

One Health National Bridging Workshop the Federal Republic of Somalia

13-15 November 2023 Nairobi, Kenya



Organized and facilitated by:

World Health Organization, World Organisation for Animal Health, Food and Agriculture Organization of the United Nations, United Nations Environment Programme

In collaboration with:

Ministry of Health, Somalia; Ministry of Livestock, Forestry and Range of Somalia; Ministry of Environment, Somalia; and Ministry of Agriculture and Irrigation, Somali

Acknowledgments

Organizers and participants would like to acknowledge the Pandemic Influenza Preparedness Secretariat and the Country Preparedness and IHR Unit of the WHO Health Emergencies Programme at the WHO Regional Office for the Eastern Mediterranean for funding this workshop. We acknowledge the funds from the World Organisation for Animal Health generously provided by the Federal Ministry for Economic Cooperation and Development (BMZ), Germany.

TABLE OF CONTENTS

ABLE OF CONTENTS	1
BBREVIATIONS & ACRONYMS	2
TRODUCTION	3
Background	3
Objectives of the workshop and expected outcomes	5
PORT ON THE SESSIONS	7
Opening Session	8
Session 1: The One Health Concept and National Perspectives	9
Session 2: Navigating the Road to One Health - Collaboration Gaps	11
Session 3: Bridges along the Road to One Health	13
Session 4: Crossroads – PVS Pathway and IHR MEF reports	15
Session 5: Road Planning	16
Session 6: Fine-tuning the road-map	17
Session 7: Way forward	18
Material and Shared drive	18
ORKSHOP OUTPUTS	19
Output 1: Assessment of levels of collaboration for 15 key technical areas	19
Output 2: NBW Roadmap - Objectives and actions identified per technical	areas
	20
ORKSHOP EVALUATION	27
PPENDIX	28
Annex 1: Workshop agenda	28
Annay 2: List of participants	21

ABBREVIATIONS & ACRONYMS

AMR Anti-microbial Resistance
CDC Centers for Disease Control

FAO Food and Agriculture Organization of the United Nations

HQ Headquarters

IHR International Health Regulations (2005)

JEE Joint External Evaluation

MEF Monitoring and Evaluation Framework
MoAl Ministry of Agriculture and Irrigation

MoECC Ministry of Environment and Climate Change

MoF Ministry of Finance

MoLFR Ministry of Livestock, Forestry and Range

MoP Ministry of Planning

MoU Memorandum of Understanding

NAP National Action Plan

NAPHS National Action Plan for Health Security

NBW National Bridging Workshop

OH One Health PH Public Health

PHEOC Public Health Emergency Operation Center

PVS Performance of Veterinary Services
SOP Standard Operating Procedures

TOR Terms of Reference

TWG Technical Working Group

UNEP United Nations Environment Programme

WHO World Health Organization

WHO-CPI World Health Organization – Country Preparedness & IHR

WOAH World Organisation for Animal Health

ZDP Zoonotic disease prioritization

INTRODUCTION

BACKGROUND

The health of humans, animals, and the environment is vitally interlinked. A majority of emerging and endemic human diseases originate in animals, whether directly, through consumption of contaminated food, or through environment exposure. Animal-specific diseases not only have indirect impacts on human health through factors such as food security and other ecosystem services, but also exert effects on livelihoods, and have a bidirectional impact on the environment, acting as drivers of biodiversity loss. The mis- and over-use of antimicrobials (antibiotics, anthelmintics, pesticides, etc.) to treat diseases, pests or disorders is now recognized as a global threat to humans and the environment.

Therefore, addressing zoonotic diseases, food safety concerns, antibiotic resistance, and other threats at the animal-human-environment interface requires cooperation and synergistic potential between public health, animal health, and environment sectors.

The World Health Organization (WHO), the World Organisation for Animal Health (WOAH), the Food and Agriculture Organisation of the United Nations (FAO) and the United Nations Environment Programme (UNEP), collectively referred to as the Quadripartite are the main international organizations responsible for proposing references and guidance for the public health, animal health and environment sectors respectively. The Quadripartite has actively promoted and implemented an intersectoral collaborative One Health approach between institutions and systems to prevent, detect, and control diseases among animals and humans. To this effect:

- WHO Member States have adopted the International Health Regulations (IHR, 2005), a legally binding instrument, for the prevention and control of events that may constitute a public health emergency of international concern. Various assessment and monitoring tools have been developed by WHO such as the IHR Monitoring and Evaluation Framework (MEF), which includes *inter alia* the State Party Self-Evaluation and Annual Reporting (SPAR) and the Joint External Evaluation (JEE) Tool.
- WOAH is the intergovernmental organisation responsible for the development of standards, guidelines and recommendations for animal health and zoonoses. These are laid down in the *Terrestrial and Aquatic Animals Codes* and Manuals. WOAH has also developed the Performance of Veterinary Services (PVS) Pathway, which is composed of a set of tools to assist countries in the evaluation of the capacities of their veterinary services and in addressing the main weaknesses.
- FAO promotes One Health in the areas of food security, sustainable agriculture, food safety, antimicrobial resistance (AMR), nutrition, animal and plant health, fisheries, and livelihoods. Applying a One Health approach is critical for achieving the UN 2030 Agenda for Sustainable Development and the associated Sustainable Development Goals (SDGs).
- UNEP is the leading global authority on environment that sets the global environmental agenda and specifically joined the Quadripartite Alliance to strengthen the environmental dimension of One Health. Recognizing the significance of the environment in the One Health framework, UNEP recently joined as the fourth partner to host the National Bridging Workshops to strengthen the environmental dimension.

International Legal Framework IHR (2005) Assessment tools for country capacities OIE Standards Checking and in the control of Performance of Vertical Services of Performance of Vertical Services of Performance of Vertical Services of Ve

Annual reporting tool + JEE tool

These support tools shift away from externally driven, short-term, emergency response type 'vertical' approaches that focus only on specific diseases, and contribute to a more sustainable, long term 'horizontal' strengthening of public, animal health systems and the environment. The WHO IHR-MEF and the WOAH PVS Pathway approaches enable countries to identify strengths and weaknesses in their respective functions and activities and promote prioritization and pathways for improvement. The result is better alignment of country -level capacity building approaches and strategies across human, animal health and environmental sectors. Furthermore, they engage countries in a routine monitoring and follow up mechanism on their overall performance levels and help to determine their needs to comply with internationally adopted references and standards.

PVS Pathway

To strengthen collaboration between animal health, human health, and the environmental sectors and improve compliance with international standards and regulations, WHO and WOAH have jointly developed a methodology in a workshop format referred to as the IHR-PVS National Bridging Workshop. The IHR-PVS National Bridging Workshop methodology has been tested in over 40 countries worldwide. This will allow countries to explore possible overlapping areas in their PVS and IHR capacity frameworks. The workshops will be conducted over three days and will bring together around 90 national stakeholders from animal, human, and environmental health, as well as other relevant sectors, to assess the existing synergies between these frameworks, identify gaps in collaboration and develop a joint national roadmap to improve intersectoral collaboration. A structured approach using user-friendly materials enables the identification of synergies, reviews gaps and defines the operational strategies to be used by policy makers for concerted corrective measures and strategic investments in national action plans for improved health security.

OBJECTIVES OF THE WORKSHOP AND EXPECTED OUTCOMES

The main objective of the NBW is to provide an opportunity to human health, animal health and environmental health services of the country to review their current collaboration gaps in key technical areas and to develop a joint roadmap of corrective measures and strategic investments to strengthen the collaborative work at the animal-human-environment interface. The NBW's focus on the following strategic objectives:

- **Improved understanding** of the One Health approach and the need for multisectoral collaboration at the animal-human-environment interface.
- **Advancing One Health**: to improve dialogue, coordination and collaboration between animal and human health sectors to strategically plan areas for joint actions and a synergistic approach;
- **Building Sustainable Networks:** to contribute to strengthening the inter-sectoral collaboration through improved understanding of respective roles and mandates.
- Strategic planning: to inform planning and investments (including the National Action Plan for Health Security) based on the structured and agreed identification of needs and options for improvement.

Expected **outcomes** of the workshop include:

- 1. Increased awareness and understanding of the IHR (2005) and the role of the WHO, the mandate of the WOAH, the IHR MEF and the WOAH PVS Pathway, their differences and connections.
- Understanding the contribution of Veterinary Services in the implementation of the IHR (2005)
 and how the results of the PVS Pathway and the IHR MEF can be used to explore strategic
 planning and capacity building needs.
- 3. A **diagnosis** of current **strengths and weaknesses in collaboration** between animal health and public health services.
- 4. Identification of practical steps and activities for the development and implementation of a **joint national roadmap** to strengthen collaboration and coordination.

The following capacity assessments were carried out prior to the IHR-PVS NBW of the Federal Republic of Somalia:

- Joint External Evaluation (JEE) mission conducted in October 2016
- The OH TWG instituted in 2018
- The country conducted zoonotic diseases prioritization in January 2023 using the CDC's OH ZDP, which prioritized 7 diseases, including Rift Valley fever, Middle East respiratory syndrome, anthrax, trypanosomiasis, brucellosis, zoonotic enteric parasites (including Giardia and Cryptosporidium), and zoonotic influenza viruses (https://doi.org/10.1016/j.onehlt.2023.100634)
- PVS evaluation conducted in October 2023



<u>The NBW road poster illustrates the process, with actors from relevant sectors coming together to</u>
embark on 7 sessions that lead to the development of a joint NBW Roadmap

REPORT ON THE SESSIONS

The One Health National Bridging Workshop (NBW) of the Federal Republic of Somalia took place in Nairobi from November 13 to 15, 2023. The workshop was hosted at the kind invitation of the Government of the Federal Republic of Somalia, with organizational support from the World Health Organization (WHO), the World Organization for Animal Health (WOAH), the Food and Agriculture Organization (FAO) and United Nations Environment Program (UNEP).

The workshop was attended by 60 national experts from key national institutions for One Health including the Federal Ministry of Health Somalia, Ministry of Agriculture and Irrigation, Ministry of Livestock, Forestry and Range, and the Ministry of Environment and Climate Change (Attendance list on Annex 2). The participants came from national, state and local district levels. The workshop used an interactive methodology and a structured approach with user-friendly materials, case studies, videos and facilitation tools. All participants received a *Participant Handbook* containing all necessary information such as the objectives of the workshop, instructions for working group exercises, expected outcomes of each session etc. Sessions were structured in a step-by-step process as described in the following pages of this report.

The agenda of the Workshop is available at Annex 1.

OPENING SESSION

Welcome and opening remarks were given by Prof. Abdinasir Yusuf Osman (representative of the Ministry of Health), Dr. Abderahman Kailie (representative of the Ministry of Livestock, Forestry and Range), Prof. Hussein Iman (representative of the Ministry of Agriculture and Irrigation), Dr. Heba Mahrous (representative of the World Health Organization) and Dr. Samuel Wakhusama (representative of the World Organization for Animal Health).

In their Opening speeches, the speakers highlighted the importance of multisectoral collaboration in the prevention, detection, and response to health threats at the animal-human-environment interface. Recent examples of the international spread of zoonotic diseases were cited to illustrate the urgent need to strengthen the One Health approach.

The key messages emanating from the opening remarks at the meeting were as follows:

- The rising global threats related to zoonotic diseases, food and water security and the alarming growth of antimicrobial resistance (AMR) necessitate coordinated action.
- The interconnectedness of challenges affecting humans, animals, plants, and the environment highlights the need for a unified approach.
- By organizing this NBW, the sectors demonstrate their strong commitment to improving their multisectoral collaboration at all required levels, not only on zoonoses but also on other threats at this the human-animal-ecosystem nexus, such as food safety issues, or antimicrobial resistances. It will guide them through assessments in both the human and animal health sectors, facilitate improved collaboration, and inform operational strategies for policymakers.

In a round of introductions, all participants had the opportunity to state their name, position and affiliation before a group photo was taken.



Figure 1: Opening Ceremony of the National Bridging Workshop of Somalia

SESSION 1: THE ONE HEALTH CONCEPT AND NATIONAL PERSPECTIVES

The workshop approach and methodology: The presentation emphasized that the meeting was neither an evaluation nor a training session, but a workshop aimed at developing a national One Health roadmap to improve the collaboration between the sectors.

Movie 1 on Tripartite OH collaboration and vision: highlighted the key principles of the Manhattan OH strategic framework, building a robust public and animal health system to improve response capacity and explaining the Tripartite concept.

Presentation on the environmental dimensions of One Health in the region: the presentation showcased the health implications of the triple planetary crises, biodiversity loss, climate change, and pollution was made strategies for addressing these environmental health issues in alignment with the One Health approach, emphasizing the need for continual assessment were discussed.

The human health, animal health and environment sectors of the Federal Republic of Somalia presented their structure, priorities, and challenges, as well as ongoing One Health activities.

Presentation on Public Health Services and One Health: (Prof. Abdinasir Yusuf Osman, Chair of One Health National Level Technical Working Group - Federal Ministry of Health Somalia). The presentation focused on the implementation and operationalization of One Health approaches in Somalia. The challenges that Somalia faces in controlling epidemics due to political instability, extreme weather events, and weak health services were discussed. The presentation highlighted gaps in Somalia's One Health, including inadequate surveillance and laboratory systems, and a limited number of qualified health workers. It also emphasizes the need for improved coordination, capacity building, and infrastructure to improve the disease detection, prevention, and control of zoonotic diseases in Somalia. In addition, the presentation highlighted recent efforts to advance the implementation of One Health in the country.

Presentation on the Veterinary Services and One Health: (Dr. Sharifo Ali Elmi, Ministry of Livestock, Forestry and Range, MoLFR One Health Focal Point): The presentation emphasized the important role of livestock in Somalia's economy and outlined the mandate of the Ministry of Livestock, Forestry, and Rangeon animal health, disease control, and sustainable livestock production. Key strategies included enhancing food security, developing veterinary public health policies, and managing transboundary animal diseases. The presentation also stressed the importance of One Health approaches, advocating for improved coordination, communication strategies, and contingency plans to tackle zoonotic diseases like Rift Valley Fever, especially under challenging environmental conditions.

Presentation on the General structure and Role of the Ministry of Agriculture and Irrigation in One Health: (Dr. Abdi Muhamed Hussein & D.r Mohamed Abdi Sheikh, Ministry of Agriculture and Irrigation (MOAI)): The presentation emphasized the importance of coordinating with health sectors to address challenges such as malnutrition, diet-related chronic diseases, and vector-borne diseases. The presentation also outlined the different strategies and policies for improving plant and animal health, and highlighting the need for a holistic One Health approach in Somalia.

Movie 2: provided participants with concrete worldwide examples of intersectoral collaboration in addressing health issues at the human-animal interface for various key technical areas such as surveillance, response and communication among others.



Figure 2: Abdinasir Yusuf Osman presenting the One Health implementation in Somalia.

Outcomes of Session 1:

At the end of the session, the audience agreed that:

- There is Intersectoral collaboration between animal health, human health, and environmental health sectors, but mainly during outbreaks; with a better coordination mechanism and preparedness, much more could be done at the human-animal-environment interface.
- The four sectors have common concerns and challenges and conduct similar activities. Competencies exist and can be pooled. This needs to be organized through a collaborative approach.
- WHO, WOAH, FAO and UNEP are active promoters of One Health and can provide technical assistance to countries to improve inter-sectoral collaboration at central, local, and technical levels.

SESSION 2: NAVIGATING THE ROAD TO ONE HEALTH - COLLABORATION GAPS

Participants were divided into working groups with mixed participants from each sector and at different levels (central, provincial, district). The groups were provided with a case study scenario (Table 1) based on diseases relevant to the local context and developed in collaboration with national representatives. This session provided the opportunity to discuss the management of zoonotic diseases and other threats at the human-animal-environment interface, identify areas of convergence, evaluate the level of collaboration between different sectors for key technical areas and identify the main gaps.

Table 1: Scenarios used for the different case studies

Antimicrobial Resistance (AMR) (disclaimer: this case is entirely fictitious)

The National reference laboratory of the Ministry of Health of Federal Government of Somalia has detected an increasing number of co-occurrence of Colistin Resistance (mcr-1) and extended-spectrum β-lactamase encoding genes in *Escherichia coli* isolated from urinary tract infections in humans in Mogadishu, Somalia. Furthermore, the central veterinary laboratory also reported increasing numbers of similar *E. coli* resistance patterns associated with mastitis in dairy cows on two commercial dairy farms in Mogadishu, Somalia.

Rabies: (disclaimer: this case is entirely fictitious)

It was reported that a stray dog, which was known to have bitten two cows and behaved aggressively towards people, had also bitten some children in the same neighborhood. Two days ago, it was shot dead by the Somali Police Force in Mogadishu. The dog's carcass was destroyed before veterinary authorities could remove the dog's head to confirm the diagnosis.

Anthrax: (disclaimer: this case is entirely fictitious)

An anthrax outbreak begins when several villagers report sudden deaths among their livestock ,especially cattle and goats, and at least 60 people who allegedly consumed uninspected meat in Bula Hawo were tested for anthrax. The victims, including backyard butchers, were rushed to the primary healthcare centre after they developed anthrax symptoms and cutaneous lesions. The man who sold the uninspected meat disappeared after learning that his neighbours had become ill. Cases of sudden death of cattle have also been reported in the vicinity.

Rift Valley Fever (disclaimer: this case is entirely fictitious)

Two patients were admitted to B/weine Hospital in Hiraan region with symptoms including headache, fever, muscle aches and jaundice. The laboratory test using RT-PCR was positive for Rift Valley fever virus. One of the patients is a commercial farmer who is regularly involved in the transboundary livestock trade between Somalia and Kenya. Visits to the same rural market were reported by the other patients.

Using experience from previous zoonotic disease outbreaks, the groups discussed how they would realistically have managed these events, and evaluated the level of collaboration between the Veterinary ,Environmental and the Public Health Services for 15 key technical areas including: coordination at high level, coordination at local level, coordination at technical level, legislation/regulation, finance, communication with media, communication with stakeholders, field investigation, risk assessment, joint surveillance, laboratory, response, education and training, emergency funding, and human resources. These activities/areas of collaboration were represented by color-coded technical area cards: green for "good collaboration", yellow for "some collaboration", and red for "collaboration needing improvement"

Coordination at high level:	GREEN	ORANGE	RED
Coordination at local level:	GREEN	ORANGE	RED
Coordination at technical level:	GREEN	ORANGE	RED
Legislation and regulation:	GREEN	ORANGE	RED
Finance:	GREEN	ORANGE	RED
Communication and media:	GREEN	ORANGE	RED
Communication with stakeholders:	GREEN	ORANGE	RED
Field investigation:	GREEN	ORANGE	RED
Risk assessment:	GREEN	ORANGE	RED
Joint surveillance:	GREEN	ORANGE	RED
Laboratory:	GREEN	ORANGE	RED
Response:	GREEN	ORANGE	RED
Education and training:	GREEN	ORANGE	RED
Emergency funding:	GREEN	ORANGE	RED
Human resources:	GREEN	ORANGE	RED



Figure 3: Participants working on a case scenario for Anthrax are evaluating the level of collaboration between the three sectors for 15 key technical areas.

During an ensuing plenary session, each group presented and justified the results of their work. <u>Output</u> <u>1</u> summarizes the results from each group.

Outcomes of Session 2:

- Areas of collaboration were identified, and joint activities discussed.
- The level of collaboration between the three sectors for 15 key technical areas was assessed (Output 1).
- The main gaps in collaboration were identified

SESSION 3: BRIDGES ALONG THE ROAD TO ONE HEALTH

A documentary video introduced the International Health Regulations (IHR) and its Monitoring and Evaluation Framework (IHR-MEF), including the Joint External Evaluation (JEE) and State Party Annual Reporting (SPAR). This was followed by a Q&A session.

The differences and connections between these tools were explained via a comparative table and participants were shown excerpts from reports from both tools, which once again highlighted their similar structure and processes.

A large matrix (IHR-PVS matrix), cross-connecting the indicators of the IHR MEF (in rows) and the indicators of the PVS Evaluation (in columns) was set-up and presented to the participants.

Using an interactive approach, working groups were asked to plot their *technical area cards* (from the session 1 exercise) into the matrix by matching them with their corresponding indicators. A plenary analysis of the outcome revealed clear clusters of gaps and highlighted that most gaps were not disease-specific but systemic. This process allowed participants to visualize the main gaps identified in each essential capacity and distinguish disease-specific from systemic gaps. This also helped identify which technical areas the following sessions should focus on.



Figure 4: Mapping of the gaps by positioning the selected cards from all disease groups on the IHR-PVS matrix provides a snapshot of the strengths and weaknesses in the collaboration between the three sectors across all technical areas

The main gaps (clusters) identified were discussed, this time at a systemic level (all health threats combined).

For the second half of the workshop, new working groups were formed, this time by technical area, to cover all aspects of the collaboration that required improvement:

- Group 1: Coordination at high, technical, and local levels
- Group 2: Surveillance and Laboratory
- Group 3: Response and Field Investigation
- Group 4: Finance and Emergency funding

In addition, since they are cross-cutting issues, each group was tasked to also consider the 'Human Resources' and 'Education and Training' aspects in their work.

Outcomes of Session 3:

- Improved understanding of the tools available to explore operational capacities in each of the sectors.
- Improved understanding of the contribution of the veterinary sector to the IHR MEF
- Better understanding of the synergies between the IHR MEF and the PVS Pathway. Reviewing together the results of capacities assessment might help to optimize multisectoral collaboration.
- Improved understanding of how disease-specific collaboration gaps are linked/contribute to systemic weaknesses in One Health
- Identification of the key technical areas to focus on during the next sessions.

SESSION 4: CROSSROADS - PVS PATHWAY AND IHR MEF REPORTS

New technical area working groups with representatives from all previous groups were organized as per the distribution detailed above.

The matrix was used to link the identified gaps to their relevant indicators in the IHR MEF and in the PVS Pathway. Each working group then opened the assessment reports (JEE, PVS Evaluation) and extracted the main findings and recommendations relevant to their technical area.



Figure 5: Participants from the Finance and Emergency funding group are extracting relevant information from The Federal Republic of Somalia's PVS and JEE reports.

Outcomes of Session 4:

- Participants gained a good understanding of the assessment reports for both sectors, their purpose, and structure.
- The main gaps relevant to each technical area and related to coordination and collaboration between sectors have been identified.
- The main recommendations were also extracted from the existing reports

SESSION 5: ROAD PLANNING

In the same working groups as in the previous session, participants were asked to identify, for each technical area, priority objectives and activities that the sectors should implement to improve their collaboration in the future. This brainstorming used several elements as sources of information:

- The report sheets from Session 2, which highlights the key gaps for all technical areas and for the different diseases / case studies used.
- The key gaps and recommendations from the JEE and PVS reports during Session 4.
- The technical activity cards, which give several examples of possible joint activities.
- The experiences of all the participants





Figure 5: The technical working group on "Response and Field Investigation" is using the results of the previous sessions to brainstorm joint activities to improve the collaboration between the sectors in this domain.

Outcomes of Session 5:

- Clear and achievable activities were identified to improve inter-sectoral collaboration between the sectors for all technical areas selected.
- For each activity, a desired completion date, focal points, required support and measurable indicators were identified.
- The potential impact and the difficulty of implementation of all proposed activities were assessed.

SESSION 6: FINE-TUNING THE ROAD-MAP

The groups engaged in a participatory process to fine-tune the objectives and activities outlined by all the groups. Through a World Café exercise, each group was asked to nominate a rapporteur to present their work. Each working group was provided with an empty template of the relevant roadmap for each priority technical area. Then the objectives and activities developed by each working group were projected, reviewed, and discussed by all participants in a plenary session. All participants were given the opportunity to provide feedback and make suggestions on all priority technical areas focusing on objectives, activities, timeline, responsibility, cost, and impact (Figure 5). At the end of the cycle, working groups were requested to review their roadmaps for amendment and improvement based on the comments, and suggestions made by other participants including moderators and facilitators. Further inputs were provided, and the objectives and activities were fine-tuned and compiled in a single final joint roadmap (Output 2). Together, participants developed the joint NBW Roadmap, made of 11 objectives and 36 activities to be implemented jointly for the management of health threats at the human-animal-environment interface.

Prioritization of Objectives

Together, the participants developed the joint NBW Roadmap, made of 11 objectives and 36 activities to be implemented jointly for the management of health threats at the human-animal-environment interface. All participants took part in an electronic poll, whereby, they were asked to vote individually using a mobile application or computer and to select five of the 11 objectives, that they considered to be of highest priority (Annex output 3).





Figure 6: World café exercise in plenary: participants are reviewing the objectives and activities developed by each technical working group and a participant voting for the priority objectives.

Outcomes of Session 6:

- Harmonized, concrete and achievable roadmap has been developed to improve the coordination and collaboration between animal health, human health and the environmental sectors in the prevention, detection and response to zoonotic diseases and food safety outbreaks
- Buy-in and ownership of all participants who contributed to all areas of the roadmap was confirmed.
- Priority objectives and activities were identified from the joint national roadmap.

SESSION 7: WAY FORWARD

A final plenary session was organized to discuss on the way forward, and to provide context on streamlining the joint roadmap developed, into the existing national frameworks to support its implementation. This session was entirely facilitated by national stakeholders.

The way forward and next steps, as discussed and agreed with all participants were determined as follows:

- Roadmap Consolidation and Sectoral Collaboration: Following constructive discussions, there was unanimous agreement on the urgent need to implement One Health approach in Somalia due to increasing health threats at the human-animal-environment interface, which require cross-sectoral collaboration. Therefore, the need to finalize the roadmap was highlighted. This ensures a holistic approach to prioritizing activities, that benefits from the unique perspectives of each sector.
- Organize a meeting (virtual or physical) to finalize and endorse the One Health Road map and conduct an internal (within each ministry/sector) discussion with leaders to advocate for One Health and approve the road map
- **Operationalize One Health**: cross sectoral collaboration in Somalia at both federal and state level
- **Establish multisectoral One Health Steering Committee** at national and subnational levels to follow up on the implementation of the joint road map of the NBW

Outcomes of Session 7:

- Way forward for the implementation of the roadmap was presented and discussed.
- Ownership of the workshop results by the country was obtained.

MATERIAL AND SHARED DRIVE

All the material used during the workshop, including movies, presentations, documents of references, results from the working groups, photos, videos were uploaded on a shared drive with a link shared to all participants (accessible at: Share Drive link).

WORKSHOP OUTPUTS

OUTPUT 1: ASSESSMENT OF LEVELS OF COLLABORATION FOR 15 KEY TECHNICAL AREAS

Technical area (cards)	RVF 🔻	Rabies 🔻	AMR 🔻	Anthrax 🔻	Score 🗊
Coordination at local Level	0	0	0	0	0
Finance	0	0	0	0	0
Field investigation	0	0	0	0	0
Risk assessment	0	0	0	0	0
Laboratory	0	0	0	0	0
Coordination at high Level	0	0	1	0	1
Legislation / Regulation	0	0	0	1	1
Joint surveillance	1	0	0	0	1
Response	0	0	1	0	1
Emergency funding	0	0	1	0	1
Coordination at technical Level	1	1	0	0	2
Communication w/ media	1	0	1	0	2
Communication w/ stakeholders	1	0	1	1	3
Education and training	1	1	0	1	3
Human resources	1	1	0	1	3

For each hazard, the performance of the collaboration between the human health and the animal health sectors is color-coded: green for "good collaboration", yellow for "some collaboration", and red for "collaboration needing improvement". The score uses a semi-quantitative scale (2 points for a green card, 1 for a yellow card and 0 for a red card).

OUTPUT 2: NBW ROADMAP - OBJECTIVES AND ACTIONS IDENTIFIED PER TECHNICAL AREAS

Activity	Timeline	Difficulty	Impact	Responsibility	Process		
COORDINATION AT HIGH, TECHNICAL AND LOCAL LEVEL							
Objective 1: To establish a High level Ministerial (MoH, MoLFR, N	NoECC and MoA	I) system to go	vern, manage, coordin	ate and supervise One Health activities		
Establish a High level Ministerial One Health steering committee	Q1 2024	+	+++	MoH, MoLFR, MoECC, and MoAl	Conduct consultation meeting to agree on establishment of a high level ministerial steering committee Develop ToRs for the steering committee		
Establish a National One Health secretariat	Q1 2024	+	+++	MoH, MoLFR, MoECC, and MoAI	 Nominate focal points from each sector to establish a national ne Health secretariat Develop the ToR for national One Health secretariat Organize Multi sectoral Coordination Mechanism (MCM) workshops 		
Develop a Memorandum of Understanding on mutual collaboration	Q1-Q2 2024	+	+++	Legal and Technical Departments of MoH, MoLFR, MoECC, and MoAl	 Agree to draft MoU at high level Draft MoU including Animal and Human Health, plant, and environment inputs Conduct internal consultations within each sector Approve the MoU by all involved parties Commence MoU 		
Objective 2: To enhance collaboration and partne	rship at inter-n	ninisterial level f	or implementa	tion of One Health act	ivities		
Establish multi-sectorial technical working groups for zoonotic diseases, AMR, Food safety involving all the stakeholders at federal level	Q3 2024	+	+++	MoH, MoLFR, MoECC, and MoAI	 Nominate focal points from each stakeholder to join the different technical working groups. Develop the membership criteria to join the different committees Invite international, regional partners, academia, private sector, and communities 		
Review and further develop strategies and plans for One Health technical areas and align with existing national plans such as the national Action Plan for Health Security (NAPHS) and other strategies including the National Action Plan on Combating Antimicrobial Resistance and Veterinary Drug control policy.	Q3 2024	+	+++	MoH, MoLFR, MoECC, and MoAl, Somali Bureau of Standards (SOBS)	 Desk review the existing strategies and plans (e.g. NAPHS, AMR NAP and Sectorial strategic plans) Conduct cross-sectional survey on zoonotic diseases, AMR, Food safety AMR from the wildlife and the environment 		

FIELD INVESTIGATION AND RESPONSE

Objective 3: Establishing framework for fields investigation and response

•	•	•			
Develop joint contingency plans for priority zoonotic diseases surveillance and response	Q2 2024	+++	+++	OH TWG, Animal health sector, Human health sector, Environmental sector, Agricultural sector, SODMA Academia, Community members, International Agencies	Develop contingency plan/s involving all concerned parties with different scenarios, with the collaboration of all stakeholders including NGOs, and international organizations (WHO, WOAH, FAO) Validate the contingency plan Dissemination of contingency plan to all involved parties
Conduct Joint Risk Assessment for the priority zoonotic disease and other acute public health events	Q4 2024	+++	+++	OH TWG, Animal health sector, Human health sector, Environmental sector, Agricultural sector, SODMA Academia, Community members, International Agencies	Conduct a ToT training (25 trainees) at National level on Joint Risk Assessment Conduct 6 sub-national Joint Risk Assessment training for priority zoonotic and food-borne diseases
Establish multi-sectoral Rapid Response Teams (RRTs) at national level and subnational level	Q2 2024	+	+++	OH TWG, Animal health sector, Human health sector, Environmental sector, Agricultural sector, SODMA Academia, Community members, International Agencies	 Activate the multisectoral RRT at national level. Specify and identify the role and responsibilities Establish a list of persons involved in RRT unit and a Roster list Train the RRT on various One Health Approach and joint activities
Map out a comprehensive assessment of available emergency response resources at the national to local levels for One Health	Q2 2024	+	+++	OH TWG, Animal health sector, Human health sector, Environmental sector, Agricultural sector, SODMA Academia, Community members, International Agencies	Stakeholder engagement and identification of resources Review of available resources
Conduct joint training in line with the One Health approach for national and sub-national RRTs	Q4 2024	++	+++	OH TWG, Animal health sector, Human health sector, Environmental sector, Agricultural sector, SODMA Academia, Community members, International Agencies	Establish training plan Selection of the expert (national & sub national experts) that are qualified in the field needed Prepare training material by the experts Conduct TOT training Conduct the cascade training Establish roster of trained individuals (database)
Conduct a training on One Health alert detection, report, joint outbreak investigation and response	Q4 2024	+	+++	OH TWG, Animal health sector, Human health sector, Environmental sector, Agricultural sector, SODMA Academia,	 Review existing training plan available of joint outbreak investigation Develop/adapt a training plan for One Health workforce Identify and engage trainers

				Community members, International Agencies	Conduct a training at national and subnational levels.
Integrate One Health approach in the Field Epidemiology Training Program and expand the participation to all technical officer relevant to One Health including a module on AMR & MAU	Q2 2024	++	+++	OH TWG, Animal health sector, Human health sector, Environmental sector, Agricultural sector, SODMA Academia, Community members, International Agencies	Map out the existing OH workforce development Select the suitable curriculum for One Health approach Conduct TOT Cascade the training
Objective 4: Assess preparedness and response ca	pacities for hea	Ith threats at th	ne human-anim	al-environment interface	
Conduct a national and subnational One Health tabletop simulation exercise on Public Health Emergency Operations Center (PHEOC) SOPs.	Q4 2024	+	+++	OH TWG, Animal health sector, Human health sector, Environmental sector, Agricultural sector, SODMA Academia, Community members, International Agencies	Establish a plan of SimEx Conduct SimEx, at national (24 participants) and 6 at subnational level Evaluate the Simex
Conduct a national and subnational One Health tabletop simulation exercise on contingency plans.	Q4 2024	+	+++	OH TWG, Animal health sector, Human health sector, Environmental sector, Agricultural sector, SODMA Academia, Community members, International Agencies	 Establish a plan of SimEx Conduct 7 SimEx, 1 at national (24 participants) and 6 at subnational level Evaluate the Simex
Conduct joint SimEx focusing on One Health outbreak response	Q2 2025	++	+++	OH TWG, Animal health sector, Human health sector, Environmental sector, Agricultural sector, SODMA Academia, Community members, International Agencies	 Select the type of Simex Identify participants Implement the Simex Evaluate the Simex
Conduct an after-action review for zoonotic disease	Q2 2025	+	++	OH TWG, Animal health sector, Human health sector, Environmental sector, Agricultural sector, SODMA Academia, Community members, International Agencies	Select the zoonotic priority disease outbreaks Conduct after action review
		SURVE	EILLANCE & LA	BORATORY	
Objective 5: Develop national joint surveillance Sy	stem for One H	ealth related th	reats (Human,	Animal, and Environment)	
Map the existing surveillance systems in different sectors (Zoonotic, food-borne diseases and AMR).	Q1 2024	++	+++	Directors of Health Departments in the relevant ministries	 Develop a checklist for mapping evaluation. Visit the sectors (Health, Livestock, Agriculture and Environment) Assess the existing surveillance system. Conduct a workshop for harmonization and validate.
Assign surveillance focal points for one health approach at national level and state level	Q1 2024	+	+++	Directors of Health Departments in the relevant ministries	Directors will plan the process

Develop national strategic plan for surveillance to the prioritized six zoonotic diseases. Develop capacity for timely detection, reporting for zoonotic diseases and other acute public health events at national and subnational level	Q2 2024 Q1	+++	+++	Directors of Health Departments in the relevant ministries	Compile the previous strategic plan and upgrade the new one health surveillance strategic plan. Recruit a consultant. Conduct a workshop to develop the components. Conduct a workshop for validation Establish integrated CHWs Develop SOPs for alert detection and reporting.
Develop a risk communication and community engagement strategy for one health	Q2				Develop RCCE strategy Develop key messages for one health prioritized diseases and events
Expand the current Integrated Disease Surveillance and Response (IDSR) system to include priority zoonotic diseases and other acute public health events	Q4 2024	++	++	One health TWG	Update IDSR guidelines Train health workers from animal and human health sector on implementation of IDSR
Objective 6: Enhance the country capacities to ide	ntify, report an	d diagnose, One	e Health-related	l threats	
Upgrade laboratory facilities specifically for animal and environmental sectors with adequate equipment to meet international standards.	Q2 2024	+++	+++	Lab Directors	Conduct mapping assessment to know the existing capacities (infrastructure, Equipment, Reagents and Human resources) for both animal and public health Mobilize the resource to fill the gaps. Implement quality assurance and quality control measures to ensure the accuracy of diagnostic results. Create interlinking laboratory networking system locally and internationally.
Establish or expand access to diagnostic testing for One Health-related threats specifically for animal and environmental sectors	Q2-Q3 2024	++	+++	Directors of National labs	Supply reagents and equipment Train the staff Link the existing labs (Public and Private) with the one health system
Assign lab focal point for One Health approach, National and State	Q1 2024	+	++	National One health Focal Point and Directors of National labs	One Health focal point will nominate the lab focal points.
Train laboratory technicians and professionals in One Health diagnostics and surveillance.	Q2 2024	+	+++	Directors of National labs	 Develop SOPs and Guidelines Develop training plan Seek the training budget
Objective 8: Develop intersectoral information sha	aring mechanisr	ns through One	Health approa	ch.	
Link all current data based to IDSR for One Health system for real time data sharing and analysis platforms	Q4 2024	++	+++	Head of Surveillance Unit in different ministries	Assessment in all surveillance data platforms in different sectors like human health, animal health etc.

Establish Surveillance Networks: Create a network of surveillance sites across the country, including hospitals, clinics, veterinary clinics, farms, wildlife sanctuaries, and environmental monitoring stations	Q1 2024	+	+++	Different line ministries, private and public hospitals and civil society.	Create a joint platform to share data of all zoonotic diseases. Develop Data Management and Analysis Systems: Implement a robust data management system to store, organize, and analyze the collected data. Develop data analysis tools and techniques to identify patterns, trends, and potential risks associated with one health threats. Conduct a risk assessment. Create a joint technical working group for surveillance network. Head of Surveillance Units in different sectors should collaborate.	
		FINANCE	AND EMERGE	NCY FUNDING		
Objective 9: Develop a 5-year national investment	plan for One H	ealth				
Identify and map existing funding sources as well as priority One Health areas with gaps for additional funding.	Q1 2024	++	+++	One Health TWG and relevant stakeholder	 Development of a structured questionnaire to all relevant stakeholders. Compile report of the findings. Conduct a validation workshop involving high-level authority. Mapping relevant stakeholders for funding 	
Develop and endorse the draft 5-year investment plan for One Health	Q1 2024/ Q2 2025	++	+++		 Hire consultant to develop a draft investment plan including emergency funding for zoonotic diseases. Drafted plan to be presented to TWG and relevant stakeholders in a workshop. Revisions adopted and incorporated into final draft. Side meeting for investment partners to present roadmaps and contingency plans to partners and highlevel decision makers. Workshop to validate and endorse final version of investment plan. 	
Objective 10: Decentralization of funding for One	Objective 10: Decentralization of funding for One Health Risk Communication and Community Engagement (RCCE) at district and regional levels					
Putting in place financial structures (MoU between National and State levels) to decentralize One Health budget from national to all levels.	Q4 2024	+++	+++	Legal and Technical Departments of Ministry of Justice (MOJCA), Attorney General Office (AGO) MHSP, MARD, and Ministry of Environment	 Draft MoU between National and State levels for the 4-line ministries. Set up a working group including representatives from MoF and the parliament. Conduct consultations in each sector. Approve the MoU by all involved parties 	

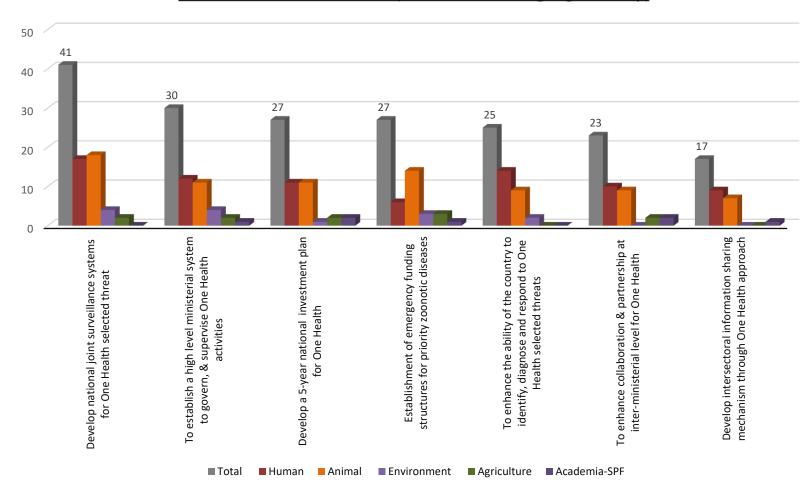
					Commence MoU
Capacity building for staff working at regional level on autonomy for financial and HR management.	Q4 2024	+	+++	OHTWG and Financial Expertise	 Identify the participants. Prepare training materials Conduct the training Evaluate the training outcome
Objective 11: Establishment of emergency funding	structures for	priority zoonoti	c diseases		
Mobilize funds and resources for emergency contingency plans developed for priority zoonotic diseases.	Q4 2024	+	++	TWG from 4 core ministries and supporting ministries such as MoF, MoP	Identification of partners to fund.
Resource mobilization for operationalization of PHEOC	Q4 2024	++	+++	TWG and PHEOC team	Draft concept notes clarifying key areas for funding.Engage stakeholders and partners.

Difficulty of implementation: Low +, Moderate ++, Very difficult +++

Impact: Low impact +, Moderate impact ++, High impact +++

OUTPUT 3: ASSESSMENT OF LEVELS OF COLLABORATION FOR 15 KEY TECHNICAL AREAS

Results of the Prioritization vote (Somalia National Brigding Workshop)



WORKSHOP EVALUATION

An evaluation questionnaire was completed by 25 participants to collect feedback on the relevance and utility of the workshop.

Workshop evaluation	'Satisfied' or 'Fully satisfied'	Average score (/4)
Overall assessment	100%	3.6
Content	93%	3.3
Structure / format	91%	3.3
Facilitators	91%	3.3
Organization (venue, logistics)	80%	3.0

Participants had to choose between 1=Highly unsatisfied – 2=Unsatisfied – 3=Satisfied – 4=Highly satisfied

Impact of the workshop on	'Significant' or 'Major'	Average score (/4)
Your technical knowledge	91%	3.2
The work of your unit	86%	3.2
AH-PH collaboration in country	82%	3.3

Participants had to choose between 1=No impact at all -2=Minor impact -3=Significant impact -4=Major impact

Would you recommend this workshop to other countries?				
Absolutely	52%			
Likely	48%			
Likely not	2%			
No 2%				

APPENDIX

ANNEX 1: WORKSHOP AGENDA

DAY 1			
08:30- 09.00	Registration of participants		
	Opening Ceremony		
	Representative of the Ministries - (15')		
	 Prof. Abdinasir Yusuf Osman – Chair of One Health National Level Technical Working Group - Minister of Health 		
	Dr. Abderahman Kailie - Director of Animal Health		
00 00 40 00	 Prof. Hussein Iman - Senior advisor - Ministry of agriculture and irrigation 		
09.00–10.30	Representative of Quadripartite agencies (15')		
	Dr Heba Marhous - WHO EMRO One Health Technical Officer		
	 Dr Samuel Wakhusama - Representative, Eastern Africa Sub-Regional representation (WOAH) 		
	• Introduction of participants (20')		
	• Group Picture (10')		
	Coffee break (30')		
	Session 1: Workshop Objectives and National Perspectives		
10.30–12.00	The first session sets the scene by providing background information on the One Health concept and the subsequent tripartite WOAH-WHO-FAO collaboration. It is followed by comprehensive presentations from both Ministries on the national public and animal health services. A second documentary provides concrete worldwide examples of fruitful intersectoral collaboration, showing how the two sectors share a lot in terms of approaches, references and strategic views.		
	 Workshop approach and methodology – PPT– Asma Saidouni (10') 		
	 MOVIE 1: Tripartite One Health collaboration and vision (10') 		
	• The environmental dimensions of One Health in the region – PPT– Alain Okito (5')		
	 Overview of One Health implementation in Somalia – PPT– Dr Abdinasir Yusuf Osman (10') 		
	 Veterinary Services and One Health – PPT–Dr Sharifo Ali Elmi (10') 		
10.30 – 12.00	 General structure and Role of the Ministry of Agriculture and Irrigation – PPT– Abdi Muhamed Hussein and Mohamed Abdi Sheikh (10') 		
Lunch	 MOVIE 2: Driving successful interactions - Movie (15') 		
(12:00-13:30)	Discussion (10')		
Lunch (12:00-13:30)			

	Session 2: Navigating the road to One Health	
13.30 – 17.00	Session 2 divides participants in working groups and provides an opportunity to work on the presented concepts. Each group will have central and provincial representatives from both sectors and will focus on a fictitious emergency scenario.	
	Using diagrammatic arrows to represent the progression of the situation, groups will identify joint activities and areas of collaboration and assess their current functionality using one of three color-coded cards (green, orange, red).	
	Presentation and organization of the working group exercise – PPT (15')	
	Case study - Working groups by disease (120')	
	Restitution (75')	
17.00 -	Facilitators and moderators only:	
18.30	Briefing Session 3-4-5 and compilation of results from Session 2	

DAY 2		
	Session 3: Bridges along the road to One Health	
	Session 3 presents the tools from both sectors (IHR MEF, JEE, PVS) and uses an interactive approach to map activities identified earlier onto a giant IHR-PVS matrix.	
08.30-11.20	This process will enable to visualize the main gaps, to distinguish disease-specific vs systemic gaps and to identify which technical areas the following sessions will focus on.	
	MOVIE 3: IHR Monitoring and Evaluation Framework (25')	
	MOVIE 4: PVS Pathway (25')	
	MOVIE 5: IHR-PVS Bridging (10')	
	 Mapping gaps on the IHR/PVS matrix (50') + Coffee break (20') 	
	Discussion – Plenary (30')	
	Session 4: Crossroads - IHR MEF, JEE and PVS Pathway reports	
11:20- 12:40	Participants will be divided into working groups by technical topic (surveillance, communication, coordination, etc) and will explore the improvement plans already proposed in the respective assessments (IHR annual reporting, JEE, PVS Evaluation, etc.), extract relevant sections and identify what can be synergized or improved jointly.	
	Presentation and organization of the working group exercise (20')	
	 Extract main gaps and recommendations from the PVS and IHR reports (including the JEE), in relation to gaps identified on the matrix (60') 	
	Lunch (13:00-14:00)	
14:00 -	Session 4 (continued)	
14:30	 Extract main gaps and recommendations from the PVS and IHR reports (including the JEE), in relation to gaps identified on the matrix (continued, 30') 	
	Session 5: Road planning	
14:30– 17:15	Participants will use the results obtained from the case studies and from the assessment reports to develop a realistic and achievable road-map to improve the collaboration between the sectors.	
	 Presentation and organization of the working group exercise (15') Identification of objectives and develop activities (Working groups by technical topic) (150') 	

DAY 3		
	Session 6: Fine-tuning the roadmap	
	The objective of Session 6 is to have all participants contribute to all technical areas and to consolidate the joint-road map by making sure it is harmonized, concrete and achievable.	
9:00 - 12:30	Finalize the objectives and filling out of Activity on the electronic format	
	Coffee break (15')	
	World Café (90')	
	Prioritization vote (10')	
	Session 7: Way forward	
12:30 - 13:30	In the last session, representatives from the key Ministries take over the leadership and facilitation of the workshop to discuss with participant about the next steps and how the established roadmap will be implemented.	
	Linkages with other mandated plans such as the National Action Plan for Health Security are discussed. This is also where any need from the country can be addressed. This will depend greatly on the current status of the country in terms of IHR-MEF and on the level of One Health capacity.	
	 Results of the prioritization vote (15') Integrating the action points into the IHR-MEF process (15') Next steps (30') (lead by Ministry representatives) 	
	<u>Closing Session</u>	
13:30 -	Evaluation of the workshop (20')	
14:15	Mr Ezana Kassa, Head of Programme, FAO Somalia	
	Mrs Fatou Ndoye Deputy Regional Director of UNEP in Africa Office	

ANNEX 2: LIST OF PARTICIPANTS

Nº	Name	Institution
1	Prof Dr Abdinasir Yusuf Osman	Federal Ministry of Health Somalia
2	Sagal Roble	Federal Ministry of Health Somalia
3	Sahra Isse	Federal Ministry of Health Somalia
4	Mohamed Abdullahi Abdulle	Ministry of Health, FGS
5	Mohamud Mohamed Husein	Puntland State Ministry of Health
6	Suad Ahmed Mohamed	Ministry of Health, Galmudug
7	Dr. Mohamed Omar Isse	MOLFR
8	Dr. Amir Yusuf Ali	MOLFR
9	Abdinasir Abdulahi Hussein	MOLFR
10	Shukri Abdi Aden	MOLFR
11	Ifrah Haji Ali	MOLFR
12	Iqra Abdinasir Mohamed	MOLFR
13	Abdulkadir Hussein Walal	Ministry of Agriculture and Irrigation F.G.S
14	Omar Haji Yusuf Ahmed	Ministry of Agriculture and Irrigation F.G.S
15	Ahmed Farole	Ministry of Environment and Climate Change, FGS
16	Mohamed. Mohamud Adaw	Federal Ministry of Health Somalia
17	Suad Ahmed Mohamoud	Ministry of Health, Puntland
18	Mohaed Bishar Shaire Farah	Ministry of Health, Galmudug
19	Abdirahman Abdullahi Abdirahman	Banadir Sate Mogadishu
20	Abdullahi Salad Hussein	Federal Ministry of Health Somalia
21	Hassan Mohamed Ali	Federal Ministry of Health Somalia
22	Dr. Abdulkadir Abdi Mohamed	PVS Team
23	Dr. Sharifo Ali Elmi	MOLFR
24	Dr. Mustaf Ibrahim Aden	MOLFR
25	Dr. Mohamed Barre Ahmed	Ministry of Agriculture and Irrigation F.G.S
26	Abukar Mohamed Ahmed	Ministry of Agriculture and Irrigation F.G.S
27	Abdullahi Hussein Ahmed	Community Leader
28	Amal Abdikadir Ahmed	MOLFR

29	Dr Kamaludin Rage Ali	Federal Ministry of Health Somalia
	Mohamed Mohamud	,
30	Abdulle	Federal Ministry of Aviation Somalia
	Siham Abdullahi	
31	Mohamud	Federal Ministry of Health Somalia
32	Major General Mohamed Mohamud Garar	Somali Police Force (SPF)
32	Dr. Osman Ahmed	
33	Mohamed	MOLFR
	Zaynab Mohamed	MOLFR
34	Abdirahman	NOCE IX
25	Maryama Muqtar	MOLFR
35	Mohamed	140150
36	Maslah Sokorow Ali	MOLFR
37	Dr. Nur Sheikh Hussein Sheikh Mohamed	MOLFR
38	Zahro Ahmed Dahir	Ministry of Environment and Climate Change, FGS
39	Asma Mohamed Yusuf	Ministry of Environment and Climate Change, FGS
40	Mohamed Abdulkadir Hassan	Ministry of Agriculture and irrigation, FGS
41	Hajera Hamud	Ministry of Environment and Climate Change, FGS
42	Ahmed Aadm Mohamed	Ministry of Health, FDGS
43	Dr Abdifitah Ahmed Diriye	Federal Ministry of Health Somalia
	Abdulahi Ahmed	
44	Abdirahman	Accademia
45	Abdirisak Mohamed Ali	Federal Ministry of Health Somalia
46	Khadar Hussein Mohamud	Federal Ministry of Health Somalia
47	Bile Abdi	Federal Ministry of Health Somalia
48	Malik Mohamed Jimale	Federal Ministry of Health Somalia
49	Dr. Abdirahman Nur Kailie	MOLFR
50	Dr. Qasim Abdi Moallim	PVS Team
51	Dr. Osman Ahmed Hassan	Jubaland State
	Dr. Abdirahman Moallim	
52	Mohamed	South West State
F2	Moktar Omar Sheikh	Hirchahalla Stata
53	Mohamed	Hirshabelle State
54	Naciima Adan Ahmed	Galmudug State
55	Prof Houssein Moualim Iman Osman	Ministry of Agriculture and Irrigation F.G.S
56	Prof Mohammed Abdi Sheikh Yusuf	Ministry of Agriculture and Irrigation F.G.S
57	Abdi Mohamed Hussien	Ministry of Agriculture and Irrigation F.G.S

	Dr Mohamed Muhamed	
58	Aden	Federal Ministry of Health Somalia
59	Mohamud Ahmed Eerkole	Federal Ministry of Health Somalia
60	Safiya abdukadir sujac	MOLFR
61	Dr Asma Saidouni	WHO EMRO, CPI
62	Dr Heba Mahrous	WHO EMRO, CPI
63	Dr Lilian Wayua Wambua	WOAH- Sub-Regional Representation for Eastern Africa
64	Dr Sonia Fevre	WOAH- Sub-Regional Representation for Eastern Africa
65	Dr MUTAAWE Athanansius Lubogo	WHO – Somalia
66	Dr Dan Mogaka	WHO – Somalia
67	Gerald Mucheru	FAO
68	Alain Okito Mosindo	UNEP – Africa
69	NANYINGI Mark	WHO – Kenya
70	Siobhan Mor	International Livestock Research Institute, Addis Ababa, Ethiopia
71	Gabrielle Laing	Unlimit Health
72	Dr Yusuf Elmi Mohamud	WHO- Somalia
73	Abdukadir Abdi	WHO-Somalia

