NATIONAL ACTION PLAN FOR HEALTH SECURITY

2020 – 2024

Ministry of Health
Democratic Republic of Timor-leste

June 2020

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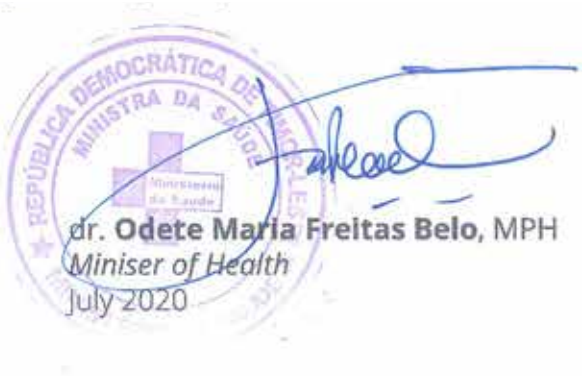
Foreword

The Timor-Leste National Action Plan for Health Security (NAPHS) is a commitment for action to strengthen capacities for public health emergency preparedness and health security. As a signatory to the International Health Regulations (IHR 2005), Timor-Leste has been striving to develop and maintain the IHR core capacities and completed the voluntary Joint External Evaluation (JEE) in November 2018.

The recommendations from the JEE have been transformed into actions to strengthen the ability of Timor-Leste to prepare and be operationally ready to manage major public health risks or events. The NAPHS summarizes these key actions and provides a roadmap for implementation over the next five years. The Ministry of Health, in partnership with the Ministry of Agriculture and Fisheries, will oversee the implementation of the NAPHS, working with other relevant ministries, in acknowledgment of multi-sectorial nature of health security.

Improving capacities for public health emergency preparedness and health security will benefit not only Timor-Leste, but will also contribute to, and impact on, health security in the region and globally.



Acknowledgements

This document has been developed and endorsed by the Ministry of Health (MOH). Many departments and agencies of the MOH are involved, including the departments of surveillance, communicable diseases control (port health), health promotion, the medical emergency and hospital services, as well as autonomous agencies such as National Health Laboratory (NHL), the National Hospital (HNGV), and the National Medical Stores of Timor-Leste (SAMES).

Many government ministries have contributed to the development of this action plan, notably the Ministry of Agriculture and Fishery (MOAF), Inspection and Supervision Authority of Economic, Health and Food Activities (AIFAESA), Ministry of Finance (Custom), Ministry of Interior (Immigration and Maritime). Many international agencies have supported the process one way or another, such as the Australian Department of Foreign Affairs (DFAT), United States Agency for International Development (USAID), Menzies School of Health Research Maluk, and the UN agencies (WHO, UNICEF, WFP, FAO, OIE).

We would like to particularly thank World Health Organization (WHO Country Office, SEARO and HQ) for facilitating the whole process and providing full support for the development of NAPHS.

Abbreviations and Acronyms

AIFAESA	Inspection and Supervision Authority of Economic, Health and Food Activities
AMR	Antimicrobial resistance
CDC	Communicable Disease Control
EMT	Emergency Medical Team
EOC	Emergency operations center
EPI	Expanded Programme on Immunization
FAO	Food and Agriculture Organization of the United Nations
FETP	Field epidemiology training programme
HIMS	Health information management system
IDSR	Integrated Disease Surveillance and Response
IEC	Information education and communication
IHR	International Health Regulations
IHR MEF	International Health Regulations Monitoring and Evaluation Framework
INFOSAN	International Network of Food Safety Authorities
JEE	Joint External Evaluation
LIMS	Laboratory Information Management System
MOAF	Ministry of Agriculture and Fisheries
MOH	Ministry of Health
MOU	Memorandum of Understanding
NAPHS	National Action Plan for Health Security
NFP	National Focal Point
NGO	Nongovernmental organization
NHL	National Health Laboratory
OIE	World Organisation for Animal Health
PPE	Personal protective equipment
PoE	Point of entry
PVS	Performance of Veterinary Services
RRT	Rapid response teams
SAMES	National Medical Stores of Timor-Leste
SOP	Standard operating procedure
UNICEF	United Nations Children's Fund
USD	United States Dollar
WHO	World Health Organization

Executive Summary

As a World Health Organization (WHO) Member State, Timor-Leste is on a quest to implement the International Health Regulations 2005 (IHR 2005) through its National Action Plan for Health Security (NAPHS), in which key activities from various ministries are aligned for implementation in the next five years.

The NAPHS was developed based on the recommendations of the Joint External Evaluation (JEE), one of the four components of the IHR Monitoring and Evaluation Framework, conducted in Timor-Leste in November 2018. The JEE process reviews IHR implementation across 19 technical areas and is conducted jointly by the country and an international team of experts. The outcomes of the JEE can then be translated into a national action plan for health security.

The Timor-Leste NAPHS serves as a framework for strengthening the capacities for public health emergency preparedness and health security by addressing the gaps identified by the JEE across the 19 technical areas. The NAPHS includes the activities and the various roles and responsibilities from both government and international organizations to implement these activities. The NAPHS also serves as a framework to mobilize domestic and external resources to priority areas requiring investment. The JEE identified that gaps remain in infrastructure and human resource capacity across the various sectors, such as the lack of capacity to investigate foodborne disease outbreaks and a laboratory that cannot test for the source of infection.

Ultimately, translating the requirements of the IHR for Timor-Leste, as assessed by the JEE, through the NAPHS will result in coordinated activities for the prevention, detection and response of public health events, both within Timor-Leste and internationally. Having a strong health security system will provide benefits across both human and animal health and will contribute to Healthy Timorese people in a healthy Timor-Leste.

1. Introduction

Background

The Democratic Republic of Timor-Leste is in Southeast Asia and lies on the eastern half of the island of Timor. Timor-Leste became a sovereign state in 2002 and is a democratic, independent and unitary State based on the rule of law, the will of the people and the respect for the dignity of the human person.

Timor-Leste is an agricultural country with more than 85 percent of the population living on subsistence farming. The country relies on high oil and gas reserves in the Timor Sea to help support the government budget. The estimated population of Timor-Leste is 1.3 million people, spread across 13 municipalities.

The Timor-Leste 2011-2030 Strategic Development Plan provides a twenty-year vision to create a prosperous and strong nation, and presents a pathway to long-term, sustainable, inclusive development in Timor-Leste, which includes health. According to the Constitution, medical care is a fundamental right of all citizens and the government is obliged to promote and build a national health system that is universal, general, free of charge, decentralized and participatory. The Ministry of Health (MOH) is responsible for provision of strategic direction, setting of standards, regulation and ensuring availability of financial and human

International health regulations (IHR)

The IHR is an international legal agreement that is binding on 196 State Parties, including all World Health Organization (WHO) Member States. The IHR was adopted at the 58th World Health Assembly in May 2005, and subsequently entered into force on 15 June 2007.

The purpose and scope of the IHR are "to prevent, protect against, control and provide a public health response to the international spread of disease in ways that are commensurate with and restricted to public health risks, and which avoid unnecessary interference with international traffic and trade." State Parties are required by the IHR to develop certain minimum core public health capacities.

The IHR Monitoring and Evaluation Framework (IHR MEF) was developed to provide a comprehensive, accurate, country-level overview of the implementation of requirements under the IHR to develop and monitor capacities to detect, monitor and maintain public health capacities and functions. There are four components of the IHR MEF - mandatory annual reporting and the three voluntary components of after-action review, simulation exercise and voluntary external evaluation.

The Joint External Evaluation (JEE) in Timor-Leste

Timor-Leste voluntarily conducted a JEE in 2018 to assess its core capacities to prevent, detect and respond to public health threats under the IHR (2005). The JEE was conducted in Dili, Democratic Republic of Timor-Leste from 19-23 November 2018 and comprised experts from Australia, Bhutan, India, Ireland, Nepal, Sri Lanka and the United States of America, as well as from the WHO Regional Office for South East Asia and the WHO Office in Timor-Leste.

The JEE team concluded that public health in Timor-Leste is built on a strong foundation of primary health care. Although the government has limited resources, doctors and health workers are sufficient and there exists high government political commitment to provide access to health services for the population. The JEE results showed that, except for immunization, many of the 19 technical areas were rated at no or limited capacity in Timor-Leste (level 1 and 2 scores). However, the evaluation team noted that this did not mean that Timor-Leste has no capacity or fails to master these technical areas, rather that the additional processes considered in the JEE tool were not met. For example, surveillance is carried out effectively in Timor-Leste without an advanced electronic system.

The JEE team provided 62 priority actions to strengthen health security and to form the basis of the National Action Plan for Health Security for Timor-Leste. Although these priority areas covered all 19 technical areas of the JEE, the combined JEE team identified several areas where focused improvement efforts would be particularly valuable – emergency response capacity, preparedness and response plans related to IHR and laboratory. This NAPHS was developed based on the outcomes of the JEE.

2. NAPHS vision, mission and objective

Vision: Healthy Timorese people in a healthy Timor-Leste

Mission: To strengthen the implementation of the IHR (2005) in Timor-Leste, which aims to: "prevent, protect against, control and provide a public health response to the international spread of disease in ways that are commensurate with and restricted to public health risks, and which avoid unnecessary interference with international traffic and trade."

Objective: To strengthen Timor-Leste's capacities for public health emergency preparedness and health security.

3. NAPHS stakeholders

The MOH is leading the preparedness for and response to public health emergency in the country. Many departments and agencies of the MOH are involved, including the departments of surveillance, communicable diseases control, health promotion, the medical emergency and hospital services, as well as autonomous agencies such as National Health Laboratory (NHL), the National Hospital (and other referral hospitals), and the National Medical Stores of Timor-Leste (SAMES).

Listed below are the key stakeholders for implementing the NAPHS.

Government	National Parliament Office of the Prime Minister Council of Ministers Ministry of Commerce and Industry (Inspection and Supervision Authority of Economic, Health and Food Activities [AIFAESA]) MOAF (Department of Veterinary) Ministry of Finance (Custom) Ministry of Interior (Immigration and Maritime) Commission of Public Service MOH (Departments of Communicable Diseases Control, Surveillance, Emergency, Public Relation, NHL) Ministry of Transport
United Nation Agencies, international non-governmental organizations and donors	World Health Organization (WHO) World Organisation for Animal Health (OIE) Food and Agriculture Organization of the United Nations (FAO) United Nations Children's Fund (UNICEF) Timor-Leste Red Cross Australian Department of Foreign Affairs United States Agency for International Development (USAID)
Civil Society, communities	Marie Stopes International Health Alliance International Services for Health in Asian African Regions Menzies School of Health Research Maluk Timor Associations for medical doctors, midwives, nurses, public health.
Media, Industry	Radio-Televisão Timor-Leste Grupo Média Nacional television Televisaun Edukasaun Community Radio Newspaper

4. NAPHS development process

The MOH invited all ministries, agencies and institutions involved in the JEE in November 2018 to contribute to the development of the Timor-Leste NAPHS as one coordinated effort to prevent, detect and respond to public health emergencies. This process involved the translation of the JEE recommendations into an action plan, and consisted of the following:

High level advocacy

The National IHR Focal Point organized advocacy meetings on the importance of the IHR (2005) and the need to develop a NAPHS with senior officers of the MOH, the MOAF and other agencies to secure their support.

Establishment of the NAPHS Working Group

The NAPHS Working Group comprises a core team of members from multisector government departments, including the MOH and MOAF, and a wider group comprising relevant stakeholders. Several Working Group meetings were held, including a core team meeting on 15 May 2019, followed by the full Working Group meeting on 16-17 May 2019.

Drafting the NAPHS

The NAPHS working group conducted a situation analysis (Annex 1) and at the Working Group meetings, conducted a Strengths, Weaknesses, Opportunities, and Threats analysis (Annex 1); reviewed each JEE recommendation; and developed priority activities for each of the JEE indicators using the following principles:

1. Utilizing the appropriate indicators and levels of capacity as described in the JEE tool and other available risk assessments for planning priority activities, as these capture the required IHR core capacities.
2. Including existing activities already approved under government, agency and donor plans or budgets that support reaching or achieving the JEE targets.
3. Adding new activities to close the gaps between existing activities and JEE recommendations or required activities to improve IHR core capacity.

For each of the 19 JEE technical areas, the relevant stakeholders reached agreement on how to: a) improve their capacities; b) incorporate their current activities relevant to health security in the NAPHS; and c) explore additional inputs and activities to fulfil the JEE recommendations. These were then incorporated into the draft NAPHS.

National Consultative Workshop on NAPHS linking with PIPP

The Consultative Workshop on National Action Plan for Health Security (NAPHS) linking with Pandemic Influenza Preparedness Plan (PIPP) for Timor-Leste took place on 26-28 June 2019 in Dili. H.E. Vice-Minister for Primary Health Care Dra Élia A. A. dos Reis Amaral opened the workshop, together with representatives from the MOAF, WHO and the Australian Embassy. The outcome of this consultative workshop was a review and led to the development of the Timor-Leste NAPHS 2020-2024. Participants to the workshop included representatives from the MOH, including Communicable Disease Control (CDC), Epidemiological Surveillance, Pharmacy, NHL, SAMES, Guido Valadares National Hospital, among others; MOAF, including animal health, quarantine and animal laboratory; Ministry of Foreign Affairs and Cooperation; Ministry of Finance; AIFAESA; Ministry of Interior; and representatives from United Nations agencies and civil society organizations.

Finalization of the NAPHS

Using the outcomes of the consultative workshop, the Working Group revised and finalized the NAPHS, which included the costing of activities.

5. Major components of the NAPHS

Planning matrix

For each of the 19 technical areas, the planning matrix comprises:

- a summary of the current level of capacity based on the JEE;
- the recommendations from the JEE;
- proposed actions to address the JEE recommendations; and
- specific activities, Ministry and Unit responsible, budget source, unit cost, unit cost per year and total cost.

Proposed budget

The total resource requirement for the Timor-Leste NAPHS, in United States Dollar (USD), is estimated at USD 17,857,468 over the five years of the plan (Annex 2). There is a higher budget allocation for Prevent capacities, followed by Detect, Respond and other IHR hazards' capacities. Timor-Leste also has an emergency contingency fund that is not included in this plan that can be accessed if there is a public health emergency.

For the implementation, Timor-Leste Government will allocate 38% (USD 6,856,376) of the total budget and committed donors 35% (USD 6,272,382) and the remaining 27% (USD 4,728,710) is still needed. The budget is higher in the early years, to account for the provision of necessary infrastructure, software and human resources.

Monitoring and evaluation

Each responsible Ministry and/or agency will monitor and evaluate their technical area indicators within the NAPHS on an annual basis. The NAPHS Working Group will convene annually and share information on the progress of the NAPHS implementation.

6. Planning matrix

6.1 National legislation, policy and financing

Current level of capacity

Timor-Leste already has some legislation, policy and financing relevant for IHR, but needs to develop and/or adjust required legislation, policy and financial resources to strengthen IHR implementation.

JEE Recommendations

- Endorse regulation on IHR implementation.
- Adjust and align national legislation, policies and administrative arrangements in all relevant sectors, and develop the NAPHS, based on findings of the JEE, to enable compliance with the IHR commitments.
- Develop separate budget line in national budget for IHR core capacity strengthening.

Activities and budget

PRIORITY ACTIVITIES	ACTIVITIES	MIN-ISTRY/ UNIT	UNIT COST	Budget Source	QUANTITY/YEAR					TOTAL
					2020	2021	2022	2023	2024	
Indicator P.1.1 The State has assessed, adjusted and aligned its domestic legislation, policies and administrative arrangements in all relevant sectors to enable compliance with the IHR→ 2018 Capacity level 2										
Develop Human Health quarantine law	Hire one national consultant	MOH/ CDC	21,650	N	1					21,650
	Hire one international consultant		8,840	N	1					8,840
	Conduct two consultative meetings		900	N	1					900
	Dissemination meeting and distribution		8,700	N	1					8,700
	Support the implementation		10,000	N	1	1	1	1	1	50,000
Review and identify gaps in current relevant legislation, policy and administrative requirements for IHR implementation	Hire one external expert	MOH/ CDC	7,970	N		1				7,970
	Assess legislation policies and administration requirements to support IHR legislation		660	N		1				660
Advocacy with relevant stakeholders on adjustments made to legislation, policy and administrative requirements	Print and advocacy dissemination (meeting)	MOH/ CDC	1,350	N			2	1	1	5,400

PRIORITY ACTIVITIES	ACTIVITIES	MINISTRY/ UNIT	UNIT COST	Budget Source	QUANTITY/YEAR					TOTAL
					2020	2021	2022	2023	2024	
Conduct relevant revisions on legislation, policy and administrative requirements based on the assessment results	Hire one national consultant	MOH/ CDC	3,650	N			1			3,650
	Hire one international consultant		6,420	N			1			6,420
	Conduct consultative meetings		1,050	N		2				2,100
	Conduct technical meeting national		490	N		1				490
	Conduct technical meeting subnational		3,800	N			3			11,400
	Dissemination		7,700	N			3	1	1	30,800
Indicator P.1.2. Financing is available for the implementation of IHR capacities→ 2018 Capacity level 2										
Review resource mapping status to enable rational budget allocation to every sector at the national level	Conduct resource mapping exercise for health security implementation	MOH/ Finance	8,840	N		1			1	17,680
Develop mechanism for allocating available budget from domestic and external sources to the relevant sectors for IHR implementation	Develop fund flow mechanism for resource sharing to support IHR implementation		Routine cost	Y/Gov						
Establish specific budget line for IHR implementation in the MOH	Submit request to the National Finance Directorate to create specific budget line for IHR		Routine cost	Y/Gov						
Establish monitoring and evaluation (M&E) process to assess the effectiveness of the fund flow mechanism	Hire consultant to establish M&E process using WHO resource mapping tool	MOH/ CDC	8,840	N		1	1	1	1	35,360
Indicator P.1.3. A financing mechanism and funds are available for timely response to public health emergencies → 2018 Capacity level 2										
Develop and disseminate protocols or mechanisms for the timely execution of funds for responding to public health emergencies by all relevant sectors	Provide awareness of the process required to access the emergency funds to the responsible division of the PM office	MOH/ CDC	Routine cost	Y/Gov						
	Share and publish the protocol on the MOH website under General Directorate for Health Service	MOH/ CDC	Routine cost	Y/ Gov						
Ensure the functionality of the fund flow mechanism for resource sharing, including the mobilization of funds at national and municipality levels for all relevant sectors	Conduct a tabletop exercise of the mechanism and update if necessary	MOH/ CDC and Finance	8,800	N		1			1	17,600
Demonstrate and document that the funds are mobilized in timely manner in response to public health emergency.	Conduct after action review on the fund flow mechanism for resource sharing	MOH/ CDC	8,840	N		1			1	17,680
Subtotal										**247,300**

6.2 IHR coordination, communication and advocacy

Current level of capacity

Timor-Leste has appointed the National Focal Point (NFP) for IHR and focal points in other sectors. Since cross ministry communication and coordination is already in place using formal government procedures, these will be used for IHR coordination, as will continuous capacity building for NFPs.

JEE Recommendations

- Establish multisectoral IHR steering committee under existing high-level structures that facilitate IHR implementation.
- Enhance the capacity of IHR focal point and focal points in relevant sectors by developing standard operating procedure (SOPs), regular training and providing necessary infrastructure.

Activities and budget

PRIORITY ACTIVITIES	ACTIVITIES	MINISTRY/ UNIT	UNIT COST	Budget Source	QUANTITY/YEAR					TOTAL
					2020	2021	2022	2023	2024	
P.2.1 A functional mechanism established for the coordination and integration of relevant sectors in the implementation of IHR → 2018 Capacity level 1										
Advocate for a multi-sectorial IHR committee with the coordination mandate for all relevant JEE technical areas	Organize awareness raising meeting (1 in Dili, 3 in other 3 municipalities)	MOH/ CDC	1,350	N		4	2	2	2	13,500
Develop and implement SOPs for communication and coordination between the NFP, all relevant sectors from government, civil society and WHO; and review performance regularly.	Hire a national consultant	MOH/ CDC	14,450	N	1	1	1	1	1	72,250
	Hire an international consultant		6,420	N	1	1	1	1	1	32,100
	Organize validation meeting		4,950	N	1	1	1	1	1	24,750
	Conduct dissemination workshop		3,650	N	1	1	1	1	1	18,250
	Organize joint simulation exercise		4,550	N	1	1	1	1	1	22,750

PRIORITY ACTIVITIES	ACTIVITIES	MIN-ISTRY/ UNIT	UNIT COST	Budget Source	QUANTITY/YEAR					TOTAL
					2020	2021	2022	2023	2024	
Develop communication channels, including a web-based system, for updating relevant sectors and partners on IHR implementation.	Hire an information technology (IT) consultant	MOH/ CDC	18,050	N	1	1	1	1	1	90,250
	Organize consultative meeting (2-3 per year)		900	N	2	2	3	3	3	11,700
Ongoing capacity building and orientation on IHR to NFP through workshops, online training and exchange with peers	Hire one international consultant	MOH/ CDC	62,080	N	1	1				124,160
	Organize capacity building meetings		900	N	2	1	1	1	1	5,400
Subtotal										**415,110**

6.3 Antimicrobial resistance (AMR)

Current level of capacity

Multisectoral coordination for AMR is already quite strong; the AMR coordination committee and AMR technical working group are already established. AMR surveillance requires strengthening, especially in laboratory capacity (cross cutting with National Laboratory); infection, prevention and control (IPC); and AMR stewardship.

JEE Recommendations

- Promote and support multisectoral coordination to implement the National Action Plan on AMR, including antimicrobial stewardship in human and animal health and agriculture.
- Revise and update the existing essential medicines list with special reference to the prudent use of antimicrobial agents, revise AMR prevention and control guidelines at the primary health-care level and list the specific priority pathogens in Timor-Leste.
- Develop further laboratory capacity across both sectors to test for and characterize AMR.

Activities and budget

PRIORITY ACTIVITIES	ACTIVITIES	MIN-ISTRY/ UNIT	UNIT COST	Budget Source	QUANTITY/YEAR					TOTAL
					2020	2021	2022	2023	2024	
Indicator P.3.1. Effective multisectoral coordination on AMR → 2018 Capacity level 3										
Organize AMR national committee coordination meetings	Organize meeting every 6 months	MOH/ Pharmacy	1,580	Y/ Gov	2	2	2	2	2	15,800
	Attend AMR meeting (local and international – 2 persons)	MOAF-DNV-LDV	5,000	Y/ Gov	1	1	1	1	1	25,000
Organize AMR Technical Working Group Meetings	Organize quarterly meeting	MOH/ Pharmacy	3,350	Y/ Gov	4	4	4	4	4	67,000
	Attend AMR meeting (local and international – 4 persons)	MOAF-DNV-LDV	10,000	Y/ Gov	1	1	1	1	1	50,000
Develop the TORs for multisectoral governance mechanisms, with clear responsibilities between AMR coordinating committees and high-level One Health groups	Hire technical assistance consultant	MOAF-DNV-LDV	1,130	N	1					1,130
	Organize workshop		3,210	N	1					3,210
	Approval and printing: 50 books/TOR		500	N	1					500
Develop AMR action plan 2021-2026	Conduct workshop to review and revise draft plan	MOH/ Pharmacy	3,350	Y/ Gov	3					10,050
	Print 100 copies		1,000	Y/ Gov	1					1,000
Indicator P.3.2. Surveillance of AMR is in place → 2018 Capacity level 1										
Prepare and initiate AMR program with Menzies/ Fleming fund	Attend preparation meeting	MOH/ Pharmacy	750	Y/ Gov		2				1,500
	Attend preparation meeting (2 persons)	MOAF/ Veterinary	1,500	Y/ Gov		1				1,500

PRIORITY ACTIVITIES	ACTIVITIES	MIN-ISTRY/ UNIT	UNIT COST	Budget Source	QUANTITY/YEAR					TOTAL
					2020	2021	2022	2023	2024	
Develop national AMR supervision objectives and strategies	Organize meeting	MOH/ Pharmacy	4,000	Y/ Flemming Fund	1					4,000
Assess existing supervisory activities and implement improvements based on the results of the assessment	Hire a consultant		8,840	Y/ Flemming Fund		1				8,840
Complete assessment of existing laboratory capacity for identification and testing of antibiotic susceptibility of common bacteria including Mycobacterium tuberculosis	Hire an international consultant	MOH/ Pharmacy	8,840	Y/ Flem-ming Fund		1				8,840
Establish SOPs, protocols and databases for monitoring AMR data; reporting systems between MOH and MOAF; and mechanisms for analyzing data and reporting back to facilities and to WHO.			No cost							
Determine a national coordination center to oversee the development and functioning of the national AMR supervision system	To be done during AMR national coordination committee meeting		No cost							

PRIORITY ACTIVITIES	ACTIVITIES	MIN-ISTRY/ UNIT	UNIT COST	Budget Source	QUANTITY/YEAR					TOTAL
					2020	2021	2022	2023	2024	
Purchase equipment and kits test for AMR	Two-day refresher training on how to use AMR test kits (international facilitator with 10 participants)	MOAF/ Veterinary	3,500	Y/ Gov		1				3,500
	Procure test kits - not yet determined									
Link laboratory diagnostics to field animal disease surveillance and control programmes	Sample testing for diagnostic test - depending on event (routine)			Y/ Gov						
Capacity building for AMR surveillance for aquatic animals	Training in surveillance, specimen collection and testing (in-country or out of country)		12,780	Y/ Donor			1			12,780
Determine designated sentinel surveillance sites, including for poultry, pigs and aquatic animal diseases and commence specimen collection and testing.	Collect samples in poultry, procure test kits and test	MOAF	4,500	Y/ Gov	3	3	3	3	3	67,500
	Collect samples in pigs, procure test kits and test		4,000	Y/ Gov	3	3	3	3	3	60,000
	Collect sample for aquatic animal (testing in Australia)		4,000	Y/ Donor	3	3	3	3	3	60,000
Indicator P.3.3. Infection prevention and control → 2018 Capacity level 1										
Review WHO recommendations on core components for effective IPC programs; national practical manuals; and facilities that support implementation	Hire a consultant	MOH/ Pharmacy	6,420	Y/ WHO		1				6,420
	Conduct coordination meeting with hospitals		3,540	Y/ WHO		1				3,540
	Organize field visit for consultant assessment		800	Y/ WHO		1				800
	Organize workshop to assess result		2,880	Y/ WHO		1				2,880
Indicator P.3.4. Optimize use of antimicrobial medicines in human and animal health and agriculture → 2018 Capacity level 1										

PRIORITY ACTIVITIES	ACTIVITIES	MIN-ISTRY/ UNIT	UNIT COST	Budget Source	QUANTITY/YEAR					TOTAL
					2020	2021	2022	2023	2024	
Develop a national antimicrobial stewardship plan and national legislation that regulates the use, availability and quality of antimicrobials	National antimicrobial stewardship plan in progress	MOH/ Pharmacy	10,000	Y/ WHO	1	1	1	1	1	50,000
	Review legislation and advocate inclusion in national legislation		3,650	N		1				3,650
Assess stewardship policies and activities, including the regulatory framework and antimicrobial supply chain management, using a multisectoral approach	Assess policy and develop framework		1,470	Y/ Flem-ming Fund		3				4,410
Review the list of Essential Drugs and clinical guidelines that promote appropriate use	Recruitment TA, develop TOR, consultation meeting, develop guidelines, printing		6,420	N		1	1	1	1	25,680
	Conduct meeting		870	Y/ Gov		1				870
Assess existing antimicrobial use and consumption monitoring (public and private)	Conduct regular supervision and develop consumption report twice a year	MOH/ Pharmacy	400	Y/ Gov	2	2	2	2	2	4,000
Develop/update and disseminate national stewardship and clinical care management guidelines that include categorization of the Essential Drug list (Access, Watch, Reserve) for antibiotics that promote appropriate antimicrobial use	Standard development and guideline development		10,000	Y/ WHO	1	1	1	1	1	50,000
Establish SOPs, protocols and databases to monitor antimicrobial use in humans and animals	Hire consultant (including Prepare proposal for donor/ Fleming fund)	MOH/ Pharmacy	90,000	N	1	1	1	1	1	450,000
Conduct pharmacist and public awareness campaign	Develop information education and communication (IEC) materials, talk show, seminar	MOH/ Pharmacy	10,000	Y/ WHO	1	1	1	1	1	50,000
Subtotal										**1,054,400**

6.4 Zoonotic Disease

Current level of capacity

MOH has already incorporated some priority zoonotic diseases into their surveillance system. MOAF is focused on internalizing animal health legislation to national and subnational level. MOH and MOAF are working together to develop a contingency plan for zoonotic diseases.

JEE Recommendations

- Map zoonotic diseases in the human and animal sectors, develop a list of priority zoonotic diseases and establish effective surveillance systems for all these diseases.
- Approve and implement the One Health Strategic Framework with sustainable financing.
- Establish a multisectoral operational mechanism/incident command structure to respond to zoonotic diseases and conduct training to test the plan.
- Accelerate implementation of Timor-Leste animal health legislation under the biosecurity legal framework (plant and animal health).

Activities and budget

PRIORITY ACTIVITIES	ACTIVITIES	MINISTRY/ UNIT	UNIT COST	Budget Source	QUANTITY/YEAR					TOTAL
					2020	2021	2022	2023	2024	
Indicator P.4.1. Coordinated surveillance systems in place in the animal health and public health sectors for zoonotic diseases/pathogens identified as joint priorities → 2018 Capacity level 1										
Identify priority zoonotic diseases for human and animal using One Health Disease Zoonotic Priority Tools	Organize workshop/ training	MOH and MOAF	3,750	N	1					3,750
Develop/ trial risk mapping tools (Zoonotic and emerging infectious diseases)	Organize workshop/ training		1,550	N	1					1,550
Implement animal health legislation under the biosecurity legal framework (plant and animal health)	Organize national dissemination meeting	MOAF	1,380	Y/ Gov		1				1,380
	Organize dissemination at municipality level		1,940	Y/ Gov		13				25,220
Implement surveillance for priority zoonotic diseases	Conduct sample collection for Brucellosis		84,000	Y/ Gov	1	1	1	1	1	420,000

PRIORITY ACTIVITIES	ACTIVITIES	MIN-ISTRY/ UNIT	UNIT COST	Budget Source	QUANTITY/YEAR					TOTAL
					2020	2021	2022	2023	2024	
Indicator P.4.2. Mechanisms for responding to infectious and potential zoonotic diseases established and functional → 2018 Capacity level 1										
Establish a multisectoral operational mechanism/incident command structure to respond to zoonotic diseases and conduct training to test the plan (animal and human)	Finalize/combine draft contingency plan on zoonotic diseases (e.g. rabies, avian influenza) and include human health and mechanisms for human and animal vaccine provision	MOH and MOAF	4,675	Y/ Gov	1	1	1	1	1	23,375
Promote public awareness for zoonotic diseases,	Organize public awareness for rabies	MOAF	12,000	Y/ Gov	1	1	1	1	1	60,000
Improve procurement to ensure sufficient supply to respond to zoonotic diseases	Include mechanism in contingency plan	MOH and MOAF	No cost							
Subtotal										**535,275**

6.5 Food safety

Current level of capacity

The focus of food safety is to improve the capacity for surveillance and response and prevent food borne disease by improving the food safety of food vendors/ producers and the community.

JEE Recommendations

- Establish National Food Safety Commission and Codex Committee.
- Develop and enact Food Act.
- Develop multisectoral National Food Safety Emergency Detection and Response Plan and institutionalize formal coordination mechanism at national and municipal levels.
- Train food inspectors and relevant officials on foodborne disease surveillance, outbreak investigation and response management.

Activities and budget

PRIORITY ACTIVITIES	ACTIVITIES	MIN-ISTRY/ UNIT	UNIT COST	Budget Source	QUANTITY/YEAR					TOTAL
					2020	2021	2022	2023	2024	
Indicator P.5.1. Surveillance systems in place for the detection and monitoring of foodborne diseases and food contamination → 2018 Capacity level 2										
Ensure Integrated Disease Surveillance and Response (IDSR) includes food borne diseases	Conduct super-visory visit on outbreak investi-gation	MOH/ Food	1,080	Y/ Gov	6	6	6	6	6	32,400
Finalize draft National Food Safety Strategy 2020-2025	Launch Strategy		5000	Y/ WHO	1	1				10,000
	Disseminate and implement Food Safety Strategy at all levels		1,705	Y/ WHO	4	4	4	3	2	28,985
	HR to check food safety		5,265	Y/ WHO	20	10	20	40	60	789,750
Award M&E classification to restaurants	Award food safety certificate to restaurants, caterers, food vendors, "tahu tempe" (bean curd, tempe) producers and drinking water producers		540	Y/ Gov	30	35	45	55	60	121,500
Procure and conduct training on food rapid test kits	Procure rapid test kits	MOH/ AI-FAESA and MOAF	25,000	Y/ Gov	1	1	1	1	1	125,000
	Train health worker on using the rapid test kit		10,110	Y/ Gov	1	1	1	1	1	50,550
Increase awareness of food safety practices to food premises	Organize orientations on the five keys food safety measures for food premises	MOH/ Food	3,200	Y/ WHO	5	5	5	5	5	80,000
Develop pre-market evaluation for food circulation in Timor-Leste	Identify stakeholder and focal point	AIFAE-SA	2,880	Y/ Gov	1					2,880
	Develop monitoring strategy		3,650	Y/ Gov	1	1				7,300
	Establish foodborne diseases/ bacteria		No cost							
	Develop SOPs		5,250	Y/ Gov	1					5,250
Establish reliable and accurate laboratory testing for food samples	Establish a food laboratory with integrated information systems, SOPs, and accreditation.		500,000	Y/ Gov	1	1	1	1		2,000,000

PRIORITY ACTIVITIES	ACTIVITIES	MIN-ISTRY/ UNIT	UNIT COST	Budget Source	QUANTITY/YEAR					TOTAL
					2020	2021	2022	2023	2024	
Conduct food inspections of establishments (shops/ distributors)	As per decree law 23/2009		Routine	Y/ Gov	1	1	1	1	1	
Conduct hygiene inspection of food establishments (restaurants, food producers, food distributors) for compliance to minimum standards	As per decree law no 7/2009, 28/2011		Routine	Y/ Gov	1	1	1	1	1	
Indicator P.5.2. Mechanisms are established and functioning for the response and management of food safety emergencies → 2018 Capacity level 1										
Develop operational plan for rapid response to food safety emergencies	Hire consultant to develop operational plan	AIFAE-SA	8,840	N	1	1	1	1	1	44,200
	Conduct consultative workshop with relevant stakeholders to develop SOPs/ guidelines for rapid response to food safety emergencies		10000	N	1	1	1	1	1	50,000
	Finalize, launch and disseminate operational plan, SOPs/Guidelines		2,250	N	2	2	1	1	1	15,750
Develop and implement an integrated and regular coordination system for food safety at national level	Hire consultant to develop SOPs for communication between all sectors including INFOSAN and the National IHR Focal Point.		8,840	N	1	1	1	1	1	44,200
	Conduct consultative workshop to review the plan		1,350	N	1	1	1	1	1	6,750
	Hold regular meetings		No cost		1	1	1	1	1	
Conduct training for Food Inspectors in collecting food samples	Organize in-country training	MOH/ AIFAESA and MOAF/ Veteri-nary	18,560	Y/ WHO	1	1	1	1	1	92,800
	Organize overseas training for five people per year		20,000	Y/ WHO	5	5	5	5	5	500,000

PRIORITY ACTIVITIES	ACTIVITIES	MIN-ISTRY/ UNIT	UNIT COST	Budget Source	QUANTITY/YEAR					TOTAL
					2020	2021	2022	2023	2024	
Conduct regular INFOSAN meetings	Identify stakeholders and focal points (INFOSAN Emergency Contact Point)		No cost							
	Conduct quarterly meetings		975	Y/ Gov	4	4	4	4	4	19,500
Establish a functional National Food Safety Commission, Codex Committee and secretariat	Organize orientation workshop to develop TORs of the Commission and Secretariat	MOH and MOAF	1,350	N	2	1				4,050
	Hire international consultant to establish Commission and Secretariat		23,360	N	1	1	1	1	1	116,800
	Hire national consultant		21,650	N	2	2	2	2	2	216,500
Conduct Second Codex Alimentarius Meeting	Organize stakeholder meeting and workshop		2,350	Y/ WHO	2	2	2	2	2	23,500
Disseminate food safety information to community health workers	Conduct orientation on five key food safety strategies and environmental Health focal point at community health centre level	MOH/ Food	4,285	Y/ WHO	13	13	13	13	13	278,525
Train food inspectors, rapid response teams (RRT) and relevant officials on foodborne disease surveillance, outbreak investigation and response management	Train MOH rapid response team at municipality and national level on foodborne disease outbreak investigation and response every year (n=60)	MOH/ Food	18,840	Y/ WHO	1	1	1	1	1	94,200
	Train MOAF RRTs at national and subnational level	MOAF/ Veteri-nary	15,000	Y/ Gov	1	1	1	1	1	75,000
Celebrate World food safety day	Conduct workshop	MOH/ FOod	1,810	Y/ WHO	1	1	1	1	1	9,050
	Deliver multi-media mass campaign with IEC materials		1,500	Y/ WHO	1	1	1	1	1	7,500
	Run talk show		2,000	Y/ WHO	1	1	1	1	1	10,000
	Run cooking competition		11,080	Y/ WHO	1	1	1	1	1	55,400
Subtotal										**4,917,340**

6.6 Biosafety and biosecurity

Current level of capacity

Timor-Leste is improving the national laboratory infrastructure to comply with biosafety and biosecurity requirements; advocating for biosafety and biosecurity legislation; and continuously improving their human resources capacity to handle dangerous pathogens.

JEE Recommendations

- Develop and implement biosafety and biosecurity legal framework with strong enforcement mechanism and monitoring and evaluation.
- Develop the national plan of action for biosafety and biosecurity for human, animal and agriculture sector.
- Develop a process for in-country training that accommodates the entire specimen to result pathway including specimen collection, specimen processing, culture and identification, and storage of pathogens and transport to the reference laboratory.

Activities and budget

PRIORITY ACTIVITIES	ACTIVITIES	MINISTRY/ UNIT	UNIT COST	Budget Source	QUANTITY/YEAR					TOTAL
					2020	2021	2022	2023	2024	
Indicator P.6.1. Whole-of-government biosafety and biosecurity system in place for all sectors (including human, animal and agriculture facilities) → 2018 Capacity level 1										
Advocate for the establishment of Biosafety and Biosecurity legislation / Diploma ministerial	Hire consultant to draft legislation on Biosafety and biosecurity for human health	MOH/ NHL	8,840	N	1					8,840
	Hire consultant to draft legislation on biosafety and biosecurity for animal laboratory	MOAF/ Veterinary	8,840		1					8,840

PRIORITY ACTIVITIES	ACTIVITIES	MIN-ISTRY/ UNIT	UNIT COST	Budget Source	QUANTITY/YEAR					TOTAL
					2020	2021	2022	2023	2024	
Establish Biosafety and Biosecurity committee at National level	Hold coordination and communication meetings to establish Biosafety and Biosecurity Committee or integrate Biosafety and Biosecurity into existing IHR committee	MOH/ NHL	5,920	N	1	1	1	1	1	29,600
Develop biosafety and biosecurity protocol for all levels of facility	Hire consultant to draft biosecurity and biosafety protocol		12,650	Y/ Gov	1					12,650
Designate laboratory biosafety and biosecurity officer for laboratory at referral level	Promote or recruit biosafety and biosecurity officer	MOH/ NHL	18,850	Y/ Gov	1	1	1	1	1	94,250
Develop laboratory licensing requirements	Hire consultant to develop licensing requirement for laboratory as per international standard	MOH	8,840	N	1	1	1	1	1	44,200
Indicator P.6.2. Biosafety and biosecurity training and practices in all relevant sectors (including human, animal and agriculture) → 2018 Capacity level 2										
Develop training modules for biosafety and biosecurity	Hire consultant to develop syllabus and training materials for Biosafety and Biosecurity	MOH/ NHL	2,150	N	1	1	1	1	1	10,750
Incorporate biosafety and biosecurity training into induction and continuous training programs	Train all laboratory staff on Biosafety and Biosecurity		8,490	Y/ Gov	2	2	2	2	2	84,900
Disseminate biosafety and biosecurity guidelines to all laboratories	Conduct workshop to disseminate biosafety and biosecurity guidelines		5,780	N	1	1	1	1	1	28,900
Subtotal										**322,930**

6.7 Immunization

Current level of capacity

Immunization is already strong in Timor-Leste. Improvements in infrastructure and health facilities, and continuous capacity building for health providers, will continue to ensure access and service to all people. Immunization implementation will also be improved by involving the community in the planning and supervision in remote areas.

JEE Recommendations

- Widen access to the Timor-Leste Health Information System, version 2 dashboard for routine immunization data from the health information management system (HIMS) and use the indicators to propose actions for strengthening the Expanded Programme on Immunization (EPI).
- Conduct periodic evaluations of the routine immunization system.
- Consider the use of alternative operational denominator estimates used to calculate vaccination coverage for specific EPI operations.
- Adjust the national vaccine distribution system to ensure the elimination of stock-outs at the subnational level.

Activities and budget

PRIORITY ACTIVITIES	ACTIVITIES	MINISTRY/ UNIT	UNIT COST	Budget Source	QUANTITY/YEAR					TOTAL
					2020	2021	2022	2023	2024	
Indicator P.7.1. Vaccine coverage (measles) as part of national programme → 2018 Capacity level 4										
Sustain and strengthen the strategy to achieve and maintain 90% to 95% coverage by 2020 by strengthening the micro planning and its quarterly review	Continue to develop comprehensive micro planning and its quarterly review meeting.	MOH/ Immunization	135,000	Y/ DONOR	1	1	1	1	1	675,000
	Conduct refresher training to strengthen routine immunization at all facilities		7,716	Y/ DONOR	1	1	1	1	1	38,580
	Conduct coordination meeting to strengthen service delivery in very remote areas		3,752	Y/ DONOR	2	2	2	2	2	37,520

PRIORITY ACTIVITIES	ACTIVITIES	MINISTRY/ UNIT	UNIT COST	Budget Source	QUANTITY/YEAR					TOTAL
					2020	2021	2022	2023	2024	
	Conduct six monthly meetings to engage community participation in micro planning	MOH/ Immunization	6,570	Y/ DONOR	2	2	2	2	2	65,700
	Conduct coordination and review meeting with local and international development partners to strengthen the immunization program		160	Y/ DONOR	4	4	4	4	4	3,200
Ensure the quality of immunization services through quarterly supportive supervision	Conduct three monthly supportive supervision for quality improvement at all immunization facilities		1,200	Y/ GOV	4	4	4	4	4	24,000
Improve communication with HIMS department to ensure data quality input	Conduct coordination meeting with HIMS department to discuss denominator calculation		260	Y/ GOV	2	2	2	2	2	2,600
Maintain quality control of necessary infrastructure and essential facilities for immunization services, including port of entry storage (Cold room)	Improve current cold system facilities (Establish 1 cold room at Comoro Airport and 1 Dili Port)	MOH/ Finance	50,000	Y/ GOV	1					50,000
Indicator P.7.2. National vaccine access and delivery → 2018 Capacity level 4										
Strengthen the distribution system and develop new approach to avoid vaccines stock out in any situation at any facilities	Conduct supervision visit to all health facilities	MOH/ Immunization	520	Y/ GOV	4	4	4	4	4	10,400
	Develop pull system as new approach to reduce vaccine cost distribution and avoid stock out at any level of the implementation		7,716	Y/GOV	1					7,716
Subtotal										914,716

6.8 National laboratory system

Current level of capacity

Laboratory is one of the priority areas. Continuous improvement for laboratory infrastructure, reagent stock for priority diseases, the laboratory system, procedures, quality and human resources at national and its tiered laboratory network is required.

JEE Recommendations

- Establish a legal framework for human and animal laboratory quality management which provides legislation, regulation and standards so that accreditation to ensure patient (human and animal) safety is assured.
- Across animal and human laboratory practice, embed a culture of continuous professional development in laboratory quality management, laboratory safety, as well as require laboratory techniques through regular certified training.
- Cooperate if possible, on common components in human and animal health to strengthen the laboratory system, e.g., a laboratory information system, a specimen referral system for overseas testing, laboratory executive management and improved diagnosis in district settings.

Activities and budget

PRIORITY ACTIVITIES	ACTIVITIES	MINISTRY/ UNIT	UNIT COST	Budget Source	QUANTITY/YEAR					TOTAL
					2020	2021	2022	2023	2024	
Indicator D.1.1. Laboratory testing for detection of priority diseases → 2018 Capacity level 3										
Develop laboratory capacity for diagnostic and surveillance testing	Fellowship for both human and animal laboratory staff	MOH/ NHL	10,000	Y/ Donor	2	2	2	2	2	100,000
		MOAF/ Veterinary	10,000	Y/ Donor	2	2	2	2	2	100,000
	Laboratory short courses at Pacific Paramedical Training Center	MOH/ NHL	94,000	Y/ Donor	1	1	1	1	1	470,000

PRIORITY ACTIVITIES	ACTIVITIES	MINISTRY/ UNIT	UNIT COST	Budget Source	QUANTITY/YEAR					TOTAL
					2020	2021	2022	2023	2024	
	Procurement of laboratory supplies		100,000	Y/ Flemming Fund		1	1			200,000
		MOAF/ Veterinary	70,000	Y/ Flemming Fund		1	1			140,000
Improve laboratory infrastructure and expand laboratory space at NHL for infectious disease testing and AMR surveillance	Renovation and expansion of laboratory	MOH/ NHL	180,000	Y/ Flemming Fund		1				180,000
		MOAF/ Veterinary	70,000	Y/ Flemming Fund		1				70,000
	Procure generator	MOH/ NHL	17,000	Y/ Gov		1				17,000
	Procure incinerator		3,000	Y/ Gov		1				3,000
Ensure periodic maintenance and calibration of equipment	Conduct maintenance service for low and high-risk laboratory at National Tuberculosis Reference Laboratory	MOH/ NHL	40,000	Y/ Donor	1	1	1	1	1	200,000
	Conduct maintenance and repair service for Biosafety Cabinet		20,000	Y/ Gov	1	1	1	1	1	100,000
	Conduct maintenance for other laboratory equipment		85,000	Y/ Gov	1	1	1	1	1	425,000
Increase spectrum, coverage and efficiency of public health testing in the country	Training on laboratory method for food and water analysis		28,256	Y/ Gov	1	1	1	1	1	141,280
	Recruit laboratory technical consultant for toxicology, food and water analysis		13,000	Y/ Gov	1	1				26,000
Recruit qualified laboratory technologist	Recruit and retain qualified laboratory technologist		66,300	Y/ Gov	1	1	1	1	1	331,500
Develop laboratory test handbook	Recruit national consultant to develop laboratory handbook		2,000	Y/ Gov	1					2,000

PRIORITY ACTIVITIES	ACTIVITIES	MIN-ISTRY/ UNIT	UNIT COST	Budget Source	QUANTITY/YEAR					TOTAL
					2020	2021	2022	2023	2024	
Procure laboratory equipment and reagents required for testing priority diseases	Procurement of BD Phoenix ™ Automated Identification and Susceptibility testing System	NHL/ MOAF/ Veterinar	80,000	Y/ Fleming Fund		1				80,000
Participate in External Quality Assessment Program	Enrollment in external quality assessment program for all laboratory tests conducted	MOH/ NHL	7,500	Y/ Gov	1	1	1	1	1	37,500
		MOAF/ Veterinary	7,500	Y/ Gov	1	1	1	1	1	37,500
Indicator D.1.2. Specimen referral and transport system → 2018 Capacity level 2										
Establish specimen referral network within the country and to WHO Collaborating Centres	Contract overseas laboratory to receive and test samples	MOH/ NHL	10,000	Y/ Gov	1	1	1	1	1	50,000
Establish specimen transport system within the laboratory tiered network	Procure two 4WD vehicles to support the existing transport mechanism	MOH/ NHL	70,000	Y/ Gov	1					70,000
	Procure additional vehicle	MOAF/ Veterinary	3,000	Y/ Gov	1					3,000
Develop specimen management guidelines	Hire consultant to draft specimen management guidelines	MOH/ NHL	2,000	Y/ Fleming Fund	1					2,000
		MOAF/ Veterinary	1,500	Y/ Fleming Fund	1					1,500
Establish service agreements with courier companies for overseas referrals	Establish contract agreement with courier company for international shipment	MOH/ NHL	6,000	Y/ Gov	1	1	1	1	1	30,000
Strengthen coordination and communication throughout laboratory sector to improve laboratory transport system	Conduct annual laboratory review meeting		8,280	Y/ Gov	1	1	1	1	1	41,400
D.1.3 Effective national diagnostic network → 2018 Capacity level 2										
Develop national laboratory policies and identify the capacity expected at each level of the laboratory system	Conduct consultative workshop	MOH/ NHL	6,995	Y/ Fleming Fund	1					6,995
		MOAF/ Veterinary	7,000	Y/ Fleming Fund	1					7,000
Develop laboratory service package for each level of health facility	Conduct consultative workshop	MOH/ NHL	5,150	Y/ Gov	1					5,150

PRIORITY ACTIVITIES	ACTIVITIES	MIN-ISTRY/ UNIT	UNIT COST	Budget Source	QUANTITY/YEAR					TOTAL
					2020	2021	2022	2023	2024	
Strengthen coordination and communication throughout laboratory sector to improve laboratory service and networking	Hold quarterly meeting with relevant partners and stake holders	MOH/ NHL	2,395	Y/ Gov	1	1	1	1	1	11,975
D.1.4 Laboratory quality system → 2018 Capacity level 1										
Designate a laboratory quality manager in all laboratories at the referral level	Promote or recruit qualified personnel for the role of quality manager	MOH/ NHL	9,425	Y/ Gov	1	1	1	1	1	47,125
Develop Laboratory Quality Manual	Advocacy meeting for dissemination of Quality Manual	MOH/ NHL	4,260	Y/ Gov	1					4,260
		MOAF/ Veterinary	4,500	Y/ Gov	1					4,500
Conduct annual external audit	Hire consultant to assess progress towards accreditation	MOH/ NHL	6,420	Y/ Flemming Fund	1		1		1	19,260
Establish Laboratory information system	Procure and install laboratory information system	MOH/ NHL	110,000	Y/ Flemming Fund		1				110,000
		MOAF/ Veterinary	100,000	Y/ Flemming Fund		1				100,000
Provide training for all staff in the Laboratory Quality Management System	Training on Laboratory Quality Management System based on ISO 15189 and ISO 17025	MOH/ NHL	10,015	Y/ Flemming Fund	1		1		1	30,045
		MOAF/ Veterinary	20,000	Y/ Flemming Fund	1		1		1	60,000
Monitor the training conducted for human resource development	Develop human resources database	MOH/ NHL	2,000	Y/ Gov		1				2,000
Subtotal										3,636,990

6.9 Surveillance

Current level of capacity

Timor-Leste has adequate surveillance for priority diseases and is now planning to advance to higher level by developing a web-based surveillance reporting system and to continuously improve capacity for timely and complete surveillance reporting and data analysis at national and subnational level.

JEE Recommendations

- Train multidisciplinary multi-hazard emergency/RRTs for all 13 municipalities to investigate and respond to all public health events.
- Develop and strengthen web-based reporting system for both animal and human surveillance
- Improve capacity to analyze data and respond at municipality/district and subdistrict level.
- Implement procedure for immediate sharing of information on suspected outbreaks of HPAI, rabies, brucellosis and anthrax in both humans and animals and joint investigation and response.
- Strengthen collection, storage and transportation of samples from the periphery to the national level.

Activities and budget

PRIORITY ACTIVITIES	ACTIVITIES	MINISTRY/ UNIT	UNIT COST	Budget Source	QUANTITY/YEAR					TOTAL
					2020	2021	2022	2023	2024	
Indicator D.2.1. Surveillance systems → 2018 Capacity level 3										
Conduct pre-border surveillance for the following animal diseases : avian influenza, foot and mouth disease, Newcastle disease, classical swine fever and haemorrhagic septicaemia	Field trips for sample collection (five national and two local participants for five days including rental car and per diem)	MOAF	83,000	Y/ Gov	1	1	1	1	1	415,000
	Procure materials and equipment, i.e. ELISA kits (5,000 kits)		40,000	Y/ Gov	1	1	1	1	1	200,000

PRIORITY ACTIVITIES	ACTIVITIES	MIN-ISTRY/ UNIT	UNIT COST	Budget Source	QUANTITY/YEAR					TOTAL
					2020	2021	2022	2023	2024	
Disseminate veterinary legislation to development partners and public	Conduct workshop and direct dissemination to local authorities and communities through talk shows and radio	MOAF	6,700	Y/ Gov		1				6,700
Update and disseminate IDSR case definitions for all priority diseases to health workers	Conduct workshop at the municipality level on surveillance case definitions	MOH/ SURV	2,781	Y/ WHO	13	13	13	13		144,612
	Conduct workshop in National and Referral Hospital on surveillance case definitions		2,246	Y/ WHO	5	5	5	5	5	56,150
	Conduct train the trainer workshop in basic epidemiology at municipality level; includes a trainer for five days		6,380	Y/ WHO	4	4	4	4	4	127,600
Increase capacity of event-based and indicator-based surveillance system at national and municipality level and at hospitals	Monitor and supervision at municipality level	MOH/ SURV	1,900	Y/ Gov	4	4	4	4	4	38,000
	Conduct quarterly review on the conduct of surveillance at national level		2,880	Y/ Gov	4	4	4	4	4	57600
	Conduct workshops at health centers, national and referral hospitals that are influenza sentinel sites.		3,760	Y/ WHO	4	4	4	4	4	75,200
Improve capacity of IDSR for Rapid Response Team (RRT)	Conduct five one-day training workshops on IDSR annually in Dili and the four districts (40 persons/ workshop)	MOH/ SURV	2,050	Y/ WHO	5	5	5	5	5	51,250

PRIORITY ACTIVITIES	ACTIVITIES	MIN-ISTRY/ UNIT	UNIT COST	Budget Source	QUANTITY/YEAR					TOTAL
					2020	2021	2022	2023	2024	
Improve capacity in vaccine preventable disease surveillance at national and sub-national level	Conduct annual review at municipalities level in surveillance and epidemiology, comprising two-day supervision visits twice a year (five persons permission to all 13 districts)	MOH/ SURV	800	Y/ WHO	26	26	26	26	26	104,000
	Conduct on-the-job training on vaccine preventable diseases for the 100 persons working in community health centers over 10 working days		900	Y/ WHO	25	25	25	25	25	112,500
Develop national surveillance guidelines	Hire international consultant	MOAF/ Veterinary	12,000	N	1					12,000
Develop SOP for Surveillance at points of entry (PoE)	Local consultant hired to develop SOP as part of action plan as per MOU with Indonesia	MOH/ CDC	7,250	Y/ Gov	1					7,250
Develop SOP for surveillance cross border for animal health		MOAF	7,250	Y/ Gov	1					7,250
Indicator D.2.2. Use of electronic tools → 2018 Capacity level 2										
Provide access and training for the electronic information system	Install software report system (budget approved by FAO)	MOAF/ NDVS	15,000	Y/ FAO	1					15,000
	Procure required computer hardware for each municipality and at national level	MOAF	1,000	Y/ Gov	14					14,000
	Conduct training on software at each municipality	MOAF	5000	Y/ FAO	1	1	1	1	1	25,000
Use EPItools program for sample size determination	Conduct training and refresher in using EPItools (budgeted by Australia)	MOAF	5000	Y/ Donor	1	1	1	1	1	25,000

PRIORITY ACTIVITIES	ACTIVITIES	MIN-ISTRY/ UNIT	UNIT COST	Budget Source	QUANTITY/YEAR					TOTAL
					2020	2021	2022	2023	2024	
Improve capacity to use EpiInfo database at sub-national level	Conduct annual training workshop in using EpiInfo at each municipality for 20 persons	MOH/ SURV	1,910	N	13	13	13	13	13	124,150
Develop web-based surveillance reporting system	Hire an international consultant to design, pilot and roll out the web-based reporting tools to selected municipalities	MOH/ SURV	23,360	Y/ WHO	1	1	1	1	1	116,800
	Hire national consultant		14,450	N	1	2				43,350
	Procure tablets for health centers, hospitals and MOH		30,000	N			1			30,000
	Procure server		1,500	N			1			1,500
	Conduct ongoing servicing and maintenance		20,000	N	1	1	1	1	1	100,000
Indicator D.2.3. Analysis of surveillance data → 2018 Capacity level 3										
Capacity building in data analysis to ensure adequate number of trained, competent personnel and quality data in Epidemiology Bulletin (national and sub-national)	Conduct annual data analysis workshop for public health workers (50 persons over 3 days)	MOH/ SURV	4,100	Y/ WHO	1	1	1	1	1	20,500
Subtotal										**1,930,412**

6.10 Reporting

Current level of capacity

The reporting requirements under the IHR are established and function in Timor-Leste. The two recommendations from the JEE for reporting are duplicated elsewhere and are therefore not included in the planning matrix.

JEE Recommendations

- Develop protocols and processes using the One Health approach for public health emergency reporting (see 10.3 Antimicrobial resistance and 10.4 Zoonotic diseases).
- Build capacity and develop communication and coordination mechanism for information sharing among IHR NFP, OIE delegate, INFOSAN emergency contact point and national Codex contact point (see 10.1 IHR coordination, communication and advocacy and 10.5 Food safety).

6.11 Human resources

Current level of capacity

Timor-Leste has a National Health Sector Strategy Plan 2011-2030 as the reference/base and will review the human resources strategy for IHR implementation for both human and animal health.

JEE Recommendations

- Expand existing strategies into a comprehensive workforce strategy for each sector, including initial training, government retention and career advancement.
- Implement and formalize to sustain the current field epidemiology training programme (FETP) as part of a documented plan to increase the number of epidemiologists and consider adding laboratory and veterinary components.
- Finalize the draft human resource workplan for the veterinary sector.
- Advocate for the capital development fund to offer more scholarships.

Activities and budget

PRIORITY ACTIVITIES	ACTIVITIES	MINISTRY/ UNIT	UNIT COST	Budget Source	QUANTITY/YEAR					TOTAL
					2020	2021	2022	2023	2024	
D.4.1 An up-to-date multisectoral workforce strategy is in place										
Review existing human resources strategies for each sector, including initial training, recruitment, government retention and career advancement.	Hire a local consultant for two months	MOH	6,050	N	1	1				12,100
	Conduct one meeting at national level		900	N	1	1	1	1	1	4,500
Finalize draft human resource workplan for the veterinary sector	Conduct consultative meeting	MOAF	5000	N	1	1				10,000
Indicator D.4.2. Human resources are available to effectively implement IHR → 2018 Capacity level 2										
Map human resource needs for epidemic preparedness and control at national and sub-national level for both human and animal health	Hire one international consultant for one month	MOH	13,680	N	1					13,680
	Conduct two consultative meetings (for human and animal health)		3,350	N	2					6,700
Map required training for IHR implementation for all sectors	Conduct two consultative meetings (for human and animal health)		3,350	N	2					6,700
Indicator D.4.3. In-service trainings are available → 2018 Capacity level 2										
Develop list of relevant in-service training conducted in-country	List all relevant in-service training conducted in-country including national institutes and professional bodies for both human and animal health sector.	MOH and MOAF	No cost							
Coordinate with stakeholders and development partners for in-service training related to public health emergencies	Conduct 1 to 2 meetings annually	MOH	5000	N	1	1	1	1	1	25,000

PRIORITY ACTIVITIES	ACTIVITIES	MIN-ISTRY/ UNIT	UNIT COST	Budget Source	QUANTITY/YEAR					TOTAL
					2020	2021	2022	2023	2024	
Indicator D.4.4 FETP or other applied epidemiology training programme in place → 2018 Capacity level 2										
Review trainees' capacity and function to establish sustainable field epidemiology activities	Hire one international consultant for two weeks (every two years)	MOH	8,840	N		1		1		17,680
Update modules for basic epidemiology for human and animal health and provide refresher training	Conduct annaul workshop	MOH	14,800	N	1	1	1	1	1	74,000
Provide training in epidemiology	Send seven persons per year for one-month training to English speaking country (five from MOH and two from MOAF)	MOH and MOAF	10,000	N	7	7	7	7	7	350,000
Subtotal										520,360

6.12 Emergency preparedness

Current level of capacity

Timor-Leste has conducted a risk assessment for natural disasters and specific diseases. To achieve higher capacity, an integrated contingency plan for natural and IHR hazards is in progress.

JEE Recommendations

- Conduct and publish risk assessment and resource mapping for all public health hazards including natural, communicable disease, chemical, biological, radiation and food hazards; pre-position essential items for emergency/disaster response.
- Develop a comprehensive multisectoral multi-hazard preparedness plan.
- Ensure national multisectoral emergency response plans are developed for all public health hazards.
- Identify and document options for accessing surge capacity and conduct training and refresher training for RRTs in all the municipalities.

Activities and budget

PRIORITY ACTIVITIES	ACTIVITIES	MINISTRY/ UNIT	UNIT COST	Budget Source	QUANTITY/YEAR					TOTAL
					2020	2021	2022	2023	2024	
Indicator R.1.1. Strategic emergency risk assessments conducted, and emergency resources identified and mapped → 2018 Capacity level 1										
Map and update emergency stockpiles amongst all relevant stakeholders	Hire a national consultant for three months every year	MOH/ Ambulance	21,650	N	1	1	1	1	1	108,250
Assess infrastructure, facilities and human resources in national and regional hospitals	Hire an international consultant for three months to conduct assessment		45,040	N	1					45,040
Establish database for trained human resources for emergency preparedness and response	Hire a national IT international consultant for three months, software arrangement		21,650	N	1					21,650
Develop/review SOP or plan for the distribution of stockpiles, including personal protective equipment (PPE), during an emergency	Hire an international consultant for three months each year to develop and review the plan		21,650	N	1	1	1	1	1	108,250
Indicator R.1.2. National multi-sectoral multi-hazard emergency preparedness measures, including emergency response plans, are developed, implemented and tested → 2018 Capacity level 1										
Finalize the Timor-Leste Contingency, emergency preparedness and response plan for natural and IHR hazard (natural, man-made and epidemic)	Conduct workshop to disseminate the finalized Health Sector Contingency Plan	MOH/ Ambulance	3,500	N/ WHO	1					3,500
Develop multi-hazards emergency preparedness plan for hospitals	Conduct consultation workshop for 50 participants		3,650	N		1				3,650
	Hire an international consultant for three months		45,040	N	1					45,040
Conduct basic life support training, including simulation exercises of natural, man-made and public health emergencies	Conduct training for 50 participants over four days		7,550	Y/ Gov	1	1	1	1	1	37,750
	Hire an international consultant for three months to develop the plan		45,040	N	1					45,040
	Conduct consultation workshop for 50 participants		3,650	N	1	1	1	1	1	18,250
Subtotal										**436,420**

6.13 Emergency response operations

Current level of capacity

The Emergency Operations Center (EOC) at the national level is being established. The next step will be to develop the legal governance for EOC establishment and core capacities to operate the EOC.

JEE Recommendations

- Clarify, formalize and document the emergency response coordination mechanism within MOH and across ministries and for all hazards.
- Establish a functional and sustainable HEOC.
- Develop a programme of exercises and after-action reviews across all hazards; include simulation exercises based on the scenario in the health cluster contingency plan.

Activities and budget

PRIORITY ACTIVITIES	ACTIVITIES	MINISTRY/ UNIT	UNIT COST	Budget Source	QUANTITY/YEAR					TOTAL
					2020	2021	2022	2023	2024	
Indicator R.2.1. Emergency response coordination → 2018 Capacity level 2										
Develop legal document (Ministry decree) for the establishment of the EOC	Develop structure, role and responsibilities for EOC establishment	MOH/ Ambulance	10,000	N	1	1				20,000
Advocate for the establishment of EOCs in municipalities	Assess the requirements for EOCs in municipalities, including EOC focal point, roles and responsibilities, coordination mechanism		24,000	N	1					24,000
Emergency Health Cluster Coordination Group meeting	Hold four meetings per year		1,190	Y/ Gov	2	4	4	4	4	21,420

PRIORITY ACTIVITIES	ACTIVITIES	MINISTRY/ UNIT	UNIT COST	Budget Source	QUANTITY/YEAR					TOTAL
					2020	2021	2022	2023	2024	
Update, maintain and communicate with emergency health cluster members	Update emergency health cluster membership database	MOH, WHO and relevant stakeholders	No cost		2	2	2	2	2	
	Maintain communication channels for emergency health cluster through Facebook and Whatsapp groups		No cost		1	1	1	1	1	
Participate in inter-ministerial disaster management group activities	Relevant ministry to attend	MOH/ Ambulance	No cost		1	1	1	1	1	
Indicator R.2.2. Emergency operations centre (EOC) capacities, procedures and plans → 2018 Capacity level 1										
Develop and disseminate SOPs and guidelines for emergency response operation	Hire an international consultant for three months to develop the SOPs	MOH/ Ambulance	33,040	N	1					33,040
	Conduct consultation workshop for 50 participants		7,075	N	1					7,075
Conduct trainings on EOC operations and management at the national level	Conduct four-day workshop for 50 participants		9,605	N	1	1	1	1	1	48,025
	Conduct study tour and train the trainer within the country.		8,210	N	1					8,210
Conduct training on disaster and public health emergency management for national EOC staff	Conduct training workshop		2,750	N	1		1			5,500
Obtain technical assistance for EOC operation and training	Hire an international consultant for one month		13,680	N	1					13,680

PRIORITY ACTIVITIES	ACTIVITIES	MINISTRY/ UNIT	UNIT COST	Budget Source	QUANTITY/YEAR					TOTAL
					2020	2021	2022	2023	2024	
R.2.3. Emergency Exercise Management Programme → 2018 Capacity level 2										
Advocate for the Ministry of Interior to include public health emergencies in the National Disaster Management Policy	Conduct meeting with Ministry of Interior	MOH/ Ambulance	No cost							0
Conduct simulation exercise to test the contingency plan, EOC operations and the business continuity plan	As per 10.12 Emergency Preparedness									0
Participate in Indian Ocean Wave simulation every 2 years		MOH/ Ambulance	Routine							0
Conduct pandemic influenza simulation exercise	Conduct simulation exercise at municipality level with multi stakeholders	MOH/ Ambulance	25,000	N	1		1		1	75,000
Subtotal										**255,950**

6.14 Linking public health and security authorities

Current level of capacity

Timor-Leste will identify a focal point for IHR hazards from the security authorities instead of using formal government procedures and will develop a mechanism for coordination during public health emergencies.

JEE Recommendations

- Identify and share points of contact with spelled-out roles and responsibilities in each IHR risk area, as well as points of contact in the security sector.
- Conduct national risk assessment and identify potential risks.
- Conduct scenario-based dry run or table-top exercise for the priority risks among the point of contact from stakeholders.
- Establish a secure communication mechanism (e.g., domain-controlled email system).

Activities and budget

PRIORITY ACTIVITIES	ACTIVITIES	MINISTRY/ UNIT	UNIT COST	Budget Source	QUANTITY/YEAR					TOTAL
					2020	2021	2022	2023	2024	
Indicator R.3.1. Public health and security authorities (e.g. law enforcement, border control, customs) linked during a suspect or confirmed biological, chemical or radiological event → 2018 Capacity level 1										
Identify contact points for public health emergencies	Identify and establish a list of contacts in public health, animal health, radiological safety, chemical safety and security authorities for public health emergencies	MOH/ CDC	No cost							
Identify appropriate activities for the response to biological, chemical, radiological and other threats and develop written protocol or MOU between sectors.	Conduct annual consultative meetings to determine appropriate activities such as notifications, assessments, investigation and laboratory testing		2,500	N	1	1	1	1	1	12,500
Conduct national risk-assessment to identify the risks of biological, chemical or radiological events	Hire an international consultant for 10 days		8,840	N	1					8,840
Conduct scenario-based exercises for priority risks	Conduct the tabletop exercise through a meeting		7,550	N		1		1		15,100
Subtotal										**36,440**

6.15 Medical countermeasures and personnel deployment

Current level of capacity

Timor-Leste is starting to establish Emergency Medical Teams (EMT) and will develop mechanism for receiving medical and personnel during public health emergencies.

JEE Recommendations

- Draft a national plan for sending and receiving medical countermeasures during public health emergencies, including threshold and authority for activation, customs clearance and logistics.
- Establish national and local Emergency Medical Team referring to global standard.
- Prepare the national medicines regulatory authority for rapid emergency use authorization of medicines not yet approved in the country

Activities and budget

PRIORITY ACTIVITIES	ACTIVITIES	MINISTRY/ UNIT	UNIT COST	Budget Source	QUANTITY/YEAR					TOTAL
					2020	2021	2022	2023	2024	
Indicator R.4.1. System in place for activating and coordinating medical countermeasures during a public health emergency → 2018 Capacity level 1										
Develop mechanism for sending and receiving medical countermeasures/ logistics during a public health emergency	Hire an international consultant for three months	MOH/ Ambulance	45,040	N		1				45,040
	Conduct consultative workshop and disseminate plan		3,650	N	2	1	1	1	1	21,900
Participate in regional/ international partnerships for emergencies as per formal agreements (i.e. Pacific Partnership etc.)	As required		No cost							0
Indicator R.4.2. System in place for activating and coordinating health personnel during a public health emergency → 2018 Capacity level 1										
Establish protocol for emergency management teams (EMT) at national hospital and regional hospitals	Hire an international consultant for three months	MOH/ Ambulance	45,040	N	1					45,040
Build capacity for EMT level 1 and level 2	Train EMT and surge staff from main stakeholders		7,960	Y/ WHO	1	1	1	1	1	39,800
Develop SOPs for national EMT	Hire an international consultant for three months	MOH/ Ambulance	45,040	N	1		1			90,080
	Conduct one-day consultation workshop to finalize and disseminate the SOPs		3,650	N	1	1	1	1	1	18,250

PRIORITY ACTIVITIES	ACTIVITIES	MINISTRY/ UNIT	UNIT COST	Budget Source	QUANTITY/YEAR					TOTAL
					2020	2021	2022	2023	2024	
Develop SOPs for a national emergency medical team aligned to global standards, and including personnel registration; personnel certification; and personnel deployment (level 1)	Hire an international consultant for three months	MOH/ Ambulance	45,040	N	1					45,040
	Conduct consultation workshop to develop training for EMT and surge staff		3,800	N	1	1	1	1	1	19,000
	Conduct training for EMT and surge staff		7,550	N	1	1	1	1	1	37,750
Develop mechanism for receiving international health personnel during a public health emergency	Hire an international consultant for three months		45,040	N	1					45,040
	Conduct consultation workshop to finalize mechanism		3,650	N	1	1	1	1	1	18,250
Indicator R.4.3. Case management procedures implemented for IHR relevant hazards → 2018 Capacity level 2										
Develop case management procedures for ambulance services for IHR priority diseases	Hire an international consultant for three months		45,040	N	1					45,040
	Conduct training for ambulance staff		7,550	N	1	1	1	1	1	37,750
Review/ update/ develop case management procedure for IHR priority diseases	Hire an international consultant for three months		45,040	N	1					45,040
	Conduct a consultation workshop to finalize procedure and conduct regular trainings		7,550	N	1	1	1	1	1	37,750
Training in the management of public health emergencies for hospital personnel	Hire an international consultant for three months to develop training module		45,040	N		1				45,040
	Conduct training at national and regional/ referral hospital		7,550	N	1	1	1	1	1	37,750
Subtotal										**673,560**

6.16 Risk communication

Current level of capacity

The MOH Health Promotion unit has a good relationship with media and regularly conducts briefings with social mobilization teams and volunteers in the community. To achieve higher capacity, the focus will be on developing risk communication guidelines and increasing media and community knowledge and awareness on IHR hazards.

JEE Recommendations

- Develop risk communication guidelines in the health sector and align them with the national health emergency communication plan/strategy.
- Conduct media awareness workshops and other interventions to strengthen risk communication capacity in the country.

Activities and budget

PRIORITY ACTIVITIES	ACTIVITIES	MINISTRY/ UNIT	UNIT COST	Budget Source	QUANTITY/YEAR					TOTAL
					2020	2021	2022	2023	2024	
Indicator R.5.1. Risk communication systems for unusual/unexpected events and emergencies → 2018 Capacity level 2										
Develop emergency risk communication guidelines for the health sector, including SOPs for public communication during emergency, rumour management and media monitoring	Hire international consultant	MOH/ Health Promotion	19,000	N		1				19,000
	Conduct national consultative workshop		5,000	N		1				5,000
	Disseminate guidelines at meetings in all municipalities		2,320	N	13					30,160
	Printing and distribution 50 books		500	N	1	1	1	1	1	2,500

PRIORITY ACTIVITIES	ACTIVITIES	MINISTRY/ UNIT	UNIT COST	Budget Source	QUANTITY/YEAR					TOTAL
					2020	2021	2022	2023	2024	
Build capacity for risk communication at national and sub-national level	Conduct train the trainer risk communication workshop at national level	MOH/ Health Promotion	6,120	N	1					6,120
	Conduct risk communication training at municipal level annually		4,020	N	1	1	1	1	1	20,100
	Conduct M&E of risk communication efforts three times a year		3,145	N	3	3	3	3	3	47,175
	Support attendance at regional and international risk communication trainings and workshop		2,600	N	1	1	1	1	1	13,000
Indicator R.5.2. Internal and partner coordination for emergency risk communication → 2018 Capacity level 3										
Conduct regular multi-sectorial meetings for health promotion that include risk communication	Hold six monthly Health Promotion meetings of multi-sectorial stakeholders	MOH/ Health Promotion	1,750	Y/ Gov	2	2	2	2	2	17,500
Advocate for donors to conduct simulation exercises that include emergency risk communication	Participate in simulation exercise		No cost							
Indicator R.5.3. Public communication for emergencies → 2018 Capacity level 3										
Update the public communication plan annually	Part of routine operations	MOH/ Health Promotion	No cost							
Build capacity in emergency communication (media training etc.) for government spokespersons	Conduct training for spokespersons at national / ministerial level		6,000	N	1	1	1	1	1	30,000
	Conduct social media, media monitoring and rumor management training nationally and at municipalities.		5,250	N	1	1	1	1	1	26,250
Facilitate regular engagement with mass media and social media	Hold six monthly meetings with mass media and social media counterparts		2,355	Y/ Gov	2	2	2	2	2	23,550

PRIORITY ACTIVITIES	ACTIVITIES	MINISTRY/ UNIT	UNIT COST	Budget Source	QUANTITY/YEAR					TOTAL
					2020	2021	2022	2023	2024	
Indicator R.5.4. Communication engagement with affected communities → 2018 Capacity level 3										
Review and update SOPs for developing IEC materials with the involvement of community and include communication during emergencies	Develop and review IEC materials on risk communication (outbreak disease) and pandemic disease	MOH/ Health Promotion	11,260	N	1	1	1	1	1	56,300
	Print and distribute IEC materials		14,400	N	1	1	1	1	1	72,000
	Conduct advocacy for the perception of pandemic diseases and behavior for local leaders in three municipalities		460	N	3	3	3	3	3	6,900
Provide regular briefings, training and social mobilization engagement to community engagement teams	Conduct refresher training on of social mobilization engagement to community engagement teams including volunteers for public health communication	MOH/ Health Promotion	4,840	N	1	1	1	1	1	24,200
Disseminate risk communication messages through the MOH Facebook account	Regularly disseminate risk communication information through the MOH Facebook account		No cost							
Indicator R.5.5. Addressing perceptions, risky behaviours and misinformation → 2018 Capacity level 2										
Strengthen media monitoring and media analysis	Conduct annual trainings in media monitoring and media analysis for rumors and misinformation, perceptions and risky behaviors	MOH/ Health Promotion	4,840	N	1	1	1	1	1	24,200
Conduct workshops with the media (including social media) and other interventions to improve knowledge on IHR hazards	Conduct annual national media and social media workshop		2,355	N	1	1	1	1	1	11,775
Run media campaigns to address misinformation, perception and behavior as per the communication plan	Disseminate information on pandemic disease through media television, radio and billboards to address misinformation, perception, behavior	MOH/ Health Promotion	2,500	Y/ Gov	1	1	1	1	1	12,500
Build capacity in behavior change at national and municipalities level	Conduct refresher training for behavior change at national and municipalities level		2,765	N	1	1	1	1	1	13,825
Subtotal										**462,055**

6.17 Points of entry

Current level of capacity

Timor-Leste will continue to improve the core capacities and infrastructure of the designated PoEs, develop and disseminate human health quarantine law and develop a contingency plan at PoE, including the conduct of regular simulation exercise.

JEE Recommendations

- Develop all routine core capacities (medical care for ill travelers, conveyances inspection, environmental sanitation and vector control) at designated points of entry as prescribed in the IHR Annex.
- Develop local public health emergency contingency plans at designated points of entry consistent with the national point of entry contingency plan and incorporated into the National Emergency Response Plan and conduct regular simulation exercises.
- Develop procedures to coordinate public health activities with animal and food sectors at points of entry.

Activities and budget

PRIORITY ACTIVITIES	ACTIVITIES	MINISTRY/ UNIT	UNIT COST	Budget Source	QUANTITY/YEAR					TOTAL
					2020	2021	2022	2023	2024	
PoE.1 Routine capacities established at points of entry										
Ensure that PoEs are adequately equipped	Procure thermal scanner	MOH/ CDC	3,000	Y/ WHO		3	3			18,000
	Conduct trainings in using thermal scanner		450	Y/ WHO		6	6			5,400
	Procure one remote thermal scanner		75,000	N				1		75,000
Recruit health personnel for designated PoEs	Conduct recruitment process	MOH/ CDC	34,476	Y/ Gov		5	5	5	5	689,520
Conduct training on PoE roles and responsibilities for quarantine officers	Develop curriculum for training quarantine officers (basic, advanced and expert)	MOH/ CDC	9,810	Y/ Gov		1				9,810
	Develop training materials		6,420	Y/ WHO		1				6,420
	Conduct training of trainer		6,890	Y/ Gov		1				6,890
	Conduct basic training of quarantine officers at airport, seaport and ground crossings		19,130	Y/ Gov		3	3	3	3	76,520
	Develop curriculum for ship/aircraft sanitation		3,030	Y/ Gov		1				3,030
	Conduct training of ship/aircraft sanitation		4,675	Y/ Gov		1	1	1	1	18,700

PRIORITY ACTIVITIES	ACTIVITIES	MIN-ISTRY/ UNIT	UNIT COST	Budget Source	QUANTITY/YEAR					TOTAL
					2020	2021	2022	2023	2024	
Consider designating additional international crossings as PoEs.	Assess designating seven additional international crossings as PoE (airports, seaports and ground crossings)	MOH/ CDC	1,400	Y/ WHO		3	4			9,800
	Conduct meeting at Kayrala Xanana International Airport-Suai		1,760	Y/ Gov		1				1,760
	Conduct meeting at Rota de Sândalo International Airport- RAEOA (Oécusse)		3,000	Y/ Gov			1			3,000
	Conduct meeting at Tibar International Seaport		1,760	Y/ Gov		1				1,760
	Conduct meeting at Tunubibi		1,760	Y/ Gov			1			1,760
	Conduct meeting at in Oesilo ground crossing		2,740	Y/ Gov			1			2,740
Disseminate routine and public health emergency SOPs	Conduct workshop		1,500	Y/ WHO	1	1	1	1	1	7,500
Develop PoE strategic plan and guidelines	Conduct workshop		900	Y/ WHO		1				900
Train national staff at PoEs in implementation of the public health emergency SOPs	Conduct training at airport		975	Y/ Gov	1	1	1	1	1	4,875
	Conduct training at Seaport		975	Y/ Gov	1	1	1	1	1	4,875
	Conduct training at the three ground crossings		975	Y/ Gov	1	1	1	1	1	4,875
Improve coordination with PoEs	Conduct quarterly coordination meetings for all PoEs		200	Y/ Gov	4	4	4	4	4	4,000
Communicate with Indonesia regarding border crossings	Conduct quarterly coordination meetings with Indonesia		200	Y/ Gov	4	4	4	4	4	4,000
Support plane, ships and conveyance inspections	Support training and study visit		15,940	Y/ Gov				1		15,940
Build capacity for PoE staff to identify and process narcotic and other illegal drugs	Conduct workshop		120	Y/ Gov		1				120

PRIORITY ACTIVITIES	ACTIVITIES	MINISTRY/ UNIT	UNIT COST	Budget Source	QUANTITY/YEAR					TOTAL
					2020	2021	2022	2023	2024	
Disseminate single window related to import of pharmaceutical product and food (Refer to Linking Public Health)	Conduct workshop	MOH/ CDC	120	Y/ Gov		1				120
Support study tours of airport, seaport and ground crossing	Field visit to airport		9,850	N			1			9,850
	Field visit to seaport		7,000	N			1			7,000
	Field visit to ground crossings		1,000	N			1			1,000
Conduct joint simulation exercise on a maritime emergency operation	Conduct joint tabletop exercise at seaport	Ministry of Transport	800	N			1			800
Conduct simulation exercise on emergency planning of aircraft with a firefighting response	Conduct simulation exercise at airport		825	N			1			825
Procure water testing kits	Develop proposal and procure assessment kits	MOH/ CDC	1,000	N		1				1,000
Develop SOPs for dealing with corpses at PoEs	Develop module and conduct workshop		2,040	N		1				2,040
Indicator PoE.2. Effective public health response at points of entry → 2018 Capacity level 2										
Develop draft guidelines for health quarantine; include routine operations and operations during public health emergencies	Draft guidelines for health quarantine (MOH regulations at airport and seaport; MOH regulations at ground crossing; MOH regulations for quarantine health officers; and government regulations on quarantine health)	MOH/ CDC	60,000	Y/ Gov	1					60,000
	Disseminate draft guidelines to all PoEs		6,000	Y/ Gov	1	1	1	1	1	30,000
	Draft the MOH Decree and law enforcement for health quarantine		5,000	Y/ WHO	1					5,000

PRIORITY ACTIVITIES	ACTIVITIES	MIN-ISTRY/ UNIT	UNIT COST	Budget Source	QUANTITY/YEAR					TOTAL
					2020	2021	2022	2023	2024	
Improve preparedness at PoE by developing contingency plans for all designated PoEs	Develop contingency plans for each PoE	MOH/ CDC	3,630	Y/ WHO		1				3,630
	Revise contingency plans after field visits to each PoE		2,400	Y/ WHO		1	1	1	1	9,600
	Conduct tabletop exercise at each PoE to test the contingency plans		20,000	Y/ WHO		1				20,000
Train health personnel at PoEs	Develop curriculum on the detection of and response to public health emergency containment at PoEs for Port Health Officers		8,000	N		1				8,000
Conduct simulation exercise of a public health emergency at airport	Conduct field-based simulation exercise at the airport (no budget yet)		10,000	N					1	10,000
Improve information sharing and communication with related stakeholders	Conduct workshop on health quarantine implementation at ground crossings		5,000	Y/ Gov	1	1	1	1	1	25,000
Share information system with related stakeholders in quarantine (Agriculture, immigration, finance, Home affairs, maritime)	Conduct coordination meetings with related sectors/ stakeholders		5,000	Y/ Gov	1	1	1	1	1	25,000
Hold annual PoEs evaluation meeting	Hold annual meeting to evaluate PoE implementation		5,000	Y/ Gov	1	1	1	1	1	25,000
Conduct annual border coordination meeting with Indonesia	Hold annual meeting		10,000	Y/ Gov	1	1	1	1	1	50,000
Subtotal										**1,271,060**

6.18 Chemical events

Current level of capacity

Timor-Leste will identify the focal ministry for responsible for chemical events to conduct a risk assessment on the chemical inventories and current situation.

JEE Recommendations

- Conduct and publish a risk assessment detailing chemical inventories and a situation analysis of the current state of chemical event response and the associated gaps in preparedness.
- Develop appropriate policy and legislation on chemical event surveillance, alert processes and response.
- Create or identify, fund and staff a government institution responsible for developing the national policies and mechanisms for managing chemical events and increasing political will and public awareness of chemical risks.

Activities and budget

PRIORITY ACTIVITIES	ACTIVITIES	MINISTRY/ UNIT	UNIT COST	Budget Source	QUANTITY/YEAR					TOTAL
					2020	2021	2022	2023	2024	
CE.1 Mechanisms established and functioning for detecting and responding to chemical events or emergencies										
Identify focal point from MOH to coordinate with responsible units from Ministry of Interior, Ministry of Defence, Ministry of Economic, industry and trade, Ministry of Natural Resource and MOAF on chemical events, pesticides and waste management.	Identify focal point	MOH	No cost		1					
Conduct risk assessment detailing chemical inventories, a situation analysis of chemical event response and the gaps in preparedness	Hire a national consultant (if available) to conduct risk assessment		3,650	N		1				3,650
	Hire an international consultant to conduct risk assessment		8,840	N		1				8,840
	Hold meeting to present the risk assessment results and recommendations		1,350	N		1				1,350

PRIORITY ACTIVITIES	ACTIVITIES	MINISTRY/ UNIT	UNIT COST	Budget Source	QUANTITY/YEAR					TOTAL
					2020	2021	2022	2023	2024	
Participate in field-based simulation exercises organized by counterparts	Participate in simulation exercise	MOH	No cost			1				
	Provide PPE		2,000	N		1				2,000
Establish information sharing mechanism on the registration of pesticide and fertilizer	Appoint focal point from MOH to share latest register of pesticides and fertilizers, in coordination with the MOAF		No cost							
Indicator CE.2. Enabling environment in place for management of chemical events → 2018 Capacity level 1										
Advocate for political will and public awareness on chemical event risk and management	Produce IEC materials on chemical event risk and management	MOH	2,000	N	1	1	1	1	1	10,000
	Advocate to the Parliament commission		No cost							
	Advocate to the government		4,800	N	1	1	1	1	1	24,000
Subtotal										**49,840**

6.19 Radiation emergencies

Current level of capacity

Timor-Leste will identify the focal ministry for radiation management to conduct the risk assessment and develop safety measures for personnel working with radiology/ radiation equipment.

JEE Recommendations

- Conduct and publish a risk assessment of potential events and a situation analysis of the current state of radiation event response and associated gaps in preparedness.
- Develop appropriate policy and legislation on radiation event surveillance, alert processes and response.
- Create or identify a government institution responsible for developing the national policies and mechanisms for managing radiation events, and for increasing political will and public awareness of chemical risks.

Activities and budget

PRIORITY ACTIVITIES	ACTIVITIES	MINISTRY/ UNIT	UNIT COST	Budget Source	QUANTITY/YEAR					TOTAL
					2020	2021	2022	2023	2024	
RE.1 Mechanisms established and functioning for detecting and responding to radiological and nuclear emergencies										
Develop SOPs for safety measures for operational staff at all PoEs	Develop SOPs	MOH	13,680	N		1				13,680
	Conduct training of Trainers		5,770	N		1		1		11,540
	Conduct training at relevant PoE		1,625	N		1		1		3,250
	Procure PPE for all PoE		20,000	N		1				20,000
Conduct annual medical checks for operational staff that have radiation exposure	Part of routine medical checks		Routine							
Conduct risk assessment and situation analysis on the current radiation risk and identify gaps in preparedness and response for radiation emergencies	Combine radiation risk assessment with chemical risk assessment and assign the same to consultant to conduct risk assessment		8,840	N		1				8,840
Indicator RE.2. Enabling environment in place for management of radiological and nuclear emergencies→ 2018 Capacity level 1										
Identify focal government agency and focal person for radiation management	Appoint a focal point from MOH staff	MOH	No cost							
Advocate for political will and public awareness on managing radiological events	Disseminate risk assessment on radiation emergencies		No cost							
Develop guidelines on occupational health for workforce exposed to radiology or radiation equipment	Develop SOPs	TBD	10,000	N	1					10,000
	Hire an international consultant for 14 working days		10,000	N	1	1	1	1	1	50,000
	Conduct train the trainter for radiation emergency SOPs (10 people)		5,000	N	1	1				10,000
	Conduct three-day training workshop for 50 people		10,000	N	1	1	1	1	1	50,000
Subtotal										**177,310**

Annex 1: Situation analysis

Population rate

Timor-Leste has one of the fastest and highest population growth rates in the world at 2.13% per year. However, the total fertility rate (TFR) has declined from 5.7 in 2009-10 to 4.2 in 2016, and has fallen both in rural and urban areas, due to increasing education and household wealth. An estimated 14,000 young people enter the labor market each year and, although this augurs well for adequate human resources, it can also increase the unemployment rate.

Maternal and child health

Timor-Leste is on track to achieve Sustainable Development Goals (SDGs) for child health. The under-five mortality rate has declined from 83 per 1,000 live births in 2003 to 41 per 1,000 live births in 2016; the infant mortality rate declined from 60 per 1,000 live births to 30 per 1,000 live births; while newborn mortality rate also decreased from 33 to 19 per 1,000 live births during the same period. Nonetheless, these figures remain higher than the South-East Asia regional averages.

The maternal mortality ratio is estimated at 215 deaths per 100,000 live births. There has been a significant increase in antenatal care where having one visit by skilled staff has increased from 55 per cent in 2007 to 84 per cent in 2016. The proportion of births delivered with the assistance of a skilled provider almost doubled, from 30% in 2009-10 to 57% in 2016, while the proportion of births in a health facility more than doubled since 2009-10, from 22 percent to 49% in 2016.

Malnutrition is a major issue in Timor-Leste, with the childhood stunting rate at 52 per cent in 2013. Although this has decreased to 46 per cent in 2016, it is still a very high rate. The prevalence of underweight children has also declined, from 45% in 2009-10 to 40% in 2016. However, the prevalence of wasted children has increased from 19% to 24% during the same period.

Initiation of breastfeeding of children is almost universal. However, despite a significant increase in the exclusive breastfeeding rate over the past 10 years, only 50% percent of children under age 6 months are exclusively breastfed. Exclusive breastfeeding declines with increasing age, with 35% of children age 4-5 months exclusively breastfed, compared with 64% of children age 0-1 months and 53% of children age 2-3 months. Contrary to recommendations, 22% of children aged less than six months receive complementary foods in addition to breast milk.

Burden of disease

Timor-Leste faces the double burden of disease of communicable diseases such as tuberculosis, malaria, and dengue, and noncommunicable diseases such as cardiovascular and chronic obstructive pulmonary diseases, which are among the ten leading causes of death.

For malaria, ownership of insecticide-treated nets (ITN) has increased substantially, from 41% in 2009-10 to 64% in 2016, as has use of ITNs, from 29% of the household population sleeping under an ITN the night before the survey to 47% during the same period. Care seeking for children aged less than five with fever in the two weeks before the survey has decreased. Advice or treatment was sought for 73% of children in 2009-10 compared with 58% in 2016.

Awareness of tuberculosis has decreased with the proportion of women who have heard of TB decreasing from 78% to 63%, and from 83% to 68% among men between 2009/10 and 2016. Most people who have heard of tuberculosis are aware that coughing for more than two weeks is a symptom (63% of women and 75% of men).

As well as malaria, tuberculosis and dengue, there are other neglected diseases such as leprosy, Lymphatic filariasis, soil transmitted helminth infections (STH) and yaws that remain a major public health challenge, being endemic in some municipalities.

Non communicable diseases are also of concern. Timor-Leste has one of the highest tobacco use prevalence rates in the world. Overall tobacco use prevalence among adolescents aged 13–15 years was 42% and 66% of students were exposed to tobacco smoke in their homes. There is a need to address the risk factors associated with unhealthy personal lifestyles, as well as environmental and climate change, as these could lead to high threats of both communicable and noncommunicable diseases in the country.

Timor-Leste has recorded no major zoonotic disease outbreaks in recent years and does not have a list of priority zoonotic diseases. Rabies and anthrax are priority communicable diseases. In 2011, a Performance of Veterinary Services assessment was conducted which flagged the presence of bovine brucellosis as a major disease concern both for public health and for cattle and buffalo.

Health System

The health system in Timor-Leste is a mixture of public (National Health Service) and private providers as well as international and bilateral donors that fund and conduct prevention, health promotion and disease treatment activities.

The National Health Services are delivered within the decentralized government system, administered through the Central Services, Municipal Health Services and five institutions. The central services at the MOH are responsible strategic direction, setting of standards, regulation and ensuring availability of financial and human resources. The municipal health services are responsible for managing health services delivery at the municipal level, implementing all health programs and provision of primary health care services at all levels in accordance with the Basic Service Packages.

Community Health Centers at the municipal level provide inpatient and outpatient services, with a staff numbering from 10 – 14; comprising doctors, nurses, midwife, pharmacist and laboratory technicians. These have direct access to ambulance services or multifunction cars to provide patient transfer, as necessary, from sub-district health centres to the nearest referral hospitals, as appropriate.

The Community Health Centers at the sub district level have a wider range of staff and provide mobile clinic services and technical and managerial support in their health posts. The services offered vary according to the size of the catchment population and distance from higher referral facilities.

The nearest facility-based services to community are delivered through a network of 200 health posts, staffed with a team of one nurse and one midwife, that can deliver a minimum package of preventive, promotive and curative care. There are two levels of hospitals providing secondary care in Timor-Leste. Five referral hospitals are in the regions of Oecusi, Maliana, Maubise, Suai and Baucau. The referral hospitals have out-patients, emergency and in-patient departments. They are staffed with general practitioners and specialists in four clinical areas such as surgery, pediatrics, gynecology-obstetrics and internal medicine. There is one national hospital (Hospital Nacional Guido Valadares) for specialized services with linkages for tertiary care with neighboring countries such as Indonesia, Malaysia and Singapore. Both national and referral hospitals serve as training and internship centers for all staff up to medical officers.

Referral arrangements among the three levels of services are linked with ambulance services, as ambulances are based in hospitals and district ambulance stations.

Furthermore, the private sectors in Timor-Leste are considered as complementary to the public health sector in terms of increasing geographical access of people to health services and the scope and scale of services provided.

The national One Health strategic framework was endorsed by the MoAF and the MoH during World Rabies Day in October 2018 with key strengths related to zoonotic diseases including the close coordination and communication between public health and animal health, which will be further formalized through a One Health Working Group.

Animal Health System:

Timor Leste has established National Development Plan of 2002 that provided a vision to have by 2020 sustainable, competitive and prosperous agriculture, forestry and fisheries industries that support improved living standards for the nation's people and the Strategic Development Plan for 2011-2030, indicates an intention to support the development of livestock-based commercial enterprises for a range of livestock species.

The Directorate of Quarantine and Biosecurity (DQB) is responsible for quarantine inspection at international borders and entry ports and also with some responsibility for livestock movement control within the country. New diseases emerge periodically and about 50% of human emerging infectious diseases (EIDs) arise from animal sources, i.e. H5N1 influenza, sudden acute respiratory syndrome (SARS) and Nipah virus infection. All of these diseases have arisen in Asia and the international community has recognized the need to assist Timor Leste in monitoring animal populations for the emergence of diseases that could spread to humans (zoonotic diseases).

Endemic Animal diseases in Timor Leste are Newcastle Disease (ND), Classical Swine Fever (CSF), Septicemia Epizootic (SE), Brucellosis, Sura and parasite diseases. Ministry of Agriculture and Fisheries (MOAF) has routine vaccination program to control endemic animal diseases. The routine vaccinations conducted in the country include: vaccination for ND, CSF and SE. The other two main diseases (Brucellosis and Sura) have no vaccination yet.

A sentinel herd early warning system is being established in Timor-Leste, funded by the Australian government as part of a broader effort to boost biosecurity surveillance and analysis and protect Australia's valuable livestock industries and exports, as well as enhancing Timor-Leste's capacity to detect and prevent the establishment of exotic diseases. They will monitor for foot and mouth disease (FMD), screw-worm fly and blue tongue disease.

Timor-Leste National Aquaculture Development Strategy 2012–2030 is available to guide future development of aquaculture in Timor-Leste. Animal source foods – livestock and fish – is vital to improving the nutritional status of the people of Timor-Leste, and addressing the country's problem of chronic malnutrition. Aquaculture, or the farming of aquatic animals and plants, has been identified by Government as a means of improving the food and nutrition security situation of the country, and contributing to economic activity and household incomes in rural areas.

Timor Leste has become the 178th member of OIE in 2010. Livestock in Timor Leste composed of village chickens, pigs, cattle, goats, buffaloes, horses and sheep. According to Census 2010, 86% of total household keep livestock as their livelihood.

Emergency/Disaster management in Timor-Leste

Timor-Leste is considered as a country with medium exposure to natural hazards. The most frequent natural disasters are landslides and floods, which can disrupt land transportation through the destruction of bridges and roads. Severe and recurring droughts can also be a problem during the dry season and worsen the country's food security problems. Tropical cyclones, earthquakes and tsunamis also represent as disaster risks.

A lack of strategies to deal with and adapt to disasters make Timor-Leste as the 7th most disaster-prone country in the world. In 2008, Timor-Leste developed the National Disaster Risk Management Policy (DRM), which outlined the government's vision of the disaster management process from the national level to the village level. However, although the government of Timor-Leste considers DRM a priority and supports the dissemination of DRM policies to the district level, the 2011-2030 Strategic Development Plan did not explicitly re-define or integrated DRM as one of its development priorities. The main principle of the DRM is to render the Timorese people more prepared and to be active participants in the prevention of disasters and disaster risk management activities. It aims to protect and reduce the loss of human lives and properties, thereby contributing to the wellbeing and tranquility of our people.

The DRM was developed by the Ministry of Social Solidarity to respond to the constitutional mandate to identify priorities to guide government objectives and strategies to guarantee the security and safety of the citizens and their property and to safeguard natural resources against natural or human-induced disasters.

In 2016, Timor-Leste Disaster Management Reference Handbook was developed to provide decision makers, planners and responders with a basic understanding of regional disaster management plans, including information on key domestic disaster response entities, regional backgrounds and local and international humanitarian organizations present in the region.

In 2018, the responsibility for coordinating the overall preparation and response to any emergency that may occur in Timor-Leste was transferred from the Ministry of Social Solidarity (MSS) to the Ministry of Interior, under the Secretary of State of Civil Protection. The National Disaster Management Directorate (NDMD) is responsible and is composed of the National Disaster Operation Centre, the Departments of Preparedness and Formation, Prevention and Mitigation, Response and Recovery, and disaster management committees at Districts, Sub-district and Suco (village) levels.

In 2014, the Humanitarian Country Team in Timor-Leste applied the new guidance for Inter-Agency Emergency Response Preparedness as an action-oriented approach to support the government of Timor-Leste in preparing for, and responding to, any hazards that may affect the country. The Emergency Response Preparedness Plan provides an outline of the common analysis, preparedness planning and response measures that have been identified by the humanitarian community, and includes the cluster/sector plans.

Public health emergency preparedness and response

Although there have been no major public health emergencies, Timor-Leste voluntarily conducted a Joint Voluntary Evaluation using the Joint External Evaluation (JEE) tool in 2018 to assess its core capacities to prevent, detect and respond to public health threats under the International Health Regulations (IHR) (2005). The JEE external team noted that public health in Timor-Leste is built on a strong foundation of primary health care. Although the government has limited resources, the number of doctors and health workers are sufficient and there exists high government political commitment to provide access to health services for the population. The JEE results showed that, except for immunization, many core capacities were assessed at level 1 and 2, but that this did not mean that Timor-Leste has no capacity or fails to master the technical areas. For example, surveillance is carried out effectively without an advanced electronic system. Timor-Leste understands the rapid challenges the country faces vis-a-vis public health and other IHR risks and is planning to move forward with small but doable steps that will lead to steady improvement across several years.

The MOH is leading the preparedness for and response to public health emergency in the country. A public health emergency operations center is being developed and its physical location will be the coordination hub of operations, information and communication during public health emergencies. During peacetime, the center will facilitate improvement to plans and procedures for emergency management and build capability and capacity for emergency response through training and simulation exercises.

Annex 2: SWOT analysis

A SWOT (strength, weakness, opportunity and threat) analysis was conducted by the NAPHS Working Group with regards to implementing the IHR (2005) and strengthening the capacity for health security in Timor-Leste, synthesized based on the discussions and analysis of the Working Group members.

Strengths

- The following documents are available:
  - National health sector strategy plan 2011-2030
  - Natural Disaster Risk Management Policy (2008)
  - Disaster Management Reference Handbook (2016)
  - Performance of Veterinary Services (PVE) Evaluation and PVS gap analysis
  - Action plans for some technical areas, such as the Antimicrobial National Action Plan.
- The Inter-ministerial Inter Agency Coordination is conducted regularly
- There are contingency funds at ministries for outbreaks and at the office of the Prime Minister office for emergencies
- Military-civilian corporation during emergency is in place since 1999
- There is are good relationships and informal coordination and communication among the National IHR Focal Point and relevant ministries and agencies, such as human health, animal health, food authority, customs
- The reporting mechanism to WHO and OIE is operational
- Capacity building for health and animal personnel is conducted regularly
- In-service training is available in and out country through government fund and donors
- Draft contingency plan for public health/ IHR related hazards emergency is being finalized
- National Laboratory, both human and animal, have adequate capacity to test 4-10 priority diseases
- MOH Communication plan and budget is available and reviewed annually with strong relationships with media and partners

Weaknesses

- There is no dedicated budget line in national budget for strengthening IHR core capacities and no SOPs to access emergency budget in Prime Minister office
- The 2005 National risk disaster management plan has not been updated; the National disaster risk management policy does not include biological, chemical and radiation events
- A comprehensive risk assessment of IHR-related hazards has not been conducted
- There is a low awareness of IHR and public health emergency among the security sector, policy makers and the public as no event or emergency has occurred

- The roles and responsibilities of focal points at various ministries have not been developed
- There are frequent human resources rotations and changes at national and local level, as well as a lack of human resource, especially epidemiologists, Information Technology (IT) and finance professionals
- There are inadequate mechanisms/SOPs for some Technical Areas, including for information sharing and reporting to multiple stakeholders
- There is a lack of community awareness on zoonotic and other IHR priority diseases and a lack of media knowledge and skills to address and promote knowledge on IHR hazards

Opportunities

- Access to donors and government funds for capacity building
- In house and international training through collaboration with United Nations agencies
- To have support on IHR from high level officials, especially National Parliament on the health matter (Commission of National Parliament) through advocacy by MoH (National Directorate of disease Control)
- Opportunity to submit specific budget on IHR to the MOH
- Opportunity to engage all relevant ministries (not only health) to bring the NAPHS forward
- Technology to enhance coordination and reporting available (for example, through mobile application such as Whatsapp, online system and web-based reporting)

Threats

- There may be new zoonotic diseases emerging
- Illegal movement and transaction of goods
- Issues with internet connection that does not support the communication needs
- Lack of legislation/ policy for IHR priority diseases
- Unstable political situation causes the government's structure to keep changing, which also impacts on the work of the ministries
- Changing leaders in the ministries causes the plans that have been established to be changed as well

Annex 3: Summary of NAPHS budget by JEE technical area indicators and year

Technical Area	Indicator	Year 1	Year 2	Year 3	Year 4	Year 5	Total
TA 1: National legislation, policy and financing	P.1.1. The State has assessed, adjusted and aligned its domestic legislation, policies and administrative arrangements in all relevant sectors to enable compliance with the IHR	50,090	21,220	57,270	19,050	11,350	158,980
	P.2.1. Financing is available for the implementation of IHR capacities		17,680	8,840	8,840	17,680	53,040
	P.3.1. A financing mechanism and funds are available for timely response to public health emergencies		17,640			17,640	35,280
	Subtotal	50,090	56,540	66,110	27,890	46,670	247,300
TA 2 IHR coordination, communication and advocacy	P.2.1. A functional mechanism established for the coordination and integration of relevant sectors in the implementation of IHR	117,750	122,250	58,370	58,370	58,370	415,110
	Subtotal	117,750	122,250	58,370	58,370	58,370	415,110
TA 3 Antimicrobial resistance	P.3.1. Effective multisectoral coordination on AMR	47,450	31,560	31,560	31,560	31,560	173,690
	P.3.2. Surveillance of AMR	41,500	61,680	50,280	37,500	37,500	228,460
	P.3.3. Infection prevention and control		13,640				13,640
	P.3.4. Optimize use of antimicrobial medicines in human and animal health and agriculture	120,800	136,150	127,220	127,220	127,220	638,610
	Subtotal	209,750	243,030	209,060	196,280	196,280	1,054,400
TA 4 Zoonotic disease	P.4.1. Coordinated surveillance systems in place in the animal health and public health sectors for zoonotic diseases/pathogens identified as joint priorities	89,300	110,600	84,000	84,000	84,000	451,900
	P.4.2. Mechanisms for responding to infectious and potential zoonotic diseases established and functional	16,675	16,675	16,675	16,675	16,675	83,375
	Subtotal	105,975	127,275	100,675	100,675	100,675	535,275
TA 5 Food safety	P.5.1. Surveillance systems in place for the detection and monitoring of foodborne diseases and food contamination	702,690	644,610	694,010	803,005	409,300	3,253,615
	P.5.2. Mechanisms are established and functioning for the response and management of food safety emergencies	335,985	334,635	331,035	331,035	331,035	1,663,725
	Subtotal	1,038,675	979,245	1,025,045	1,134,040	740,335	4,917,340

TA 6 Biosafety and biosecurity	P.6.1. Whole-of-government biosafety and biosecurity system in place for all sectors (including human, animal and agriculture facilities)	63,940	33,610	33,610	33,610	33,610	198,380
	P.6.2. Biosafety and biosecurity training and practices in all relevant sectors (including human, animal and agriculture)	24,910	24,910	24,910	24,910	24,910	124,550
	Subtotal	88,850	58,520	58,520	58,520	58,520	322,930
TA 7 Immunization	P.7.1. Vaccine coverage (measles) as part of national programme	219,320	169,320	169,320	169,320	169,320	896,600
	P.7.2. National vaccine access and delivery	9,796	2,080	2,080	2,080	2,080	18,116
	Subtotal	229,116	171,400	171,400	171,400	171,400	914,716
Total for Prevent		**1,840,206**	**1,758,260**	**1,689,180**	**1,747,175**	**1,372,250**	**8,407,071**
DETECT							
TA 8 National laboratory system	D.1.1. Laboratory testing for detection of priority diseases	403,556	1,291,556	558,556	388,556	388,556	3,030,780
	D.1.2. Specimen referral and transport system	100,780	24,280	24,280	24,280	24,280	197,900
	D.1.3. Effective national diagnostic network	21,540	2,395	2,395	2,395	2,395	31,120
	D.1.4. Laboratory quality system	54,620	221,425	45,860	9,425	45,860	377,190
	Subtotal	580,496	1,539,656	631,091	424,656	461,091	3,636,990
TA 9 Surveillance	D.2.1. Surveillance systems	310,113	290,313	283,613	283,613	247,460	1,415,112
	D.2.2. Use of electronic tools	121,640	107,090	109,690	78,190	78,190	494,800
	D.2.3. Analysis of surveillance data	4,100	4,100	4,100	4,100	4,100	20,500
	Subtotal	435,853	401,503	397,403	365,903	329,750	1,930,412
TA 10 Reporting	The two recommendations from the JEE for reporting are duplicated elsewhere and are therefore not included in the budget						
TA 11 Human resources (animal and human health sectors)	D.4.1. An up-to-date multi-sectoral workforce strategy is in place	11,950	11,950	900	900	900	26,600
	D.4.2. Human resources are available to effectively implement IHR	27,080					27,080
	D.4.3. In-service trainings are available	5,000	5,000	5,000	5,000	5,000	25,000
	D.4.4. FETP or other applied epidemiology training programme in place	84,800	93,640	84,800	93,640	84,800	441,680
	Subtotal	128,830	110,590	90,700	99,540	90,700	520,360
Total for Detect		**1,145,179**	**2,051,749**	**1,119,194**	**890,099**	**881,541**	**6,087,762**

RESPOND							
TA 12 Emergency Preparedness	R.1.1. Strategic emergency risk assessments conducted and emergency resources identified and mapped	109,990	43,300	43,300	43,300	43,300	283,190
	R.1.2. National multi-sectoral multi-hazard emergency preparedness measures, including emergency response plans, are developed, implemented and tested	104,780	14,850	11,200	11,200	11,200	153,230
	Subtotal	214,770	58,150	54,500	54,500	54,500	436,420
TA 13 Emergency response operations	R.2.1. Emergency response coordination	36,380	14,760	4,760	4,760	4,760	65,420
	R.2.2. Emergency operations centre (EOC) capacities, procedures and plans	74,360	9,605	12,355	9,605	9,605	115,530
	R.2.3. Emergency Exercise Management Programme	25,000		25,000		25,000	75,000
	Subtotal	135,740	24,365	42,115	14,365	39,365	255,950
TA 14 Linking public health and security authorities	R.3.1. Public health and security authorities (e.g. law enforcement, border control, customs) linked during a suspect or confirmed biological, chemical or radiological event	11,340	10,050	2,500	10,050	2,500	36,440
	Subtotal	11,340	10,050	2,500	10,050	2,500	36,440
TA 15 Medical countermeasures and personnel deployment	R.4.1. System in place for activating and coordinating medical countermeasures during a public health emergency	7,300	48,690	3,650	3,650	3,650	66,940
	R.4.2. System in place for activating and coordinating health personnel during a public health emergency	206,770	26,610	71,650	26,610	26,610	358,250
	R.4.3. Case management procedures implemented for IHR relevant hazards	112,730	67,690	22,650	22,650	22,650	248,370
	Subtotal	326,800	142,990	97,950	52,910	52,910	673,560
TA 16 Risk communication	R.5.1. Risk communication systems for unusual/unexpected events and emergencies	52,835	40,555	16,555	16,555	16,555	143,055
	R.5.2. Internal and partner coordination for emergency risk communication	3,500	3,500	3,500	3,500	3,500	17,500
	R.5.3. Public communication for emergencies	15,960	15,960	15,960	15,960	15,960	79,800
	R.5.4. Communication engagement with affected communities	31,880	31,880	31,880	31,880	31,880	159,400
	R.5.5. Addressing perceptions, risky behaviours and misinformation	12,460	12,460	12,460	12,460	12,460	62,300
	Subtotal	116,635	104,355	80,355	80,355	80,355	462,055
Total for Respond		805,285	339,910	277,420	212,180	229,630	1,864,425

OTHER IHR RELATED HAZARDS AND PoE							
TA 17 Points of Entry	PoE.1. Routine capacities established at points of entry	6,025	251,960	246,485	293,150	202,210	999,830
	PoE.2. Effective public health response at points of entry	96,000	65,030	33,400	33,400	43,400	271,230
	Subtotal	102,025	316,990	279,885	326,550	245,610	1,271,060
TA 18 Chemical events	CE.1. Mechanisms established and functioning for detecting and responding to chemical events or emergencies		15,840				15,840
	CE.2. Enabling environment in place for management of chemical events	6,800	6,800	6,800	6,800	6,800	34,000
	Subtotal	6,800	22,640	6,800	6,800	6,800	49,840
TA 19 Radiation emergencies	RE.1. Mechanisms established and functioning for detecting and responding to radiological and nuclear emergencies		49,915		7,395		57,310
	RE.2. Enabling environment in place for management of radiological and nuclear emergencies	35,000	25,000	20,000	20,000	20,000	120,000
	Subtotal	35000	74915	20000	27395	20000	177,310
Sub Total 3		143,825	414,545	306,685	360,745	272,410	1,498,210
Grand Total		3,934,495	4,564,464	3,392,479	3,210,199	2,755,831	17,857,468