



THE UNITED REPUBLIC OF TANZANIA

**PRIME MINISTER'S OFFICE**

**NATIONAL ONE HEALTH STRATEGIC PLAN  
2022-2027**





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## FOREWORD



Recent global emerging pandemic threats have highlighted the increasing effects of zoonotic pathogens on human and animal health. It has also become evident that changes in the environment, including intensification of agriculture, population growth, urbanization, climate change and human encroachment into wildlife habitats are drivers for such zoonotic disease emergence. The One Health approach has been recognized as a major strategy of disease control and prevention as it emphasizes the relatedness of human, animal, and environmental health as well as the importance of trans - disciplinary efforts to control emerging pandemic threats. This has been demonstrated in the recent COVID-19 pandemic in 2020 across the World including Tanzania, where enhanced cross - sectoral communication during the outbreak led to the effective handling of the response. Similar efforts were observed in the development and implementation of the Tanzania National Avian and Pandemic Influenza Emergency Preparedness and Response Plan (2011), National Rift Valley Fever Emergency Preparedness and Response Plan (2011), and strategies aimed at prevention and control of prioritized zoonotic diseases as described in the first National One Health Strategic Plan 2015-2020.

This second “National One Health Strategic Plan” has been developed using a multi-sectoral approach drawing expertise and experiences from various sectors reflecting shared commitment to enhanced collaboration among human, animal, wildlife, and environmental health sectors to reduce the burden of zoonotic diseases, Anti-Microbial Resistance (AMR) and other public health threats. This strategic plan is a whole-of-government guiding document summarizing strategic One Health activities among various stakeholders. The plan aims to create and maintain active collaboration coordination and communication among the relevant sectors for better prevention, prediction, detection, and response to health threats. Successful implementation of the strategic plan will contribute significantly to the overall goal of improving public health, food safety and security, and the livelihoods in the country.

This strategic plan should be considered a “living document” and is open for feedback, additions and revisions based on changing needs. It is in this regard that we call upon one health related government departments, development partners, institutions of higher learning, research institutions, civil society, the private sector, and the Tanzanian community to join us in this noble initiative.

A handwritten signature in black ink, appearing to be 'Kassim Majaliwa', written over a horizontal line.

Kassim Majaliwa Majaliwa (MP.)  
**PRIME MINISTER**  
**THE UNITED REPUBLIC OF TANZANIA**

## ACKNOWLEDGEMENTS

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The Prime Minister's Office wishes to thank all those who devoted their time and contributed to the successful completion of review of the National One Health Strategic Plan 2015-2020.

Special appreciation goes to the team that worked tirelessly to draft this National One Health (NIMR), Sokoine University of Agriculture (SUA), Muhimbili University of Health and Allied Sciences (MUHAS); Tanzania Wildlife Research Institute (TAWIRI), Tanzania Veterinary Laboratory Agency (TVLA); University of Dodoma (UDOM); President's Office Regional Administration and Local Governments (PO-RALG); African One Health University Networks (AFROHUN) and representatives from Revolutionary Government of Zanzibar, Development partners and Non-Government Organizations.

In addition, we wish to thank the Food and Agriculture Organization (FAO) and Sandia National Laboratories Global Chemical and Biological Security Program for providing financial support towards the review of this strategic plan.

A stylized, handwritten signature in black ink, consisting of several overlapping loops and lines.

Dr. John A. K. Jingu  
**PERMANENT SECRETARY,  
PRIME MINISTER'S OFFICE  
(POLICY, PARLIAMENTARY AFFAIRS AND COORDINATION)**

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## ABBREVIATIONS AND ACRONYMS

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AFROHUN	Africa One Health University Network
AMR	Anti-microbial resistance
AU	African Union
BTRP	Biological Threat Reduction Program
CBOs	Community Based Organizations
CDC	Centre for Disease Control and prevention
GCLA	Government Chemist Laboratory Authority
CPD	Continuous Professional Development
CSOs	Civil Society Organizations
DPPOs	District Plant Protection Officers
DTRA	Defense Threat Reduction Agency
DVO	District Veterinary Officer
DVS	Director of Veterinary Services
EAC	East African Community
EOCC	Emergency Operation Centre and Communication
FAO	Food and Agriculture Organization of the UN
FBOs	Faith Based Organizations
GHSA	Global Health Security Agenda
GIZ	German International Development Cooperation
ICE	Information, Communication and Education
IDSR	Integrated Disease Surveillance and Response
IHR	International Health Regulations (2005)
JEE	Joint External Evaluation
LITA	Livestock Training Agency
MCT	Medical Council of Tanganyika
MLF	Ministry of Livestock and Fisheries
MNRT	Ministry of Natural Resources and Tourism
MoA	Ministry of Agriculture
MoEST	Ministry of Education, Science and Technology
MoFP	Ministry of Finance and Planning
MoH	Ministry of Health,
MoU	Memorandum of Understanding
MUHAS	Muhimbili Health and Allied Sciences
NACTE	National Council for Technical Education
NAP	National Action Plan
NAPHS	National Action Plan for Health Security
NEMC	National Environment Management Council
NGOs	Non- Government Organizations
NIMR	National Institute of Medical Research
NM-AIST	Nelson Mandela African Institute of Science and Technology
OH	One Health
OHCD	One Health Coordination Desk
OHS	One Health Section
OHSP	One Health Strategic Plan

OIE	World Organization for Animal Health
PHEOC	Public Health Emergency Operation Centre
PHS	Plant Health Services
PMO	Prime Minister's Office
PO-RALG	President's Office, Regional Administration and Local Government
PVS	Performance Veterinary Services
RVF	Rift Valley Fever
RVO	Regional Veterinary Officer
SACIDS	Southern Africa Centre for Infectious Disease Surveillance
SADC	Southern African Development Community
SNL	Sandia National Laboratories
SOPs	Standard Operating Procedure
SUA	Sokoine University of Agriculture
SWOC	Strength, Weakness, Opportunities and Challenges
TABSA	Tanzania Biosafety and Biosecurity Association
TADMAC	Tanzania Disaster Management Council
TALIRI	Tanzania Livestock Research Institute
TARI	Tanzania Research Institute
TAWIRI	Tanzania Wildlife Research Institute
TCU	Tanzania Commission for Universities
TMA	Tanzania Meteorological Agency
ToRs	Terms of References
ToTs	Training of Trainers
TVA	Tanzania Veterinary Agency
TVLA	Tanzania Veterinary Laboratory Agencies
TWG	Technical Working Group
UDOM	University of Dodoma
UNEP	United Nations Environment Program
VCT	Veterinary Council of Tanzania
VPO	Vice President Office
WAAW	World Antimicrobial Awareness Week
WHO	World Health Organization
ZVCs	Zonal Veterinary Centers

## EXECUTIVE SUMMARY

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This One Health Strategic Plan has been developed in accordance with the National Development Vision 2025, the Third Five Year Development Plan of the year 2021/22 to 2025/26 and the Ruling Party Election Manifesto of 2020.

The revised Plan embraces the successes and opportunities gathered in the course of implementing NOHSP 2015 – 2020, addresses weaknesses, and constraints, as obtained from various sources including One Health stakeholders' meetings. This jointly revised One Health strategic plan will allow human, animal (including wildlife), environmental health experts and other associated expertise to work collaboratively to prevent, detect and respond to emerging and re-emerging diseases from this interface. In addition, the implementation of the Strategic plan will take into account the recently launched first joint plan on One Health that aims to strengthen collaboration, communication, capacity building, and coordination across all sectors responsible for addressing health concerns at the human-animal-plant-environment interface.

The Strategic Plan is structured in four chapters. Chapter One is on Introduction, and it consists of the background, genesis of One Health, the country profile which includes geography and population of Tanzania, administrative structure, socio-economic development and agriculture, livestock, and wildlife sectors. The chapter also presents emerging pandemic threats namely zoonotic diseases, antimicrobial resistance, Biosafety and Biosecurity threats, food safety threats, environmental health threats, climate change health threats and other emerging and re-emerging health threats. The introduction also entails One Health approach globally, in Tanzania as well as its coordination.

Chapter Two presents the Situation Analysis in which implementation of International Health Regulations (IHR) 2005; evaluation and improvement of health systems; regulatory framework as well as mandates and functions of OH Section are described. The chapter also describes Human, Animal and Environmental Health Systems in Tanzania that consists of the Ministry of Health; the Ministry of Livestock and Fisheries; the Ministry of Natural Resources and Tourism; the Vice President's Office-Environment; the Ministry of Agriculture; and Ministry of Education, Science and Technology. In addition, the chapter presents Strengths, Weaknesses, Opportunities and Challenges that emanated from performance review of OHSP of 2015-2020. Moreover, the chapter describes stakeholders' analysis.

Chapter Three focuses on the Strategic Plan where it outlines the Vision, Mission, Core Values and Guiding Principles. Also, the chapter describes six strategic pillars namely, Coordination; Surveillance, Detection, Prevention and Control; Preparedness and Response; Research and Development; Awareness, Advocacy and Communication as well as Training and Education. For each pillar, there are strategic goals, strategic objectives, strategy, targets, activities, indicators, and means of verification.

Chapter Four explains Results Framework underlining result chain, the result framework based on pillars; monitoring and evaluation of the strategy, reviews plan as well as reporting plan. Also, the annual action plan for accomplishing OHSP 2022-2027 is presented as an appendix 1.

# 1. INTRODUCTION

## 1.1 Background

The emergence and re-emergence of pandemic and other public health threats are complex and multifaceted, as evidenced by the ongoing COVID-19 pandemic. Their effective management and countering require multiple lines of collaborative action and sustained cross-sectorial coordination. The One Health Approach is a strategy designed to promote multi-sectoral and interdisciplinary use of knowledge and skills of medical, public health, veterinary and environmental professionals to address animal, human and environmental health challenges.

Although One Health is not a new concept, it has become more important in recent years to attain optimal health for people, animals and the environment. Interactions among people, animals, and the environment continue to change. The expansion of human and animal populations, changes in climate and land use, and increased international travel and trade provide opportunities for disease spread. Approximately 75% of recently emerging infectious diseases affecting humans are diseases of animal origin; approximately 60% of all human pathogens are zoonotic. One Health obviously includes the health professions, but, it also includes wildlife specialists, anthropologists, economists, environmentalists, behavioral scientists, and sociologists, among others. One Health embraces the idea that complex problems at the human-animal-environmental interface can best be solved through multidisciplinary communication, cooperation, and collaboration. One Health is increasingly being acknowledged by national and international institutions as the most constructive approach to address complex issues at the animal-human-environmental interface.

## 1.2 Genesis of One Health

The One Health concept was preceded by the 'One Medicine' concept which has African roots when in 1960s, the American epidemiologist Calvin Schwabe, influenced by his work with Dinka pastoralists in Sudan coined the term 'One Medicine' based on similarities between human and veterinary medicine. During 1980s, the 'One Medicine' concept evolved and it was extended to 'One Health' to reflect the concept of health to the whole ecosystem as pioneered by the international organization's namely the World Health Organization (WHO) and the Food and Agriculture Organization (FAO).

In Africa, the One Health approach was adopted in 2018 when a One Health programme was adopted under the Africa Centre's for Disease Control and Prevention (Africa CDC). This programme embraces cross-cutting public health issues including antimicrobial resistance and zoonotic diseases as priority areas. The One Health Programme at Africa CDC is comprised of a cross-divisional One Health Technical Working Group (OH-TWG) with representation from five technical divisions namely; surveillance and disease intelligence, emergency preparedness and response, laboratory systems, public health institutes and research and; disease control and prevention.

During the 35th Ordinary Meeting of the East African Council of Ministers held in 2017, it was decided to embrace the One Health and establish and operationalize an EAC Regional One Health Platform. In 2019, the 19th EAC Sectoral Council of Ministers of Health directed the EAC Secretariat to strengthen multi-sectoral collaboration and

coordination by developing a regional One Health Strategy. It is expected that adoption of this strategy will provide guidance for multi-disciplinary and multi-sectoral preparedness, prevention, detection and response to public health threats across EAC borders and consequently improve coordination in response, prevention and control of infectious diseases of One Health nature in humans, animals and environment in the region.

In Tanzania, the concept of One Health, underpinned by multi-sectoral collaborations, was first adopted in the control of the Rift Valley Fever outbreak of 2007. During this period, a number of One Health-driven networks and consortia were formed. These include, but not limited to, the Southern African Centre for Infectious Diseases (SACIDS), the One Health Network for Central and Eastern Africa (OHCEA), the African Research Consortium for Ecosystem and Population Health (Afrique One), the One Health National Networks for Enhanced Research in Infectious Diseases (NRN-Biomed), the Cysticercosis Working Group in East and Southern Africa (CWGESA) and Health for Animals and Livelihood (HALI). Most of these networks and consortia were established by collaborative research scientists at universities and research institutions to promote One Health research so as to generate evidence to inform policy. During 2013, a National One Health Agenda (NOHA) in Tanzania was conceived and formalized during the 2013 joint NIMR/2nd One Health Scientific Conference.

### **1.3 Country Profile**

#### **1.3.1 Geography and Population of Tanzania**

Tanzania is a country in East Africa in the Great Lakes region, covering a total area including inland water and Zanzibar of 947,303 km<sup>2</sup>, where 886,040 km<sup>2</sup> comprises of land and 62,050 km<sup>2</sup> comprises of water (Lake, 2013).

The climate varies with geographical zones: tropical on the coast where it is hot and humid (rainy season March - May); semi-temperate in the mountains with short rains November - December and long rains February – May, while it is drier in the plateau region with considerable seasonal variations in temperature. Rainfall is well distributed throughout the year reaching its peak during the period of March through May. Such diverse climate influences a wide range of vectors of veterinary and public health importance.

Tanzania mainland total population as of the 2022 nation census stand at 61,741,120 people. The overall population growth rate is estimated to be 3.2% per year. Agriculture supports the livelihoods of 82% of the population, 70% of which is rural. About 37% (1,745,776 out of 4,901,837) of the households keep livestock.

#### **1.3.2 Administrative structure**

Tanzania is divided into thirty-one administrative regions: 26 in the Mainland and five in Zanzibar (three in Unguja, two in Pemba). There are 169 districts, known as local government authorities.

Since 1986, the government has undergone several reforms in its sectors, including Public, Agriculture and Local government.

Sectors involved in One Health activities function at both the national and local governments. Within the devolved governance, veterinary services are managed under the Ministry of Livestock and Fisheries (MLF); public health service is managed under the Ministry of Health (MoH) at the national level and at sub national (regional) level, by the President Office - Regional and Local Administration (PO-RALG), while the wildlife service is managed by the Ministry of Natural Resources and Tourism (MNRT).

### **1.3.3 Socio-economic development**

The national Gross Domestic Product (GDP) shows an average growth rate of about 6.5-7% between 2016 and 2020, with an average annual rate of inflation of 3.3%. In accordance with the current Five -Year Development Plan III [FYDP III], the targeted average GDP growth rate is expected to be not less than 8% per annum.

The thrust of Tanzania's development agenda, has been on economic growth and specifically addressing the negative impacts of illiteracy, poverty, and disease burdens. Among the factors contributing to the slowdown of attaining the intended targets include; climate change including floods that affect basic infrastructure; outbreak of diseases including COVID-19 that affect trade and investments; low productivity and limited growth of primary sectors.

### **1.4 Agriculture, livestock and wildlife sectors**

Tanzania is endowed with 95.5 million hectares of land, of which 44 million hectares are classified as suitable for farming. However, despite this potential, only 10.6 million hectares are currently utilized for crop production. On the other hand, although approximately 50 million hectares of rangelands are suitable for livestock grazing, only 50% are in use. Nevertheless, the agricultural sector has continued to serve as the lifeline of rural livelihood and national food security. Indeed, the sector supports livelihoods of close to 82% of the population.

The sector is still characterized by smallholder and traditional farming systems. The performance of the sector is also negatively impacted by continued use of low genetic resources; multitude and high burdens of pests and diseases; poor husbandry practices and poor extension services, coupled with weak technology transfer back-up systems. Other factors relate to weak capacities include value addition and marketing systems, negative effects of climate change and variability and poor land use systems.

Tanzania's livestock population is comprised of 33.9 million cattle, 98% of which are indigenous breeds 87.7 million poultry, 24.5 million goats, 8.5 million sheep, 4 million dogs, 3.2 million pigs, and 657,389 donkeys. In addition to supplying food products, livestock play a major role as an engine for rural livelihoods and development. Livestock provide draught power, transport and manure as fertilizer for crop farming activities and potential energy sources through biogas technologies for rural electrification and/or cooking fuel.

Moreover, Tanzania contains some 20% of the species of Africa's large mammal population, found across its reserves, conservation areas, marine parks and seventeen

national parks, spread over an area of more than 42,000 km<sup>2</sup> and forming approximate 38% of the country's territory.

This established interface between humans, animals, and the environment, provides opportunity to share multiple resources but also a source of diseases that influence public health as well as social and economic well-being of the human species (WHO 2020a).

## 1.5 Emerging Pandemic Threats

Recently, nations worldwide have been grappling with an increase in emerging and re-emerging diseases at the human, animal, and environmental interface. The pathogens responsible for the emergence or re-emergence of these diseases can spread rapidly, not only nationally but regionally and globally. The unprecedented Ebola outbreak in West Africa in 2014 and the COVID 19 pandemic in 2019 triggered crises that, for a period, seemed to evade effective national and international responses, with catastrophic results for human health and wellbeing, food security, and economic prosperity. In 2005-2006, facing the threat of highly pathogenic avian influenza H5N1, most African countries established multi-sectoral committees to help address the threat. When that threat was under control worldwide and the disease-specific funding that supported these structures diminished or disappeared-these committees disbanded. However, it is anticipated that the Ebola and COVID 19 response structures developed internationally and nationally will be improved and become sustainable.

Recent outbreak experiences, especially with avian influenza, have spurred increasing recognition of the importance of an ongoing multi-sectorial effort to proactively address pandemic threats. A One Health approach has been internationally endorsed by FAO, OIE and WHO and later by UNEP, to form a Tripartite Plus that is expected to improve prevention, detection and response to emerging pandemic threats. Important questions, however, still remain about how to concretely institutionalize and operationalize this approach in different countries.

Nearly 75% of all new, emerging and re-emerging diseases affecting humans at the beginning of the 21<sup>st</sup> Century have originated in wildlife. HIV/AIDS, Severe Acute Respiratory Syndrome (SARS) and avian influenza vividly remind us of how vulnerable the increasingly interconnected world can be to the global impact of new emergent diseases. The speed with which these diseases can emerge and spread presents serious public health, economic and development concerns. These diseases also underscore the need for the development of comprehensive disease detection, prevention, and response capacities nationally and internationally particularly in those geographic areas where disease threats are likely to emerge. Recognizing the above need, this strategic plan describes below, the most important emerging health threats for which sufficient detection, prevention, and response capacities must be developed.

### 1.5.1 Zoonotic diseases

Tanzania has adopted six priority zoonotic diseases since 2016 when a joint priority list was created based on a systematic analysis of weighted criteria by representatives from different sectors. The criteria came up with top priority zoonotic diseases that include

Rabies, Rift Valley Fever and other viral haemorrhagic fevers (Marburg and Ebola), Zoonotic influenza, Anthrax, Human African Trypanosomiasis (Sleeping Sickness) and Brucellosis. However, in the advent of COVID 19 which emerged globally in 2019, it is obvious that it should be included as one of the priority zoonotic diseases.

Globally, it is well known and established that 60-80% of human pathogens, including those responsible for emerging and re-emerging pandemics, have multiple sources or hosts with most of them originating from animals. Studies have shown that over 60% of emerging and re-emerging infectious diseases in humans are zoonotic in nature; of which 72% originate from wildlife sources.

Therefore, this implies that any form of close interaction between humans, livestock and wildlife is likely to result into immense influences on disease dynamics in humans. With Tanzanian flora and fauna, being the fourth mega- biodiversity entity after Brazil, Indonesia, and the Democratic Republic of Congo (DRC), it implies that the scope of risks of wildlife being a source of human infections is high, especially in interface areas. Co-existence between humans and wildlife ecosystems, encroachment of wildlife ecosystems that increases deforestation are clear evidence for potential crossover of pathogens between wildlife, livestock, and humans.

In Tanzania, it has also been demonstrated that febrile syndromes, caused by zoonotic diseases such as leptospirosis, brucellosis, and Q-fever, have often been misdiagnosed as malaria cases. Misdiagnosis as a result of poor technical skills of health experts and low capacities of health systems has often led to various forms of mistreatment, thereby resulting into prolonged illness, increased disease burdens as well as inappropriate use of antimalarial therapies.

All the above account demonstrates that, albeit limited studies, Tanzania experiences various forms of health threats and burdens from several zoonotic infections, with some having received either minimal attention or attained a neglected status. This also shows that efforts designed to safeguard human health should address risks attributed to a variety of zoonoses.

### **1.5.2 Antimicrobial resistance**

Antimicrobials play an essential role in combatting infectious diseases in both human and veterinary medicine. The introduction of penicillin in the 20th century led to a dramatic reduction in illnesses and deaths from bacterial infectious diseases. Conversely, the miracle cure provided by antimicrobials for common bacterial infections is being eroded by the emergence of antimicrobial resistance. Antimicrobial resistance (as defined by the WHO) is resistance of a microorganism to respond well to an antimicrobial medicine that was originally effective for treatment of infections caused by it.

Antimicrobial resistance is an emerging public health problem globally. Although there is limited data on antibiotic resistance in Tanzania, even in the 1990s, resistance to antimicrobials in common use, such as ampicillin, tetracycline, chloroquine, and trimethoprim-sulfamethoxazole, was significant.

Through a natural selection mechanism, treatment of diseases by antimicrobials, microorganisms slowly adapt to them and gradually require more and more of it until they become completely resistant to an antimicrobial that was originally very effective. This problem has been developing for the past five decades and now it is going to endanger our ability to take care of patients in health care systems thereby leading to epidemics of once treatable diseases with resistant microorganisms. The AMR problem will also endanger our ability to sustain food supply and our ability to enhance national development. Taken together, antimicrobial resistance is a major wicked problem.

AMR has therefore been designated as a complex or wicked health problem because its causes are complex, and its solution is complex. However, the debate about antibiotic use in agriculture remains complicated by its relation to other scientific, political, and economic issues. Despite development of novel drugs to replace resistant ones, AMR is spreading faster than the introduction of new compounds into clinical practice, causing a public health crisis. The most unfortunate phenomenon about causes of AMR is where humans consume animal and plant products which have been contaminated with antimicrobials either intentionally through treatment or accidentally through feeds and environmental contamination.

The overuse and misuse of antibiotics is facilitated in many places by their availability over the counter and without prescription, but even where this is not the case prescribing practices vary hugely between (and often within) countries. Such issues are only made worse by large quantities of counterfeit and sub-standard antimicrobials permeating the pharmaceutical markets in some regions. In some places in Africa antimicrobials are sold in streets and open markets further perpetuating the problem of AMR.

The use of antibiotics in agriculture is routinely described as a major contributor to the clinical problem of resistant disease in human medicine. Chickens, eggs, meat and milk products we take are often having small doses of antimicrobials which inevitably could cause resistance in humans. This is a very frightening situation since most of us consume these animal products with little or no knowledge of its health implications. It is obvious that livestock keepers cannot follow the rules or regulations which force them into culling of animals or discarding animal products during withdrawal periods because they affect their economic livelihoods.

In addressing this complexity, the Government of Tanzania has adopted the Agenda of the 68<sup>th</sup> World Health Assembly of May 2015, which adopted the global action plan on antimicrobial resistance and urged Member States to develop National Action Plans for AMR using a “One Health Approach” as a way to address this and other complex problems. The National action plan outlined the key strategic objectives, interventions, and activities to slow the development and spread of AMR and improve patient outcome.

The objectives of the NAP are to: Improve awareness and understanding of antimicrobial resistance through effective communication, education and training; Strengthen the knowledge and evidence base through surveillance and research; reduce the incidence of infection through effective sanitation, hygiene and infection prevention measures; Optimize the use of antimicrobial medicines in human and animal health; develop the economic case for sustainable investment that takes account of the needs of all

countries and to increase investment in new medicines, diagnostic tools, vaccines and other interventions.

### **1.5.3 Biosafety and biosecurity threats**

Biosafety refers to the safety measures put in place to prevent people from unintentional exposure to infectious microorganisms and toxins, (or simply preventing people from pathogens); whereas Biosecurity refers to security measures designed to prevent the loss, theft, misuse, diversion, or intentional release of highly infectious microorganisms and toxins (or simply preventing pathogens from bad people). On the other hand, Biorisk Management refers to the system or processes put in place to control Biosafety and Biosecurity risks associated with handling or storage and disposal of infectious microorganisms or toxins in human, animal and environmental health services.

The demand for implementing Bio risk Management is increasing day by day due to increasing biosafety and biosecurity risks (bio risks) associated with episodes of emerging and re-emerging diseases, affecting humans, animals and plants causing significant health and economic impact in the country. Bio risks associated with Rift Valley Fever outbreaks in East Africa (2006-2007), Acute Aflatoxin poisoning (2016); and the current COVID-19 global pandemic (2019) are just a few examples of bio risks affecting humans, animals and plants), all of which could constitute complex health problems.

Additionally, increased human, domestic animals, wildlife, and environment interactions collectively increase the frequency of such health and economic challenges. Furthermore, the increasing global population especially in developing countries, increased global travel and transportation, and urbanization, have been associated with increased risks of disease outbreaks, bioterrorism and other health emergencies that are mostly life threatening. Thus, joint efforts of human, animal, and environmental experts as well as well-organized multisectoral coordination mechanisms through One Health approach is of paramount importance and could provide solutions to these complex problems. Therefore, incorporating Biosafety and Biosecurity activities in the National One Health Strategic Plan (OHSP) will help to scale up implementation of Bio risk Management and improve the safety and security of the country.

### **1.5.4 Food safety threats**

Disease outbreaks in livestock not only put at risk their immediate food source, but it also puts at risk their livelihoods and resilience capacity and that affects their long-term food security. Disease outbreaks which reduce the availability of live animals and livestock products can reduce household income, undermine the diets of household members, impair nutritional status and increase risks to health, especially of women and children. Outbreaks can also impair the wider market availability for those products. Chronic food insecurity also drives risky behaviors related to animals: no one who is well-fed would consider consuming the carcass of an animal that has died of disease. Effects of animal disease extend to people who work in production and processing – including livestock and agri-food workers, transporters, and sellers. One Health concept helps find ways to limit these risks and encourage resilient livelihoods. Zoonotic diseases have serious impacts on food safety and security; however, Tanzania does not have a

single agency responsible for food safety. Food safety control is characterized by a multi-agency system whereby food safety and quality infrastructure are shared between several ministries and departments. Food safety is also linked to AMR where animal feeds may have sub-optimal antibiotic levels and food animals and the environment may contain antibiotic residues which may later cause AMR. There is a need to develop and enhance regulations, standards, and coordination mechanisms for food safety, to properly ensure their implementation to efficiently manage chemical, radiation and microbiological contamination. The laws and regulations along with their implementation need strengthening.

### **1.5.5 Environmental health threats**

Environmental health is concerned with all aspects of the natural and built environment affecting human health. On the other hand, environmental protection is concerned with protecting the natural environment for the benefit of human health and the ecosystem. Environment and factors associated with it are other parts of the cause of many epidemic diseases both in the developed and developing nations. In Tanzania, environmental health problems arise from population pressure on housing, poor environmental sanitation, coupled with lack of safe water and basic housing facilities. Despite the deplorable state of environmental health (lack of safe water, bad housing conditions, and so on), there is no reliable and timely means of surveillance or any monitoring system.

Analysis of Household Budget Survey (HBS) indicates 26.4 percent of populations of Tanzania in 2017/18 live in poverty which means they do not have adequate capacity to access basic amenities such as food, safe water, sanitation and proper hygiene with resultant increased susceptibility to water-borne infections. Thus, there is an urgent need to invest more in environmental health and ensure every Tanzanian has access to portable water, proper waste disposal mechanisms and proper environmental sanitation. This would go a long way in preventing spread of diseases.

### **1.5.6 Climate change health threats**

Climate variability is associated with the geographical distribution and reproduction of vectors responsible for a number of diseases. Diseases at the human-animal ecosystem interface (e.g., zoonotic diseases, water/food borne diseases, vector borne diseases) continue to pose threats to humans and animals with increasingly significant morbidity and mortality. Outbreaks of vector borne diseases that are known to be influenced by climate variability include malaria, dengue, rift valley fever, yellow fever and trypanosomiasis. For example, Rift valley fever is usually triggered by sustained heavy rains.

On the other hand, warmer climate, frequency of flooding and drought would increase water borne diseases like typhoid and cholera. The spread and outbreak of cholera are concomitant with the climate prediction in the country. Studies show significant relationship between temperature and the incidence of cholera in the country. It is

predicted that for a 1-degree Celsius temperature increase the initial relative risk of cholera increases by 15 to 29%<sup>1</sup>.

Despite the presence of linkage between climate change and climate sensitive diseases in the country, there is no system to track down prevalence of such diseases despite the presence of health information management system. Development of One Health could help to alert about the disease incidences and outbreaks and thus planning to respond timely.

### 1.5.7 Other emerging and re-emerging health threats

Apart from the Emerging Pandemic Threats drivers listed above, the Tanzanian population faces several other public health risks such as foodborne infections like aflatoxicosis, cholera and bovine tuberculosis. Aflatoxicosis, is a clear example of health risks that can be attributed to consumption of contaminated foods. Indeed, one of the most common ways by which plant diseases can affect humans is through secretion of toxic metabolites such as mycotoxins by fungi infecting plant products. Although the fungi producing these mycotoxins infect plants but not humans, the mycotoxins often have adverse impacts on human and animal health. Aflatoxins are one of the most common and serious groups (types = B1, B2, G1 and G2), which are produced by some *Aspergillus* species. Aflatoxin B1 is one of the most serious mycotoxins because it is lethal at high doses and is carcinogenic to humans at low doses and can result in reduced liver function, vomiting and abdominal pain. Annual deaths in some parts of Africa due to effects of aflatoxin have been reported to reach 250,000. Cholera is also an important human health risk in Tanzania, and this is because of the periodic outbreaks that the country has witnessed. The main attributing factors to the outbreak being: floods inadequate clean and safe water; poor sanitation; unhygienic conditions and low level of education/awareness of the community on disease and its risk factors.

In Africa, crop diseases have serious impacts on social well-being as they can be a cause of abject poverty that is linked to food and nutritional insecurity. Poor drying and storage of grains and other food staff is the underlying cause and a food safety risk for lethal toxins to both human and animals.-On the other hand, the 2011 *E. coli* 0157 outbreak in Europe and those in Japan in 1996 and in Canada in 2000 also point to the possibility of experiencing similar cases in Tanzania, albeit with possibly no explosive dimensions. Reports of the presence of *E. coli* 0157 in animals [Lupindu, 2014] and humans [Erb et al., 2018] in Tanzania therefore demonstrates this possibility, that may be linked to consumption of vegetables and fruits contaminated by manure or sewerage.

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<sup>1</sup> Demographic Health Survey 2010 and 2015. Ministry of Health. Dar es Salaam

In Tanzania, the mining sector is an upcoming economic activity, which has resulted in emergence of uncontrolled and unregulated small mining activities. These activities have, at times, been associated with gross contamination of water sources and even grazing areas that has been experienced in some parts of Tanzania, which may pose serious health risks to humans and animals, including aquatic resources. Similarly, contamination of the environment by industrial wastes in urban areas also poses dangers to human and ecosystem health. Consequently, the control of these diseases requires a multi-sectoral approach that encompasses the human, animal, and environmental health sectors, as well as water, engineering/construction; and education.

## 1.6 One health approach

The approach is recognized by the World Health Organization (WHO), Food and Agriculture Organization of the United Nations (FAO), World Organization for Animal Health (OIE) and the Global Health Security Agenda (GHSA) as a strategy for promoting the collective effort of several disciplines, working locally, nationally and internationally, to attain good health for people, animals and the environment. Priority public health challenges that are addressed using the One Health Approach include: emerging and re-emerging zoonotic and infectious diseases of epidemic and pandemic potential, antimicrobial resistance, environmental pollutants, food safety threats and other complex health problems.

One Health Approach is a strategy that World Health Organization (WHO) member states are obligated to observe being part of the implementation of International Health Regulations (IHR) 2005 established for the purpose of improving the detection and reporting of potential public health emergencies worldwide. IHR 2005 provides a guiding framework for surveillance, preparedness and response to public health events of international concern, including zoonoses within the auspices of Global Health Security Agenda (GHSA) initiative. Recently 2022, the quadripartite (Food and Agriculture Organization of the United Nations (FAO), the United Nations Environment Programme (UNEP), the World Health Organization (WHO), and the World Organization for Animal Health (WOAH, founded as OIE) launched the One Health Joint Plan of Action, developed through a participatory process, that provides a set of activities that aim to strengthen collaboration, communication, capacity building, and coordination across all sectors responsible for addressing health concerns at the human-animal-plant-environment interface.

In 2006, Regional Committee for Africa (Organization's decision-making body on health policy in the African Region) through Resolution AFR/RC56/R2 called for the implementation of the IHR (2005) in the context of the Integrated Disease Surveillance and Response (IDSR) in Africa.

### 1.6.1 One Health Approach in Tanzania

Being a member of WHO and Regional Committee for Africa, Tanzania was obligated to observe IHR 2005 in compliance with its international commitments. The Tanzanian determination to adopt the One Health (OH) approach came about after the Rift Valley Fever (RVF) outbreak of in 2007. The devastating effects of RVF on human and animal health, as well as on the economy, prompted the Prime Minister's Office (PMO) to coordinate response which was implemented jointly by the ministry responsible for public health and social welfare and the ministry responsible for livestock. The enhanced cross - sectoral communication during the outbreak led to the effective handling of the response.

After the RVF outbreak, Tanzania authorities worked to institutionalize OH approach in order to facilitate the coordination of appropriate interventions that would either prevent future outbreaks or reduce the burden of diseases to humans. This decision led to the establishment of One Health Coordination Desk (OHCD) under the Disaster

Management Division in Prime Minister's Office in 2018 and development of One Health Strategic Plan for 2015–2020.

OHCD was mandated to coordinate activities of technical working groups (training, advocacy and communication; preparedness and response; research and development; surveillance and a national multisectoral one health technical committee comprised of directors from core oh sector ministries (human health, animal health (livestock and wildlife), and the environment) in order to enable appropriate interventions and information sharing across health sectors to minimize outbreaks and save lives.

### **1.6.2 One health coordination**

The Disaster Management Act, No. 6 of 2022 mandates the Prime Minister's Office, Disaster Management Division (DMD), through One Health Section the role of coordination of One Health activities in Tanzania. The OH Section facilitate efficient inter- sectoral, multi-disciplinary collaboration and communication between various key players, for proper prevention and control of zoonotic disease outbreaks related to human, animal (wildlife and livestock) and environmental health , biorisk management, AMR, food safety and security, (re) emerging health issues, non- communicable diseases and other events of public health concern.

It coordinates an interdisciplinary, cross-sectoral and multi-disciplinary approach to disease surveillance, monitoring, prevention, control and mitigation of endemic and emerging diseases and other public health threats. It also coordinates the roles of various stakeholders of OH such as line ministries, private sectors, International and Local NGOs, Academic and Research Institutions (ARI), CBOs, FBOs and the media.

One Health coordination structure is aligned with the Disaster Risk Management Framework at all levels as outlined in the Disaster Management Act No.6, 2022. One Health Multisectoral Technical Committees at regional, district, ward and village/street levels which implement OH related functions. The act provides for establishment of One Health Multisectoral Technical Committee at regional, district, ward and village/street levels which implement OH related functions. At the national level there will be Multi-Technical Working Groups organized to address six thematic areas namely (i) Training and Education (ii) Awareness, Advocacy and Communication, (iii) Preparedness and Response, (iv) Research and Development (v) Surveillance Prevention and Control and (vi) Coordination. One Health Section serves as the secretariat to the National Disaster Risk Management Technical Committee for all issues related to the threats of hazards that endanger the health of the community and provide guidance to mobilize resources for prevention, preparedness, response and mitigation to all public health threats.

## 2. SITUATIONAL ANALYSIS

This chapter highlights a systematic performance evaluation of One Health Approach operations. It assesses current and future strength, weakness, opportunities and challenges, and also internal and external forces that may influence performance and choice of strategies.

### 2.1 Implementation of International Health Regulations (IHR) 2005

World Health Organization Member States use IHR 2005 to govern surveillance of public health emergencies of international concern. These guidelines were enacted in 2005 and came into force on 15 June 2007 and are legally binding. In 2006, the Regional Committee for Africa through Resolution AFR/RC56/R2 called for the implementation of the IHR (2005) in the context of the Integrated Disease Surveillance and Response (IDSR). Successful implementation of IHR 2005 requires the fulfilment of 8 core capacities including legislation, policy and coordination, surveillance, preparedness, response, risk communications, laboratory and human resources for all levels including Point of Entries, as well as Potential hazards (zoonotic events). IHR core capacity development in zoonotic events according to capability levels is as follows:

#### Capability Level 1: Foundation

- (a) Coordination exists within the responsible government authority (ies) on the detection of, and response to zoonotic events.
- (b) List of priority zoonotic diseases with case definitions available.
- (c) A regularly updated roster (list) of experts that can respond to zoonotic events is available.

#### Capability Level 2: Inputs and processes

- (a) National policy, strategy or plan for the surveillance and response to zoonotic events are in place.
- (b) Focal point(s) responsible for animal health (including wildlife) designated for coordination with the Ministry of Health and compliance with IHR 2005
- (c) Systematic and timely collection and collation of zoonotic disease data is done.
- (d) Access to laboratory capacity, nationally or internationally (through established procedures) to confirm priority zoonotic events is available.
- (e) A mechanism for response to outbreaks of zoonotic diseases by human and animal health sectors is established.

#### Capability Level 3: Outputs and outcomes

- (a) Functional mechanisms for inter-sectoral collaborations that include animal and human health surveillance units and laboratories are established.
- (b) Zoonotic disease surveillance that includes a community component is implemented.

- (c) Timely and systematic information exchange between animal surveillance units, human health surveillance units and other relevant sectors regarding potential zoonotic risks and urgent zoonotic events.
- (d) Timely response to more than 80% of zoonotic events of potential national and international concern.

#### **Capability Level 4: Additional achievements**

Country experiences and findings related to zoonotic risks and events of potential national and international concern have been shared with the global community

#### **2.2 Evaluation and improvement of health systems**

The WHO-JEE is a systematic tool used to evaluate their capacity in prevent, detect and respond to public health threats. Tanzania was the first country to undertake JEE evaluation in 2016 where the country capacities in 19 technical areas were assessed. The findings demonstrated that although there has been significant progress, gaps still existed in key core capacities to prevent, detect and respond to public health emergencies. Following that NAPHS was developed 2017-2021 to address the gaps identified during JEE evaluation. In 2015 Tanzania join the GHSA initiative which aims to contribute in addressing health security issues at the global level as well as accelerated IHR implementation in the country.

In order to achieve the sustainable improvement of national Veterinary Services' compliance with OIE standards, in particular on the quality of Veterinary Services, the OIE has developed the Performance of Veterinary Services (PVS) Pathway, which is composed of different tools to assist countries to objectively assess and address the main weaknesses of their Veterinary Services. Tanzania conducted OIE -PVS gap analysis in 2009 and PVS evaluation follow up mission in 2016 which identified gaps in performance of veterinary services.

In 2019 IHR-PVS bridging workshop were conducted to analyze and improve collaboration between the sectors in the prevention, detection and response to zoonotic diseases and other health events at the animal- human interface.

#### **2.3 Regulatory framework**

One Health Strategic Plan has been formulated based on the policy and legal authority according to the National Disaster Management Policy of 2004 and Disaster Management Act, Cap No. 242 which prescribes the overall goal to operationalize an effective and efficient disaster management system that will minimize risks of loss of life, property and environment in Tanzania. The Act sets institution framework for DRM from national to village level with mandates on one health issues.

There are a number of legislations and regulations guiding One Health Approach in Tanzania. These include: -

- (a) National Health Policy, 2007: The National Health Policy provides direction towards improvement and sustainability of the health status of all the people, by reducing disability, morbidity and mortality, improving nutritional status and raising life expectancy.

- (b) National Livestock Policy of 2006: The policy gives provision for control of zoonotic diseases in view of safeguarding the public health Tanzania.
- (c) National Action Plan for Health Security 2017- 2021: Overarching plan which provides the measures and interventions to be implemented in line with IHR.
- (d) The Tanzania Wildlife Research Institute Act. CAP. 260: addresses issues of wildlife disease outbreaks which have effects on wild animals, livestock and human being.
- (e) The National Action Plan on Antimicrobial Resistance 2017 – 2022: The National Action Plan addresses actions needed to be taken in order to combat antimicrobial resistance (AMR) in the country. It is obligatory to raise awareness of antimicrobial resistance and promote behavioral change through public communication programmes that targets human, animal and plant health. Inclusion of the use of antimicrobial agents and resistance in school curricula will further promote better understanding and awareness from an early age.
- (f) All Hazards Health Emergency, Preparedness and Response Plan, 2016: The plan intends to respond to all aspects of emergency response operations at all levels and planning and organizing response to emergency events of different nature.
- (g) Health sector Strategic Plan (2021 -2027): The strategy recognizes that achievements in the health sector cannot be reached and sustained without participation of central Ministries, Ministry of Finance and planning and President Office Public Service Management and good governance and other sectoral Ministries including but not limited to those responsible for water, agriculture, livestock fisheries, infrastructure ICT and other that have impact in health sector. Cross sector collaboration will be enhanced under the guidance of PMO to ensure that the health in all policies approach is effectively implemented.
- (h) National eHealth Strategy 2013: the strategy recognizes the potential of information and communication technology (ICT) it can offer in transforming healthcare delivery by enabling information access and supporting healthcare operations, management, and decision making.
- (i) Animal Disease Act.CAP.156: make provision for certification, animal disease outbreak investigation, control, notification and compensation.
- (j) Veterinary Act. CAP. 319: This Act provided for the registration of veterinarians, enrolment or enlistment of Paraprofessionals and Paraprofessional Assistants, and for the establishment of the Veterinary Council and for matters incidental or connected thereto.
- (k) Public Health Act, 2009: The Act provides the promotion preservation and maintenance of public health with a view to ensuring the provision of comprehensive functional and sustainable public health services to the general public. It serves for controlling diseases including zoonoses, Act provide provision guiding outbreak notification and investigation.

- (l) The Atomic Energy Act, Cap. 188: The Act establishes Tanzania Atomic Energy Commission which is the national regulatory body responsible for atomic energy matters in the country.
- (m) Environmental Management Act, Cap. 191: An Act provides institutional framework for sustainable management of environment; to outline principles for management, impact and risk assessment, prevention and control of pollution, waste management and environmental quality standards.
- (n) The Fisheries Act Cap. 388: An Act make provision for sustainable development, protection, conservation, aquaculture development, regulation and control of fish, fish products, aquatic flora and its products and for related matters.

## **2.4 Human, animal and environmental health systems in Tanzania**

This section summarizes the national structures for key ministries performing One Health activities from the range of national to local level.

### **2.4.1 Ministry of Health**

The Ministry of Health (MoH) is implementing a One Health agenda through its policy guideline by a collaborative effort of health science professions together with their related disciplines and institutions working locally, nationally and globally to attain optimal health for people, domestic animals, wildlife, plants, and the environment. The Ministry has developed all hazard emergency preparedness and response plan, establishment of PHEOC which link with the National EOCC for coordination of national emergency disaster response, implementation of the WHO Integrated Disease Surveillance and Response (IDSR) system as a channel for disease surveillance from the Community level to National level.

The IDSR guidelines include surveillance and response protocols for 33 notifiable diseases reported either immediately or weekly with the aim of timely disease investigation, disease detection, investigation and consequently rapid response.

The Ministry has established the Tanzania Field Epidemiology and Laboratory Training Program (TFELTP) to strengthen the epidemiologic and laboratory capacity and training health workers and animal health workers in District & health facilities. Moreover, to strengthen One Health approach AFROHUN in collaboration with the Ministry established training curriculum for on job health care workers and university modules for undergraduate students.

### **2.4.2 Ministry of Livestock and Fisheries**

In Tanzania mainland the Ministry of Livestock and Fisheries is responsible for management of animal health and safeguard the public Health against health hazards of animal origin. The ministry has put in place systems form National, Zonal, Regional, Local Government Authorities, Wards and Village levels to facilitate management of matters concerning animal health such as diseases surveillance, detection, prevention and control. At national level the government has established a Directorate of Veterinary Services (DVS) within the Ministry of Livestock and Fisheries to manage matters concerning animal health such as diseases surveillance, detection, prevention and

control. In addition, there is a veterinary laboratory system maintained by Tanzania Veterinary Laboratory Agency (TVLA) for laboratory diagnosis of animal diseases, Animal feeds. TVLA also produce veterinary vaccines and perform research in animal diseases. There are other Government veterinary laboratories owned by institutions like SUA, NM-AIST, LITA, TALIRI and TAWIRI.

There are 8 Zonal Veterinary Centres (ZVC) that operate under DVS and there are 11 zonal TVLA centers countrywide. Disease Surveillance is done by ZVCs and TVLA centres in collaboration with Regional Veterinary Officers (RVO) and District Veterinary Officers (DVO). Disease prevention and control activities at Regional and District levels are supervised by ZVC officers. Regional veterinary Officers (RVO), District Veterinary Officers (DVO) and Ward/ Village livestock field officers are responsible for taking all necessary measures for prevention and control of animal and zoonotic diseases. Partly veterinary services at these levels are rendered by private sector.

Outbreak or occurrence of animal diseases in the field is reported by farmer or private animal health service provider to the nearest livestock officer (village or ward livestock field officer). The flow of information is then channeled to District Veterinary Officer (DVO), Regional Veterinary Officer (RVO), Zonal Veterinary Centres (ZVC, TVLA centres and finally to the Director of Veterinary Services In the case of notifiable diseases the DVS reports to the PMO, World Organization for Animal Health (OIE), EAC and SADC. Also, DVS gets information of zoonotic disease from the MoH and wildlife diseases from the Ministry of Natural Resources and Tourism. The reporting of occurrence and outbreak of disease is done through weekly reports and Event Mobile Application System-(EMA-i) that uses mobile telephone/cell phone

#### **2.4.3 Ministry of Natural Resources and Tourism**

The Ministry of Natural Resources and Tourism (MNRT) is mandated to conduct surveillance of infectious diseases in the wildlife in protected areas of different categories and ecosystems across the country. This is achieved through the Tanzania Wildlife Research Institute (TAWIRI) and wildlife protected area management namely Tanzania National Parks (TANAPA), Ngorongoro Conservation Area Authority (NCAA), Tanzania Wildlife Management Authority (TAWA). Tanzania Wildlife Research Institute (TAWIRI) is mandated to coordinate and undertake research related to wildlife in Tanzania. According to TAWIRI Act, among others, function 5 requires the institute to conduct research and investigations on wildlife diseases in order to know their causes and propose ways of controlling them. TAWIRI is the lead institution with all technical matters related to wildlife research, health and welfare in Tanzania. TANAPA, NCAA and TAWA are the management authorities responsible for conservation of wildlife – flora, fauna and their associated environments in wildlife protected areas under their jurisdiction. These are managers and custodians of all resources in areas they manage including flora, fauna and their habitats. In fulfilment of their responsibility, these institutions work in close collaboration among themselves and communities surrounding protected areas concerned. Therefore, TAWIRI, TANAPA, NCAA, TAWA in cooperation with the communities surrounding different wildlife protected areas for

that matter have the duty to lay down strategies for prevention and control of infectious and non-infectious diseases in wildlife.

About 38% of the land in this country has been set aside for conservation of wildlife in the form of 22 National Parks, 1 Ngorongoro Conservation Area, 32 Game Reserves, 16 Wildlife Management Areas, 38 Game Controlled Areas and open areas. Also, there are 13 natural forests, 21 forest plantations, long stretch of mangrove forests in the eastern parts of the country along the Indian Ocean Coast (URT, 2021). These areas have diverse landscape and climate that support high diversity of wildlife both flora and fauna. Forests, mountains, savannah bush land, rift valleys, hills, kopjes, wetlands, lakes, rivers, streams and short grass plains on these landscapes offer unique habitats with plenty of basic needs for life (food, shelter and cover) of various wildlife species including big games, small mammals, insects, aquatic life, birdlife and diverse of plants. With such a great diversity, protected areas are also a home to various microorganisms including viruses, bacteria, fungi and protozoa some of which are responsible for a wide range of diseases of animals and people.

### **2.5.3.1 Organization structure**

In investigating wildlife diseases, veterinarians working with different Wildlife Management Authorities namely TANAPA, NCAA and TAWA as well as TAWIRI report to the superiors within the respective institutions through established communication procedures. The wildlife veterinarian reports to the Officer's in-charge of the protected area and heads of institution(s). Sometimes, they work in collaboration with Tanzania Veterinary Laboratory Agency (TVLA) and the Zonal Veterinary Centres (ZVCs) that are directly under the DVS and the Officer's in-charge of the ZVCs directly report to the DVS. Therefore, detected wildlife diseases of concern including endemic, emerging, re-emerging and zoonotic diseases from across the country are reported to the Directorate of Veterinary Services (DVS) at the Ministry responsible for Livestock. In accordance with the requirements of the Animal Disease Act No. 17 of 2003, the reporting of disease outbreaks of concern is usually fast-tracked to facilitate timely notification of the higher authorities, mobilization of resources and mounting the required responses.

### **2.5.3.2 Disease surveillance and control systems in wildlife**

Wild animals are susceptible and succumb to various infectious and non-infectious diseases in a similar way as other living organisms. Different disease causative agents including viruses, bacteria, protozoa, fungi, parasites and prions are responsible for various infectious diseases in wild animals. Some of diseases are known to be among the causes for decimation and extinction of wild animal species, specifically those endangered or critically endangered as they associate with high morbidity and severity. Among these are Rinderpest, Anthrax, Canine Distemper, Rabies, and Highly Pathogenic Avian Influenza. Also, some wildlife species are known to be reservoirs and intermediate hosts for pathogens from the wild to humans especially those living at the human-wildlife-livestock interfaces. The vice versa is also true, some diseases are transmissible from humans to wild animals in the wild. Depending on the nature of the pathogens and existing favorable factors, the disease may spread far and beyond. For

example, disease caused by arthropod-borne viruses (arboviruses) such as dengue fever, yellow fever, Zika, chikungunya and West Nile viruses (Weaver, 2013). Other diseases include: Anthrax, Brucellosis, bovine Tuberculosis, highly pathogenic Avian Influenza, Rabies, Rift Valley Fever, Trypanosomoses and worm infestation e.g Echnococcosis, Taeniosis, Ascariosis, etc.

### **2.5.3.3 Laboratory systems**

All institutions under the MNRT maintain two types of veterinary laboratories. Firstly, the basic field veterinary laboratories that are maintained in a protected area concerned or at one zonal veterinary base, which serves several protected areas. So far, these are basically Biosecurity Level (BSL) 1 laboratories equipped with basic equipment and working tools to cater for sample collection, preliminary processing, diagnosis, temporary storage, packaging and shipping them to advanced laboratories. Ideally, all veterinary laboratories strategically located in the field that belong to TAWIRI, TANAPA and NCAA fall under this category (BSL 1). Secondly, a nearly BSL 2 veterinary laboratory exists at TAWIRI Headquarters in Arusha, acting as a referral to the basic field laboratories (BSL 1). Another BSL 2 veterinary laboratory is in the process of being constructed by TANAPA in Arusha. This laboratory will serve as the central veterinary laboratory for all basic field laboratories in TANAPA system. The BSL 2 veterinary laboratories receive samples from the BSL1 laboratories, process them further, make diagnosis, store samples longer, keep records, packaging and shipment of wildlife samples to advanced veterinary laboratories within and outside the country. All these wildlife veterinary laboratories work in collaboration with TVLA and ZVCs that are strategically located across the country.

### **2.4.4 Vice President's Office- Environment**

One of the responsibilities of the office of the Vice President is the management of the natural environment for the benefit of human health and the ecosystem in general. Environmental management ensures sustainability and equitable use of resources in addressing the basic needs of present and future generation without degrading the environment. Good environment is good for health as it reduces chances of disability, morbidity and mortality, and improves nutritional status and raising life expectancy. It has been studied that is critical in controlling some diseases. Climate change affects water quality, which is the main concern in the health sector as people suffer from water related diseases, such as malaria, diarrhoea, cholera and dengue fever. These are mostly associated with the increased precipitation and temperature as a result of the global climate change.

### **2.4.5 Ministry of Agriculture**

In Tanzania main land the Plant Health Services (PHS) under the ministry of Agriculture operates in different levels which include National, Zonal, Regional, District, Ward and Village levels.

At National level, Plant Health Assistant Director (AD-PHS) is responsible for all matters concerning plant health such as pests (e.g. Insect pests and diseases) surveillance,

pests and disease detection, prevention and control. PHS is there to safeguard human health by managing pest and diseases and the environment; deploy Integrated Pest Management (IPM) strategies and approaches in order to minimize pre and post-harvest crop losses.

There are five PHS zones (Eastern, Central, Southern Highland, Northern and Lake/Western Zones) and three special centres (Rodent control, Bio-control and Kilimo Anga). In-case of a diseases or pests outbreak such as Aflatoxin, Locust and Quelea, Fall Armyworm are reported by Village Extension Workers either to the District Plant Protection Officers (DPPOs) of the respective district / Zonal Plant Health Centres or to the AD-PHS directly for action. Pests prevention and control activities at Regional and District level are supervised by Zonal Plant Health coordinator.

The ministry of Agriculture in collaboration with the Ministry responsible for Local Government Authorities (LGAs) at the Regional, District and Ward/village levels work together to take action required for prevention and control of Pests including surveillance, training farmers on pest identification and management through Integrated Pest Management (IPM) Approach.

Pests outbreak in the field is reported by farmer to the nearest Village Extension Officer. The flow of the information is then directed to DPPOs, Zonal Coordinator, and finally to AD-PHS at Ministry level. If the pest is in the list of notifiable it is then reported to the International Pests Prevention Convention (IPPC) by National Plant Protection Officer (NPPO). The official report of pest outbreak is done through e-mail/phone

Key pests and diseases of economic importance threatening Human, animal and plants in Tanzania include the grain eating birds (Quelea/quelea), locust, armyworm, the field rodents. These pests and diseases are declared outbreak pests when they occur in large population densities, covering large tracts of land.

Pests or diseases outbreak in the field is reported by farmer to the nearest Village Extension Officer. The flow of the information is then directed to DPPOs, Zonal Coordinator, and finally to AD-PHS at Ministry level. If the pest is in the list of notifiable pests it is then reported to the International Pests Prevention Convention (IPPC) by National Plant Protection Officer (NPPO). The official report of pest outbreak is done through email.

#### **2.4.6 Ministry of Education, Science and Technology**

The Ministry of Education, Science and Technology (MoEST) is mandated to develop Policies on Education, Research, Library Services, Science, Technology, Innovation, Skills, Training Development and their implementation. It is therefore envisaged that MoEST will oversee education and training institutions in general as well as oversee research activities focusing on cross-cutting health issues which address One Health Approach. The Ministry will also oversee food, nutrition and health services in education institutions. In discharging its roles, MoEST will ensure that children with special needs

are identified and provided with rehabilitation services consistent with their needs. To ensure presence of healthy students, MoEST will provide appropriate sexual and reproductive health education to all students including those with special needs.

### **2.5 Strength, Weakness, Opportunities and Challenges (SWOC)**

A SWOC analysis was carried out to analyze the current internal/external factors (legislation, funding, emerging diseases, and new technologies) in the work environment that may impact implementation of the One Health approach. The results are presented below.

**Table 1: Strengths, Weaknesses, Opportunities and Challenges (SWOC)**

<b>Pillar 1: Coordination</b>			
<b>STRENGTH</b>	<b>WEAKNESS</b>	<b>Opportunities</b>	<b>Challenges</b>
<p>i. Establishment of an institutionalized OHS</p> <p>ii. Availability of trained staff/manpower in specific areas</p> <p>iii. Availability of One Health technical experts (multidisciplinary/multi-sectoral)</p> <p>iv. Political support through the PMO</p> <p>v. Existence of multi-sectoral contingency plans (National Avian Pandemic Influenza Plans, RVF contingency plan, Preparedness Plan for Public Health Risks and Emergencies)</p> <p>vi. Existence of One Health Initiatives in different sectors - AFROHUN, SACIDS, Afrique One, etc.)</p> <p>vii. Existence of National Task Force committees in various sectors to respond to public health events including zoonotic diseases (AMR, IHR etc.)</p> <p>viii. Strong inter-ministerial cooperation through newly developed TWGs</p> <p>ix. Existence of professional associations such as TVA, TMA, TABSA, Existence of professional associations such as TVA, TMA, TABSA</p>	<p>i. Inadequate cooperation between OHS and relevant sectors</p> <p>ii. Low awareness on burden of zoonoses, AMR and other public health threats among policy makers, politicians and community</p> <p>iii. Inadequate resources for supporting the OHS</p> <p>iv. Inadequate implementation of National One Health Strategic Plan</p> <p>v. Lack of One Health Policy</p> <p>vi. Inadequate on-the-job training.</p>	<p>i. Existence of Quadripartite agreement on implementation of OH (WHO-OIE-FAO-environment)</p> <p>ii. Existence of ratified biological weapon convention (Ratified BWC, Cartagena Protocol)</p> <p>iii. Existence of potential development partners and local support (FAO, WHO, CDC etc)</p> <p>iv. Presence of various local One Health implementing partners</p>	<p>i. Global economic crisis</p> <p>ii. Political instability among neighbouring countries</p> <p>iii. Presence of (emerging and re-emerging zoonotic diseases such as Ebola, COVID 19</p>
<b>Pillar 2 - Surveillance, prevention and control</b>			
<b>STRENGTH</b>	<b>WEAKNESS</b>	<b>OPPORTUNITIES</b>	<b>CHALLENGES</b>
<p>i. Existence of legal and policy framework</p> <p>ii. Existence of surveillance systems</p>	<p>i. Lack of inter-sectoral laboratory sharing policy</p> <p>ii. Lack of National One Health policy</p>	<p>i. Presence of potential partners to support disease surveillance,</p>	<p>i. Emerging and re-emerging zoonotic diseases</p>

<p>iii. Existence surveillance guidelines (IDSR/IHR (2005), EBS; guidelines for surveillance of prioritized zoonotic diseases; AMR Surveillance framework (2018)</p> <p>v. Control strategies for prioritized zoonotic diseases</p> <p>vi. Existence of contingency plan for some diseases such as RVF Contingency Plan, HPAI - H5N1, Ebola and COVID-19</p> <p>vii. Existence of laboratory infrastructure with qualified workforce</p> <p>viii. Well trained and capable staff at National and subnational levels</p> <p>ix. Good communication infrastructure</p> <p>x. ICT exists which supports reporting via mobile</p> <p>xi. Existence of various surveillance tools</p> <p>xii. Existence of National Committees and task forces for IHR, AMR</p> <p>xiii. Existence of private sector which support surveillance</p>	<p>iii. Inadequate coordination, collaboration, and communication between sectors</p> <p>iv. Inadequate laboratory capacity at subnational level throughout the different sectors (health, livestock, wildlife)</p> <p>v. Inadequate human resource capacity at subnational levels</p> <p>vi. Low engagement and participation of community in surveillance and reporting</p> <p>vii. Inadequate sharing of surveillance data across sectors</p> <p>viii. Inadequate surveillance data feedback (between sectors and farmers/livestock keepers)</p> <p>ix. Inadequate capacity for surveillance data management, analysis and interpretation</p> <p>x. Inadequate implementation of integrated strategies, SOPs and guidelines focuses for zoonotic diseases (and other tools)</p> <p>xi. Inadequate community engagement</p> <p>xii. Inadequate capacity to develop diagnostic tools and laboratory reagents.</p> <p>xiii. Inadequate coverage of ICT across the country</p>	<p>detection prevention and control</p> <p>ii. Existence of One Health initiatives i.e., regional, and global (AFROHUN, SACIDS, SADC, AU, SNL, BTRP, DTRA, GIZ)</p> <p>iii. Existence of EAC One Health Strategic Plan</p> <p>Existence of internationally recognised guiding documents (OIE, FAO, WHO)</p> <p>iv. Existence of international reference laboratories for specific diseases)</p>	<p>ii. Unpredictable weather / climate change</p> <p>iii. Existence of porous borders</p> <p>iv. Donor dependent funding</p> <p>v. Conflicting interests on priority setting among key partners</p>
<p><b>Pillar 3: Preparedness and Response</b></p>			
<p><b>Strength</b></p> <p>i. Political stability commitment and support</p> <p>ii. Defined response structures and laboratory systems</p>	<p><b>weakness</b></p> <p>i. Slow dissemination of National Preparedness and response plans to all sectors and subnational level</p>	<p><b>Opportunities</b></p> <p>i. Existence of various local One Health implementing partners</p> <p>ii. Donors/collaborators' interest to support</p>	<p><b>Challenges</b></p> <p>i. Conflicting interests on priority setting among key players</p>

<p>iii. Availability of Incidence Management Systems (IMS) and Emergency Operational Centres at National level</p> <p>iv. Availability of Disaster and Emergency committees</p> <p>v. Existence of formal Multi-sectoral Coordination through PMO (One Health Section)</p> <p>vi. Availability of multidisciplinary/multi-sectoral experts</p> <p>vii. Existence of multi-sectoral all hazards and diseases specific contingency plans (National Avian Pandemic Influenza Plans, RVF contingency plan, Preparedness Plan for Public Health Risks and Emergencies)</p> <p>viii. Existence of National Task Force committees in various sectors to respond to public health events including zoonotic diseases</p> <p>ix. Inclusion of One Health approach issues within government sectors as well as in the University training curriculum</p> <p>x. Country commitment on Regional and Global Resolutions e.g. IHR, GHSA,</p> <p>i.</p>	<p>ii. Poor utilization/participation of response committees in multi-sectoral approach at subnational level</p> <p>iii. Few multi-sectoral Emergency Operational Centres at sub national level</p> <p>iv. Inadequate human resource capacity to support Multi-sectoral preparedness and response to emerging and re-emerging diseases</p> <p>v. Competing priorities among sectors especially during preparedness</p> <p>vi. Inadequate of expertise in responding to newly emerging diseases</p>	<p>emergency preparedness and response activities</p> <p>iii. Existence of Regional and International One Health Initiatives</p>	<p>ii. Global economic crisis due to ongoing COVID-19 outbreak</p> <p>iii. Political instability in some neighbouring countries</p>
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<b>Pillar4: Research and Development</b>	
<b>Strength</b>	<b>weakness</b>
<p>i. Existence of operational OH consortia and networks</p> <p>ii. One Health Strategic Plan launched in 2018;</p>	<p>i. Low volume and quality of OH research</p> <p>ii. Limited funding to support OH research</p>
<b>Opportunities</b>	
	<p>i. Existence of external funding agencies</p> <p>ii. Interest of development partners</p>
<b>Challenges</b>	
	<p>i. Global economic crisis</p> <p>ii. Frequent occurrence (overwhelming) of</p>

<ul style="list-style-type: none"> <li>iii. Existence of OHS</li> <li>iv. Existence of risk surveillance and responses systems.</li> <li>v. Existence of multidisciplinary/sectoral research experts</li> <li>vi. Presence of political will on value of One Health research</li> <li>vii. Existence of diverse natural resources for use in research e.g. in wildlife, agriculture, environment etc.</li> <li>viii. Existence of training institutions relevant to One Health</li> <li>ix. Existence of established partnership between research and development institutions</li> <li>x. Existence of One Health harmonized CPD curriculum among institutions</li> </ul>	<ul style="list-style-type: none"> <li>iii. Low number of human resources and infrastructure to support OH research</li> <li>iv. Inadequate collaboration among researchers in different national and international research institutions</li> </ul>	<ul style="list-style-type: none"> <li>iii. Existence of EAC One Health forum</li> <li>iv. Existence of research dissemination forums</li> <li>v. Existence and use of new technologies</li> <li>vi. Subscription and ratification to international and regional treaties and protocols e.g. JEE, GHSA IHR etc.</li> </ul>	<p>emerging/re-emerging pandemic Threats</p> <ul style="list-style-type: none"> <li>iii. Heavy dependence on external funding for research.</li> </ul>
<b>Pillar 5: Training, advocacy and communication</b>			
<b>Strength</b>			
<ul style="list-style-type: none"> <li>i. Availability of multi-sectoral expertise in human, animal, and environmental health</li> <li>ii. Availability of One health related policy documents</li> <li>iii. Existence of awareness, advocacy and communication technical working group at One Health Section</li> <li>iv. Existence of national AMR communication strategy</li> </ul>	<b>Weakness</b>		
<ul style="list-style-type: none"> <li>i. Weak One Health information sharing mechanism among, sector ministries, and other relevant stakeholders</li> <li>ii. Lack of One Health Awareness, communication and advocacy strategy, guidelines and toolkits.</li> <li>iii. Inadequate human and financial resources for awareness, advocacy and communication activities.</li> <li>iv. Inadequate One Health advocacy to policy makers</li> <li>v. Inadequate appreciation of One Health concept to policy makers.</li> <li>vi. Conflicting interests in priority setting among key players and participating agencies regarding awareness, advocacy and communication.</li> </ul>	<b>Opportunities</b>		
<b>Challenges</b>			
<ul style="list-style-type: none"> <li>i. Shifting of priorities and resources away from One Health Awareness, Advocacy and communication activities due to national and global dynamics.</li> </ul>			

	<ul style="list-style-type: none"> <li>vii. Reliance on development partners in One Health awareness, advocacy and communication programs.</li> <li>viii. Inadequate ICE One Health promotion materials</li> <li>ix. Lack of One health data and information sharing systems.</li> <li>x. Inadequate awareness to the community regarding different One Health matters.</li> </ul>		
<b>Pillar 6: Training and Education</b>			
<b>Strengths</b>			
<ul style="list-style-type: none"> <li>i. Existence of training institutions that address human, animal, and environmental health</li> <li>ii. Availability of multi-sectoral expertise in human, animal, and environmental health</li> <li>iii. Existence of established integrated One Health training courses for in-service personnel.</li> <li>iv. Existence of integrated One Health training programs in technical education and higher learning institutions for pre-service personnel</li> <li>v. Availability of training materials (curricula, text books and manuals)</li> <li>vi. Availability of One health related policy documents and training packages</li> </ul>	<ul style="list-style-type: none"> <li>i. Lack of One Health training plan</li> <li>ii. Inadequate resources to support One Health e-learning (e.g., audio books, simulation models)</li> <li>iii. Inadequate human and financial resources</li> <li>iv. Overreliance on development partners in One Health training, programs.</li> <li>v. Slow adoption of One Health Approach Concept among policy makers, executive officers and managers</li> <li>vi. Inadequate understanding of One Health Approach by the policy makers, Executive Officers and Managers</li> </ul>	<ul style="list-style-type: none"> <li>i. Existence of strong professional councils in Tanzania (e.g. MCT, VCT)</li> <li>ii. Existence of Regulatory Bodies (TCU, NACTE, CGLA, TMDA)</li> <li>iii. Existence of CPD programs in Tanzania</li> <li>iv. Existence of e-learning platforms e.g. ECHO, ZOOM</li> <li>v. Existence of One Health Sector Ministry programs</li> <li>vi. High need and demand for capacity building in One Health</li> </ul>	<ul style="list-style-type: none"> <li>Challenges</li> <li>Heavy dependence on external funding for OH interventions</li> </ul>

## 2.6 Stakeholder's analysis

### 2.7.1 The objective of the OH stakeholder mapping

The objective of the mapping was to identify and visualize all One Health stakeholders in Tanzania, their current relationship/interaction with One Health Section (OHS) and their influence in One Health activities in the country. The output of the analysis will be used to guide stakeholder engagement during implementation of OH activities.

### 2.7.2 Stakeholders visual maps

One Health stakeholder analysis was undertaken to assess the interaction and influence. The results indicated that majority of the stakeholders had high interaction with the OHS and influence (both resource and non-resource) on One Health activities. However, the most resource-based influential group was the NGOs and international institutions. Political leaders and reverend groups were very influential category had very little interaction with the OHS. In addition, communities and professional associations were the least interactive and influential category of all, as for media had low interaction with OHS but very influential. The communication and advocacy strategy need to be developed taking cognizance of the risk mapping findings. The pictorial map is as shown in the figure. Detailed analysis report is attached as **Appendix 3**.

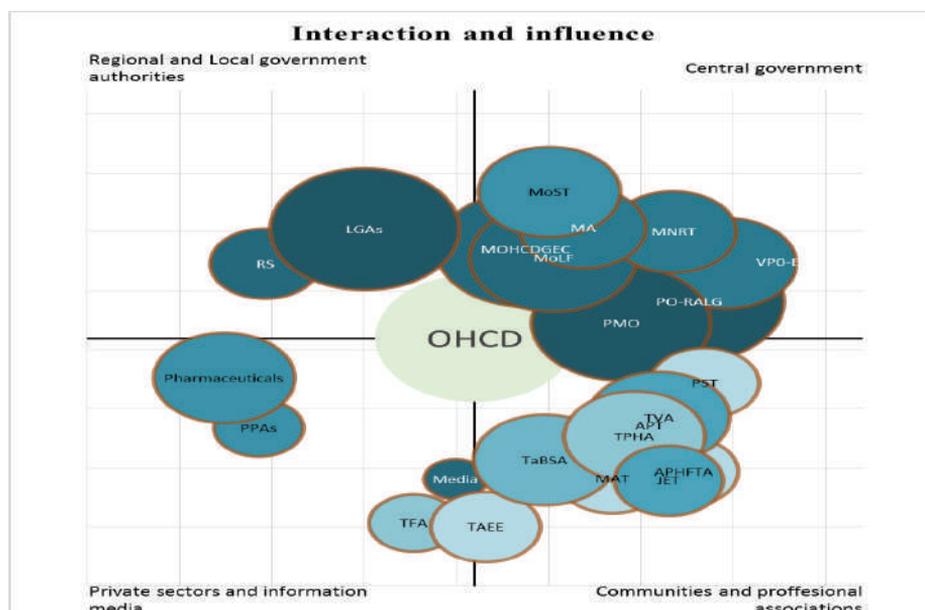


Figure 1. Interaction and influence map for central government, Regional and local government authorities, communities and professional associations and private sector and information media. The proximity to the OHS indicates strong interaction, the bubble size represents the level of resource-influence. The color shades represent the level of non-resource-based influence; the darker the shade, the higher the influence.

## 3. THE STRATEGIC PLAN

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### 3.1 Purpose

The overall purpose of the Strategic Plan is to provide a strategic direction in the implementation of OH Agenda. Specifically, the plan intends to improve performance of OHS; improve accountability; act as a communication tool within organization and other stakeholders; indicate the timing of implementation; indicate how progress should be measured; and establish priority areas for efficient and effective allocation of limited resources.

### 3.2 Vision and Mission

#### 3.2.1 Vision

A nation with optimal health for people, animals and the environment achieved through collaborative efforts locally, nationally, regionally and globally.

#### 3.2.2 Mission

Improve the well-being of the United Republic of Tanzania by promoting collaboration in addressing One Health country priorities.

### 3.3 Objective of the strategy

Provide functional and quality integrated human, animal and environmental health systems to reduce the burden of health threats at all levels

### 3.4 Core Values

The following are the core values that will guide the implementation of this Strategic Plan:

- (a) **Collaboration** – promote engagement and collaboration to achieve the strength of a united force working for the benefit of all;
- (b) **Adaptability** – flexible, innovative and responsive to meet the changing needs of our society;
- (c) **Excellence** – promote the highest standards of performance throughout the scope of One Health to ensure quality and continuous improvement at all levels;
- (d) **Teamwork** - close working relationships with all stakeholders for synergy;
- (e) **Transparency** - openness and willingness to promote and share in executing One Health; and
- (f) **Resilience** - recognizing the varied staff, programmes, disciplines, sectors, and backgrounds with the aim of reaching a common goal

### 3.5 Guiding Principles

The following principles will guide the implementation of this plan:

- (a) Prevention and control of zoonoses is a national public good and requires strong political and financial commitment at national and county levels

- (b) Sustainable utilization of existing institutions and whenever possible drawing on lessons learnt
- (c) Use of a multidisciplinary approach to realize technical, political, and regulatory frameworks required to effectively manage zoonoses
- (d) Science-based and continually adjust to new information and technologies
- (e) Recognize and respect cultural diversity.

### **3.6 Strategic Pillars and Goals**

Strategic pillars are the broad areas of focus which we must invest and work in to successfully achieve our mission. The strategic plan will be implemented to impact in six pillars. Each Pillar has a strategic goal, Objectives, Strategies, and Targets Key Performance Indicators as follows:

**Table 2: Logical Framework**

Strategic pillar 1: Coordination						
Strategic goal: To strengthen and institutionalize One Health coordination at all levels						
Objective	Strategy	Target	Activities	Indicator	Means of verification	
1.1 To enhance the operational capacity of One Health coordinating desk	1.1.1 Strengthen Technical Working Groups (TWG) to be functional, active and well-coordinated	1.1.1.1 Establish One Health Technical Working Groups by 2023	i. Identify and appoint TWG members	-Number of TWGs established	-Minutes of One Health stakeholders meeting	
			ii. Conduct workshop to develop ToRs for TWGs	-Number of TWGs members appointed	-Copy of nomination letters	
				-Number of meetings convened	-ToR in place	
		1.1.1.2 Conduct quarterly meetings for TWGs by 2027	i. Invite identified stakeholders	-Number of meetings convened	-Minutes of TWG meetings	
			ii. Prepare meeting documents and needed resources			
			iii. Conduct meetings			
		1.1.1.3 Conduct biannual national, regional and district multi-sectoral OH technical teams' meetings by 2027	i. Invite identified stakeholders	-Number of meetings convened	Minutes of the biannual meetings	
			ii. Prepare meeting documents and needed resources			
			iii. Conduct meetings			
		1.1.1.4 Organize capacity building training workshops for TWGs by 2027	i. Conduct training needs Assessment	Number of TWGs members trained	Training reports	
			ii. Identify and communicate with training institutions			
			iii. Conduct training			



1.3 To strengthen/improve networking between OHS, local and international One Health consortia	1.3.1 Strengthen working relationship between OHS, local and international One Health consortia	1.2.1.3 Develop programmes and projects to support OH activities by June, 2027 1.3.1.1 Organize One Health national platform using existing structure by 2027 1.3.1.2 Conduct Quarterly meetings of OH focal persons at village, ward, districts, regional and ministry levels by June,2027 1.3.1.3 Facilitate OHS staff to attend One Health consortia meetings by June, 2027	ii. Organize stakeholders' meetings i. Identify and invite stakeholders ii. Prepare meeting documents and needed resources iii. Conduct National platform	-Number of meetings convened	
			i. Identify and invite stakeholders ii. Prepare documents for a meeting	-Number of meetings convened	
			Identify number of OHS staff and allocate funds to facilitate their attendance to OH Consortia meetings	-Number of meetings attended -Number of OHS staff participating in One Health consortia meetings	
<b>Strategy Pillar 2: Surveillance, Detection, Prevention and Control</b>					
<b>Goal: Functional and quality joint human and animal health surveillance systems to reduce the burden of zoonotic diseases, Antimicrobial Resistance (AMR) and other public health events established</b>					
	<b>Strategy</b>	<b>Target</b>	<b>Activities</b>	<b>Indicator</b>	<b>Means of verification</b>
2.1 To strengthen joint surveillance, of prioritized zoonotic diseases, AMR, and other public health threats at all levels	2.1.1 Establish joint One Health surveillance system at national, zonal/regional and district levels	2.1.1.1 Develop guidelines, SOPs, manuals for surveillance of PZD, AMR and other public health events by 2027	i. Develop guidelines, SOPs, manuals for surveillance of PZD, AMR and other public health events ii. Conduct dissemination workshop	No of SOPs, manuals for surveillance of PZD, AMR and other public health events Number of dissemination workshop	SOP and manuals in place Workshop report

		Supervision report	
		Number of zones regions and districts supervised	
	iii. Undertake supportive supervision		
	iv. Train public and animal health staff to collect, store and analyse joint surveillance data		
	v. Use of ICT on data collection		
	vi. Conduct participatory epidemiology to engage community in surveillance		
	i. Conduct training on zoonotic diseases at zonal, regional and district levels.	Number of trained personnel at all levels	Training report
	ii. Conduct quarterly joint surveillance meetings on zoonotic disease, AMR and other public health events	Number of meetings conducted	Meeting report
	i. Conduct Joint Risk Assessment of zoonotic diseases at zonal, regional and district levels	Number of trained personnel on JRA	Training reports
	Train District public and animal health workers on surveillance using OH approach by 2027.		
	2.1.2 Enhance joint zoonotic disease, AMR and public health threat surveillance at national,		
	2.1.2.1 Conduct joint Risk Assessment of zoonotic diseases, AMR and other public health events at zonal,		

		zonal/regional, district and community levels	regional and district levels by 2027	ii. Implement the associated recommendations		
			2.1.2.2 Quarterly joint surveillance meetings on zoonotic disease, AMR and other public health events conducted by 2027	Conduct quarterly joint surveillance meetings on zoonotic disease, AMR and other public health events	Number of meetings conducted	Meeting Report/minutes
		2.1.3 To establish joint database at OHS for zoonotic diseases, AMR, and other public health events	2.1.3.1 Capacitate OHS, store and analyses joint surveillance data by 2027	i. Train OHS on collection, store and analyses joint surveillance ii. Procure and install data storage and analysis software	Number of OHS staff trained Availability of the software	Training reports Software in place
		2.1.4 Strengthen cross-border sharing of information on zoonotic diseases, AMR and other events	2.1.4.1 Conduct risk communication and community engagement on zoonotic diseases, AMR and other public health events by 2027	i. Conduct KAP studies on zoonotic diseases, AMR and other public health events ii. Develop and disseminate IEC materials on zoonotic diseases, AMR and other public health events iii. Train community on iv. Reporting, prevention and control of zoonotic diseases, AMR and other public health events	Number of KAP study conducted Number of materials disseminated Number of personnel trained	KAP report IEC materials in place Training reports

2.2 To strengthen, prevention and control of prioritized zoonotic diseases, AMR, and other public health threats at all levels	2.2.1 Enhance prevention and control of prioritized zoonotic diseases, AMR and other public health events	2.1.4.2 Conduct Quarterly cross-border surveillance committee meetings by 2027  2.2.1.1 Implement control strategies for prioritized zoonotic diseases, AMR and public health events	Conduct cross-border joint risk assessment focusing on zoonosis diseases, AMR and other public health events  i. Develop and review guidelines and SOPs for vaccination of priority zoonotic diseases  ii. Procurement of vaccines and biologicals	Number of meetings conducted  Number of SOPs and guidelines developed and reviewed for 6 PZDs	Meeting reports  SOPS and guidelines in place  Procurement reports
			iii. Conduct pre vaccination awareness campaigns	Number of wards/villages sensitized	Reports
			iv. Conduct routine vaccination campaigns for relevant PZDs,	Number of animals vaccinated for each PZDs and coverage	Vaccination reports
			v. Conduct pre and post vaccination monitoring	Number of supervisions conducted pre and post vaccination	Monitoring reports
		2.1.2.2 Conduct On job trainings of staffs in the area of zoonotic diseases, AMR and other health events on prevention and control by 2027	i. Conduct staff training needs assessment  ii. Conduct on the job trainings of staffs on prevention and control of zoonotic diseases, AMR and other health events	Number of needs assessments conducted  Number of staff trained	Needs assessment Reports  Train reports

3.1 To enhance prioritized zoonotic disease detection capacity at national (100%), zonal/regional (60%) and district (30%) levels	3.1.1 Strengthen laboratory diagnostic capacity	3.1.1.1 Capacity building for laboratory across sectors in the area of zoonotic diseases, AMR and other health events diagnosis by 2027	<p>i. Conduct laboratory needs assessment</p> <p>ii. procurement of laboratory equipment, reagents and consumables</p> <p>iii. Train laboratory staff across sectors in the area of zoonotic diseases, AMR and other health events diagnosis</p> <p>iv. Develop SOPs for detection of prioritized zoonotic diseases, AMR and other public health events</p>	<p>Number of assessments done</p> <p>Number of lab equipment, reagents and consumables procured</p> <p>Number of personnel trained</p> <p>Number of SOPs developed</p>	<p>Laboratory needs assessments reports</p> <p>Inventory reports</p> <p>Training reports</p> <p>SOPs in place</p>
		3.1.1.2 Strengthen Multi-sectoral laboratory network	<p>i. Develop TOR for laboratory networks</p> <p>ii. Conduct Quarterly meetings for multi-sectoral diagnostics committee</p> <p>iii. Conduct Inter-laboratory comparison for priority zoonotic diseases</p>	<p>Number of TOR developed</p> <p>Number of meetings conducted</p>	<p>TOR in place</p> <p>Meeting reports</p>
		3.1.1.3 Strengthen laboratory quality management system	<p>i. Conduct Inter-laboratory comparison for priority zoonotic diseases</p>	<p>Number of inter laboratory comparison conducted</p>	<p>Reports</p>

				ii. Carryout proficiency test	Number of proficiency test carried out	Reports
		3.1.1.4 Strengthen laboratory biosafety and biosecurity measures		iii. Conduct dissemination meeting of Biosafety and Biosecurity Guidelines	Number of meetings conducted	Meeting report/ minutes
				iv. Review National Biosafety and Biosecurity checklist	Number of National Biosafety and Biosecurity checklist reviewed	Reviewed Checklist in place
				v. Assess Biosafety and Biosecurity implementation in six laboratories per year	Number of assessments	Reports
				vi. Conduct Bio-risk management training		Training reports
<b>Strategic pillar 3: Preparedness and Response</b>						
<b>Strategic goal: To strengthen multi-sectoral emergency preparedness and early response frameworks for One Health events</b>						
<b>Objective</b>	<b>Strategy</b>	<b>Target</b>	<b>Activities</b>	<b>Indicator</b>	<b>Means of verification</b>	
3.1 Strengthen frameworks for multi-sectoral preparedness and response to emerging and re-emerging Health Related Threats	3.1.1 Review the existing multi-sectoral emergency preparedness and response frameworks	3.1.1.1 Review Multi-sectoral preparedness and response frameworks by 2027	i. Identify and map the key stakeholders to involve in the review process  ii. Conduct two workshops for key stakeholders to review the existing multi-sectoral preparedness and response frameworks by 2027	-Number of stakeholders identified  Number of workshops conducted Number of personnel attended workshop	Review reports  Workshop reports  Meeting Registration	

			iii. Conduct One validation workshop of key stakeholders to validate the frameworks that entails emergency preparedness and response conducted by 2027	Number of stakeholders attended workshop	Workshop reports
			i. One Workshops to Prepare dissemination plan	Dissemination plan in place	Workshop reports
			ii. Printing 3000 copies of validated emergency and response frameworks	Number of policy makers and development partners attended dissemination	Delivery/dispatch notes
			iii. Dissemination meetings to policy makers and Development partners on the reviewed and validated frameworks	Number of personnel attended dissemination Number of workshops conducted	Meeting reports
			iv. Conduct zonal and regional Workshops to disseminate and Distribute the copies of the reviewed and validated emergency and response frameworks		Workshop reports Meeting registration
		3.1.2 Disseminate frameworks that entails multi-sectoral emergency preparedness and response to emerging and re-merging Health Related Challenges to all levels	3.1.2.1 Disseminate reviewed and validated emergency and response frameworks by 2027		

<p>3.2 To strengthen operationalization of multi-sectoral preparedness and response frameworks to emerging and re-emerging Health Related Challenges at all levels</p>	<p>3.2.1 Support joint table-top and field simulation exercises on One Health related emergencies and response (focus on subnational levels).</p>	<p>3.2.1.1 Conduct joint table-top and field simulation exercises to Multi-sectoral actors for preparedness and response to emerging and re-emerging Health related threats by 2027</p>	<p>i. Conduct one joint table-top simulation exercise per year</p> <p>ii. Conduct one joint field simulation exercise per year</p> <p>iii. Conduct one multi-sectoral meeting per year to update the plan using simulation exercises findings,</p> <p>i. Conduct supportive supervisions in zonal and regional facilities on operationalization of multi-sectoral emergency and response frameworks (Two supervisors per facility)</p> <p>ii. Conduct two meetings of three days per year with 20 multidisciplinary participants to prepare budget</p>	<p>-Number of table-top simulation exercises conducted per year</p> <p>-Number of participants</p> <p>-Number of simulation exercises conducted per year</p> <p>-Number of participants</p> <p>-Number of meetings conducted</p> <p>-Number of facilities visited in each zone</p> <p>-Number of facilities visited at regional level</p> <p>-Number of meetings conducted per year</p> <p>-Number of participants attended</p>	<p>Simulation exercise report</p> <p>Participants attendance registers</p> <p>Simulation exercise report</p> <p>Participants attendance registers</p> <p>-Meeting reports</p> <p>-Participants attendance registers</p> <p>-Supportive supervision report</p> <p>-Meeting report</p> <p>-Attendance register</p>
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	Challenges at Subnational level		sectoral preparedness and response frameworks to health related emerging and re-emerging health threats iv. Conduct training to orient personnel on Multi-sectoral preparedness and response frameworks to health related emerging and re-emerging health threats	-Number of personnel oriented  -Attendance registers	-Training Reports
<b>Strategic pillar 4 – Research and development</b>					
<b>Strategic goal – To improve the health of humans, animals and the environment through evidence-based policy advisories</b>					
<b>Objective</b>	<b>Strategy</b>	<b>Target</b>	<b>Activities</b>	<b>Indicator</b>	<b>Means of verification</b>
4.1 Increase the volume and quality of OH research	4.1.1 Engage relevant OH stakeholders to develop OH research agenda	4.1.1.1 Identify One Health research priorities by June 2023.	Identify One Health stakeholders  Conduct One Health stakeholders mapping  Establish TWGs to identify One Health research priorities	- List of stakeholders  -Maps of One Health stakeholders  Number of TWGs established	- List of One Health stakeholders in place  - Maps of One Health stakeholders in place  ToRs for TWGs in place  Workshop proceedings
			Conduct Workshop to develop national One Health research agenda	Number of research agenda developed	

		4.1.1.2 Align Institutional research agenda to national One Health research agenda by June 2023	Sensitize institutions to align their research agenda to the national One Health research agenda	Number of sensitization meetings conducted	- Sensitization reports in place
		4.1.1.3 Promote collaborative research projects among One Health research stakeholders	Conduct review workshops to align sectoral research agenda to include One Health in line with the national agenda	-Number of documents reviewed -National One Health research agenda developed	-Printed copies of the developed and revised documents
	4.1.2 Promote collaborative research projects among One Health research stakeholders	4.1.2.1 Create and maintain an inventory of available research resources for One Health by June 2027	Create an inventory of available research resources for One Health	-1 inventory of One Health research resources in place	-Inventory of One Health research resources in place
		4.1.2.2 Develop collaborative proposals addressing One Health priorities among participating institutions by June 2027	Create Research Groups to respond to various calls for One Health researches	-Number of collaborative One Health research proposals developed and submitted for funding -Number of on-going One Health projects -Number of collaborative agreements signed -Number of newly established research groups addressing One Health	-Funder/Sponsor communications -Signed collaborative agreements -Signed grants contracts
	4.1.3 Develop new and utilize existing research forums for dissemination of One Health research	4.1.3.1 Develop new One Health research forum by June 2027 4.1.3.2 Increase participation of One Health researchers in research forums (e.g., TPHA,	i. Develop MoU for One Health research forum ii. Register newly developed One Health forum to a relevant regulatory body	-MoU developed  -One-Health researchers' forum launched -Registration certificate	-Number of signed MoUs -Certificate of registration in place -Launching report -Conference proceedings in place

		TVA, TAWIRI, NIMR etc.) to disseminate One Health research findings by June 2027	<p>iii. Launching and operationalize the developed One Health research forum</p> <p>iv. Sensitize various One Health research groups to disseminate research findings in different forums</p> <p>v. Present research findings from various One Health Research Groups in research forums</p>	<p>-Number of One Health research groups sensitized</p> <p>-Number of presentations at research dissemination events per annum</p> <p>-Number of conference proceedings</p>	
	4.1.4 Utilize technologies and innovations to solve One Health challenges	4.1.4.1 Increase number of technologies and innovations to address One Health challenges by June 2027.	<p>i. Identify, review and select technologies and innovations relevant to One Health</p> <p>ii. Roll out the selected technologies and innovations to address One Health challenges</p>	<p>-Number of technologies and innovations identified, reviewed and selected</p> <p>-Number of technologies deployed. and innovations deployed.</p>	<p>-List of technologies an innovation in use</p> <p>-Reports of the technological/innovations roll out</p>

**Strategic pillar 5: Awareness, Advocacy and Communication**

**Strategic goal: Enhance awareness, advocacy and communication on One Health for professionals, policy makers and the community**

Objective	Strategy	Target	Activities	Indicator	Means of verification
5.1 To increase awareness on One Health at community level	5.1.1 Develop and disseminate ICE materials for increasing awareness to different One Health actors	5.1.1.1 Develop and print ICE promotion materials for increasing awareness on One Health by 2027	i. Conduct preliminary meeting to identify stakeholders and plan for the workshops to develop ICE One Health promotional materials  ii. Conduct 2 workshops for developing zero draft of ICE One Health promotion materials  iii. Conduct 1 workshop for finalizing ICE One Health promotion materials  iv. Print ICE One Health promotion materials	-Meeting conducted   Number of ICE One Health promotion materials developed  -Types of ICE One Health promotion materials developed -ICE One Health promotion materials printed	-List of attendees   Workshop reports   -Printed ICE Materials in place -Types of IEC materials in place   -Dispatch of materials handed over to the regions and districts  -Dissemination report
		5.1.1.2 Disseminate ICE and One Health promotion materials for increasing awareness by 2027	i. Distribute ICE One Health Promotional materials to regions and districts  ii. Conduct five dissemination meetings for national, regional decision makers	-Number of regions and districts where ICE One Health promotion materials were distributed  -Number of dissemination meetings conducted at different levels	

			iii. To conduct 20 dissemination workshops/seminars for One Health actors	-Number of stakeholders participating in dissemination workshops/seminars	-Participant attendance register
	Sensitize the public and media on One Health through media and other forum	5.1.1.1 Conduct One Health sensitization activities during global and national commemoration One Health related days (such as WAAAW, World rabies day, World Environment Day) by 2027	<p>i. Prepare One Health global and national commemoration days annual calendar.</p> <p>ii. Facilitate stakeholders to conduct One Health awareness during OH days</p>	<p>-One Health global and national commemoration days calendar in place</p> <p>-Number of One Health related days where OH awareness activities were conducted</p> <p>-Number of regions and districts that commemorated OH related days</p>	<p>-Calendar</p> <p>-Event reports</p>
		5.1.1.2 Conduct One Health sensitization meetings/campaigns to the community and relevant stakeholders by 2027	Mobilize stakeholders to conduct OH sensitization meetings/campaigns	<p>-Number of meetings/campaigns carried out by different stakeholders</p> <p>-Number of stakeholders participated during sensitization meetings/campaigns for each district</p>	<p>-Minutes of meetings/ report of campaigns</p> <p>-Participant attendance registers</p>
		5.1.1.3 Conduct media briefing, sensitization and engagement by 2027	<p>i. Conduct media briefings with journalists</p> <p>ii. Conduct media sensitization</p>	<p>-Number of media briefings held on OH</p> <p>-Number of sensitization workshops conducted on OH</p>	<p>Sensitization/engagement report</p> <p>Media briefings report</p>

			workshops to journalists			
			iii. Conduct engagement activities with journalists			List of journalists /media houses participated
			Conduct meetings/workshops with policy makers, decision makers and other stakeholders			-Minutes of meetings -Workshop reports -Participant attendance registers
5.2 To enhance advocacy on One Health approach to policy makers, decision makers and other stakeholders	5.2.1 Secure high-level buy-in and support for One Health activities from policy, decision makers and other stakeholders	5.2.1.1 Conduct advocacy meetings and/or workshops to policy makers, decision makers and other stakeholders at national and sub-national level by 2027				
	5.2.2 Developing, disseminating, and operationalizing One Health Advocacy	5.2.2.1 Develop One Health Advocacy Guideline by 2027	i. Conduct preparatory meetings to develop advocacy guidelines			-Minutes of meetings
			ii. Conduct 2 workshops for developing One Health Advocacy Guideline			-Reports of workshop
			iii. Conduct 1 workshop for developing One Health Advocacy Guideline			-Printed One Health Advocacy Guideline
			iv. Print One Health			
			v. Advocacy Guideline			

		5.2.2.1 Develop One Health Advocacy Toolkit by 2027	<p>i. Conduct preparatory meetings to develop One Health Advocacy Toolkit</p> <p>ii. Conduct 2 workshops for developing One Health Advocacy Toolkit</p> <p>iii. Conduct 1 workshop for developing One Health Advocacy Toolkit</p> <p>iv. Print One Health Advocacy Toolkit</p>	<p>-Minutes of meetings</p> <p>Reports of workshop</p> <p>Printed One Health Advocacy Toolkit</p>
		5.2.2.2 Disseminate One Health Advocacy Guidelines by 2027	<p>i. Distribute One Health Advocacy guidelines to regions and districts</p> <p>ii. Conduct dissemination conference for disseminating One Health Advocacy Guidelines</p>	<p>-Dispatch of materials handed over to the regions and districts</p> <p>-Dissemination report</p> <p>-Participant attendance register</p>
		5.2.2.3 Disseminate One Health Advocacy Toolkit by 2027	<p>i. Distribute One Health Advocacy toolkit to regions and districts</p>	<p>-Dispatch of materials handed over to the regions and districts</p>

5.3 Strengthen communication systems and capacity among One Health key stakeholders at all levels	5.3.1 Develop and Disseminate One Health Communication strategy	5.3.1.1 Prepare One Health Communication Strategy by 2027	ii. Conduct dissemination workshops/seminars for disseminating One Health Advocacy toolkit i. Conduct preparatory meetings to develop One Health Communication Strategy ii. Conduct 2 workshops for developing One Health Communication Strategy iii. Conduct 1 workshop for finalizing One Health Communication Strategy iv. Print One Health Communication Strategy i. Launch One Health communication strategy	-Number of stakeholders participating in One Health Advocacy Toolkits dissemination workshops/seminars -Number of preparatory meetings conducted -Number of workshops/seminars carried out -Communication strategy in place -Number of stakeholders attended the launch of One Health communication strategy	-Dissemination report -Participant attendance register -Minutes of meetings Workshop reports and proceedings -List of participants Printed strategy copies -One Health Communication strategy launch report
		5.3.1.2 Disseminate Communication strategy through workshops/ seminar by 2027			

			ii. Conduct five dissemination meetings on One Health communication strategy	-Number of stakeholders participating in One Health communication strategy dissemination -Number of stakeholders participating in dissemination meetings	-Participant attendance registers
			iii. Distribute One Health communication strategy to stakeholders	Number of One Health communication strategies disseminated to stakeholders	
	5.3.2 Creation and operationalization One Health data and information sharing system at all levels	5.3.2.1 Develop web portal on One Health data and information by 2027	i. Conduct technical meetings on developing web-portal	- Meetings conducted	-Minutes of meeting
			ii. Engage a consultant to develop web-portal	-Web portal in place Contract and terms of reference between OHS and the consultant	-Data sheets from One Health database -Signed contract
		5.3.2.2 Operationalize web portal on One Health data and information by 2027	Procure software for the web-portal	Installed software	Software procurement document

### Strategic Pillar 6 – Training and education

#### Goal: Enhance training and education on One Health Approach for pre and in-service personnel in human, animal and the environmental health sectors

Objective	Strategy	Target	Activities	Indicator	Means of verification
6.1 Enhance knowledge and skills on One Health Approach through in-service and pre-service trainings from national to district level.	6.1.1 Engage training and education institutions, Sector Ministries, Regulatory and Professional Bodies in supporting One Health integrated trainings	6.1.1.1 Health engagement meeting for Training and Education Institutions, Sector Ministries Regulatory and Professional Bodies hosted annually.	i. Prepare One, OH engagement meetings for Training and Education institutions, Sector Ministries Regulatory and Professional Bodies	•Number of meetings hosted	-Meeting minutes / Reports -Participants attendance list -Activity reports
			ii. Host annual engagement meeting for Sector Ministries, training and educational, institutions for OH Approach training and education activities.		
		6.1.1.2 Gaps for OH approach identified by June 2023	iii. Host annual engagement meeting for regulatory bodies and professional bodies for OH Approach training and education activities.		
			i. Prepare Meeting for identification of gaps for OH approach	•Number of meetings for OH gaps identified	•Minutes of the Meeting •Participants attendance list •OH Approach Training Gap Report
			ii. Conduct technical Meeting to identify gaps for OH approach		

		6.1.1.3 Identified OH approach gaps reviewed and incorporated in new training curricula by June 2023	<p>i. Plan Meeting for Conducting technical Meeting to review training curricula and incorporate identified OH approach gaps</p> <p>ii. Conduct technical Meeting to review training curricula and incorporate identified OH approach gaps.</p> <p>iii. Disseminate reviewed training curricula with OH training package</p>	<p>•Number of new training curricula incorporating reviewed OH gaps</p>	<p>•Minutes of the Meeting</p> <p>•Participants attendance list</p> <p>•OH Approach Gaps Review Report</p> <p>•Curricular with incorporated OH gaps</p>
		6.1.1.4 Training of trainers for One Health Approach conducted by June 2024	<p>i. Prepare Training material for Training of Trainers (ToT) for One Health Approach</p> <p>ii. Procure training materials for Training of Trainers (ToT) for One Health Approach</p> <p>iii. Conduct Training of Trainers (ToT) for One Health Approach</p> <p>iv. Assess effectiveness of OH Approach ToT training</p>	<p>•Number of ToTs trained on One Health</p>	<p>•ToT Training Report</p> <p>•Participant attendance lists</p>

			<p>6.1.1.5 Training on OH Approach for 3450 pre-service trainees and 2000 in-service personnel conducted by June 2027</p>	<p>i. Develop training plan for OH Approach for training of 3450 pre-service trainees and 2000 in-service personnel</p> <p>ii. Procure training materials for Training of Trainers (ToT) for One Health Approach</p> <p>iii. Conduct training on OH Approach for 3450 pre-service trainees</p> <p>iv. Conduct training on OH Approach for 2000 in-service personnel</p> <p>v. Assess effectiveness of Pre-service and In-service OH trainings</p>	<p>•Number of in-service and pre-service personnel trained</p>	<p>•Pre-service Training Report</p> <p>•In-service Training Report</p> <p>•Participant attendance lists</p>
		<p>6.1.1.6 Five CPD short course for In-service personnel on OH Approach developed by June 2027</p>	<p>i. Develop five CPD short course for In-service personnel on OH Approach</p> <p>ii. Procure training materials for One Health Approach CPD training</p> <p>iii. Conduct at least one developed multidiscipline and multi-sectoral OH CPD training program</p>	<p>•Number of OH-Approach CPD short courses developed</p> <p>•Number of OH CPD conducted</p>	<p>•Developed OH CPD short courses</p> <p>•OH CPD short course curricula and materials development report</p> <p>•OH CPD Report</p> <p>•OH CPD participants attendance list</p>	

	6.1.2 Develop Field learning programs for one health	6.1.2.1 Two Student training simulation models developed by June 2027	i. Develop two Student training simulation models ii. Conduct training using simulation models	•Number of student training simulation models developed	•Student training simulation models •Simulation models Activity Reports
		6.1.2.2 Hundred (100) Student's OH Approach Innovation Clubs in training and educational Institutions established by June 2027	i. Conduct sensitization meetings for establishing OH Approach Innovation Clubs ii. Establish 100 Student's OH Approach Innovation Clubs in training and educational institutions iii. Supervise OH Approach Innovation Clubs in training and educational institutions	•Number of Students OH Approach Innovation Clubs established.	•Students OH Approach Innovation Clubs •OH Approach Innovation Clubs establishment reports
		6.1.2.3 Student-learning and service model to control / eliminate infectious disease rates created annually.	i. Create student-learning and service model to control / eliminate infectious disease rates in each year ii. Conduct student awareness creation seminar on learning and service model to control / eliminate infectious disease rates in each year	•Number of learning and service model created	•Developed Learning and service model •Learning and service model development Reports



	learning in One Health Approach		remedial training modules ii. Disseminate curricula for OH remedial training modules iii. Conduct OH remedial training using developed modules iv. Assess effectiveness of OH remedial training curricula	modules developed/reviewed.	•OH remedial training modules development reports
		6.1.3.2 Four (4) Teaching facilitation guides for OH Approach remedial training modules, for pre-service and in-service personnel developed by June 2027.	i. Develop budget for developing four (4) Teaching Facilitation Guides for OH training modules, for pre-service training at University, and Technical Training Institutions ii. Mobilize resources for developing four (4) Teaching Facilitation Guides for OH Approach remedial training modules, for pre-service training at University, and Technical Training Institutions	•Number of teaching Facilitation guides developed	•Teaching Facilitation Guides •Teaching Facilitation Guides Development Report •OH books, •OH manual •OH compendia •Training materials development activity reports

			iii. Identify mechanism (consultancy, outsourcing, institution engagement, OH program) for developing four (4) Teaching Facilitation Guides for OH Approach remedial		
		6.3.3.OH Approach books (p-books & e-books), one (1) manual and seven (7) compendia for pre-service and in-service personnel developed by June 2027	i. Develop costed plan for developing OH Approach books (p-books & e-books), one (1) manual and seven (7) compendia for pre-service and in-service personnel ii. Mobilize resources for developing OH Approach books (p-books & e-books), one (1) manual and seven (7) compendia for pre-service and in-service personnel		

		iii. Identify mechanism (consultancy, outsourcing, Institution engagement, OH program) for developing (p-books & e-books), one (1) manual and seven (7) compendia for pre-service and in-service personnel			
		iv. Facilitate development of OH Approach books (p-books & e-books), one (1) manual and seven (7) compendia for pre-service and in-service personnel			
		v. Disseminate developed OH Approach books (p-books & e-books), one (1) manual and seven (7) compendia for pre-service and in-service personnel			

## 4. RESULTS FRAMEWORK

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### 4.1 Introduction

This chapter provides a basis on how various interventions are linked to the Objectives and how they will be monitored; what kind of reviews will be undertaken over the Strategic Planning Cycle; what type of evaluations will be undertaken to show that the interventions have either led or are leading to achievement of the intended outcomes; and how progress of the various interventions will be reported.

### 4.2 Result Chain

A combination of objectives and targets in the Strategic Plan and activities and inputs in the Medium-Term Expenditure Framework (MTEF) form One Health result chain. The basic assumption is that, there is causal linkage in the various elements of OH result chain. The inputs, that is, utilization of resources will lead to achievement of the activities, which will contribute to achievement of outputs. Achievement of outputs will lead to achievement of outcomes.

### 4.3 The Result Framework Matrix

This matrix contains objectives, expected outcomes and indicators. It depicts how the objectives will be achieved and how the results will be measured. The indicators in the matrix will be used to track progress towards achievement of outcomes and objectives. The Result Framework matrix is detailed below:

**Table 3: Results Matrix**

STRATEGIC PILLARS	OBJECTIVE CODE	OBJECTIVE	EXPECTED OUTCOMES	INDICATORS
Coordination	A	1.1 Enhance the operational capacity of One Health section	i.	Information sharing between sectors. Number of joint meetings between sectors and ministries Number of OH section staff and focal persons trained TWGs performance appraisal report
			ii.	
			iii.	
			iv.	
			v.	
B	1.2 Increase resources to support One Health activities;	i.	% increase of OH financially supported programmes	
		ii.	Number of OH staffs recruited	
C	1.3 Strengthen working relationship between OH section, local and international One Health consortia	Improved working relationship between OH section, local and international One Health consortia	-Number of OH consortia meetings OH section staffs participated  -Number of collaborative activities planned	
D	2.1 To strengthen joint surveillance, of prioritized zoonotic diseases, AMR, and other public health threats at all levels	i.	Improved surveillance data sharing and feedback across sectors	Number of surveillance reports shared among sectors
		ii.	Improved quality and quantity of surveillance data and utilization for decision making	- No of quarterly surveillance data sharing meetings undertaken  - Number of surveillance data utilized for decision making

			iii. Increased engagement and participation of community in surveillance and reporting	Percentage of quality surveillance data
E	2.2 To strengthen, prevention and control of prioritized zoonotic diseases, AMR, and other public health threats at all levels		<p>i. Enhanced implementation of prevention and control strategies for prioritized zoonotic diseases, AMR, and other public health threats at all levels</p> <p>ii. Improved capacity of personnel in prevention and control of prioritized zoonotic diseases, AMR, and other public health threats at all levels</p> <p>iii. Increased awareness and engagement of actors in prevention and control of prioritized zoonotic diseases, AMR, and other public health threats at all levels</p>	<p>Percentage increase in coverage of vaccination against PZD</p> <p>No of personnel trained on prevention and control of PZDs, AMR and other public health events</p> <p>No of personnel trained and engaged on prevention and control of PZDs, AMR and other public health events</p>
F	2.3 To enhance prioritized zoonotic disease detection capacity at national (100%), zonal/regional (60%) and district (30%) levels		<p>i. Improved laboratory capacity to detect prioritized zoonotic diseases, AMR, and other public health threats at all levels</p> <p>ii. Improved inter-sectoral laboratory sharing of information for informed decision making</p> <p>iii. Improved biosafety and biosecurity measures</p>	<p>Number of laboratories with capacity to detect prioritized zoonotic diseases, AMR, and other public health threats</p> <p>- Number of laboratory reports shared among sectors</p> <p>- No of quarterly laboratory data sharing meetings undertaken</p> <p>- Number of facilities implementing biorisk management</p> <p>- Number of facilities with biorisk management manual</p>
G	3.1 Strengthen frameworks for multi-sectoral preparedness and response to emerging and re-emerging Health Related Threats		Mechanism for multi-sectoral Preparedness and response frameworks available at all levels	Number of Coordinated multi-sectoral emergency responses to emerging and re-emerging Health Related Threats
<b>Preparedness and Response</b>				

	H	3.2 Strengthen operationalization of multi-sectoral preparedness and response frameworks to emerging and re-emerging Health Related Threats at all levels	<p>i. Increased number of Functional multi-sectoral Emergency Operational Centres at sub national level</p> <p>ii. Improved participation of response committees in multi-sectoral approach at subnational level</p>	Number of Functional multi-sectoral Emergency Operational Centres at sub national levels
<b>Research and Development</b>	I	4.1 Increase the volume and quality of OH research	<p>i. Improved OH research collaborations within and outside Tanzania</p> <p>ii. Increased funding to support OH research activities</p> <p>iii. Technologies and innovations to solve OH challenges generated</p>	<p>The number of collaborative projects</p> <p>% of fiscal budget allocation for OH research in line ministry</p> <p>New innovations/technologies developed</p>
<b>Awareness, Advocacy and Communication</b>	J	5.1 Increase awareness on One Health at community level	Awareness of the community members regarding different One Health matters increased	% of community members who are aware of different OH matters
	K	5.2 Enhance advocacy on One Health approach to policy makers, decision makers and other stakeholders	Appreciation on the importance of One Health approach among policy makers, decision makers and other stakeholders improved	% of policy makers, decision makers and other stakeholders who appreciate the One Health approach
	L	5.3 Strengthen communication systems and capacity among One Health key stakeholders at all levels	One Health information sharing mechanism among, sector ministries and other relevant stakeholders strengthened.	Number of sector ministries and other relevant stakeholders sharing One Health Information
<b>Training and Education</b>	M	6.1 Enhance knowledge, skills and practice on One Health Approach through in-service and pre-service trainings from national to district level.	Increased understanding and adoption of One Health Approach Concept among policy makers, decision makers and the community.	Proportion of policy makers, decision makers and the community with clear understanding and adopting OH Approach Concept.

## 4.4 MONITORING & EVALUATION

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### 4.4.1 Monitoring and Evaluation

The purpose for monitoring is to ensure that the Strategic Plan is implemented according to schedule and if there are any deviations, appropriate and timely actions should be taken. Monitoring will be carried out on a continuous basis while evaluation will be done periodically. Monitoring will involve regular data collection and analysis on the progress of implementation of the plan to ensure that the implementation is on track and objectives will be met. The results from the analysis will then be used to inform decision makers to take corrective measures on time where abnormalities have been noted.

### 4.4.2 Monitoring Plan

The Monitoring plan consists of continuous collection of data of designated indicators and their descriptions; indicator targets values; methods of analysis; indicator reporting frequencies; and responsible officer for data collection, analysis and reporting. Tracking of the indicators will be done quarterly.

### 4.4.3 Evaluation Plan

The Evaluation Plan details evaluation studies to be conducted during the Strategic Planning Cycle. It entails methodology, timeframe and responsible person to examine the outcome/impact of the program also referred to as the change from the baseline situation. The evaluation studies intend to obtain evidence as to whether the interventions have led to implementation effectiveness, efficiency, relevance, sustainability and impact to inform programming decisions. A total of two (2) evaluations will be conducted over the period of five years of implementation. The first one will be conducted in the third year of implementation (mid-term evaluation) and the second after closeout (terminal evaluation).

An example of monitoring and evaluation Plan Matrix is detailed below:

## The example of monitoring and evaluation plan matrix

Pillar: Coordination												
Objective	Target indicator	Target indicator Baseline	Outcome indicator	Outcome indicator baseline	Responsible	Means of verification	Cost	2023	2023	2024	2025	2027
To enhance the operational capacity of One Health coordinating desk	Establish Health Working Groups by 2023	One Technical Working Groups by 2023	Number of TWGs established			Minutes of One Health stakeholders meeting						
			Number of TWG members appointed			Copy of nomination						

## 4.5 Reporting Plan

The reporting plan is prepared in accordance with statutory requirements, planning and Budgeting Guideline (PBG) and other Manuals or as may be required from time to time.

### 4.5.1 Internal Reporting Plan

The Internal Reporting Plan consist of three types of reports namely Sections, Divisions and Management reports. The reports will be prepared on weekly, monthly, quarterly, annually or on demand basis and submitted to various internal stakeholders including Head of Divisions/ Units, and Management:

**Table 4: Internal Reporting plan**

S.N	Source of Report	Types of Report	Recipient	Frequency	Responsible Person
1.	Section	<ul style="list-style-type: none"><li>Section's implementation reports</li></ul>	Head of Section	Weekly	HoS
2.	Directorate /Units	<ul style="list-style-type: none"><li>Implementation Reports</li></ul>	Management	Monthly	HoD/HoU

### 4.5.2 External Reporting Plan

This Plan involves preparation of two types of reports namely; Implementation report and Financial report. The frequencies of reporting being; Quarterly, Semi-annual and Annual reports. These reports are submitted to various external stakeholders, including line ministries, MoFP, DPs, and the Parliament. The Plan is detailed below:

**Table 5: External Reporting Plan**

S.N	Source of Report	Types of Report	Recipient	Frequency	Responsible Person
3.	Directorate /Units	Activity and financial reports		Quarterly	HoD/HoU
4.	Management	Activity and financial reports		Quarterly	CEO

#### 4.6 Plan Review

A total of four (4) formal annual reviews will be carried out during the Strategic Planning Cycle. The aim of these reviews is to track annual progress of implementation of the one health activities according to the plan.

The reviews will focus on activities carried out, outputs and outcomes to assess issues, challenges and lessons learnt over the year. Findings from the reviews will be used to prepare a report to inform decision-makers on progress of implementation and adjustments required if any.

## Appendix 1: NATIONAL ONE HEALTH STRATEGIC PLAN 2023 – 2027

### 2021 ANNUAL ACTION PLAN

Strategic pillar 1: Coordination										
Strategic goal: To strengthen and institutionalize One Health coordination at all levels										
Objective	Strategy	Target	Activities	Budget Estimate	Responsible Institution(s)	TIME FRAME				
						Year 1	Year 2	Year 3	Year 4	Year 5
1.1 To enhance the operational capacity of One Health coordinating desk	1.1.1 Strengthen Technical Working Groups (TWG) to be functional, active and well-coordinated	1.1.1.1 Establish One Health Technical Working Groups by 2023	i. Identify and appoint TWG members	0	PMO-OHS					
			ii. Conduct workshop to develop ToRs for TWGs	20,000,000						
		1.1.1.2 Conduct quarterly meetings for TWGs by 2027	i. Invite identified stakeholders	0	PMO-OHS					
			ii. Prepare meeting documents and needed resources	0						
			iii. Conduct meetings	400,000,000						
		1.1.1.3 Conduct biannual national,	i. Invite identified stakeholders	0	PMO-OHS					

			regional and district multi-sectoral OH technical teams' meetings by 2027		ii. Prepare meeting documents and needed resources iii. Conduct meetings	0 200,000,000					
			1.1.1.4 Organize capacity building training workshops for TWGs by 2027		i. Conduct training needs Assessment ii. Identify and communicate with training institutions iii. Conduct training	10,000,000 0 100,000,000					
			1.1.2 Organize capacity building training workshops for OHS Staff and OH focal persons		i. Conduct training Needs Assessment ii. Identify and communicate with training institutions iii. Conduct training	0 0 60,000,000					
1.2 To increase resources to support One Health activities			1.2.1 Enhance resource mobilization and allocation from the government, development partners and private sectors		i. Identify stakeholders and organize a workshop ii. Draft a Resource Mobilization Strategy document iii. Disseminate signed resource mobilization	0 100,000,000 50,000,000	PMO-OHS				



between OHS, local and international One Health consortia	and international One Health consortia	Organize One Health National platform using existing structure by 2027	ii. Prepare meeting documents and needed resources	0						
			iii. Conduct National platform for One Health	500,000,000						
		1.3.1.2 Conduct Quarterly meetings of OH focal persons at village, ward, districts, regional and ministry levels by June,2027	i. Identify and invite stakeholders	0						
			ii. Prepare documents for a meeting	0						
			iii. Conduct Meeting	300,000,000						
		1.3.1.3 Facilitate OHS staff to attend One Health consortia meetings by June, 2027	Identify number of OHS staff and allocate funds to facilitate their attendance to OH Consortia meetings	50,000,000						

**Strategic Pillar 2: Surveillance, Detection, Prevention and Control**

**Strategic Goal: Functional and quality joint human and animal health surveillance systems to reduce the burden of zoonotic diseases, Antimicrobial Resistance (AMR) and other one health events established**

Objective	Strategy	Target	Activities	Budget Estimate	Responsible Institution(s)	TIME FRAME				
						Year 1	Year 2	Year 3	Year 4	Year 5
2.1 To strengthen joint surveillance of prioritized zoonotic diseases, AMR, and other public health threats at all levels	2.1.1 Establish integrated/One Health surveillance system at national, zonal/regional and district levels	2.1.1.1 Develop guidelines, SOPs, manuals for surveillance of PZD, AMR and other public health events by 2027	i. Develop guidelines, SOPs, manuals for surveillance of PZD, AMR and other public health events  ii. Conduct dissemination workshop  iii. Undertake supportive supervision	80,000,000	PMO-OHS, Sector Ministries (VPO-Environment, MoH, MLF, MoA, MNRT)					
	2.1.2 Enhance integrated surveillance for zoonotic disease, AMR and public health threat at national, zonal/regional, district and community levels	2.1.2.1 Conduct integrated surveillance for zoonotic diseases at zonal, regional and district and community levels	i. Train public and animal health staff on integrated Indicator and Event based surveillance	160,000,000						
				50,000,000						



2.2 To strengthen, prevention and control of prioritized zoonotic diseases, AMR, and other public health threats at all levels	2.2.1 Improve cross-border sharing of information on zoonotic diseases, AMR and other events	2.2.1.1 Conduct risk communication and community engagement on zoonotic diseases, AMR and other public health events by 2027	interpretation at national and subnational levels	100,000,000					
			i. Conduct KAP studies on zoonotic diseases, AMR and other public health events	100,000,000					
			ii. Develop and disseminate IEC materials on zoonotic diseases, AMR and other public health events	60,000,000					
			iii. Train community on reporting, prevention and control of zoonotic diseases, AMR and other public health events	100,000,000					
			iv. Conduct cross-border	120,000,000					







Strategic pillar 3: Preparedness and Response										
Strategic goal: To strengthen multi-sectoral emergency preparedness and early response frameworks for One Health events										
Objective	Strategy	Target	Activities	Budget Estimate	Responsible Sectors & Institution(s)	Year 1	Year 2	Year 3	Year 4	Year 5
3.1 Strengthen frameworks for multi-sectoral preparedness and response to emerging and re-emerging Health Related Threats	3.1.1 Review the existing multi-sectoral emergency preparedness and response frameworks	3.1.1.1 Review Multi-sectoral preparedness and response frameworks by 2027	i. Identify and map the key stakeholders to involve in the review process	23,000,000	OHDS					
			ii. Conduct two workshops for key stakeholders to review the existing multi-sectoral preparedness and response frameworks by 2027	44,000,000	OHDS					
			iii. Conduct One validation workshop of key stakeholders to validate the frameworks that entails	18,000,000	OHDS					











**Strategic pillar 4 – Research and development**

**Strategic goal – To improve the health of humans, animals and the environment through evidence-based policy advisories**

Objective	Strategy	Target	Activities	Budget Estimate	Responsible Sectors & Institution(s)	Year 1	Year 2	Year 3	Year 4	Year 5
4.1 Increase the volume and quality of OH research	4.1.1 Engage relevant OH stakeholders to develop OH research agenda	4.1.1.1 Identify One Health research priorities identified by June 2023	i. Identify One Health stakeholders	20,000,000	OHS, Universities, Research Institutions (i.e SUA, MUHAS, NIM-AIST, UDOM, NIMR, TAWIRI, TARI, TALIRI e.tc.)					
			ii. Conduct One Health stakeholders mapping	80,000,000						
			iii. Establish TWGs to identify One Health research priorities	50,000,000						
			iv. Conduct Workshop to develop national One Health research agenda	40,000,000						
		4.1.1.2 Align institutional research agenda to national One Health research	Sensitize institutions to align their research agenda to the national One Health research agenda	25,000,000	OHS, Universities, Research Institutions (i.e SUA,					







**Strategic pillar 5: Awareness, Advocacy and Communication**

**Strategic goal: Enhance awareness, advocacy and communication on One Health for professionals, policy makers and the community**

Objective	Strategy	Target	Activities	Budget Estimate	Responsible Sectors & Institution(s)	Year 1	Year 2	Year 3	Year 4	Year 5
5.1 To increase awareness on One Health at community level	5.1.1 Develop and disseminate ICE materials for increasing awareness to different One Health actors	5.1.1.1 Develop and print ICE promotion materials for increasing awareness on One Health by 2027	i. Conduct preliminary meeting to identify stakeholders and plan for the workshops to develop ICE One Health promotional materials	200,000,000	PMO-OHS, Sector					
			ii. Conduct 2 workshops for developing zero draft of ICE One Health promotion materials	50,000,000	PMO-OHS, Sector Ministries (VPO-Environment, MoH, MLF, MoA, MNRT, CSOs,					
			iii. Conduct 1 workshop for finalizing ICE One Health promotion materials	30,000,000	Development partners)					













	information sharing system at all levels	Health data and information by 2027	developing web-portal										
			ii. Engage a consultant to develop web-portal	50,000,000									
		5.3.2.2 Operationalize web portal on One Health data and information by 2027	Procure software for the web-portal	0									
<b>Strategic Pillar 6 – Training and education</b>													
<b>Goal: Enhance training and education on One Health Approach for pre and in-service personnel in human, animal and the environmental health sectors</b>													
<b>Objective</b>	<b>Strategy</b>	<b>Target</b>	<b>Activities</b>	<b>Budget Estimate</b>	<b>Responsible Sectors &amp; Institution(s)</b>	<b>Year 1</b>	<b>Year 2</b>	<b>Year 3</b>	<b>Year 4</b>	<b>Year 5</b>			
6.1 Enhance knowledge and skills on One Health Approach through in-service and pre-service trainings in technical education institutions from national to district level.	6.1.1 Engage Training and Education institutions, Sector Ministries, Regulators and Professional Bodies	6.1.1.1 One, Health engagement meeting for Training and Education Institutions, Sector Ministries Regulators and Professional Bodies hosted annually	i. Prepare One, OH engagement meetings for Training and Education institutions, Sector Ministries Regulatory and Professional Bodies	100,000,000	OHS, Sector-Ministries, Universities, Research Institutions, Development Partners								



























## Appendix 2: LIST OF CONTRIBUTORS

The following experts participated in review process of the One Health Strategic Plan

Sn	Name	Title	Institute
1	Dr. Julius Keyyu	Director of Research	TAWIRI
2	Mr. Jacob Lusekelo	Laboratory Scientist	MoH
3	Mr. Jubilant Mwangi	Plant Health	MoA
4	Mr. Hargeney Chitukolo	Ass. Administrator	RAS ARUSHA
5	Mr. Maliki Ali Maliki	Principal Environmental Management Officer	VPO /DOE
6	Ms. Gloria C. Omari	Research/Technical Support Coordinator	TMDA
7	Prof. Eron Karimuribo	DVC-ARC SUA	SUA
8	Pro. Robinson Mdegela	Aquatic Specialist	SUA
9	Prof. Deodatus Kakoko	One Health Focal person	MUHAS
10	Prof. Japhet Killewo	Country Manager /Public Health	AFROHUN
11	Dr. Charles Massambu	BSBS Expert	UDOM
12	Dr. John Kunda	Epidemiologist/Researcher	NIMR
13	Mr. Benedikt Kisaka	DRR Expert	Dar-MAERT
14	Mr. Erick Venant	Pharmacist/ AMR expert	RBA Initiative
15	Dr. Grace Saguti	Public Health	WHO
16	Mr. Gerald Manase	One Health Focal Person	PO-RALG
17	Mr. Harrison Chinyuka	NOH Coordinator	PMO
18	Dr. Justine Assenga	OHFP	MoLF
19	Mr. Godfrey Sanga	Admin. Officer	PMO
20	Dr. Baltazar Leba	OHS/AHFP	PMO
21	Dr. Gibonce Kayuni	AMR Expert	MoLF
22	Ms. Valentina Sanga	OHS/PHFP	PMO
23	Dr. Abubakar Hoza	Animal Health Expert	SUA
24	Dr. Christopher Mnzava	DRM Epert	Dar-MAERT
25	Dr. Benezeth Lutege	Veterinarian	MoLF
26	Dr. Zacharia Makondo	Lab Scientist	TVLA
27	Mr. Joseph Qamara	Environmental Expert	VPO /DOE
28	Dr. Khadija Omary	Veterinary Officer	Zanzibar
29	Ms. Siana Mapunjo	AMR Expert	MoH
30	Dr. Ndekya Oriyo	Research Scientist	NIMR

31	Mr. Muhidin Omary	AMR Epert	Zanzibar
32	Mr. Robert Fyumangwa	Research Scientist	TAWIRI
33	Prof. Rudovic Kazwala	Animal Health Expert	SUA
34	Mr. Ibrahim Hamidu	Data and Communication	PMO
35	Mr. Ewald Bonifasi	DRR Speciliast	PMO
36	Ms. Jubilate Benard	Public Health	MoH
37	Prof. Hezron Nonga	DVS	MoLF
38	Mr. Kalelema Mataba	Agriculture Officer	MoA
39	Dr. Idrissa Chuma	Senior Conservation Officer	TANAPA
40	Mr. Charles Msangi	Ass. Director Disaster Research	PMO
41	Dr. Iddi Lipende	Wildlife Expert	TAWIRI
42	Ms. Wahab Kimaro	Animal Health Expert	SUA
43	Dr. Niwael Mtui	Animal Health Expert	FAO
44	Mr. Elias Ponsiano	Monitoring and Evaluation Expert	FAO







