

# ALAPPUZHA

Health and Family Welfare Department  
Government of Kerala

KERALA.HEALTH

ALAPPUZHA

January 2026



Centre for One Health - Kerala  
Thycaud, Thiruvananthapuram- 14

# **ONE HEALTH@ALAPPUZHA**

**Health and Family Welfare Department  
Government of Kerala**

**KERALA.HEALTH**





## **Smt. Veena George**

Minister for Health &  
Family Welfare  
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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.

A handwritten signature in blue ink that reads "Veena George".

**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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## CHAPTER 1

### BACKGROUND

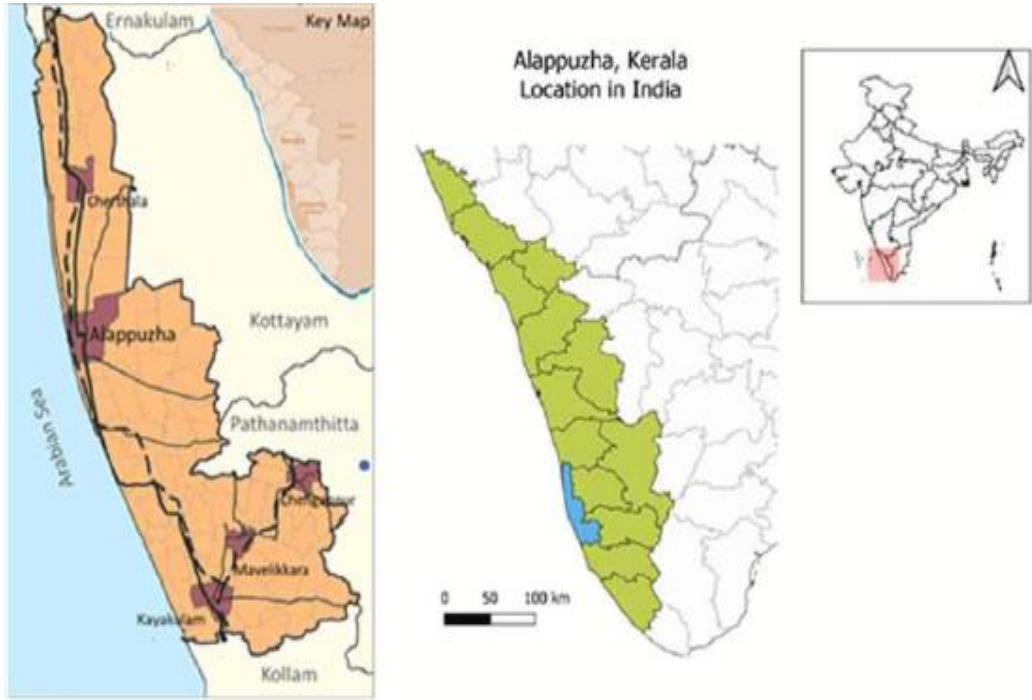


Figure 1.1. Map illustrating the Alappuzha district

Alappuzha, the smallest district in Kerala, is renowned for its picturesque backwaters, serene beaches, and vast network of lagoons, earning it the celebrated title of the “**Venice of the East.**” The district is best known for its iconic houseboat cruises that glide through the rustic Kerala backwaters—a tranquil maze of canals, lakes, and waterways that define its unique charm. Alappuzha is also distinguished by its expansive paddy fields, thriving coir industry, and vibrant religious festivals, all of which contribute to its rich cultural and economic identity.

### 1.1. Geographic Profile

Alappuzha district is located on a narrow peninsular landmass bordered by the **Arabian Sea** to the west and the expansive **Vembanad Lake** to the east. The district's terrain is shaped by three major rivers—the **Manimala**, **Pamba**, and **Achankovil**—along with their numerous branches and tributaries that flow across the region before draining into the Vembanad Lake. This lake, which lies **below sea level**, is the **longest lake in the Indian peninsula** and forms a defining natural boundary for the district. Positioned between the sea and the lake, Alappuzha has a unique ecological setting that contributes to its susceptibility to waterborne and vector-borne diseases.

Alappuzha's topography is distinctive: it is a **sandy strip of land interwoven with lagoons, canals, and backwaters**, with **no highlands or forest areas**, making it the only district in Kerala without such terrain. Nearly **80% of the district lies in the coastal region**, and water bodies constitute about **13%** of its total area. The **Kuttanad region**, famous for below-sea-level farming, is one of the most prominent geographical features of the district.

### 1.2. Special Area Features

- **Extensive Backwater Network:** The district is often referred to as the "*Venice of the East*" due to its interconnected canals, lakes, and lagoons.
- **Kuttanad Below-Sea-Level Farming System:** One of the few places in the world where farming is done below sea level, making it an agricultural and hydrological hotspot.
- **Long Coastline:** Alappuzha has a **contiguous coastline of 82 km**, making it highly exposed to coastal erosion, tidal flooding, and saline intrusion.
- **Absence of Highlands:** It is the only district in Kerala without highland or forest areas, with terrain classified mainly as coastal and midland regions.
- **Scattered Hillocks:** Small hillocks exist only in the eastern parts between Bharanikkavu and Chengannur blocks.
- **High Population Density:** With a density of around **1504 persons per sq. km**, it is one of the most densely populated districts in Kerala.

### 1.3. Administrative Profile

Administratively, the district is divided into **two revenue divisions—Alappuzha and Chengannur**—which together comprise **six taluks**:

- **Alappuzha Revenue Division:** Cherthala, Ambalappuzha, Kuttanad
- **Chengannur Revenue Division:** Karthikappally, Mavelikkara, Chengannur

Within these divisions, there are a total of **72 Grama Panchayats**, distributed across various block panchayats in the district. The district also includes **six municipal towns**: Alappuzha, Chengannur, Cherthala, Haripad, Kayamkulam, and Mavelikkara.

These features collectively shape the district’s environmental health profile, influencing disease patterns, water management challenges, and public health priorities.

### 1.4. Demographic Profile

**Table 1.4.1 Demographic Profile of Alappuzha**

Total Population	21,27,789
Male	10,13,142
Female	11,14,647
Population Growth	0.88%
Area Sq. Km	1,415
Density/km <sup>2</sup>	1,504
Proportion to Kerala Population	6.37%
Sex Ratio (Per 1000)	1100
Child Sex Ratio (0-6 Age)	951
Average Literacy	95.72

Male Literacy	97.36
Female Literacy	94.24
Total Child Population (0-6 Age)	1,92,046
Child Proportion (0-6 Age)	9.03%

Alappuzha has a population of 21.27 lakh and is one of the most densely populated districts in Kerala, which increases the chances of communicable diseases spreading quickly. The district has a good sex ratio, and high literacy, which support better health awareness. The district's closely packed settlements and movement across water-bound areas make it easier for vector-borne and water-borne diseases to spread. These factors highlight the need for continuous surveillance, community education, and strong primary health care to control communicable diseases effectively.

### 1.5. Health Infrastructure Profile of the District

**Table 1.5.1. Health Infrastructure Profile of Alappuzha**

<b>Modern Medicine Institutions in Alappuzha</b>	
<b>Name of Institution</b>	<b>Total Number</b>
General Hospital	1
District Hospital	2
Taluk Head Quarter Hospitals	6
District TB Centre	1
W & C Hospital	1
TB Hospital	1

Leprosy Hospital	1
Block Community Health Centres	11
Non-Health Block Community Health Centres	4
Primary Health Centres	62
Urban Primary Health Centres	6
Health and Wellness Centres (Rural Centres 366 + Urban Centres 24)	390
School of Nursing	1
District Public Health Laboratory	1
District Vector Control Unit	1
District Medical Office (Health)	1

Alappuzha district has a well-structured and extensive public health system that supports its dense population and unique geographical landscape. The district's modern medicine infrastructure is anchored by a network of institutions that together ensure comprehensive service delivery across primary, secondary, and selected tertiary care levels.

## District Medical Office (Health)



**Figure 1.2. District Medical Office Health, Alappuzha**

At the apex of health care stands the District Medical Office (DMO), which plays a crucial role in preventing and controlling communicable diseases across the district. As the central coordinating body, it oversees surveillance systems, outbreak response teams, laboratory linkages, and field level health staff, ensuring that early warning signals are quickly identified and acted upon. The office also guides PHCs, CHCs, and hospitals in implementing immunization, vector control, sanitation measures, and health education activities. By coordinating with other departments, the office ensures a unified response during disease outbreaks. Its leadership in planning, monitoring, and rapid decision making makes the DMO essential for maintaining public health security and reducing the spread of communicable diseases in Alappuzha.

### **Arogyakeralam Alappuzha: National Health Mission Office**



**Figure 1. 3. Arogyakeralam District NHM Office**

The National Health Mission (NHM), known as Arogyakeralam operates from within the DMO office in Alappuzha. It coordinates the flow of central government funds to the district, ensuring that key national health programmes—such as immunisation, disease control initiatives, maternal child health services, and health system strengthening activities—run smoothly and effectively.

### **General Hospital Alappuzha**



**Figure 1.4. General Hospital Alappuzha**

The General Hospital, Alappuzha, is one of the district's most important public health institutions, providing accessible secondary level care to a large and diverse population. As a major referral centre, it offers essential services such as emergency care, inpatient treatment, surgery, obstetrics, and specialist consultations, making it a critical support system for people from both urban and rural areas. Its role in controlling communicable diseases is equally significant: the hospital manages early diagnosis, treatment, and referral of infectious cases, supports outbreak response, and works closely with the DMO, surveillance units, and peripheral health facilities. With high patient footfall and strategic location, the General Hospital acts as a frontline institution for managing fever cases, vector borne diseases, respiratory infections, and other public health threats. By combining clinical care, laboratory support, and public health coordination, it plays a central role in safeguarding the overall health of the population in Alappuzha.

Recently a new 7-storey, Outpatient (OP) Block building for the institution was inaugurated by Kerala Chief Minister Sri. Pinarayi Vijayan on **October 27, 2024**, as part of the government's 100-day action plan, significantly upgrading the healthcare facility. Several critical departments housed in its 58-year-old building were shifted to this newly constructed block, ensuring safer and more efficient service delivery. Additionally, the Public Works Department has sanctioned **₹7 crore for a new inpatient block**, addressing long-standing space constraints and rising patient load, particularly in emergency care.

## Secondary Care hospitals



**Figure1.5. District Hospital Chengannur**

The district also hosts **two District Hospitals (Chengannur District Hospital, Mavelikara District Hospital)** and **six Taluk Headquarters Hospitals**, forming the backbone of secondary care. These institutions provide essential inpatient, surgical, and specialty services, reducing the burden on the General Hospital. Complementing them are specialized facilities such as the **District TB Centre**, a dedicated **TB Hospital**, and a **Leprosy Hospital**, providing disease-specific care.

Primary Health Care Centres and Community Health Centres:



Figure 1.6. Family Health Centre Neelamperoor

At the primary care level, Alappuzha has a robust network of **62 Primary Health Centres (PHCs)** and **6 Urban PHCs**, **4 Non-Health Block CHCs** supported by **11 Block Community Health Centres** and one Taluk hospital as the apex centre of the concerned health block. This extensive network ensures that even remote and water-locked regions receive timely and accessible healthcare.

Janakeeya Arogya Kendram: Health and Wellness Centres



Figure1.7 UHC Thondankulangara, Alappuzha Municipality

The district has a total of **390 Health and Wellness Centres (366 rural and 24 urban)**, providing the first point of contact for patients to the health care facility. They further strengthen preventive, promotive, and chronic disease management services in the region. For every 3-4 wards there is a sub centre, making it accessible to the general population.

## **District Public Health Laboratory**



**Figure1.8. District Public Health Laboratory Alappuzha**

The District Public Health Laboratory plays a vital role in strengthening public health services in Alappuzha, a district prone to water-borne and vector borne diseases. The laboratory supports disease surveillance, outbreak investigation, and routine diagnostic services essential for timely public health action.

A new laboratory building is being constructed exclusively for the District Public Health Laboratory at the General Hospital Alappuzha compound through NHM Alappuzha at a cost of ₹1.25 crore. It is near completion and is expected to be functional by the first quarter of 2026. The facility will provide a dedicated, modern space capable of receiving samples from all departments across the district health system. It will offer comprehensive diagnostic services, including microbiological and pathological testing, human culture sample processing, and a full range of biochemistry investigations.

As part of the laboratory upgradation, new equipment will also be procured, enabling the addition of 17 more diagnostic tests to the existing 65 tests currently available.

The new facility will further be equipped to receive and process samples from allied departments such as Veterinary, AYUSH, and other related sectors, thereby strengthening inter-departmental coordination. This expanded capacity directly supports the implementation of the One Health programme in the district by enabling integrated surveillance of human, animal, and environmental health.

By facilitating timely detection of zoonotic and environmental pathogens, the Public Health Laboratory will significantly enhance early warning systems, improve outbreak preparedness, and contribute to more effective, evidence based public health action across sectors.

### **District Vector Control Unit**

Public health functions are reinforced by institutions such as the **District Vector Control Unit**, which plays a crucial role in a district prone to vector-borne diseases.

### **1.6. Health Scenario**

Alappuzha district's health status from the early 1990s to 2021 reflects its ongoing struggle with water-borne and vector-borne communicable diseases, closely linked to its unique backwater geography. Outbreaks of dengue, leptospirosis, and encephalitis were recurrent, and although these were controlled to some extent through existing health infrastructure and human resources, they still took a significant toll on the community.

The district's geographic uniqueness makes it particularly prone to communicable diseases due to the following factors:

- **Backwater ecosystem:** The district's canals, lagoons, and paddy fields form extensive wetlands. These wetlands provide ideal breeding grounds for mosquitoes, contributing to malaria, filariasis, and later dengue outbreaks.
- **Flood-prone areas:** Seasonal flooding increased the risk of leptospirosis (rat fever), which became a recurring health challenge.
- **Agricultural practices:** Workers in paddy fields were especially vulnerable to waterborne infections such as leptospirosis and Japanese encephalitis.

### **Communicable Diseases in Alappuzha (1990s–2021)**

- 1990s:
  - Malaria and filariasis were major public health concerns.
  - Waterborne diseases like diarrheal illnesses were common due to poor sanitation in flood-prone areas.
- 2000s:
  - Malaria cases declined due to vector control measures, but dengue fever and chikungunya emerged strongly.
  - Leptospirosis outbreaks became frequent during monsoon and flood seasons.
- 2010s:
  - Japanese encephalitis and acute encephalitis syndrome (AES) outbreaks were reported, linked to paddy field exposure.
  - Dengue and leptospirosis continued to burden the district, with Kerala reporting thousands of cases annually.
- 2020–2021:
  - District-level data showed dengue, leptospirosis, and diarrheal diseases as major communicable burdens.
  - COVID-19 added pressure, but Kerala’s decentralized health system helped manage cases.

To summarize, from the 1990s to 2021, Alappuzha’s health profile was shaped by its watery geography, which fueled communicable diseases such as malaria, dengue, leptospirosis, and encephalitis. During this period, health infrastructure evolved from basic Primary Health Centres (PHCs) to Kudumba Arogya Kendrams (Family Health Centres), offering more people-friendly facilities and standardised care, the geographic vulnerabilities and recurring outbreaks highlight the importance of early case detection, risk mapping, and targeted interventions for effective control of communicable diseases. For successful implementation of health regulations and swift response actions, the involvement of other line

departments—such as agriculture, animal husbandry, water management, and sanitation—is essential. This integrated approach underlines the One Health need, where human, environmental, and animal health systems must work together to safeguard community well-being.

### **1.7. Significance of One Health in Alappuzha**

- **Early Detection & Surveillance:** Integrated monitoring of human, animal, and environmental health helps predict outbreaks. **Risk Mapping & Targeted Action:** Identifying high-risk zones (paddy fields, flood-prone areas) enables focused interventions.
- **Cross-Sector Collaboration:** Joint efforts ensure effective disease control and rapid response during epidemics.
- **Community Resilience:** Awareness programs linking safe agricultural practices, sanitation, and vector control empower local populations.
- **Sustainable Health Outcomes:** By addressing root causes in environment and agriculture, One Health reduces recurring disease cycles.

Thus, for Alappuzha, One Health is not optional but essential. Its geography and livelihood patterns demand an integrated approach that unites human health services with animal health and environmental management. This holistic framework strengthens resilience against communicable diseases and ensures healthier communities in the long run.

## CHAPTER 2

### INTRODUCTION TO ONE HEALTH INITIATIVE



Figure 2.1. One Health Launch activity IEC materials

#### 2.1. Planning of One Health programme in the district

The pre-launch activities for the One Health initiative in the district involved several key steps to ensure effective public engagement and readiness. Coordination meetings were held with stakeholders to finalize logistics, communication strategies, and implementation plans. Essential equipment such as laptops, printers, scanners, and overhead projectors were procured. Informational materials including small booklets, brochures, and leaflets were developed. Publicity efforts were prepared and displayed at strategic locations to maximize visibility and awareness.

## 2.2. Launch of One Health in District



**Figure 2.2. Launch of One Health in Alappuzha through Online platform**

Alappuzha district formally adopted the One Health framework in December 2021. The launch meeting of the One Health Coordination Committee for Alappuzha was on 04/01/2022 which was conducted in online platform. It was chaired by Hon. Sub Collector Sree Sooraj IAS on behalf of the Hon. District Collector. Dr. Shinu K. S., Additional Director (Medical), introduced the Aardram and One Health initiatives, followed by World Bank Representative Shri Satheesh Chandran, who explained the programme goals and implementation framework and directed the District Nodal Officer to prepare a district-level action plan. State NKKP-2 Committee members Dr. Mahesh N., Dr. Ajan, and Dr. Nikhilesh shared their expert inputs on strengthening the One Health approach. The meeting was attended by the DMO, DPM, Deputy DMOs of the district. DMO (Ayurveda), DMO (Homeo), heads and representative of all the line departments, and representatives from ESI, ICHS, IMA, and private hospital associations also participated in the meeting. Dr. Deevan Prahlad, NKKP-2 District Nodal Officer, delivered the main presentation. The participants actively contributed to the discussions, marking a strong beginning for the One Health initiative in Alappuzha.

During the following months, activities to introduce the concept of one health in the district and sensitization of staff regarding the same was initiated. The activities were as follows:

**Table 2.1. Launch and Follow up Activities of One Health in Alappuzha**

DATE	Activities for the launch of One health in the District
04/01/2022	Core committee meeting at district level
17/01/2022	Block level Meeting on One Health
21/03/2022	Intersectoral Coordination committee meeting on Leptospirosis
26/03/2022	Training on One Health for newly joined Medical Officers
05/04/2022	Intersectoral Coordination committee meeting on One Health
11/04/2022	Sensitization Training on One Health for all Program Officers and Charge Medical Officers during the monthly Medical Officers Conference

Following this, sensitization training was conducted for the ASHAs, and all the health staffs of the district.

**District Mentors**

Smt Pulomaja  
(One Health Mentor)  
Appreciated by Hon Health Minister for conducting AMR IEC to co-passengers in Train



**Figure 2.3. District One Health Mentor, Alappuzha**

As per the direction given from the state, the mentors selected from the state were formally posted in the district as District One Health Mentors. 12 One Health District Mentors were appointed in the district as per the order DPSU/002/2023/COH-K(2) dated 23/06/2023.

Their role was to support the district team in bringing the One health in action at all wards and LSGDs of the district. For this, sensitization training of the health staff, public and staffs of line departments was also done with the support of the District Mentors.

**Table 2.2. List of District Mentors of One Health in Alappuzha**

<b>Sl No:</b>	<b>Health Block</b>	<b>Institution Mentor Assigned</b>
1	Arookutty	P C Girija
2	Thuravoor	Guruprassana K
3	Muhamma	Sony S
4	Chettikad	Chitrabhai S
5	Chempumpuram	Benny T (later Sajeev R)
6	Veliyanad	Shajahan P M
7	Ambalappuzha	Unniahamed V H
8	Chunnakara	Vandana Viswanath
9	Muthukulam	Reji Chandran
10	Kurathikad	Syam V
11	Pandanad	Rajeev K N
12	Thrikunnapuzha	Pulomaja V R

### **Ward level Community Mentors and Community Volunteers**

Formation of Community Mentors (7 per each ward, so a total of 9,688 community mentors in the district) and Community Volunteers (7 per each community volunteers, so a total of 67,816 community volunteers in the district).



Figure 2.4. One health meeting, chaired by District Panchayat President

**CHAPTER 3****GOVERNANCE AND PROGRAMME MANAGEMENT SYSTEM.****3.1. Governance**

The Alappuzha District One Health Committee was initially constituted on 27 December 2021. The District Level Committee, thus formed, is currently chaired by the designated officer of each department. The officers are as follows:

**Table 3.1 District One Health Committee Members as on December 2025**

<b>Sl. No:</b>	<b>Designation</b>	<b>Name</b>
1	District Collector – Chairperson	Sri. Alex Varghese IAS
2	District Medical Officer (Health)	Dr. Jamuna Varghese
3	Deputy Director of Panchayat	Smt. Binz C Thomas
4	District Animal Husbandry Officer	Dr. Arunodhya
5	District Agriculture Officer	Smt. Ambily C
6	District Fisheries Officer	Sri. Ramesh
7	District Forest Officer	Mr. Sunish V
8	District Food Safety Officer	Smt. Subimol Y J
9	District Surveillance Officer	Dr. Dileepkumar S. R
10	District NKKP2 Nodal Officer (Health)	Dr Teny George Pallippadan

Each district has One Health Nodal Officer representing the health department and is entrusted with the responsibility of overall coordination and day to day management of one health programmes in the district. The One Health Nodal Officer will be reporting to DMO and closely work with DSO. The DMO and or DSO office shall provide necessary support to implementation of one health programme in the district

In addition, each collaborating department also has One health nodal officer at district level. Since the Health Department Nodal Officer is the chief coordinating person for one health programme planning and implementation, the other departments' nodal officers also must provide need-based support in one health programme operationalisation.

The One Health committee must also be constituted as all LSGDs. Their aim is to periodically monitor the one health activities in the LSGD area. Community Based Surveillance by community volunteers through the community mentors, followed by verification of the issue by a scientific Joint outbreak investigation and finally swift action through an active one health team in the LSGD. This is to be ensured by passing one Health resolution in all the LSGDs. As on 01/12/2025, all the LSGDs of the district have passed the One Health resolution.

The Health Institution is to ensure periodic conducting one health committee meeting and follow up of cases. They are to form an LSGD level WhatsApp group with community mentors to ensure communication is maintained within the members. Periodic meetings at ward level and LSGD level will ensure sustaining the efforts and activities of the programme.

## CHAPTER 4

### INTERSECTORAL COLLABORATION

Intersectoral collaboration is the backbone of the One Health approach, which recognizes that human health, animal health, and environmental health are deeply interconnected. Kerala has emerged as a national leader in operationalizing this approach through structured coordination between departments such as Health, Animal Husbandry, Local Self-Government, Forestry, and Environmental agencies. Alappuzha, as one of the early pilot districts, has played a significant role in demonstrating how such collaboration can strengthen disease surveillance and outbreak response.

#### 4.1. Need for Intersectoral Collaboration in One Health

- **Rising zoonotic threats:** Kerala has repeatedly faced zoonotic outbreaks—Nipah, leptospirosis, rabies, and vector-borne diseases—highlighting the need for coordinated surveillance across human, animal, and environmental sectors.
- **Environmental vulnerabilities:** High population density, water logging, and climate-sensitive ecosystems in districts like Alappuzha increase the risk of disease transmission.
- **Fragmented information systems:** Without shared data and joint field action, early detection of outbreaks becomes difficult.
- **Community-level complexity:** Many risk factors—waste management, livestock rearing, wildlife movement—fall outside the health department’s direct control, requiring collaboration with LSGIs, Animal Husbandry, and other sectors.

#### 4.2. Key Partner Departments

One Health is an integrated approach that recognizes the interconnection between human health, animal health, agriculture, environment, and ecosystems. In Alappuzha, where water bound geography and livelihoods depend on farming, fisheries, and tourism, collaboration across departments ensures sustainable health and development. The key departments in one health and their role are given below:

### **1. Health Department**

The Health Department leads the One Health framework in Alappuzha by coordinating disease surveillance, hospital care, and public health programs. It ensures early detection of outbreaks and integrates responses with other sectors, thereby protecting communities from epidemics and strengthening overall resilience.

### **2. Animal Husbandry**

The Animal Husbandry Department monitors livestock health, controls zoonotic diseases, and provides veterinary services to farmers. By preventing disease transmission from animals to humans and improving food security, it plays a vital role in rural income generation and public health safety.

### **3. Agriculture**

The Agriculture Department promotes safe crop practices, integrated pest management, and soil health. Its work reduces pesticide exposure, ensures a safe food supply, and sustains farmer livelihoods, directly contributing to healthier communities and environmental sustainability.

### **4. Fisheries**

The Fisheries Department oversees fish health, aquaculture safety, and water ecosystem balance. This prevents fish-borne diseases, supports nutritional security, and strengthens the local economy, which is particularly important in water-rich Alappuzha.

### **5. Irrigation**

The Irrigation Department manages canals and water distribution for agriculture and domestic use. By ensuring clean water availability and preventing waterborne disease outbreaks, it safeguards both farming productivity and community health.

## **6. Food Safety**

The Food Safety Department enforces hygiene standards, conducts inspections, and regulates food quality in markets and eateries. This protects consumers from contamination and builds public trust in local produce and food systems.

## **7. Forest and Wildlife**

The Forest and Wildlife Department conserves biodiversity, monitors wildlife health, and prevents human-animal conflict. Its efforts maintain ecological balance and reduce the risk of emerging zoonotic diseases that can spread to humans.

## **8. Water Authority**

The Water Authority ensures safe drinking water supply and manages sewage systems. By preventing diarrheal diseases and improving sanitation, it directly enhances community health outcomes in Alappuzha.

## **9. Pollution Control Board**

The Pollution Control Board monitors industrial waste, air, and water quality. Its interventions reduce environmental hazards and safeguard the long-term health of people and ecosystems, ensuring sustainable development.

## **10. Dairy Development**

The Dairy Development Department promotes hygienic milk production, processing, and distribution. This ensures nutritional security, prevents milk-borne infections, and supports the rural economy, making dairy a safe and reliable source of livelihood.

## **11. LSGD**

LSGD supports health initiatives through sanitation drives, waste management, safe water supply, and local disease surveillance. It mobilizes community participation, ensures effective implementation of health and environmental programs, and facilitates coordination between key departments. By integrating local governance with One Health principles, LSGD strengthens preventive measures, promotes

awareness, and ensures that interventions reach households directly, thereby enhancing both public health and environmental sustainability.

#### **4.3. Coordination mechanisms and functionality**

##### **1. Committee and intersectoral meetings:**

The one health district committee chaired by the district collector forms the guide and backbone of the intersectoral collaboration in one health. The follow up meetings help in knowledge sharing and ensures coordination between the departments. There is also twelve block level and seventy-eight LSG level one health committees in the district. They convene on periodic basis to monitor the ongoing one health activities.

##### **2. Workshops and trainings:**

Inter-departmental sensitisation trainings, trainer of trainer workshops are being conducted along with the line departments.

##### **3. Field investigation activities:**

Joint Outbreak investigations were routinely done in cases where the events were reported. This helped in efficient detection of cases

#### **4.4. Intradepartmental coordination**

Within each department, there is a nodal person for one health at district level and at lower levels too. For example, in health department, there is district nodal person for one health (the District Aardram nodal officer), and at block level and health institution level there is a nodal staff for one health. This helps in the ease of coordination of one health activities across the various levels.

## CHAPTER 5

### PRESENT STATUS OF ONE HEALTH IN DISTRICT

#### 5.1 Programmes so far

##### A. First three years (July 2021 to Jun 2024)

During the first three years of the One Health programme in Alappuzha, significant strides were made in strengthening district-level coordination and community engagement. One Health committees were established at the Panchayati Raj Institution (PRI) level, ensuring grassroots participation in health governance. A series of trainings were conducted for health staff, line department officials, the 9688 community mentors, and 67816 community volunteers in the district, equipping them with the knowledge and skills to address health challenges at the human-animal-environment interface. The purchase of essential IT equipment was also done.

Handholding of the periphery institutions was also done in the one health related activities by the nodal officers as well as the community mentors.



**Figure 5.1 One Health District and Community Mentors participating in various field activities**

**B. Year 4 (July 2024 to Jun 2025)**

**I. Training on One Health and Community Based Surveillance**

The concept of community-based surveillance was introduced to the staffs of health and line departments. Repeated training programmes and review meetings were conducted for it.

**II. Training programmes conducted as part of Joint Outbreak Investigation:**

**Table 5.1 Activities conducted as part of Outbreak Investigation trial run in Alappuzha District**

Date	Calendar of Events
18/09/2024	Joint OBI planning: DMO, DSO, DPM, DNO One health Programme
19/09/2024	Sensitization for Programme officers, DMO (H) Alappuzha
19/09/2024	Sensitization of District Mentors One Health
20/09/2024	Review meeting by Director COH
24/09/2024	Intersectoral meeting by District administration with line departments
24/09/2024	sensitization of staff FHC Cherthala south - afternoon
25/09/2024	JOIN- day 1, workshop with line departments LSGD level
26/09/2024	JOIN-day 2, field visit based on rumors
26/09/2024	Intersectoral meeting, LSGD level
30/09/2024	JOIN - day 3, Review meeting with district administration
Post JOIN Activities	

03/10/2024	Review on activities conducted on Joint outbreak Investigations on Block Medical Officers, Health Supervisors
19/10/2024	Medical Officers Conference - Joint outbreak Investigations and dissemination of findings and lessons learned.
28/10/2024	One health district Mentors Review meeting

**Table 5.2 Schedule of One Health and AMR Training and Review Programmes Conducted at District, LSGD, and Ward Levels**

No:	Date	Training Programme
1	29/12/2024	Training on Avian Influenza for staff One Health line departments and One health Community Mentors and Volunteers at Cherthala South Panchayat.
2	19/10/2024	Training for charge Medical Officers on One Health
3	28/10/2024	Refresher training for District Mentors
4	18/01/2025	Intersectoral One Health Workshop
5	Ongoing	One Health review & training at LSGD & Ward level
6	Ongoing	AMR review & training at LSGD & Ward level

**C. Year 5 (July 2025 to June 2026)**

**One Health Mentors:**

As per the letter number 002/2025/COH-K dated 28/06/2025, the Centre for One Health had directed to designate one staff from the hospital as the institutional level one health mentor replacing the District level mentor. They will perform as a

coordinator and a technical resource person for the institutional level one health activities.



**Figure 5.2 One Health Institution Mentors Training**

### **Pandemic Preparedness Plan:**

The Alappuzha district, in collaboration with the District Disaster Management Authority (DDMA), is preparing a comprehensive Pandemic Preparedness Plan to strengthen resilience against future public health emergencies. This plan focuses on incorporating missing health indicators into district-level monitoring systems and emphasizes mapping vulnerable and marginalized communities to ensure equitable access to health services. By integrating health data with disaster management strategies, the district aims to build a robust framework that can anticipate risks, mobilize resources, and coordinate timely interventions across all sectors.

As part of the action plan, the district will conduct training for Health Inspectors (tentative date 05/12/25), followed by a district-level data consolidation exercise involving epidemiologists, data managers, block and major hospital PROs, and programme officers (tentative date 21/12/25). A district-level workshop (27/12/25) will be organized with the

Disaster Management Team to develop tools and strategies, which will be further refined through a follow-up (31/12/25) meeting with the District Collector. The plan also includes the preparation of a final report with documentation, alongside the printing of materials and display of maps to support awareness and implementation. Together, these activities will ensure that Alappuzha district adopts a community-centered, data-driven, and inclusive approach to pandemic preparedness.

### **AMR activities**

Many innovative programmes were conducted under the AMARAM: Alappuzha Model of Antimicrobial Resistance Awareness and Mitigation programme which is given in detail in chapter 8.

## CHAPTER 6

### LSG LEVEL INITIATIVES

#### 6.1. Coordination Mechanisms

Coordination mechanisms ensure that human health, animal health, and environmental sectors work together seamlessly at the grassroots. At the LSGD level, these mechanisms must be simple, functional, and embedded in existing governance structures.

- One Health Committee at LSG level: All the 78 Panchayat/Municipality in Alappuzha district have formed One Health Committee. They have periodic intersectoral meetings and trainings are being conducted in which the one health activities are being followed up. The institutional one health mentor of the health department ensures its smooth functioning. This will help in swift and effective action on the reporting events.
- Integrated Reporting Channel: A WhatsApp group is formed at each ward which includes the seven community mentors and forty-nine community volunteers of that ward. In turn, at LSG level, there is WhatsApp group involving the all the community mentors, stake holders and nodal persons of each department. This ensures that all the CBS events are immediately received at the LSG level so that swift action can be taken. Escalation and reporting of the events and follow up activities are being sent to block level and finally to district one health office. This will help in faster reporting and reduce duplication of reports.
- As and when needed, joint outbreak investigations are being conducted for the reported unusual event. Few of the examples are –
  - mass deaths of fishes in Vembanad lake
  - flocks of poultry bird's death in Vallikunnam GramaPanchayat
  - follow up activities of stray dog bites

## **6.2. Key Processes**

A continuous cycle of detection → response → review → improvement. It is the core process pathway ensuring that the one health system is functional and dynamic to needs of the locality.

These are the operational activities that keep One Health functioning on the ground.

### **1. Surveillance and Early Warning**

- Syndromic surveillance through JHI/JPHN
- Reporting of unusual animal deaths by Veterinary staff
- Environmental surveillance: water quality, waste hotspots, vector indices
- Community-based reporting through ASHA, Kudumbashree, and ward volunteers

### **2. Risk Assessment and Prioritization**

- Mapping hotspots: slaughterhouses, waste dumps, wetlands, animal markets
- Identifying high-risk wards for leptospirosis, rabies, dengue, etc.
- Seasonal risk profiling (monsoon, summer scarcity, festival seasons)

### **3. Joint Response and Control Measures**

- Coordinated outbreak response (health + veterinary + LSGD sanitation)
- Mass vaccination drives (rabies, livestock diseases)
- Source reduction for vectors
- Safe waste disposal and water sanitation measures

### **4. Capacity Building**

- Training for field staff on One Health concepts
- Orientation for elected representatives
- Community awareness sessions

## **5. Monitoring and Review**

- Monthly One Health review at LSG level
- Dashboard or simple reporting sheet for tracking actions
- Feedback loops to district One Health Cell

### **6.3. Planning Process in One Health at LSGD level**

To ensure the process is maintained, the following proactive steps have been taken by the district one health team.

1. Project on One Health: Activities taken up by the LSG. So that the activities can be maintained at the LSG. As of financial Year, 2025-2026, nearly 20% of the LSG have taken up projects on One Health, with special focus on AMR and communicable disease control activities.
2. Periodic training and sensitization trainings on One health topics
3. Health Day Observations
4. Innovative programmes
5. Community participation activities

Planning ensures that One Health is not an ad-hoc activity but a structured part of local governance.

## CHAPTER 7

### COMMUNITY BASED SURVEILLANCE - CBS

#### 7.1 Planning:

##### A. Trainings

Training on Community Based Surveillance was initially obtained during the state workshop on 25<sup>th</sup> and 26<sup>th</sup> April 2025 at Alappuzha for the selected members of all line departments.



**Figure 7.1 Training on CBS and JOI in One Health**

Following this, various intra departmental sensitization trainings on Community Based Surveillance and Joint Outbreak Investigation were done.





**Figure 7.2 Department level training on CBS and JOI at Animal Husbandry Dept., Irrigation Dept., and Agriculture Dept.**

At LSG and ward level, during the one health committee meetings, the concept of Community Based Surveillance and Joint Outbreak Investigation was given to the staffs and to the public.



**Figure 7.3 Ward level meeting on CBS at Thakazhy**



**Figure 7.4 Ward level meeting on CBS at Thuravoor South**



**Figure 7.5 Ward level meeting on CBS at Edathuva**

At block level, training for all the health staff was given on 7<sup>th</sup> and 10<sup>th</sup> of November 2025. The initial session was given online, followed by a discussion workshop in each health blocks was done. With this all the health field- level health staff were trained in the concepts of One health.



**Figure 7.6 Block level training on CBS and JOI, at Ambalapuzha heath Block**

B. Trial Run of CBS & JOI: Joint Outbreak Investigation on Avian influenza conducted at Cherthala South GramaPanchayat

As part of ONE HEALTH program, Dr. Rajan N. Khobragade, IAS Additional Chief Secretary H&FW, Ayush instructed the district to conduct a joint outbreak investigation adhering to protocol received from the state. Based on recent outbreaks of Avian influenza, the district has been instructed to conduct joint OBI in Cherthala, south LSGI. The activities conducted as part of this exercise were as follows:

Following the intersectoral coordination meeting on 24th September 2024, under the chairpersonship of Additional District Magistrate, an intersectoral meeting cum workshop on Avian influenza was conducted in Cherthala South Grama Panchayat on 25th September 2024. The meeting was presided over by the Cherthala South Grama panchayat Health Standing Committee Chairperson & inaugurated by the Panchayat President. The Vice President, Panchayat Secretary, Ward members, Line Department representatives from Food Safety, Water Authority, Fisheries, Agriculture, ASHA workers, One Health Mentors, and Volunteers participated in the workshop.

During the meeting, the importance of One Health, its surveillance mechanism, and the joint outbreak investigation were explained. The technical sessions on contextual relevance of Joint Outbreak Investigation were explained by the District Surveillance Officer. The scientific session on Avian Influenza, past experiences, surveillance, and reporting mechanisms was explained by the Veterinary Surgeon of the Cherthala South GP. The standard operating procedures and steps to be followed in JOIN were detailed to the gathering by the medial officer, Cherathala South GP.



Figure 7.7 Inauguration of Workshop training on CBS and JOI by Panchayat President Smt. Sinimol Samson



Figure 7.8 Training Sessions on CBS and JOI at Cherthala South

## 7.2 Consultations

A follow up, district level review meeting was convened under the chairmanship of deputy collector in charge of disaster management to discuss the observations among stakeholders.



**Figure 7.9 Post JOI consultation meeting with various departments at District Level, Chaired by Deputy Collector**

A follow-up district level workshop with all line departments was also conducted to consolidate the findings, issues and formulate the lessons learned. The lessons learned and suggestions during the consultation meetings are as follows:

i) At stakeholder level:

- Frequent & timely sensitization meetings is needed for swift action
- Addition of Police as a stakeholder is needed to ensure proper implementation of containment activities and restrictions
- Inclusion of local farmers and avian pet owners as stakeholders, can consider frequent trainings for them at block or LSGD level for early case detection
- Fund allocation (can be considered permission of emergency disaster fund utilization for the same, for this proper guideline might be needed to prepare)
- Enhancement and timely disbursement of compensation for the farm owners

- Poultry integration for good production practices- Government acting as an integrator and farmers acting as contractual farmers. The prime focus should be on farm biosecurity measures
  - Vaccination strategy
  - Outbreak reporting system- incentive system to encourage reporting outbreaks
- ii) At implementation level:
- State level diagnostic facility for poultry avian cases for early diagnosis- leading to faster hence effective response
  - More strict protocol for management of suspect cases, to consider them as true cases until proven otherwise. Permission to utilize resources for it.
  - Can consider preparation of disease specific checklist to avoid pitfalls and in missing out vital steps (the same which is being done in surgeries, proven effective in avoiding mishaps)
  - A single point real time data collection and disbursement via an automated interactive dashboard will ensure fast data reporting and inference formation

### **7.3. Setting up the process**

To ensure that there is proper community-based surveillance and follow up timely and efficient Joint Outbreak investigations, the following decisions were taken up at the district:

- At ward level, discussion of activities being conducted as part of One Health taken in the ward during the Ward Health Sanitation Committee meetings.
- Inclusion one selected community mentor in the Janakeeya Arogya Samathi meetings with special permission during the needed time so that one Health activities can be followed up.
- Inclusion of one health activity report in weekly IDSP meeting is the institution.
- Monthly review of one health related activities at block level during the block conference and in the district level during the Medical Officers conference.

## **7.4. Functions of Community Based Surveillance**

### **Impact: Community Based Surveillance**

A total of 73 event-based indicators were reported for Alappuzha district through the District Mentors as part of community-based surveillance. Following this, joint outbreak investigations were done on all the cases and some of the notable Joint Outbreak investigations are given below:

#### **2. Joint Outbreak Investigation at Vallikunnam on suspected Avian Influenza:**

On 14<sup>th</sup> June 2025 evening, the District was informed about the death of flocks of chicken in a few poultry farms in ward 8 of Vallikunnam Grama Panchayat. This was reported by locals to the Medical officer, who further reported to the district surveillance officer. Since the death of flocks of birds is a serious event-based indicator for possible avian influenza, the district surveillance officer entrusted the Aardram nodal officer to conduct a thorough investigation on the matter. A team involving Field staff from the Vallikunnam FHC, ASHA workers, Ward One Health Community Mentors and Community Volunteers, District One Health Mentor, and Aardram Nodal Officer planned to meet at the site the very next day onwards to conduct a Joint outbreak investigation.

The possibility of flocks of poultry being dead was passed to the local veterinary officer. To verify the existence of outbreak, a team was formed with the community mentor, community volunteers and health staff of the area and field data collection of poultry, fever surveillance was initiated.

The veterinary team visited the area on 16/06/2025 and conducted survey and collected samples for testing. The preliminary testing revealed highly virulent form of New Castles Disease which primary affects the poultry animals. As the disease diagnosed is not a zoonotic disease, the further investigations were halted.

# വള്ളികുന്നത്ത് കോഴികൾ ചാകുന്നത് തുടരുന്നു

- 🔴 രണ്ടാഴ്ചയ്ക്കുള്ളിൽ ചത്തത് 6,030 കോഴികൾ
- 🔴 വിദഗ്ദ്ധസംഘം സ്ഥലം സന്ദർശിച്ചു

വള്ളികുന്നം പള്ളികുന്നത്ത് കൊഴിക്കും കുടഞ്ഞോടെ ചാകുന്നതിന്റെ എണ്ണം ദിനംതോറും കൂടുന്നു. അഞ്ച് പാലുകളിലെ 5030 ഇറച്ചിക്കോഴികളും പരിഷ്കരിച്ചിട്ടുള്ള 180 മുട്ടക്കോഴികളും 6030 കോഴികളാണ് രണ്ടാഴ്ചയ്ക്കുള്ളിൽ ചത്തത്. തുടർന്ന് ജില്ലാ ചീഫ് വെറ്റിനറി ഓഫീസർ ഡോ. എസ്. രമേശ് നേതൃത്വത്തിൽ ജില്ലാ വെറ്റിനറി അറ്റോളിയിലേക്ക് സന്ദർശിച്ച് രോഗപരിഹാരം കാണാൻ ശ്രമം നടത്തി.



വള്ളികുന്നം കല്ലാമ്പാൽ ഭാഗത്ത് ഫാമിലെ കോഴികൾ രോഗബാധിച്ച് ചത്തുവീഴാനും നിലയ്ക്കലും

വള്ളികുന്നത്ത് കോഴികൾ കുടഞ്ഞോടെ ചത്തുവീഴുന്ന കോഴി ഫാം ജില്ലാ ചീഫ് വെറ്റിനറി ഓഫീസറുടെ നേതൃത്വത്തിലുള്ള സിബിസംഘം സന്ദർശിച്ചപ്പോൾ

വയറ്റുകൊണ്ട് കർഷകർ എന്നിവരിൽ നിന്നു വരിയാണോ രോഗാണുജന്തുനിർമ്മാണകേന്ദ്രം നൽകുകയും ചെയ്യും. മൂന്നുദിവസം മുൻപ് വള്ളികുന്നം ഗ്രാമപഞ്ചായത്തിലേക്ക് ഡോ. എസ്. രമേശ് നേതൃത്വത്തിൽ രോഗപരിഹാരം കാണാനെത്തിയപ്പോൾ ചത്തുവീഴുന്ന കോഴികളുടെ അമ്പലക്കുളിയിൽ പക്ഷികൾക്ക് ഗർഭിണിയെ രാജാക്കിയായിട്ട് പരിശോധിച്ചിരുന്നു.

പരിശോധനാനന്തരം ഫലിച്ചില്ലെങ്കിൽ കൂടുതൽ വിശദ പരിശോധനയ്ക്കായി സാഹ്യകൂടം അയച്ചുനോക്കും. പക്ഷെ ജില്ലാ വെറ്റിനറി ഓഫീസർ സെന്ററിൽ കോഴികൾക്ക് രോഗപരിഹാരം കാണാൻ സാധിക്കില്ലെന്ന് പറഞ്ഞു.

### ആശങ്കയിൽ ഇറച്ചിക്കോഴി വിപണി

കോഴികൾ കുടഞ്ഞോടെ ചാകുന്നത് വള്ളികുന്നത്തും പരിസരപ്രദേശങ്ങളിലുമുള്ള ഇറച്ചിക്കോഴി വിപണിയിൽ ആശങ്കയിലാക്കി. ഇറച്ചിക്കോഴി വിപണിയിൽ 140 തുടങ്ങി. മൂന്നാഴ്ചയായി കടൽ മത്സ്യത്തിന്റെ വിലയും കൂടുതലായും വില വർദ്ധിച്ചതും ചെറുത്തോടെ ഇറച്ചിക്കോഴിക്ക് വിപണിയിൽ കൂടുതലായും കോഴികൾ കുടഞ്ഞോടെ ചാകാൻ തുടങ്ങിയതോടെ കോഴിയില്ലാത്ത വിപണിയിൽ കൂടുതലായും വില വർദ്ധിച്ചതും കോഴികൾ കുടഞ്ഞോടെ ചാകുന്നത് വള്ളികുന്നത്തും പരിസരപ്രദേശങ്ങളിലുമുള്ള ഇറച്ചിക്കോഴി വിപണിയിൽ ആശങ്കയിലാക്കി.

### പെട്ടെന്നു ചത്തു വീഴുന്നു

രോഗപരിഹാരം കാണാൻ സാധിക്കാതെ മരണമടഞ്ഞു കോഴികൾ ചത്തുവീഴുന്ന കോഴികൾ കുടഞ്ഞോടെ ചാകുന്നത് വള്ളികുന്നത്തും പരിസരപ്രദേശങ്ങളിലുമുള്ള ഇറച്ചിക്കോഴി വിപണിയിൽ ആശങ്കയിലാക്കി.

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Figure 7.10 News report of Flocks of poultry deaths and follow up activities being done at Valikunnam

3. JOI at Thannermukkom area following aquatic fish deaths in Vembanad lake.

**വേമ്പനാട്ടുകായലിൽ മീനുകൾ ചത്തുപൊങ്ങുന്നു**

ചത്തുപൊങ്ങുന്ന കരിമീൻ, കൂരി, പുളയൻ മത്സ്യങ്ങൾ

**മുഹമ്മദ്** വേമ്പനാട്ടുകായലിൽ മീനുകൾ ചത്തുപൊങ്ങുന്നു. മുഹമ്മദ്, തണ്ണീർമുക്കം ഭാഗങ്ങളിലായി കരിമീൻ, കൂരി, പുളയൻ എന്നീ മീനുകളാണ് ചത്തുപൊങ്ങുന്നത്.

മൂന്നുദിവസത്തിലേറെയായി ഇങ്ങനെ കാണുന്നുണ്ട്. ഓരോ ദിവസവും ഇതിന്റെ എണ്ണം കൂടിവരുകയാണ്. ഇതോടെ മത്സ്യത്തൊഴിലാളി

**വെള്ളത്തിന്റെ അളവ് കുറയുന്നു**

മീൻ ചത്തുപൊങ്ങാൻ മറ്റൊരുകാരും കാരണമുണ്ടാകും. 2010 മുതൽ കൂട്ടനാട് കായൽക്കുഴി ഗവേഷണകേന്ദ്രം തണ്ണീർമുക്കം ബണ്ടുമുതൽ തോട്ടപ്പള്ളി വരെ വെള്ളവും വെള്ളത്തിന്റെ അളവും പരിശോധിക്കുന്നുണ്ട്. കായലിൽ വെള്ളത്തിന്റെ അളവ് ക്രമാതീതമായി കുറഞ്ഞിട്ടുണ്ട്. ബുധനാഴ്ച ബണ്ടിന്റെ തെക്കുവശം വെള്ളത്തിന്റെ താഴ്ഭാഗത്ത് അഞ്ച് പിപിടി (പാർട്സ് പെർ തൗസന്റ്) ഉപ്പുരസമാണു കലർന്നിരിക്കുന്നത്. തോട്ടപ്പള്ളി ഭാഗങ്ങളിൽ ആറ് പിപിസിയുണ്ട്.

**കെ.ജി. പദ്മകുമാർ**  
ഡയറക്ടർ, കൂട്ടനാട് കായൽക്കുഴി ഗവേഷണ കേന്ദ്രം

കൊണ്ട് ആശങ്കയായി. കടലും കനത്ത ചൂടിൽ കായൽ ജലം ചൂടുകൂടിക്കുന്നതോ മലിന്യത്തിൽ നിന്നുള്ള വിഷമോ

ആയിരിക്കാം ചത്തുപൊങ്ങുന്നതിനു കാരണമെന്നു മത്സ്യത്തൊഴിലാളികൾ പറയുന്നു. കായലും ഇടത്തോട്ടുകളും മാലിന്യം നിറഞ്ഞ വെള്ളത്തിന് ഒഴുക്കില്ലാതെ ദുർഗന്ധം വമിക്കുന്ന അവസ്ഥയിലാണ്. തണ്ണീർമുക്കം ബണ്ടിന്റെ ഷട്ടറുകൾ അടഞ്ഞുകിടക്കുന്നതും കാരണമാണ്. വിഷയം ഗൗരവമുള്ളതാണെന്നും ശാസ്ത്രീയപഠനം വേണമെന്നുമാണ് മത്സ്യത്തൊഴിലാളികളുടെ ആവശ്യം. വർഷങ്ങൾക്കുമുമ്പ് പ്ലാസ്റ്റിക് മാലിന്യം കായലിൽ വൃഷ്ടമാക്കി മീനുകൾ ചത്തുപൊങ്ങിയിരുന്നു.

Figure 7.11 News report of unusual deaths of fishes in Vembanad lake

## CHAPTER 8

### INNOVATIVE PROGRAMMES

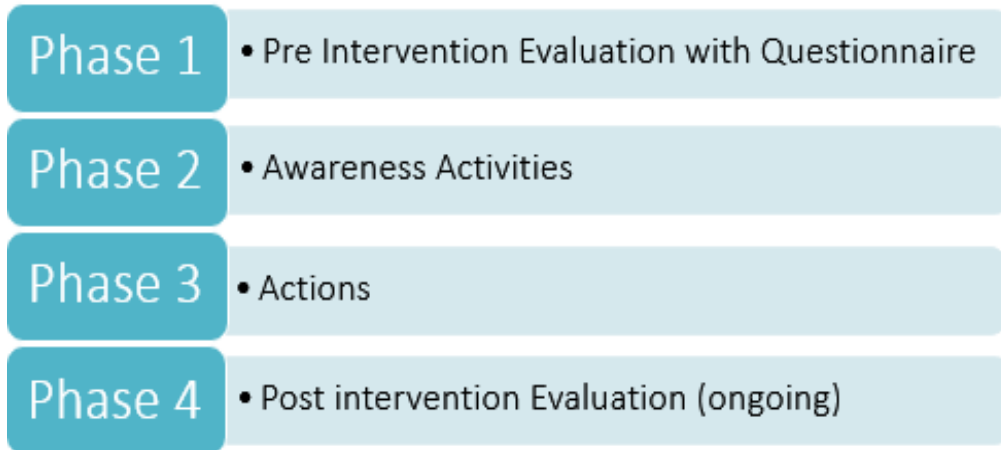
#### A. District level AMARAM: Alappuzha Model of Antimicrobial Resistance Awareness and Mitigation



**Figure 8.1 District level launch of Antimicrobial Resistance Activities**

The AMARAM initiative in Alappuzha represents a unique district-level innovative model for combating antimicrobial resistance. Antimicrobial Resistance (AMR) has emerged as a major public health challenge globally, with irrational and excessive use of antibiotics across human health, veterinary, aquaculture, and agriculture sectors contributing to its rise. Recognizing this, Alappuzha district launched AMARAM – Alappuzha Model of Antimicrobial Resistance Awareness and Mitigation, a comprehensive initiative aimed at building awareness, strengthening surveillance, and promoting rational antibiotic use through a One Health approach. For this, the district Level AMR Committee was Constituted to oversee planning, coordination, and implementation. The project was implemented as 4 phases which are depicted in the following:

## ACTION AGAINST AMR



The following actions were planned in the program:

- Antibiotic-Friendly LSGIs: One Local Self Government Institution (LSGI) was selected per health block to serve as a model.
- Mandatory AMR Projects: Each LSGI to implement six strategic components under the supervision of the Medical Officer.
- Data Collection: Comprehensive data to be gathered from hospitals, clinics, pharmacies, laboratories, blood collection centers, hatcheries, farms, aquaculture units, and other areas prone to antibiotic misuse.
- Social media campaigns and World Antimicrobial Awareness Week (WAAW) celebrations.
- Mandatory blue-colored cover for dispensing antibiotics.
- Subscription to the “Bhodhyam” WhatsApp channel by all individuals in LSGIs.
- Regular AMR awareness classes and competitions in educational institutions by local health authorities.
- Strict infection control protocols for all institutions within LSGIs.
- Monthly inspections by local health teams and district nursing officers.

- Immunization coverage for all healthcare personnel.
- Mandatory IMAGE/KEIL subscription for institutions handling biomedical waste.
- Surveillance of hospital-acquired infections.
- Proper biomedical and general waste management practices.
- Mandatory prescription audits in all healthcare institutions.
- AMR checklists for every institution.
- Monthly joint inspections of pharmacies, laboratories, hatcheries, farms, and aquaculture units.
- Implementation of the “PROUD” program for rational antibiotic use.
  - Training sessions for antibiotic handlers as per the AMR training calendar.



**Figure 8.2 Inauguration and Community Engagement Activities of the One Health Programme at Cherthala South Panchayat**

- Hon ACS of Health
- Sri Rajan Khobragade IAS appreciated Top 10 institutions for their remarkable activities related to AMR & released Neenu Talks News letter



Effect of AMR activities in the district



Figure 8.3 AMR related campaign in Alappuzha district



targeted training sessions, outreach activities, and community engagement, AMARAM has strengthened responsible prescribing practices and encouraged people to avoid self-medication.

Equally important, the campaign has raised antibiotic literacy among the public, making communities more aware of how misuse contributes to drug-resistant infections. Public meetings, workshops, and information drives have emphasized the risks of indiscriminate antibiotic consumption and the need for adherence to medical advice. As a result, Alappuzha has witnessed a positive shift in attitudes toward antibiotic use, with greater acceptance of rational treatment protocols and preventive health measures.

### B. Local Self Government level activities on AMARAM:

Some of the activities conducted as part of AMARAM programme are depicted below.



Table top standee @Medical shops offices of line departments



Figure 8.6 AMR activities by FHC Thakazhy



Figure 8.7 AMR Thiruvathira by FHCChettikulangara



Figure 8.8 AMR theme Magic show by CHC Pandanad



Figure 8.8 Training for Agrichem workers



Figure 8.9 AMR Pledge at various institutions across the district.



Figure 8.10 PROUD programme bin at FHC Aroor

## CHAPTER 9

### FINANCIAL ALLOCATION AND ITS UTILIZATION

#### Financial Year 2022-2023

**Table 9.1 Funds: Allocated – Surrendered- Utilised - Proportion utilised - 2022-23**

Allocated Fund	Surrendered	Utilised	Proportion utilised
1400000	545574	854426	61.03%

#### Financial Year 2023-2024

Out of the total Rs. 10,21,050/- sanctioned vide Order No. DHS/11978/2023-PH4 dated: 16-11-2023 the fund was utilized for the purpose for which the funds were sanctioned, and the remaining fund was surrendered at the end of the financial year.

**Table 9.2 Funds Issued and Expenditure Incurred for One Health Programme  
Activities for the year 2023-24**

No	Item	Transaction
1	Funds issued vide Order No. DHS/11978/2023-PH4 dated: 16-11-2023	Rs. 1021050/- (Cr)
2	Salary of One Health District Mentors	Rs. 810000/- (Dr)
3	District level TOT	Rs. 82000/- (Dr)
4	Community Mentors and Volunteers Training	Rs. 9318150/- (Dr)

#### Financial Year 2024-2025

Out of the total Rs. 7137214/- sanctioned vide Order No. DHS/126/2022-PH4 dated: 28-09-2024, 23-11-2024 and Order No: DHS/11978/2023-PH4 dated: 23-03-2025, an amount of Rs. 7090141/- (Rupees Seventy Lakh Ninety Thousand One Hundred and Forty-One Only) has been utilized for the purpose for which the funds were sanctioned. The balance of Rs.

47073/- remaining in the HoA: 2210-06-101-88-(P) was surrendered at the end of the financial year.

**Table 9.3 Funds Received, Expenditure Incurred, and Balance under One Health Programme (March 2024 - March 2025)**

No	Item	Transaction
1	Funds issued vide Order No. DHS/126/2022-PH4 dated: 28-09-2024 - Rs. 2603750/- DHS/126/2022-PH4 dated: 23-11-2024 - Rs. 2913464/ DHS/11978/2023-PH4 dated: 23-03-2025 - Rs. 1620000/-	Rs. 7137214/- (Cr)
2	Salary of One Health District Mentors form the month of March 2024 to March 2025.	Rs. 3458250/- (Dr)
3	Settlement of Queue bills	Rs. 3527781/- (Dr)
4	One Health Activities: Field investigation related trainings (15570 + 11800) Rs. 27370/- AMR related workshops (5500 + 17010 + 2000) Rs. 24510/- One Health Review and trainings (34430 +16600) Rs. 51030/- Miscellaneous expenses Rs. 1200/-	Rs. 104110/- (Dr)
5	Balance amount	Rs. 47073/-

**Financial Year 2025-2026**

Out of the total Rs. 4848000/- sanctioned via the by the PLANNING & ECONOMIC AFFAIRS (RKI) DEPARTMENT Order No G.O.(Rt) No.404/2025/P&EA Dated, Thiruvananthapuram, 25-09-2025, amount of Rs. 4394680 (rupees Forty-Three Lakh Ninety-Four Thousand Six Hundred Eighty only) has been utilized for the purpose for which the funds were sanctioned. The balance amount kept in account for utilization.

**Table 9.4 Activity-wise Fund Allocation, Utilisation, and Utilisation Percentage with Remarks under the One Health Programme for the year 2025-26**

No	Item	Total	Utilized	Utilization percentage	Remarks
1	Salary of One Health District Mentors	1080000	972000	90 %	payment done; rest kept in hand.
2	District One Health Committee meeting	5000	1000	20 %	Rs. 1000/- per meeting, 4 nos (No, Feb, Apr, Jun) and 1k for print outs and single time banner.
3	Intradepartmental TOT on One health and CBS	100000	0	0	For training on Jan 2026
4	Training of Officials of Health & line departments on One Health & CBS	2340000	2340000	100%	10% used *rest given to institutions,
5	CBC Orientation training for CMs & CVs	1038000	1038000	100 %	fund given to institutions,

6	Periodic monitoring of CBS activity	10000	0	0	DMO Conf Meeting of Jan
7	Pandemic Preparedness Plan Development Consultation workshop at District	100000	16680	17 %	Detailed action plan prepared and mentioned in the 10 <sup>th</sup> chapter
8	1. Orientation workshop on SOP for Joint Outbreak Investigation 2. Training of ward CMs & CVs on AMR 3. Training of all depts on AMR	150000	15000	10 %	Conducted JOI training at district level.  AMR field level activities being conducted and ongoing
9	Contingency expenses	100000	12000	12 %	
10	Action plan preparation and way ahead for snake bite control in Kerala	25000	0	0	to be utilized only after state workshop
	Total	484800 0	439468 0	91 %	

## **CHAPTER 10**

### **WAY FORWARD**

#### **Activities planned and forwarded to State Team:**

##### **10.1 Activities to Prevent Avian influenza**

###### **Goal:**

1. Capacity building and awareness generation among farmers and other stakeholders for pre- epidemic preparedness regarding Avian Influenza to minimize the economic loss
2. Establishing well- structured, well-informed, and well-functionally coordinated and convergent efforts among different stakeholders for Avian influenza mitigation, control, and containment

###### **Objectives:**

1. To strengthen awareness among the public and farmers regarding the avian influenza and its containment measures
2. To strengthen the surveillance mechanism of Avian Influenza
3. To strengthen mitigation strategies for the occurrence of the Avian influenza epidemics seasonally.
4. To strengthen the practices of scientific waste disposal of the affected birds, if any, and materials out of the farming practices among stakeholders.
5. To empower the systems and stakeholders for doing joint outbreak investigations, which shall empower them to contain the Avian influenza once it occurs.
6. To empower the system and stakeholders to learn from past mishaps and or planning of future exigencies.

## **10.2 Activities to reduce dog bite activities**

### **Goal:**

1. Capacity building and awareness generation among the public and stakeholders regarding different contributory factors that facilitate stray dog burden and the measures to reduce the same.
2. Continuous, convergent efforts through Animal Husbandry departments for ABC control
3. Awareness generation and systematic corrections for pet registration, pre-exposure prophylaxis, and PEP.
4. Strict regulatory efforts for proper waste management by exploring the PH Act 2023

### **Objectives:**

1. To strengthen awareness among the public, pet lovers, and pet carers regarding the health hazards secondary to animal bites, scratches, and licks.
2. To strengthen the surveillance mechanism of animal bites and rabies
3. To strengthen the regulatory framework and its implementation regarding the pet animal registration and pet vaccination.
4. To strengthen the preexposure prophylaxis among pet animal registration
5. To strengthen the awareness regarding postexposure prophylaxis among the public, pet lovers, pet caregivers and public servants dealing with animal health.
6. To strengthen the knowledge among medical practitioners regarding the categorization of the animal bite and its management.
7. To strengthen awareness regarding dead animal disposal and safe sanitation
8. To strengthen awareness among the public regarding proper waste management

## **10.3 Activities to reduce Leptospirosis**

### **Goals:**

1. Capacity building and awareness generation among the public and stakeholders regarding different contributory factors that facilitate rodent burden and the measures to reduce the same.
2. Awareness generation among cattle farmers, farmers engaged in agriculture, and other high-risk exposure groups regarding the disease transmission and prophylaxis.
3. Strict regulatory efforts for proper waste management by exploring the PH Act 2023

### **Objectives**

1. To strengthen awareness among the rodent growth, facilitating environment, and related health hazards like Leptospirosis.
2. To strengthen the surveillance system of Leptospirosis
3. To improve the knowledge, awareness, and practices among high-risk groups for potential leptospirosis exposure
4. To strengthen the awareness among the public to avoid self-medication and delay in seeking health care.
5. To strengthen the awareness among the public regarding the warning signs of Leptospirosis.
6. To strengthen the awareness among the public to avoid self-medication and delay in seeking health care.
7. To strengthen the awareness among the public regarding the warning signs of Leptospirosis.
8. To strengthen awareness regarding the PPE and Doxycycline prophylaxis
9. To strengthen awareness regarding the potential possibility of Leptospirosis in and disaster situations like post-flood
10. To strengthen awareness regarding improved hygiene, biosecurity and dead animal disposal.

11. To strengthen awareness among the public regarding proper waste management so as to prevent rodent growth.
12. Health system strengthening

#### **10.4 Suggestions from the district**

Active involvement of team members in ongoing health-related activities will enhance their visibility and support their inclusion in decision-making processes at the ward and LSGD levels whenever required. They may also benefit from handholding and support from the newly formed block-level public health team. Strengthening the skills of the health team and One Health members in areas such as active epidemiological case finding, hypothesis generation, and evaluation will further improve their effectiveness. Additionally, incorporating soft skills and basic computer skills into the training of community mentors or other willing members will help build a more capable and confident workforce.

## Contributors List

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5	Dr. Binoy	Previous Aardram- One Health District Nodal Officer	

