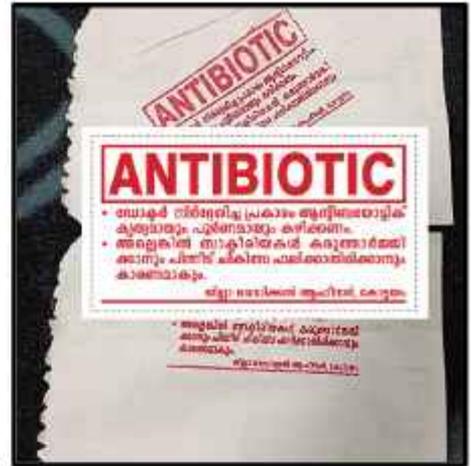
Figure 8.8: Antibiotic Dispensing Covers

Collecting the unused and expired antibiotics from the community: Yellow bin will be placed in all Govt Health institutions near Pharmacy to collect the unused antibiotic. Will dispose it scientifically through KEIL/IMAGE. Will also engage Haritha Karma Sena to collect unused medicine from Households.

Testing Antibiotic Residues in poultry, dairy, fish, and Agri produces.

Impact Assessment of the programme after one year of the launch of the activities and process documentation.

Figure 8.9: Yellow bins for collecting unused antibiotics

Table 8.1: Number of samples tested for Culture and Sensitivity

Organisms	Urine		Pus	
	OP	IP	OP	IP
E. coli	169	--	--	--
Klebsiella	45	--	--	--

Gram negative bacilli	267	56	37	76
Gram positive cocci	28		39	23
Total	**509**	**56**	**76**	**99**
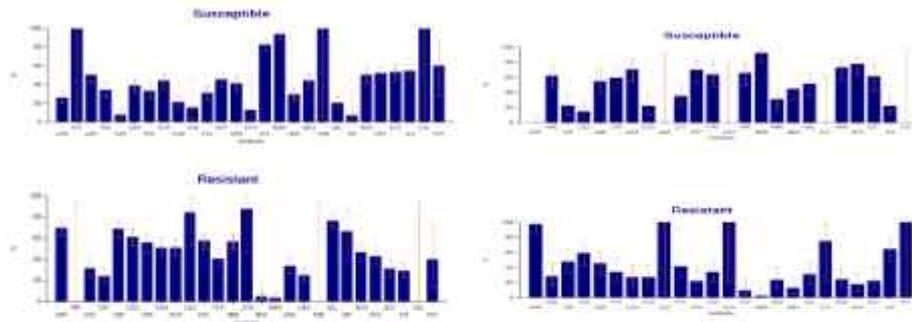
Figure 8.10: E. Coli and Klebsiella antibiogram

Reduction in antibiotic usage in Kerala by 30%: Minister Veena George

TNN / Nov 20, 2024, 22:03 IST

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T'puram: Health minister Veena George said there has been a reduction of 20 to 30% in antibiotic usage due to the interventions of the health department to prevent unnecessary and unscientific use of antibiotics.

"This means that unnecessary consumption of antibiotics was curtailed within one year. Strict measures were taken to ensure that medical stores do not sell antibiotics without a doctor's prescription. A toll-free number was provided to inform the public and strengthen awareness. All hospitals will be made antibiotic-smart," said George.

The minister was speaking at the state-level inauguration of the awareness campaign against the unnecessary and excessive use of antibiotics at Vattiyoorkavu upper primary health centre.

8.3 Unusual bat mortality at Thrikkodithanam: one health response

An incident of unusual bat mortality was reported from Thrikkodithanam in Kottayam district, prompting an immediate One Health-based field response. Given the importance of bats as reservoirs for several zoonotic pathogens, including Nipah virus,

Figure 8.11: Field team in full PPE collecting samples from the dead bat reported in Thrikkodithanam as part of the One Health investigation.

the event was treated as a potential public health concern. The Veterinary Department promptly visited the site, documented the mortality pattern, and collected biological samples following biosafety protocols. Health Department staff simultaneously assessed the human exposure risk in surrounding households, while the Forest Department supported species identification and environmental assessment within the area. Samples were forwarded for laboratory testing as per national guidelines. Through this rapid, coordinated action across Veterinary, Health, and Forest sectors, the district ensured early detection, minimized community anxiety, and demonstrated the critical role of One Health surveillance in managing wildlife-linked events.

8.4 One health response to the rabid dog incident – Koruthodu panchayath.

The rabid dog incident reported from Koruthodu Panchayath triggered a comprehensive One Health response involving the Health Department, Veterinary Department, Forest Department, and LSGD. The situation began when a dog displaying sudden aggression and biting individuals was reported. The Health Department immediately verified all human exposures, ensured rapid administration of Post-Exposure Prophylaxis (PEP), and conducted active follow-up of all bite victims. Parallelly, the Veterinary Department

initiated field screening, traced suspect animals, and confirmed rabies through appropriate laboratory testing, formally declaring the event as a zoonotic outbreak

Figure 8.12: Panchayath level meeting was held including the Vterinary department, Police department , Forest Department

requiring multisectoral action. A critical component of the investigation was the dog's movement pathway. The animal had entered the nearby forest fringe area, where unregulated waste-dumping by local residents had been attracting stray dogs and wildlife. Recognising the ecological risk, the Forest Department played a pivotal role by assisting in tracing the dog inside the forest margin and helping identify potential wildlife contact points. They also immediately strengthened surveillance over illegal waste dumping, installed monitoring mechanisms, and restricted community waste-disposal activities in these ecologically sensitive zones. Their timely intervention reduced animal congregation points and minimised the risk of spill-over or spill-back transmission between domestic dogs and wild species.

The Veterinary Department complemented these efforts by conducting mass vaccination of domestic and stray dogs in the surrounding area, monitoring livestock for abnormal behaviour, and mapping potential secondary exposures. Meanwhile, LSGD mobilised ASHA workers, Anganwadi workers, and ward-level task forces to support door-to-door case finding, community awareness, environmental cleaning, and structured reporting of suspicious animal behaviour. They facilitated local communication channels to educate residents about bite prevention, wound washing, and the importance of completing the full PEP schedule. Altogether, this incident demonstrated a strong field-level One Health partnership in Koruthodu. The integration of human health services, veterinary

surveillance, environmental protection, forest-ecosystem monitoring, and community governance ensured early detection, rapid containment, and prevention of further transmission. The coordinated response emphasised Kerala's capacity to manage zoonotic threats through a holistic, ecosystem-centered approach where human, animal, and environmental health are inseparably linked.

Figure 8.13: Animal Husbandry team vaccinating free -roaming dogs to prevent community health during the Koruthodu rabies response

8.5 One health response to dog bite incidents - Ettumanoor, Kottayam

A cluster of dog bite incidents reported from Ettumanoor, Kottayam, prompted the activation of a coordinated One Health response involving the Health Department, Veterinary Department, and Local Self-Government Department (LSGD). The Health Department initiated immediate human risk assessment by verifying all bite cases, ensuring wound management, and administering timely Post-Exposure Prophylaxis (PEP) to affected individuals. Rapid field visits were conducted by medical teams to identify high-risk households, counsel exposed persons, and provide clear instructions regarding follow-up doses. Health Inspectors (HIs) and ASHAs carried out active surveillance to detect any additional unreported bite victims, ensuring no one remained without appropriate treatment.

The Veterinary Department simultaneously undertook animal-level investigations to determine the presence of suspected rabid dogs or aggressive free-roaming dogs in the area. A field team consisting of veterinary surgeons and livestock inspectors carried out stray dog surveillance, mapped areas with repeated aggression reports, and implemented targeted vaccination drives. Dogs that could be handled were humanely caught and vaccinated, while community-owned pets were verified for vaccination status

and given booster doses where required. The department also monitored nearby livestock for abnormal neurological symptoms, ensuring that multi-species transmission was ruled out.

Figure 8.14: One Health Committee meeting in response to
dog bite incidents in Ettumanoor Municipality

LSGD played an essential operational role by mobilizing local ward committees, Kudumbashree members, Haritha Karma Sena, and sanitation teams. Waste dumping zones and open garbage accumulation points-which attract stray dogs-were cleaned, disinfected, and monitored. Awareness sessions were held in the affected wards to educate residents on dog bite prevention, safe behaviour around animals, wound-washing techniques, completing the PEP schedule, responsible pet

Figure 8.15: Rabies Control Activities

ownership, and the dangers of abandoning or feeding stray dogs without control measures. Community announcements, posters, and house visits helped ensure that residents were sensitised and actively participating in the response.

Through this integrated One Health approach, Ettumanoor successfully addressed the dog bite cluster by combining human medical care, veterinary interventions, environmental sanitation, and community engagement. The rapid collaboration between departments ensured that the transmission risk was contained, vaccination coverage improved, and public awareness increased. This incident highlighted how holistic, multisectoral action is crucial for effectively managing zoonotic threats and protecting community health in densely populated urban areas like Ettumanoor.

8.6 Joint outbreak investigations

Table 8.2: Details of Joint Outbreak Investigations

Suspected Case	LSG	Departments Involved	Health Institution Area
Dengue fever	Arunootimangalam	Health, LSGD, DVC	BFHC Arunootimangalam
Hepatitis A	Athirampuzha	Health, LSGD, ICDS	BFHC Athirampuzha
Suspected food poisoning	Athirampuzha	Health, LSGD, Education	BFHC Athirampuzha
Viral fever	Athirampuzha	Health, LSGD, Education	BFHC Athirampuzha
Dengue fever	Changanasserry	Health, LSGD, Ayush, Homeo, DVC	GH Changanasserry
ADD	Changanasserry	Health, LSGD, Ayush, Homeo, Food Safety	GH Changanasserry
Dengue fever	Edayazham	Health, LSGD	CHC Edayazham

Hepatitis A	Elikkulam	Health, LSGD, Homeo, Ayush	CHC Paika
Hepatitis A	Erattupetta	Health, LSGD, Food Safety, KWA, Ayush, Education, ICDS	FHC Erattupetta
Dengue fever	Erumely	Health, LSGD	BFHC Erumely
Suspected food poisoning	Kaduthuruthy	Health, LSGD, Food Safety, Education	FHC Kaduthuruthy
Acute Gastroenterit is	Kanjirappally	Health, LSGD, Education	PHC Parathode
Hepatitis A	Karoor	Health, LSGD, Food Safety, Pollution Control	PHC Karoor
Hepatitis A	Koodalloor	Health, LSGD, Ayush, Homeo, Food Safety, KWA	CHC Koodalloor
ADD Outbreak	Koodalloor	Health, LSGD, Homeo, KWA	CHC Koodalloor
Mumps	Koodalloor	Health, LSGD, Homeo, Education	CHC Koodalloor
Viral Fever	Koodalloor	Health, Ayush, Homeo	CHC Koodalloor
Viral Fever	Koodalloor	Health, LSGD, Homeo	CHC Koodalloor

Hepatitis A	Koruthodu	Health, LSGD, KWA, Animal Husbandry, Ayush, Homeo, Agriculture	PHC Koruthodu
Suspected food poisoining	Kottayam municipality	Health, LSGD, KWA	UPHC Veloor
Mumps	Kuruppanthara	Health, LSGD, Education	FHC Kuruppanthara
Viral fever Outbreak	Madappally	Health, LSGD, Ayush, Homeo, Education	FHC Madappally
Hepatitis A	Manarcadu	LSGD, Ayush, Education, Health, Food Safety	FHC Manarcadu
Hepatitis A	Manimala	Health, LSGD, Food Safety, KWA, Animal Husbandry, Ayurveda, Homeo, Ayush, Education, Agriculture	FHC Manimala
Mumps	Manimala	Health, LSGD, Education	FHC Manimala
Mumps	Meenachil	Health, Ayush, LSGD, Education	FHC Meenachil
Hepatitis A	Mundakkayam	Health, LSGD, Food Safety, KWA, Ayush, Education	FHC Mundakkayam

ADD	Mutholy	Health, LSGD, Education	FHC Mutholy
Chickenpox	Mutholy	Health, LSGD, Education	FHC Mutholy
Viral fever	Nattakom	Health, LSGD, Education	FHC Nattakom
Hepatitis A	Onamthuruth	Health, LSGD, KWA, Ayush, Homeo, ICDS, Agriculture, Animal Husbandry	FHC Onamthuruth
Viral fever Outbreak	Onamthuruth	Health, LSGD, Education	FHC Onamthuruth
Viral Hepatitis A	Panachikad	Health, LSGD, ICDS, Ayush, Homeo	BFHC Panachikadu
ADD Outbreak	Panachikad	Health, LSGD, Education	BFHC Panachikadu
Viral Hepatitis A	Ramapuram	Health, LSGD, ICDS, Ayush, Homeo, Animal Husbandry, KWA	BFHC Ramapuram
Hepatitis A	Thalappalam	Health, LSGD, Homeo, Ayush, Education, Dairy, Vyapari Vyavasayi Association	PHC Thalappalam

Hepatitis A	Thidanad	Health, LSGD, Education, ICDS, Food Safety, Ayush	FHC Thidanad
Acute Gastroenteritis	Ullanad	Health, LSGD, Ayush	BFHC Ullanad
Viral fever	Ullanad	Health, LSGD, Education	BFHC Ullanad
Mumps	Veliyannoor	Health, LSGD, Education, Homeo	FHC Veliyannoor

8.6.1 Joint outbreak investigation of hepatitis-a outbreak at Manimala Panchayat, Erumely health block
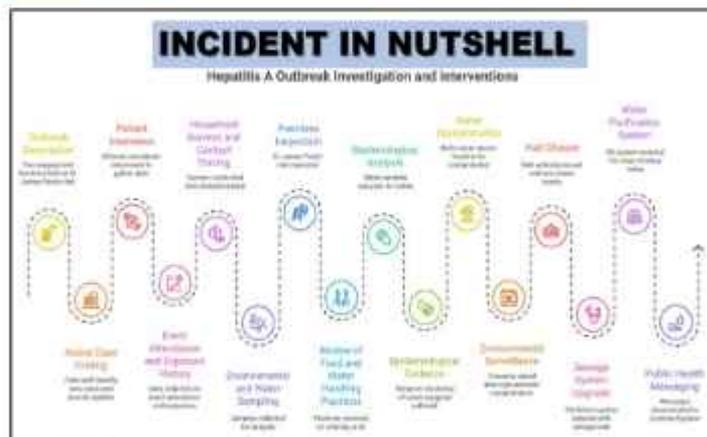
Figure 8.16: Details of Hepatitis A Outbreak Investigation and Interventions

As part of the Manimala Viral Hepatitis A, outbreak response, intersectoral and One Health coordination meetings were held on 30/05/2025 and continued in the following month to strengthen collaborative action across **health, environmental, and local governance sectors.** The outbreak was epidemiologically linked to two engagement ceremonies conducted on May 1st and May 4th, 2025 at Karikkattoor, under Manimala Panchayat. During the joint review, public health teams, LSGD representatives, water

authority officials, and parish management assessed sanitation practices, food and water handling systems, and environmental risks at the venue. Based on the risk assessment and One Health recommendations, the authorities transitioned from a single-pit latrine to a properly engineered sewage tank system and implemented RO-purified water supply within the premises. This coordinated, multisectoral approach ensured long-term mitigation of faecal–oral transmission risks and strengthened environmental safety measures to prevent recurrence.

8.6.2 Joint outbreak investigation of hepatitis-a outbreak from a one health perspective - Karoor, Ullanadu health block

The joint outbreak investigation at an educational campus was conducted using a One Health approach, integrating human health, environmental, and institutional systems to effectively control the Hepatitis A outbreak linked to contaminated drinking water. The Health Department led epidemiological surveillance, active case search, clinical management, and health education sessions focused on hygiene and safe water practices. The Water Authority conducted comprehensive water-quality testing across all supply sources, confirming contamination and facilitating immediate corrective actions. The Pollution Control Board (PCB) inspected the Sewage Treatment Plant and water distribution lines, identified leakage points, and recommended urgent engineering rectification to prevent further cross contamination. The Local Self Government Department supported sanitation drives and chlorination activities in hostels and

surrounding areas to reduce environmental risks. The University Administration ensured closure of contaminated pipelines, arranged safe alternative water supply,
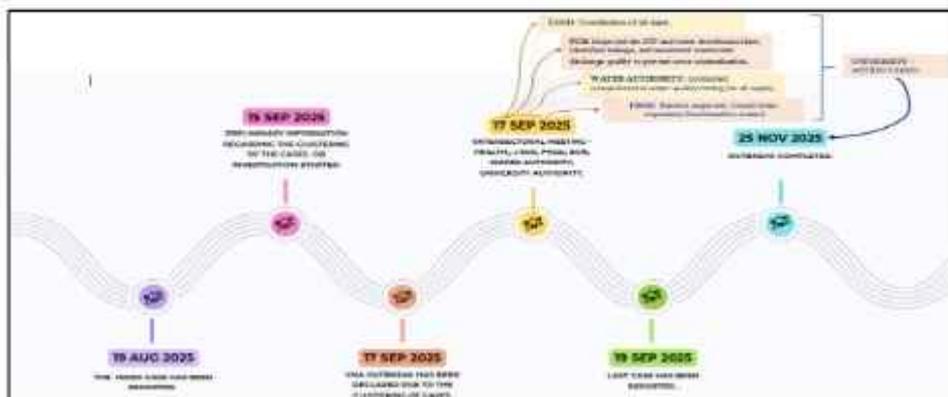

Figure 8.17: Hep A outbreak investigation

conducted hygiene audits, and established a Health & Sanitation Monitoring Committee for sustained oversight.

Complementing these efforts, the Food Safety Department (FSSAI) conducted inspections of campus eateries, suspended consumption of items prepared using unsafe water, and mandated hygiene training for all food handlers. This multisectoral, One Health–aligned response ensured rapid identification of the contamination source, harmonized departmental actions, and effectively curtailed the outbreak while strengthening long-term campus health resilience.
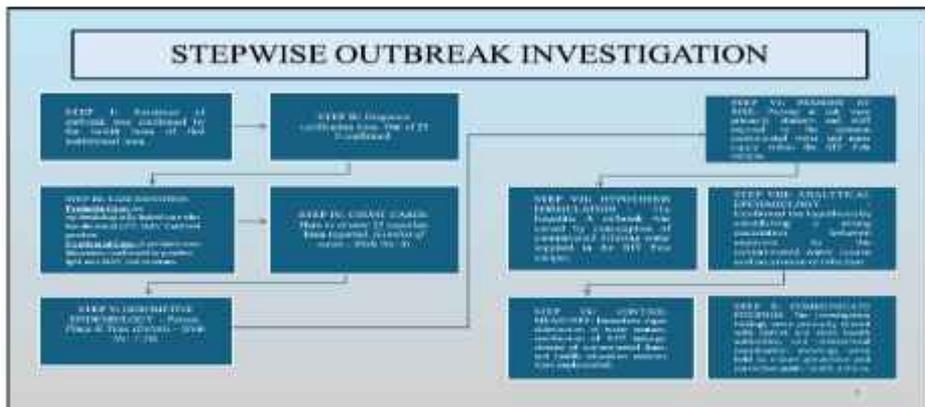
Figure 8.18: Stepwise Outbreak investigation of Hepatitis A

8.6.3 Joint outbreak investigation of dengue outbreak from a one health perspective at Changanaserry, Karukachal health block

During the dengue outbreak in Changanasserry, coordinated action between the Public Health Department and the LSGD was central to applying a One Health approach. Joint field assessments were conducted to identify vector breeding hotspots in households, public spaces, commercial areas, and waterlogged sites. **LSGD** mobilised sanitation workers for intensified source reduction, solid-waste clearance, drain desilting, and fogging activities, while the **Public Health team** provided epidemiological mapping, case-line listing, and technical guidance on vector control. Daily review meetings facilitated rapid decision-making, allocation of resources, and monitoring of control measures, enabling synchronized responses across human health, environmental sanitation, and community-level systems. This integrated collaboration significantly

Figure 8.19: Joint Outbreak investigation of Dengue Outbreak at Karukachal Health Block strengthened surveillance, reduced environmental risk factors, and improved community compliance with dengue prevention measures.

8.6.4 JOint outbreak investigation of hepatitis-a outbreak at Kidangoor Panchayat, Koodalloor health block

Figure 8.20: Joint outbreak Investigation of Hepatitis A

A comprehensive One Health response was implemented following the Hepatitis A outbreak at Kidangoor, through close coordination between the Health Department, LSGD, and hospital administration to address human health risks arising from unsafe water and environmental sanitation lapses. With ten confirmed cases and five water samples testing positive for *E. coli* and coliforms, joint inspections by Health and LSGD teams led to the immediate suspension of the main well, super chlorination of all wells, and initiation of monthly water-quality monitoring. The collaborative review strongly recommended installing proper filtration systems for both the hospital and canteen and directed the hospital to permanently discontinue the use of water from the hostel well. Health cards were issued to all food handlers to strengthen hygiene compliance. An intersectoral meeting held on 10/07/2025 by CHC Koodalloor, with active participation from the Kidangoor Panchayat (LSGD), enabled joint decision-making, environmental assessments, and enforcement of corrective actions, ensuring a unified One Health approach that addressed human health, water safety, and environmental risk factors.

8.6.5 Joint outbreak investigation of hepatitis-a outbreak from a one health perspective of Ramapuram-Karoor Panchayat, Ramapuram health block

Figure 8.21: Joint Outbreak Investigation at Karoor Paanchayt

A coordinated One Health response was launched in Karoor and Ramapuram Panchayats to control the Hepatitis-A outbreak through strong intersectoral collaboration between the Health Department, LSGD, Kerala Water Authority, Public Health Engineering Department, and the Food Safety Department. Joint meetings facilitated unified planning, leading to the formation of a Health Monitoring Committee to oversee surveillance, rapid response, and community-level interventions. The Health Department initiated active

case detection, epidemiological surveillance, fever surveys, and home visits through ASHAs, JHIs, HIs, LSGD members, and volunteers, while ensuring timely medical care, post-exposure prophylaxis, and vaccination. Simultaneously, the Water Authority and PHED undertook water-quality testing, super chlorination of wells, weekly chlorination in schools and Anganwadis, and repair of leaking pipelines to prevent contamination and secure safe drinking water. Parallelly, the Food Safety Department intensified inspections of eateries, juice vendors, and high-risk food outlets, enforcing hygiene regulations and corrective actions wherever lapses were identified. Through this integrated intersectoral action plan, human health risks, environmental contamination pathways, and food-water safety issues were addressed collectively, reinforcing a comprehensive One Health approach to outbreak containment and prevention.

8.6.6 Report on illegal waste dumping and environmental pollution

Date: May 28–29, 2025

Location: Ward 11

Mulakulam Grama Panchayat,

Muttuchira Village,

Vaikom Taluk,

Kottayam District

Subject: Unauthorized waste dumping, environmental pollution, and ensuing   public health risks at leased land.

1. Background Of Incident

Figure 8.22: Illegal waste dumping at Muttuchira Village, Vaikom Taluk

A plantation plot in Ward 11, in Mulakulam Grama Panchayat used for compost production using organic and inorganic waste, including plastic.

2. Discovery Of Illegal Waste Dumping (May 28,2025)

During routine dengue fever control inspections in Ward 11's rubber plantations, the Health Inspector and team discovered, Waste being dumped carelessly and unscientifically without regulatory permits, causing environmental pollution.

Structures found onsite comprised:

   i.   Two sheds - One containing plastic bags of waste, the other housing ~200 chickens. An 18m x 11m plastic-covered shed near the entrance with rotting food waste emitting foul odour and sewage flowing into the plantation.

   ii. A composting area covered with tarpaulin, with sewage discharge noted.

   iii. A composting area covered with tarpaulin, with sewage discharge noted.

   iv. Garbage piles containing plastic bottles and other refuse scattered among rubber trees extending 50 meters along a south-facing slope, with active rat sightings during the day.

   v.   Sewage from the site flows during rainy seasons into a nearby ravine and subsequently into a stream approximately 500 meters away.

   vi. Approximately 19 houses lie within 500 meters of the dump site.

   vii. Sixteen wells in proximity are at risk of contamination.

   viii. Waste transported from Thrikkakara municipality (hotels, bakeries, catering units) via two tippers and a tractor.

3. Immediate Administrative Action Taken (May 28,2025)

A meeting on 28/05/2025 at 2pm on Monsoon disease control was held, chaired by Kaduthuruthy Block Panchayat President. Arunnuttimangalam Health Inspector presented findings. Site inspection conducted by a delegation comprising: Kaduthuruthy Block Panchayat President, Mulakulam Panchayat President, Panchayat Secretary, Ward Member, Dy. District Medical Officer and

Pollution Control Board authorities were duly informed by the Block Panchayat President. Mulakulam Panchayat President convened a meeting at 2 pm banning operations of the unit.

4. Emergency Inter Sectoral And One Health Meeting (May 29,2025)

An emergency multi-department meeting was convened at Kaduthuruthy Block Panchayat, attended by: DSO, Technical Assistant, Pollution Control Board Engineer and Assistant Engineer, Panchayat Secretary, Velloor Police Station SHO r, Arunnuttimangalam Medical Officer and other public health officials and representatives

5. Key Decisions:

Issue a formal notice, demanding waste removal and pollution abatement within 30 days.

Immediate cessation of composting and related operations on the same day of emergency meeting held on 29/05/2025 at 2 pm.

Notice issued on May 29, 2025, contained directives for:

- Destruction of rats and mosquitoes.
- Prevention of sewage discharge from the premises.
- Separation and proper processing of waste.

Water samples collected from 16 wells suspected of contamination, sent to Kerala Water Authority Kaduthuruthy lab for testing. First phase of chlorination completed on neighbouring wells. Doxycycline supplied to 10 waste handling workers as a protective measure.

Tarpaulins secured over waste piles to prevent rainwater contamination; ongoing waste segregation.

Daily monitoring by Health Inspector mandated. Continued surveillance and enforcement actions are recommended to safeguard public health and environmental quality.

Report submitted to competent authorities for follow-up.

Figure 8.23: Waste Management Activities

CHAPTER 9

FINANCIAL ALLOCATION &UTILISATION SUMMARY (YEAR- WISE)

Table 9.1 shows that utilisation improved from **61% in 2022–23** to **over 97% in 2023–24**, reflecting strengthened implementation. High utilisation was sustained in **2024–25 (96.58%)** with minimal balance. For **2025–26**, funds have been received and utilisation details are under process.

Table 9.1: Details of Financial allocation and Utilisation

Year	Amount Received	Amount Expended	Balance/ Surrender	Percentage of Utilisation
2022-23	1400000	854426	545574	61%
2023-24	18320550	17817720	502834	97.2%
2024-25	5298044	5117008	181036	96.58%
2025-26	4888000	Under process	Under process	Under process

CHAPTER 10

FUTURE PLANS

10.1 Toll-free contact systems

A key future initiative is the establishment of department-specific toll-free numbers, supported by a centralised helpline managed by a trained contact officer. This system will act as a single, easily accessible reporting point for the public, ensuring that alerts related to outbreaks, dead animals, water contamination, waste issues, or animal bite incidents are immediately directed to the appropriate department-whether Health, Animal Husbandry, Forest, Pollution Control, or LSGD. By enabling rapid communication and faster interdepartmental coordination, this toll-free network will significantly strengthen early detection and timely One Health response in the district.

10.2 Kudumbashree and Harithakarma Sena

Strengthening One Health in Kottayam requires active community participation through Kudumbashree networks Harithakarmasena, both have a lot of field activities and regular meetings regarding their field activities. The existence of Kudumbashree as a widespread, multi-sectoral community network offers a significant advantage for the One Health Programme's surveillance efforts. Specifically, Kudumbashree's organizational structure, which includes Resource Persons specialized in various sectors like agriculture, animal husbandry, and health, and its formation of multiple small groups (6 to 8 groups of approximately 20 persons in each ward) that meet weekly, creates an already established, efficient channel. This high level of organization and frequent meetings make it much easier for the One Health team to rapidly obtain information

Figure 10.1: Kudumbashree program managers explaining their network in One Health training for block supervisors and LSGD mentors

regarding any unusual event or health-related issue that may arise, enhancing the effectiveness of the community-based surveillance system.

10.3 Strengthening block public health unit

Enhancing the capacity of Block Public Health Units (BPHUs) and optimally utilising block-level epidemiologists and data managers is vital for improving coordinated One Health action in the district. With stronger support systems, epidemiologists can lead timely joint outbreak investigations with Veterinary, LSGD, Forest, and other departments, ensuring early detection and rapid containment of emerging health threats. Empowering BPHUs with clearer roles, better data integration, and cross-sectoral collaboration will create a more responsive, efficient, and proactive public health system capable of addressing complex zoonotic and environmental challenges.

10.4 Digital integration & reporting systems

Digital platforms will play a key role in advancing One Health operations. Integrated apps and portals will support rapid reporting of outbreaks, dead animals, water contamination, vector surveillance, and environmental hazards, while enabling seamless inter-departmental coordination. Real-time dashboards for District Surveillance Units and One Health Committees will improve situational awareness, allow quick data-driven decisions, and strengthen early detection of zoonotic and environmental health risks.

10.5 Legal and administrative reinforcement

The involvement of the Legal Department will be expanded to ensure strong enforcement of waste management laws, animal movement regulations, and biosecurity guidelines. Legal backing will support timely outbreak control and ensure compliance with public health norms. Integrating One Health responsibilities into Panchayat bylaws, ward-level committees, and school health programmes will institutionalise shared accountability and enable consistent multisectoral action at the local level.

10.6. Environmental health & risk mapping

Future plans include detailed environmental risk mapping of hotspots such as flood-prone zones, forest fringes, and waterlogged panchayaths. Forecasting tools for zoonotic diseases, vector-borne illnesses, and waterborne outbreaks will help predict risks and initiate preventive interventions early. Routine Haritha Keralam water testing in schools

will enhance water safety monitoring and reduce the risk of community exposures through contaminated sources.

10.7 Sanitation & public infrastructure improvement

Sanitation improvements are vital for preventing zoonotic and environmental health risks in Kottayam, especially in high-traffic pilgrimage corridors such as the Pamba-Sabarimala route, where seasonal influx leads to increased waste generation and environmental contamination. The district plans to establish additional public toilets in markets, bus stands, tourist areas, and pilgrim transit points to ensure safe sanitation access and prevent water and soil contamination during peak Sabarimala seasons. Strengthening waste management systems-particularly in towns along the pilgrimage path-will minimise stray dog congregations, reduce wildlife attraction, and lower the risk of diseases such as rabies, leptospirosis, and waterborne infections. These actions will create cleaner environments, reduce zoonotic spillover risk, and support sustainable One Health outcomes for residents and seasonal visitors alike.

10.8 Positive reinforcement for CBS volunteers

To sustain an effective Community-Based Surveillance (CBS) network, it is essential to provide continuous positive reinforcement to volunteers. This includes promptly acknowledging any information or alerts they report-such as unusual animal deaths, waste dumping, contaminated water sources, or suspected disease clusters-and updating them on the follow-up actions taken by the concerned departments. Appreciating their role, providing public recognition, issuing certificates, and offering periodic training will keep volunteers motivated and connected to the One Health system.

10.9 Food testing lab in Kottayam

At present, Kottayam does not have a dedicated food testing laboratory, which limits the district's ability to conduct rapid food safety surveillance and detect adulteration, contamination, or microbiological risks in locally sold food products. Establishing a Food Testing Lab would significantly strengthen the One Health framework by ensuring timely testing of water, milk, meat, fish, bakery items, and processed foods, thereby preventing food-borne outbreaks and protecting public health. Upgrading IUCBR lab at Puthupally to an Intersectoral Lab may change the scenario. A local lab would also reduce delays

associated with sending samples to distant centres, enabling quicker action, better enforcement, and more routine monitoring of food safety within the district.

10.10 District action plan – health and line departments

Table 10.1: Department Specific Collaborative Programmes planned under One Health

Sl. No	Programme	Nodal department	Proposed Budget (Rs.)
1	Antimicrobial Resistance Interventions – Preventing OTC sale of antibiotics	Drugs Control	1215000
2	Public Awareness programmes		900000
3	Campaign on rational use of antimicrobials in food producing animals		300000
4	Qualitative and quantitative data analysis of AWaRe group of drugs		1000000
5	Implementation of nPROUD Pilot Project in Kottayam district		4000000
1	Dengue Control Programme	Health	7700000
2	Vector Borne Disease Control Programme		200000
3	Scrub Typhus Control Programme		3900000
4	Viral Hepatitis Control Programme		3900000
5	Leptospirosis Reduction Programme		7800000

1	Avian Influenza sensitization, Prevention and Control	Animal Husbandry	8305000
2	Antimicrobial Resistance		4800000
3	Leptospirosis Control		22500000
4	Rabies Control		41720000
5	Brucellosis Control		2000000
6	Laboratory strengthening		Not given
1	Food borne Disease Control Program	Food Safety	500000
2	Improving Infrastructure & Facilities		15000000
3	Integrated Surveillance System		20000000
4	Outbreak Investigation and Response		1000000
5	District Level Food Testing Lab		Budget not given
1	Prevention and Control of Diseases	Fisheries	30000
2	Upgradation of fish market - ensuring the quality and hygiene		60,00,000
3	Ensure high quality ice used for Fish Preservation		2,50,000
4	Water quality test kit and probes for Aquaculture practices		75,00,000

1	Control of pollution related to Industries under Water Act, Air Act and EP Act	Pollution Control Board	No budget submitted
1	Krishi Samridhi Programme - Implementation of 'Poshaka thottam"	Agriculture	3000000
2	Rodent Control Programme		250000
3	Snail Control Programme		20000
4	Establishment of plant Health clinics		10000000
5	Dewatering Programme in flooded paddy fields		800000
6	Water Hyacinth removal programme		3500000
7	Eco shop upgradation programme		480000
8	Soil Health Programme		200000
9	One Shop for biological pest & disease control programme		2000000
10	Bund construction programme		100000000
11	Mechanisation Programme (using drone)		75000000
12	Kuttanad soil and water conservation programme		15000000
1	Clearing of mouths of natural streams of Meenachil river emptying into Vembanad lake in Kumarakom,Aymanam Panchayath	Major Irrigation	3000000

2	Removal of accumulated water hyacinth from Kariyar at downstream and upstream of Valiyanappuzha bridge in Vaikom Constituency		1750000
3	Urgent Desiltation Works to Koduthuruth - Thottappally Thodu in vechoor Panchayath		4060000
4	Protecting the damaged left bank of Chittarpuzha at thottumugham bhagom -Protecting the damaged left bank of Chittarpuzha at thottumugham bhagom using DR masonry in Kanjirappally panchayath (DR masonry wall for a length of 80m)		1260000
5	Removal Of Water Hyacinth from AC Canal		2000000
6	Removal Of Water Hyacinth from Pandakasala Canal		500000
7	Rectification Of Either Bunds of Vettadi Thodu Near Kavalikkari Padashekaram In Changanasserry Taluk-Side Protection		1800000
1	Desilting and cleaning of Kanjikkuzhy Thodu from Eranjal palam to Thuruthel Palam in Kottayam municipality	Minor Irrigation	1460000
2	Desilting and cleaning of Pannagom thodu at Padinjarathil palam in Akalakkunnam Panchayath		1100000

3	Desilting and cleaning of Kalaketty Thodu at various locations		1100000
4	Desilting and cleaning of Kurunthurappuzha in Thalayolaparambu Panchayath		6000000
5	Desilting and cleaning of Arattukayam check dam in Thidanadu Panchayath		650000
6	Desilting and cleaning of area in between Thidanad town check dam, Kottarathilkadavu check dam in Thidanadu Panchayath		1000000
7	Desilting and cleaning of Kariyilathodu in Ramapuram Panchayath		1500000
8	Deepening and cleaning of Kunnelppally Thodu in ward no.4 of Kumarakom Panchayath		700000
9	Cleaning of Apsara Thodu in ward14 of kumarakom panchayath		800000
10	Restoration and revamping of panchayat pond in Ramapuram Panchayath		600000
1	Dairy farm waste management	Dairy	2000000
2	Clean milk production (mastitis control and reduced use of antibiotic in animals)		2500000
3	Clean milk production (mastitis control and reduced use of antibiotic in animals)		375000

4	Water hygiene in Dairy cooperatives		150000
5	Wastewater Management - Urine and wash water		16000000
6	Biosecurity and Disease Control in Dairy Farms		50000
7	Dead Cow Body disposal		100000
8	Fetus and Dead Calf Disposal		
9	Slurry Management in Dairy Farms		750000
10	Hazardous Waste - Empty Medicine Bottle, Syringe, surgical plastics, Pesticide Bottle etc		
11	Plastic Waste - Cattle Feed Bags, Mineral Mixture bottle and cover		
12	Roughage waste and Feed Waste		100000
13	Waste water management in Dairy Cooperative Society		400000
14	Training Programme		15000

Contributors List

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