



Food and Agriculture
Organization of the
United Nations



World Health
Organization



World Organisation
for Animal Health
Founded as OIE

ONE HEALTH JOINT PLAN OF ACTION (2022-2026)

**WORKING TOGETHER FOR
THE HEALTH OF HUMANS, ANIMALS,
PLANTS AND THE ENVIRONMENT**

ONE HEALTH JOINT PLAN OF ACTION (2022-2026)

WORKING TOGETHER FOR
THE HEALTH OF HUMANS, ANIMALS,
PLANTS AND THE ENVIRONMENT

PUBLISHED BY

FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS

•

UNITED NATIONS ENVIRONMENT PROGRAMME

•

WORLD HEALTH ORGANIZATION

•

WORLD ORGANISATION FOR ANIMAL HEALTH

ROME, 2022



Required citation:

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

The designations employed and the presentation of material in this information product do not imply the expression of any opinion whatsoever on the part of the Food and Agriculture Organization of the United Nations (FAO), United Nations Environment Programme (UNEP), the World Health Organization (WHO), or World Organisation for Animal Health (WOAH) concerning the legal or development status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. The mention of specific companies or products of manufacturers, whether or not these have been patented, does not imply that these have been endorsed or recommended by FAO, UNEP, WHO, or WOA in preference to others of a similar nature that are not mentioned.

The responsibility for the interpretation and use of the material lies with the reader, and in no event shall FAO, UNEP, WHO or WOA be liable for damages arising from such interpretation or use.

The views expressed in this information product are those of the author(s) and do not necessarily reflect the views or policies of FAO, UNEP, WHO, or WOA.

ISBN FAO 978-92-5-136957-9
ISBN WHO 978-92-4-005913-9 (electronic version)
ISBN WHO 978-92-4-005914-6 (print version)
ISBN WOA 978-92-95121-43-0
ISBN UNEP 978-92-807-3959-6

© FAO, UNEP, WHO, and WOA, 2022



Some rights reserved. This work is made available under the Creative Commons Attribution-NonCommercial-ShareAlike 3.0 IGO licence (CC BY-NC-SA 3.0 IGO; <https://creativecommons.org/licenses/by-nc-sa/3.0/igo/>).

Under the terms of this licence, this work may be copied, redistributed and adapted for non-commercial purposes, provided that the work is appropriately cited. In any use of this work, there should be no suggestion that FAO, UNEP, WHO, or WOA endorses any specific organization, products or services. The use of FAO, UNEP, WHO, and WOA logos is not permitted. If the work is adapted, then it must be licensed under the same or equivalent Creative Commons license. If a translation of this work is created, it must include the following disclaimer along with the required citation: “This translation was not created by the Food and Agriculture Organization of the United Nations (FAO), United Nations Environment Programme (UNEP), the World Health Organization (WHO) or World Organisation for Animal Health (WOAH). FAO, UNEP, WHO, and WOA are not responsible for the content or accuracy of this translation. The original English edition shall be the authoritative edition.

Disputes arising under the licence that cannot be settled amicably will be resolved by mediation and arbitration as described in Article 8 of the licence except as otherwise provided herein. The applicable mediation rules will be the mediation rules of the World Intellectual Property Organization <http://www.wipo.int/amc/en/mediation/rules> and any arbitration will be conducted in accordance with the Arbitration Rules of the United Nations Commission on International Trade Law (UNCITRAL).

Users wishing to reuse material from this work that is attributed to a third party, such as tables, figures or images, are responsible for determining whether permission is needed for that reuse and for obtaining permission from the copyright holder. The risk of claims resulting from infringement of any third-party-owned component in the work rests solely with the user.

Requests for commercial use should be submitted via: www.fao.org/contact-us/licence-request. Queries regarding rights and licensing should be submitted to: copyright@fao.org.

Acknowledgements

The Quadripartite Organizations (FAO, UNEP, WHO and WOA) would like to express sincere gratitude to all those who contributed to the development of the One Health Joint Plan of Action (OH JPA), specifically, the following individuals listed in alphabetical order:

The Quadripartite Senior Management: Peter Ben Embarek, Francesco Branca, Jean-Philippe Dop, Doreen Robinson, Keith Sumption – for their guidance and support

The FAO Technical and Coordination Team: Ahmed El Idrissi and Barbara Haesler for leading the development and drafting of the plan with continuing support and contributions of the OH JPA coordination team: Fairouz Larfaoui, Orr Rozov, Marion Selosse and Yu Qiu

The Quadripartite Drafting Team: Bernadette Abela-Ridder; Barbara Alessandrini; Peter Ben Embarek; Amina Benyahia; Julian Blanc; Katrin Bote; Tim Corrigan; Aitziber Echeverria; Jeff Gilbert; Barbara Haesler; Jeff LeJeune; Cheng Liang; James Lomax; Margarita Meldon; Leen Meulenbergs; Simone Moraes Razl; Sophie Muset; Gillian Mylrea; Scott Newman; Johannes Refisch; Luz María de Regil; Stephane de la Rocque; Diana Rojas Alvarez; Cristina Romanelli; Sean Shadomy; Junxia Song; Emily Tagliaro; Katrin Taylor; Gregorio Torres; Olafur Valsson; Maria Van Kerkhove; Sophie VonDobschuetz; Chadia Wannous; Maria Cristina Zucca

All technical experts of the four organisations at Headquarters and regional offices who provided useful inputs and comments during the review process of the OH JPA

The Quadripartite Secretariat: Mehreen Azhar, Amina Benyahia, Julian Blanc, Tianna Brand, Tim Corrigan, Lisa Crump, Fairouz Larfaoui, Cheng Liang, Orr Rozov, Marion Selosse, Nadisha Sidhu, Chadia Wannous - for their support throughout the development of the OH JPA

The Quadripartite communications and operations teams, the editor, and the design team that supported the drafting and publication process

The One Health High Level Expert Panel (OHHLEP) for their advice and valuable inputs and comments throughout the development and review process

The United Kingdom Health Security Agency for the contribution to the development of the theory of change of the plan

All experts from 22 countries who provided feedback on the written and online consultations of the OH JPA

Contents

Abbreviations and acronyms	viii
Executive summary	x
Part 1. Setting the scene	1
1.1 Background	1
1.2 Links between the health of the environment, humans, animals and plants	3
1.3 Health challenges require holistic and sustainable solutions	9
1.4 Implementation of One Health	10
1.5 Rationale	12
1.6 Scope	13
Part 2. The action framework	15
2.1. Theory of change	15
2.2 Impact, outcomes and operational objectives	18
2.3 Guiding principles	20



Part 3. Action tracks	21
Action track 1: Enhancing One Health capacities to strengthen health systems	22
Action track 2: Reducing the risks from emerging and re-emerging zoonotic epidemics and pandemics	27
Action track 3: Controlling and eliminating endemic zoonotic, neglected tropical and vector-borne diseases	34
Action track 4: Strengthening the assessment, management and communication of food safety risks	39
Action track 5: Curbing the silent pandemic of antimicrobial resistance	44
Action track 6: Integrating the environment into One Health	47
<hr/>	
Part 4. Governance, implementation and monitoring	56
Governance	56
Implementation, monitoring and evaluation	57
<hr/>	
Part 5. Investing in One Health	59
Resource mobilization strategy	59
The way forward	60
<hr/>	
Appendices	61
Appendix 1: Glossary	61
Appendix 2: Examples of One Health Joint Plan of Action-relevant Quadripartite initiatives	63
<hr/>	
References	68



Figures and tables

FIGURE 1:

ONE HEALTH PROMOTES A SUSTAINABLE AND HEALTHY FUTURE THROUGH COLLABORATION, COMMUNICATION, COORDINATION AND CAPACITY BUILDING	4
---	---

FIGURE 2:

ONE HEALTH JOINT PLAN OF ACTION THEORY OF CHANGE	16
--	----

FIGURE 3:

THE SIX ONE HEALTH JOINT PLAN OF ACTION TRACKS	21
--	----

TABLE 1:

ACTIVITIES, DELIVERABLES AND TIMELINE OF ACTION 1.1	23
---	----

TABLE 2:

ACTIVITIES, DELIVERABLES AND TIMELINE OF ACTION 1.2	25
---	----

TABLE 3:

ACTIVITIES, DELIVERABLES AND TIMELINE OF ACTION 1.3	27
---	----

TABLE 4:

ACTIVITIES, DELIVERABLES AND TIMELINE OF ACTION 2.1	28
---	----

TABLE 5:

ACTIVITIES, DELIVERABLES AND TIMELINE OF ACTION 2.2	30
---	----

TABLE 6:

ACTIVITIES, DELIVERABLES AND TIMELINE OF ACTION 2.3	32
---	----

TABLE 7:

ACTIVITIES, DELIVERABLES AND TIMELINE OF ACTION 3.1	35
---	----



TABLE 8: ACTIVITIES, DELIVERABLES AND TIMELINE OF ACTION 3.2	37
TABLE 9: ACTIVITIES, DELIVERABLES AND TIMELINE OF ACTION 3.3	39
TABLE 10: ACTIVITIES, DELIVERABLES AND TIMELINE OF ACTION 4.1	41
TABLE 11: ACTIVITIES, DELIVERABLES AND TIMELINE OF ACTION 4.2	42
TABLE 12: ACTIVITIES, DELIVERABLES AND TIMELINE OF ACTION 4.3	43
TABLE 13: ACTIVITIES, DELIVERABLES AND TIMELINE OF ACTION 5.1	45
TABLE 14: ACTIVITIES, DELIVERABLES AND TIMELINE OF ACTION 5.2	46
TABLE 15: ACTIVITIES, DELIVERABLES AND TIMELINE OF ACTION 5.3	47
TABLE 16: ACTIVITIES, DELIVERABLES AND TIMELINE OF ACTION 6.1	48
TABLE 17: ACTIVITIES, DELIVERABLES AND TIMELINE OF ACTION 6.2	50
TABLE 18: ACTIVITIES, DELIVERABLES AND TIMELINE OF ACTION 6.3	52
TABLE 19: ACTIVITIES, DELIVERABLES AND TIMELINE OF ACTION 6.4	54



Abbreviations and acronyms

AMR	Antimicrobial resistance
COVID-19	Coronavirus disease 2019
FAO	Food and Agriculture Organization of the United Nations
FETP	Field Epidemiology Training Programme
FETPV	Field Epidemiology Training Programme for Veterinarians
FTP-WEBE	Field Training Programme for Wildlife, Environment, Biodiversity and Ecosystems Professionals
GAP	Global Action Plan
GARC	Global Alliance for Rabies Control
GLLP	Global Laboratory Leadership Programme
GSC	Global Steering Committee
IFC	International Finance Corporation
IHR	International Health Regulations
IMS	Incident Management System
JEE	Joint External Evaluation of the IHR
INFOSAN	International Food Safety Authorities Network
LMIC	Low- and middle-income country
MERS-CoV	Middle East respiratory syndrome coronavirus

MoU	Memorandum of understanding
MPTF	Multi-Partner Trust Fund
NAP	National Action Plan
NASA	National Aeronautics and Space Administration
NBW	National Bridging Workshop
NGO	Non-governmental organization
NTD	Neglected tropical disease
NZD	Neglected zoonotic disease
OH JPA	One Health Joint Plan of Action
OHHLEP	One Health High Level Expert Panel
QJS	Quadripartite Joint Secretariat
PVS	Performance of Veterinary Services
ROI	Return on investment
SARS	Severe Acute Respiratory Syndrome
SDG	Sustainable Development Goal
TISSA	Tripartite Integrated System for Surveillance on AMR and Antimicrobial Use
TrACCS	Tripartite AMR country self-assessment survey
UNEP	United Nations Environment Programme
WASH	Water, Sanitation and Hygiene
WOAH/OIE*	World Organisation for Animal Health (founded as OIE)
WHA	World Health Assembly
WHO	World Health Organization

* The World Organisation for Animal Health has recently transitioned its acronym from OIE to WOAH. In some parts of the text and resources, the name of the Organisation might still be referred to as OIE or as WOAH/OIE.

Executive summary

The Quadripartite Organizations – the Food and Agriculture Organization of the United Nations (FAO), the United Nations Environment Programme (UNEP), the World Organisation for Animal Health (WOAH, founded as OIE), and the World Health Organization (WHO) – collaborate to drive the change and transformation required to mitigate the impact of current and future health challenges at the human–animal–plant–environment interface at global, regional and country level.

Responding to international requests to prevent future pandemics and to promote health sustainably through the One Health approach, the Quadripartite has developed the One Health Joint Plan of Action (2022–2026) (OH JPA).

The OH JPA outlines the commitment of the four organizations to collectively advocate and support the implementation of One Health. It builds on, complements and adds value to existing global and regional One Health and coordination initiatives aimed at strengthening capacity to address complex multidimensional health risks with more resilient health systems at global, regional and national level.

Raising the bar – One Health Joint Plan of Action (OH JPA)

The desired impact of the OH JPA is a world better able to prevent, predict, detect and respond to health threats and improve the health of humans, animals, plants and the environment while contributing to sustainable development. The OH JPA aims to work towards this vision in the following way:

- Provide a framework for action and propose a set of activities the four organizations can offer together to advance and sustainably scale up One Health.
- Provide upstream policy and legislative advice and technical assistance, to help set national targets and priorities across the sectors for the development and implementation of One Health legislation, initiatives and programmes.
- Take stock of existing cross-sectoral global and regional initiatives around One Health, identify and advise on synergies and overlaps, and support coordination.
- Mobilize and make better use of resources across sectors, disciplines and stakeholders.
- The OH JPA is guided by a theory of change and makes use of One Health principles to strengthen collaboration, communication, capacity building and coordination

equally across all sectors responsible for addressing health concerns at the human–animal–plant–environment interface.

The OH JPA is built around six interdependent action tracks that collectively contribute to achieving sustainable health and food systems, reduced global health threats and improved ecosystem management:

- Action track 1: Enhancing One Health capacities to strengthen health systems
- Action track 2: Reducing the risks from emerging and re-emerging zoonotic epidemics and pandemics
- Action track 3: Controlling and eliminating endemic zoonotic, neglected tropical and vector-borne diseases
- Action track 4: Strengthening the assessment, management and communication of food safety risks
- Action track 5: Curbing the silent pandemic of AMR
- Action track 6: Integrating the environment into One Health

Each action track consists of a set of actions with specific activities, deliverables and a timeline to achieve the following objectives:

- i. Provide adequate guidance and tools for the effective implementation of multisectoral approaches to promote the health of humans, animals, plants and ecosystems and to prevent and manage risks at the human–animal–plant–environment interface.
- ii. Reduce the risk and minimize local and global impacts of zoonotic epidemics and pandemics by understanding the linkages and drivers of emergence and spillover, adopting upstream prevention and strengthening One Health surveillance, early warning and response systems.
- iii. Reduce the burden of endemic zoonotic, neglected tropical and vector-borne diseases by supporting countries in implementing community-centric, risk-based solutions, strengthening policy and legal frameworks from the local to the global level and across sectors, and increasing political commitment and investment.
- iv. Promote awareness, policy changes and action coordination among stakeholders to ensure that humans, animals and ecosystems achieve health and remain healthy in their interactions with and along the food supply chain.
- v. Take joint action to preserve antimicrobial efficacy and ensure sustainable and equitable access to antimicrobials for responsible and prudent use in human, animal and plant health.
- vi. Protect and restore biodiversity, prevent the degradation of ecosystems and the wider environment to jointly support the health of people, animals, plants and ecosystems, underpinning sustainable development.

Lastly, the OH JPA promotes the adoption of cross-cutting principles, including systems thinking, advocacy, public-private partnerships, governance, institutional and legal frameworks, and traditional knowledge of local and indigenous communities, to build connections across the six action tracks and look at shared underlying issues.

Part 1.

Setting the scene

1.1 Background

The Tripartite organizations of the Food and Agriculture Organization of the United Nations (FAO), the World Health Organization (WHO) and World Organisation for Animal Health (WOAH, formerly OIE) have been working together for decades to address risks at the human–animal–environment interface.

In February 2021, the three organizations called on the United Nations Environment Programme (UNEP) to join the Tripartite, reaffirming the importance of the environmental dimension of the One Health collaboration.

Following the Twenty-seventh Tripartite Annual Executive Meeting (in March 2021), the Tripartite and UNEP agreed to jointly develop a strategy and action plan to prevent future pandemics through the One Health approach. In March 2022, at the Twenty-eighth Tripartite Annual Executive Meeting, the four organizations signed a memorandum of understanding (MoU) to reflect a change from the Tripartite to a new Quadripartite partnership, with UNEP as an equal partner.

The One Health Joint Plan of Action (2022–2026) (OH JPA) set out in this document is guided by the areas of One Health collaboration set out in the strategic documents of the Tripartite (FAO, OIE and WHO, 2010; 2017), the MoU of 2018 between the Tripartite organizations on cooperating to combat health risks at the human–animal–environment interface and the One Health recommendations and resolutions of the various Quadripartite governing bodies with a view to achieving public health, animal health, food safety and security, and ecosystem health. The OH JPA encompasses the priority areas of the Tripartite workplan 2021¹ and provides an overarching framework for longer-term actions.

The OH JPA also builds on World Health Assembly resolution WHA74.7, which calls on the Quadripartite “to build on and strengthen the existing cooperation among WHO, FAO, WOAH and UNEP to develop options, for consideration by their respective

¹ Priority areas are: 1) the reinforcement of national services in human health, animal health and food safety; 2) intelligence, early warning and disease information systems; 3) preparedness and response to emerging, re-emerging and neglected infectious diseases; 4) antimicrobial resistance; 5) food safety; 6) dog-mediated rabies; 7) zoonotic influenza; 8) Middle East respiratory syndrome coronavirus (MERS-CoV); 9) zoonotic tuberculosis; 10) sharing of pathogens, genetic materials and sequences; xi) communications. Overarching all activities are: A1) the reinforcement of national services in human health, animal health and food safety; A2) coordination on research and development in the area of zoonotic pathogens; A3) vector-borne disease; A4) Rift Valley fever coordination; and A5) climate change.

governing bodies, including establishing a common strategy on One Health, including a joint workplan on One Health to improve prevention, monitoring, detection, control and containment of zoonotic disease outbreaks” (WHA, 2021).

The OH JPA aims to guide the four organizations in working together on One Health with the aim of supporting their Members, Member States and State Parties in building One Health capacities. It is not a binding policy document. It provides a framework for action and proposes a set of activities that the four organizations can offer together to advance and sustainably scale up One Health. The plan uses a One Health approach to strengthen collaboration, communication, capacity building and coordination equally across all sectors responsible for addressing health concerns at the human–animal–plant–environment interface.

The OH JPA builds on, complements and adds value to existing global and regional One Health and coordination initiatives aimed at strengthening capacity to address complex multidimensional health risks with more resilient health systems at global, regional and national level. It also considers regional specificities, national contexts and priorities, as well as the level of progress on implementing One Health policies, strategies and interventions.

The OH JPA is developed through a participatory process and reflects the inputs of FAO, UNEP, WHO, WOAHA and the [One Health High Level Expert Panel \(OHHLEP\)](#). Online consultations with Members, Member States and State Parties were also organized to collect feedback and suggestions.

The OH JPA will be implemented over a period of five years (2022–2026). It is intended as a living document, open to adjustment to reflect progress, new challenges and resources made available as the Quadripartite decides.

1.2 Links between the health of the environment, humans, animals and plants

Economic development has led to substantial improvements in the well-being of many humans globally, but often at the expense of ecosystems, a healthy environment and the welfare of animals. With the global human population projected to reach 8 billion in 2023 amid unsustainable consumption and production patterns, the pressures on our natural systems are tremendous and will continue to grow (UNDESA, 2022). The earth's natural resources are being used at a faster rate than they can be replenished due to unsustainable and destructive practices and with insufficient consideration for biodiversity or the health of surrounding ecosystems upon which our lives and well-being depend.

Land-use change, unsustainable agricultural production and intensification, large-scale deforestation, land degradation and biodiversity loss, among other drivers, are threatening ecosystem integrity and functions and posing increased health risks at the human-animal-plant-environment interface, disproportionately affecting the most vulnerable communities. These risks are exacerbated by expanding urbanization, unsustainable food production and consumption patterns, including increasingly complex food chains, poor waste management and disposal, increased trade and travel, as well as pollution, biodiversity and climate crises.

The effects of environmental degradation and the corresponding erosion of ecosystem services influence the relationships between health, food production and natural systems. There is, therefore, an urgent need to reassess and transform the interactions between humans, animals, plants and the environment they share. Balancing these interactions ensures human, animal and plant health and well-being, and charts the path towards economic, environmental and social sustainability. This is critical to achieving the Sustainable Development Goals (SDGs).

1.2.1 One Health definition

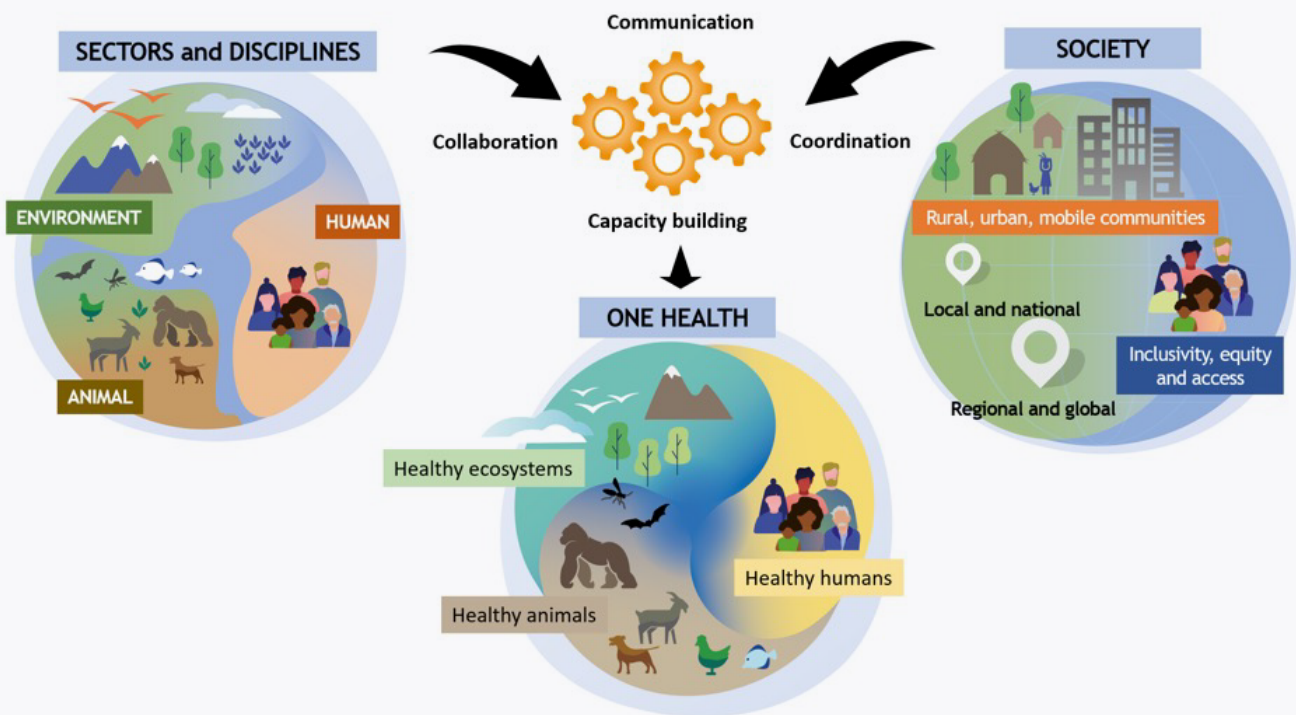
One Health is not a new concept, but it has received renewed attention and evolved over the past decade because of the increased frequency and severity of threats linking the health of humans, animals, plants and the environment. One Health calls for a holistic and systems-based approach that recognizes the interconnection between the health of humans, animals, plants and the environment.

OHHLEP, as an independent advisory group to the Quadripartite, has issued a comprehensive definition of One Health, which the Quadripartite embraces in this OH JPA (Adisasmito *et al.*, 2022):

One Health is an integrated, unifying approach that aims to sustainably balance and optimize the health of humans, animals, plants and ecosystems. It recognizes the health of humans, domestic and wild animals, plants and the wider environment (including ecosystems) are closely linked and interdependent.

The approach mobilizes multiple sectors, disciplines and communities at varying levels of society to work together to foster well-being and tackle threats to health and ecosystems, while addressing the collective need for clean water, energy and air, safe and nutritious food, taking action on climate change, and contributing to sustainable development.

FIGURE 1: ONE HEALTH PROMOTES A SUSTAINABLE AND HEALTHY FUTURE THROUGH COLLABORATION, COMMUNICATION, COORDINATION AND CAPACITY BUILDING



1.2.2 The health of the environment

The health of the environment is a critical foundation for the health and well-being of humans, animals and plants. Maintaining ecosystem health through the conservation of natural environments helps preserve biodiversity, limiting the emergence and transmission of diseases across the animal–human–plant interface (such as the dilution effect), increases well-being and promotes health. Environmental degradation caused by human activities poses several health threats that are invariably complex and rooted in how humans interact with and use the environment. The following are examples of environmental hazards that are negatively affecting the health of humans and many other species.

- Water, air and soil pollution can cause significant adverse health outcomes in humans, wild and domestic animals and plants. Environmental contamination is an important factor in many non-infectious diseases, including cancer and respiratory illness. Dangerous chemical substances and other pollutants can contaminate the food supply. For example, heavy metals, such as lead or mercury, and other toxic chemicals in aquatic ecosystems bioaccumulate in the food chain with potentially adverse impacts on humans and animals. Similarly, air pollution from fossil fuels and other sources has demonstrably negative impacts on human and animal health, biodiversity including plants, animals and ecosystems and water quality, as well as productive sectors, such as agriculture and fisheries. In addition, antimicrobial waste entering the environment and water sources (including drinking water sources) via wastewater, waste, run-off and sewage risks the spread of drug-resistant organisms and antimicrobial resistance, affecting humans, animals and the environment in myriad ways.
- Unsafe water, poor sanitation and poor hygiene are responsible for human and animal mortality and morbidity due to various diseases, particularly vulnerable populations in low-resource countries. Unintentional poisonings, mainly arising from excessive exposure to and inappropriate use of toxic chemicals, including pesticides present in occupational and/or domestic environments, are heavily affecting human health, particularly in low-income countries. Exposure to mycotoxins, aflatoxins, biotoxins and waterborne pathogens is another problem of concern affecting the health of humans, animals and plants.
- Environmental degradation generates direct health hazards, such as extreme weather and floods. The impacts of environmental degradation on the health and well-being of humans and animals are compounded by the climate crisis, which can act as a multiplier of these threats, exacerbating their impact while also undermining the resilience of environmental and ecological systems through complex processes.
- The effects of climate change on pathogens and the health status of human, domestic animals including livestock and companion animals, and wildlife may have several possible outcomes. Evidence suggests that changes occurring in the natural environment due to climate change are compromising feed and food security and increasing the spread of infectious diseases, including drug-resistant infections and vector-borne diseases. With changes in temperatures and humidity levels, vector populations may expand beyond their present geographic ranges and expose animals and humans to diseases to which they have no natural immunity. Populations of extremely ecosystem-useful insects, such as bees, can also be affected.

1.2.3 The perpetual challenge of emerging infectious diseases

Infectious diseases are among the most significant health and security challenges the global community is facing. In low-income countries, infectious diseases account for more than 60 percent of the human disease burden and are the major cause of animal disease, creating a considerable threat to the well-being of both human and animal populations. Emerging infectious diseases may be novel or an evolution of existing pathogens that emerge or re-emerge from humans or animals. Many have the potential to create deadly epidemics or pandemics, as demonstrated by COVID-19. Epidemics or pandemics may occur directly in the populations in which they emerge or following a spillover event, with subsequent amplification and spread in the recipient host population (other than in the case of a dead-end spillover). Trade in domestic animals, wildlife and their products, as well as human travel, can facilitate the spread of locally emergent diseases over long distances, even between countries, resulting in wider dissemination and impact.

Most emerging infectious diseases in humans (more than 60 percent) are of zoonotic or animal origin, with the majority of these (around 70 percent) originating in wildlife. These threats are significantly increasing in frequency and severity over time, with tremendous long-term impacts. The COVID-19 pandemic is the latest example of a major disease of probable animal origin. There have been many others, including Severe Acute Respiratory Syndrome (SARS), Nipah virus disease, zoonotic influenza (H5N1, H7N9, 2009 H1N1 influenza pandemic), arbovirus diseases (such as Zika virus disease, yellow fever and chikungunya), Ebola virus disease, plague and Middle East Respiratory Syndrome (MERS-CoV).

WHO's 2018 Research and Development Blueprint states that the biggest risk lies in the emergence of an unknown "Disease X", which may strike at any time (WHO, 2018b). In 2019, Disease X became COVID-19. There is a high degree of certainty that the world will continue to face new disease threats, driven by factors such as continued population expansion, urbanization, increased transport, land-use change, climate change, intensification of food systems and habitat loss.

Emerging infectious diseases affecting humans, as well as domestic animals or wildlife, threaten global health security, contribute to food insecurity and weigh on national economies and government resources. The effects of these diseases also have wider-reaching negative impacts on animal health and welfare, for example, affecting other disease-control efforts through the diversion of resources or through the collapse of markets and trade, with knock-on effects on animal production units and the conservation of wild animal populations.

1.2.4 The persisting burden of endemic zoonotic, neglected tropical and vector-borne diseases

In contrast to epidemic- and pandemic-prone zoonotic diseases, endemic zoonoses (including those that are vector-borne) constitute a constant social and economic burden. They usually do not spread fast or widely and mostly afflict human populations

living near their animals. In endemic areas, they perpetuate poverty by damaging not only human health, but also the health and welfare of domestic and wild animals, affecting livelihoods and food security.

Endemic zoonoses are frequently characterized as “neglected zoonotic diseases (NZDs)”, as they mainly affect poor and marginalized populations, particularly in low-income countries. Despite their persistent circulation, they are rarely targeted by formal surveillance systems, so their incidence and burden are greatly underestimated. This, in turn, leads to neglect by policymakers and funding agencies. This group includes some notorious diseases, such as rabies, anthrax, brucellosis, bovine tuberculosis, cysticercosis, leptospirosis and echinococcosis.

WHO has further classified a subgroup of 20 diseases that are mainly prevalent in tropical areas as neglected tropical diseases (NTDs).² They threaten the health and livelihood of more than a billion humans.

Many endemic zoonoses are transmitted by vectors such as mosquitoes, midges, sand flies, fleas and ticks, have animal reservoirs and are associated with complex transmission cycles. They cause disease impact in diverse contexts around the world, spanning the whole continuum from low-income to high-income countries. Examples are Japanese encephalitis, West Nile virus infection, Dengue fever, African trypanosomiasis (sleeping sickness), Lyme disease and Rift Valley fever. The epidemiology of vector-borne diseases is traditionally associated with environmental conditions, complicated by anthropological factors, which makes their control challenging.

1.2.5 The global upsurge of food and water safety hazards

Foodborne hazards have taken on new dimensions, with complex food safety challenges emerging around the globe. Hazards, including zoonotic and non-zoonotic pathogens and chemical contaminants, can enter the food chain at any point, from prior to harvest to the time of consumption.

Foodborne and waterborne diseases are caused when unsafe levels of pathogens, chemical contaminants and other toxins are ingested from food or water. Unsafe food is estimated to cause 600 million cases of foodborne illnesses in humans and more than 400,000 deaths annually around the world (WHO, 2015b). The total productivity loss associated with foodborne diseases in low- and middle-income countries (LMICs) is estimated to cost USD 95 billion per year, while the annual cost of treating foodborne illnesses is estimated at USD 15 billion (World Bank, 2018).

² Buruli ulcer, Chagas disease (American trypanosomiasis), dengue and chikungunya, dracunculiasis (guinea-worm disease), echinococcosis, food-borne trematode infections, human African trypanosomiasis (sleeping sickness), leishmaniasis, leprosy (Hansen’s disease), lymphatic filariasis (elephantiasis), mycetoma, chromoblastomycosis and other deep mycoses, onchocerciasis (river blindness), rabies, scabies and other ectoparasitoses, schistosomiasis (bilharzia), soil-transmitted helminthiasis, snakebite envenoming, taeniasis and cysticercosis, trachoma, Yaws (Endemic treponematoses) as classified by WHO (2021).

Waterborne diseases are estimated to cause over 4 billion cases of diarrheal illness and nearly 2 million deaths each year around the globe (United Nations, 2014).

In addition to long-standing foodborne bacterial pathogens such as *Salmonella*, new pathogens are emerging, and many kinds of food have been associated with the transmission of disease. Pathogens and other hazards may contaminate food in the processing environment (*Listeria monocytogenes*, for example, or unsafe levels of food additives) or through food workers (norovirus, for instance). Chemical contaminants may also enter the food chain prior to harvest – for example, veterinary drug residues in animals and pesticides on plants or heavy metals through the pollution of air, water and soil – thereby affecting human and animal health.

Food and water contamination are not just public health issues, but affect animals too. For example, the poisoning of birds of prey can occur through pesticides used in food systems. Livestock can be exposed to hazards in feed and water. The contamination of water, for instance, may cause botulism and salmonellosis and the concentration of heavy metals and pesticides may cause productivity losses.

A critical aspect related to the contamination of water, the environment and food is the cross-sectoral management (or lack thereof) of waste, which spans a wide range of materials, such as human and animal faecal matter, the carcasses of animals that have succumbed to disease or accidents, and waste from the food chain (such as condemned food products, milk that cannot be used because of drug withdrawal times, and by-products that do not have a market or use). The problem is exacerbated by the lack of One Health integration in water, sanitation and hygiene (WASH) management efforts.

1.2.6 The growing threat of antimicrobial resistance

Antimicrobial resistance (AMR) is recognized as a leading cause of death around the world, with the highest burdens in low-resource settings. An estimated 4.95 million human deaths were associated with bacterial AMR in 2019, including 1.27 million deaths attributable to bacterial AMR (Antimicrobial resistance collaborators, 2022). AMR also threatens the health of animals and plants grown for food, with effects on food security, food safety and the environment.

Antimicrobials play a crucial role in the health of humans, animals and plants, as well as in food safety and food security. However, AMR is an ever-increasing and widespread threat, driven by the overuse and misuse of antimicrobials in the human, animal and plant sectors.

There are many social and environmental factors that accelerate the emergence and spread of resistant genes and pathogens among and between humans, animals and the environment. These include insufficient access to health services, inadequate production and housing, a lack of clean water, poor sanitation, waste management and hygiene, insufficient regulatory frameworks, and a lack of awareness and education about the risks of AMR and the appropriate use of antimicrobials.

1.3 Health challenges require holistic and sustainable solutions

The complexity and interconnectedness of the health challenges threatening humans, animals, plants and the environment, where they coexist, require holistic, integrated solutions with a systemic approach that incorporates wider structural factors, as well as systemic prevention measures integrating the health of humans, animals, plants and the environment.

This shift requires the embrace of One Health to move beyond the siloed approaches still adopted by many sectors. This will enable and institutionalize intersectoral science-based knowledge sharing, intelligence gathering and response planning at all levels of the relevant organizations and ensure that there are protocols for the intersectoral alert and management of threats, as well as joint decision processes for sustainable and holistic solutions.

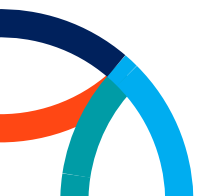
One Health is predicated on a systemic understanding of the interdependencies between the health of humans, animals, plants and the environment and how these can manifest as health threats. It enables better understanding of the root causes and drivers of disease emergence, spread and persistence, as well as the impacts of biodiversity loss and environmental degradation. This is supported by conceptualizing challenges on a wider scale and the associated sharing and integration of data and knowledge across multiple stakeholders and disciplines.

One Health provides a more comprehensive assessment of health challenges, thereby facilitating the development of appropriate prevention and management strategies and inclusive evidence-based policies to strengthen and develop sustainable health systems and ecosystems. These, in turn, help to build social, ecological and economic resilience.

This thinking clearly indicates the value of integrating knowledge and perspectives from many players into parts of the system working towards positive outcomes for humans, animals, plants and ecosystems, while increasing investment in developing health systems underpinned by prevention, early detection, preparedness and coordinated cross-sectoral timely response to reduce the risk of disease emergence and future pandemics.

Healthy and sustainable agrifood systems are an integral part of the One Health vision for a better future. Livestock and fish food systems, in particular, require targeted attention and integrated policies given the multiple effects that the growing demand for protein has on the animal production sector and associated systems (for example, deforestation for the production of animal feed, the increasing scale and density of animals, disease emergence and land-use change).

One Health is a powerful approach that can enable the achievement of health for humans, animals, plants and the environment, as well as food and water security and safety. It can, therefore, help pave the way to achieving the SDGs, including those on poverty, hunger, health and well-being, inequality, clean water and sanitation, work and economic growth, sustainable and responsible consumption and production, and partnerships.



1.4 Implementation of One Health

The growth in support for the One Health concept has led to the establishment of several global initiatives to adopt and advance a One Health approach to addressing global health threats. With significant investments by funding partners, One Health initiatives and networks are emerging worldwide, with many countries and regions encouraging collaboration between professionals from different disciplines, working from community to global levels across sectors and institutional divides.

Despite this widespread support and engagement, implementing One Health in practice continues to prove challenging. It faces technical, institutional and professional barriers, in addition to sustainability concerns, competing priorities and funding deficiencies. The One Health concept has evolved by broadening its scope. However, environmental considerations, socioeconomic factors in disease emergence and spread, and the cost and benefits of One Health interventions have not been sufficiently defined or integrated into the development and implementation of One Health interventions, policies, legislative frameworks, strategies or programmes.

The environmental sector, which consists of areas such as natural resource management, wildlife management and conservation, biodiversity conservation, management and sustainable use, pollution and waste management, is not always routinely incorporated into the One Health approach and there has been limited engagement in cross-sectoral initiatives. The role of the environmental determinants of health has not been well understood by other sectors and there is good potential to integrate environmental considerations more consistently.

Professional segregation with limited cross-sectoral working, inadequate representation of some sectors, disjointed legislative schemes, a lack of data sharing and transparency, an absence of multisectoral coordination mechanisms, siloed budgets and decision-making processes, and a lack of robust regulatory frameworks, legal support, mandates and enabling policies are additional barriers hindering the effective implementation of One Health, particularly at regional, national and sub-national level.

One Health requires continued institutionalization, supported by appropriate investments for greater awareness among all stakeholders, cross-sectoral competencies and capacities, joint workforce training, career pathways and opportunities, effective governance rooted in transdisciplinary and multisectoral principles and appropriate legislation, stakeholder and community engagement, the integration of the concept into education in related disciplines, and a renewed emphasis, with key interventions and collaborations at all levels, on moving towards a more sustainable, healthier and safer world.

Notable progress in the fight against AMR, for example, as an area with established One Health experience across disciplines, should be used as a building block in the implementation and operationalization of One Health in other areas. Proposed actions should aim to benefit from established efforts and optimize and enhance milestones already achieved.

1.5 Rationale

The COVID-19 pandemic and its profound impact on human health, society and economies around the world highlighted the interconnectedness between biodiversity, a healthy environment, food systems and our health, and has revealed vulnerabilities at all levels. Assessments of these complex interactions warn us that future pandemics will emerge more often, spread more rapidly, do more damage to the world economy and kill more people than COVID-19, unless there is a transformative change in the global approach to our relationship with the environment and how we tackle disease emergence, spillovers and spread – from prevention to reaction and preparedness. Although warnings of a pandemic arising from a previously unknown zoonotic pathogen have been on the international radar for many years, the COVID-19 crisis has reinforced the urgent need for an integrated, One Health approach to pandemic prevention.

The need for this transformative change is supported by increasing high-level political support for One Health to manage health threats associated with interactions between humans, animals, plants and the environment.

In the face of the increasing number of multidimensional health, water, energy, food security and biodiversity challenges that the world is facing, a shared vision of coherent and coordinated action on all levels is more important than ever. The Quadripartite considers this international dynamic to be a unique opportunity to take its partnership to a new level and stand together as a global coalition to jointly drive change and achieve the transformations required to mitigate the impact of current and future health challenges at global, regional and country level.

The OH JPA embraces this global vision to further strengthen a comprehensive One Health approach and to foster the change pathways required for successful implementation at all levels. The OH JPA is motivated by the urgent need for global governance in One Health, in which the Quadripartite plays a leading role to reduce risks to the health of humans, animals, plants and the environment.

The OH JPA adopts One Health with a broader perspective, adopting a systems approach to support the health of humans, animals, plants and ecosystems, while identifying and addressing the factors underlying disease emergence, spread and persistence, and the complex economic, social and environmental determinants of health. By integrating the environmental dimension to gain a broader understanding of disease emergence and spread, as well as the role of ecosystems in disease regulation, One Health can unfold its entire capacity. It can thereby help to address the underlying drivers of disease emergence and ill health, improve disease prevention and preparedness, mitigate the impacts of health risks and threats, implement sustainable solutions and promote health for all in a holistic manner long term.

1.6 Scope

The scope of the OH JPA is guided by the imperative for an inclusive One Health approach to addressing the health threats of humans, animals and plants in an integrated manner, while promoting environment and biodiversity protection and acknowledging the broader systems benefits of cross-sectoral collaboration to achieve collective outcomes.

Specifically, the OH JPA addresses the risks and consequences of emerging zoonotic diseases with epidemic and pandemic potential, endemic infectious diseases of zoonotic and vector-borne origin, food and water safety hazards, AMR and the health of the environment.

Non-zoonotic epidemics of transboundary animal diseases and their risk factors can seriously impact society, economic trade, food security, ecosystem function and the health and well-being of humans. Their prevention and mitigation can benefit from a One Health approach and are comprehensively described in the *Strategy of the Global Framework for Progressive Control of Transboundary Animal Diseases (GF-TADs)* (FAO and WOA, 2021). While these diseases and livestock and fish production systems are not specifically addressed in the OH JPA, they are considered in the broader framework of capacity building, coordination, systems thinking and resources across relevant technical components of the OH JPA. Plant pests and diseases are not specifically addressed here, as they are beyond the context of the OH JPA. However, plant health in general is addressed across the action tracks, for example, in the context of food safety, AMR, the health of the environment and capacity development.

The OH JPA is a technical document informed by evidence, best practices and existing guidance from the Quadripartite. It offers a set of actions with activities for the Quadripartite to advance One Health at all levels. It also offers a set of tools, guidance and support mechanisms that countries, international partners and non-state actors, such as civil-society organizations, professional associations, academia and research institutions, can draw upon for their One Health planning and implementation.

The implementation of proposed actions at the national level will need to consider national contexts, priorities and resources. The elaboration of associated workplans at country level will be conducted in consultation with Members, Member States and State Parties with a view to helping countries accelerate progress on One Health.

The OH JPA is strategically linked to and aligned with many relevant initiatives (see Box 1). It should be noted that this list is not exhaustive and can be completed as appropriate. A list of the most relevant programmes, initiatives and tools to the OH JPA can be found in appendix 2. The OH JPA will complement these initiatives while facilitating and supporting their implementation at country, regional and global level, taking a coordinated One Health approach.

BOX 1: THE OH JPA BUILDS AND COMPLEMENT EXISTING AND ONGOING INITIATIVES, INCLUDING:

-
- [Global Action Plan on AMR](#) (WHO, 2015a)

 - [Road Map for Neglected Tropical Diseases 2021–2030](#) (WHO, 2021a)

 - [Zero by 30: the global strategic plan to eliminate human deaths from dog-mediated rabies by 2030](#) (WHO, FAO and OIE, 2018)

 - [Quadripartite Strategic Framework for collaboration on antimicrobial resistance](#) (FAO, UNEP, WHO, WOAHA 2022)

 - [Roadmap for Zoonotic Tuberculosis](#) (WHO, FAO and OIE, 2017)

 - [Convention on Biological Diversity](#) (United Nations, 1992)

 - [WOAHA/OIE wildlife health framework](#) (WOAHA, 2021)

 - [Global framework for progressive control of transboundary animal diseases \(GF-TADs\)](#) (FAO and WOAHA, 2021)

 - [Preventing the next pandemic - Zoonotic diseases and how to break the chain of transmission](#) (UNEP, 2020)

 - [WHO global strategy on health, environment and climate change](#) (WHO, 2020a)

 - [Draft WHO Global Strategy for Food Safety \(2022-2030\)](#) (WHO, 2021b)

 - Joint FAO/WHO food safety monitoring framework

 - [International Health Regulations-Performance of Veterinary Services \(IHR-PVS\) National Bridging Workshops \(NBWs\)](#)

 - [The Tripartite operational tools of the Tripartite Zoonoses Guide](#) (WHO, FAO and OIE, 2020)
-

Part 2.

The action framework

2.1. Theory of change

The theory of change for the OH JPA argues that One Health, as an integrated, multisectoral, holistic and transdisciplinary approach, has the potential to solve the pressing health challenges described above. Effective implementation of One Health at all levels can make significant contributions to the envisaged impact and outcomes of the OH JPA and achieve sustainable and lasting results.

There are numerous technical, coordinative, collaborative and institutional challenges hindering the effective implementation of One Health at the global, national and subnational level. The OH JPA seeks to remove these barriers to enable progress on improved health outcomes for humans, animals, plants and the environment.

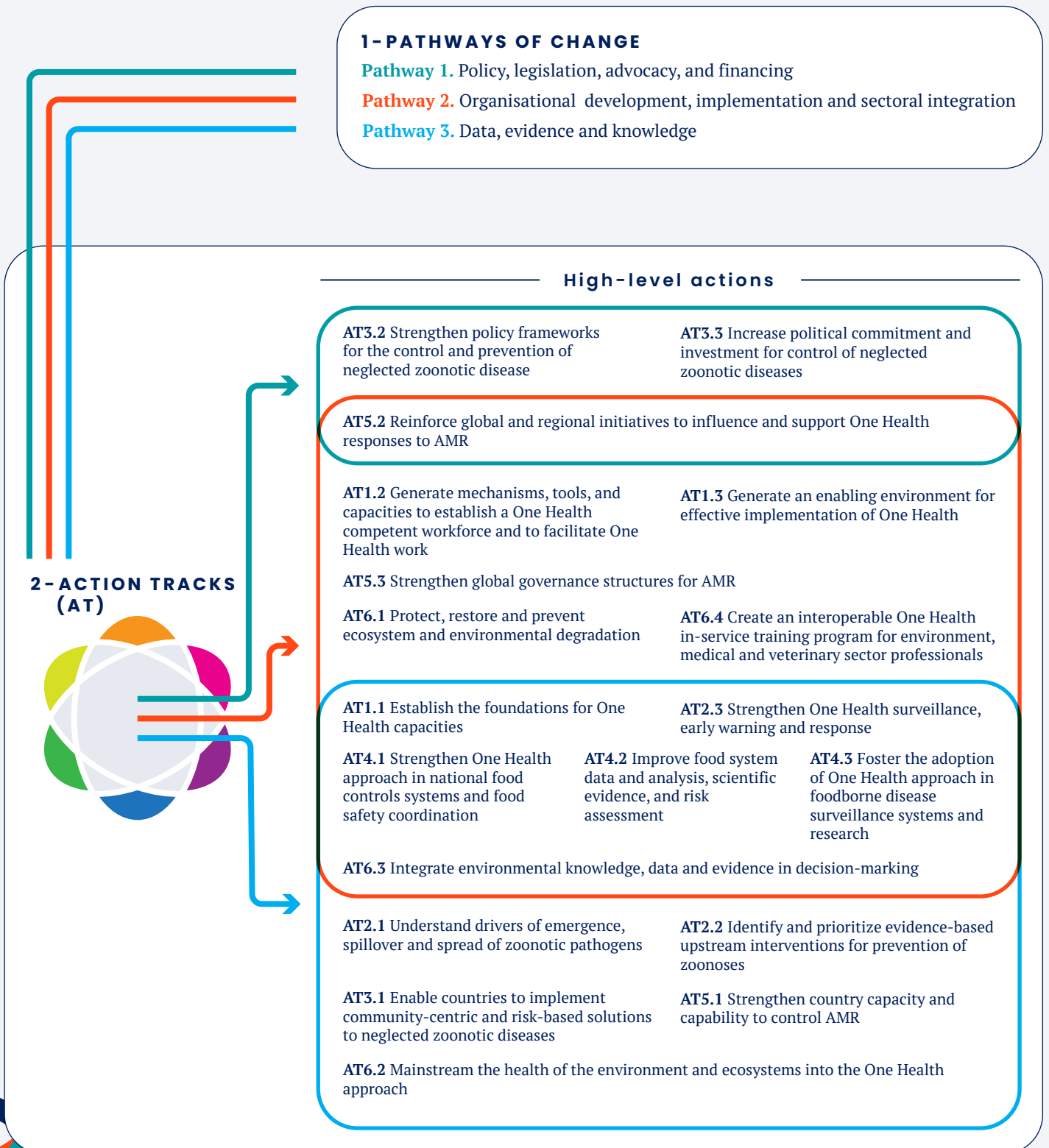
The theory of change is supported by three pathways to change, which represent the areas where the four organizations have the greatest capacity to bring about significant and sustainable change in terms of the expected medium- and long-term outcomes. These three **change pathways** are:

- **Pathway 1:** Policy, legislation, advocacy and financing – encompasses all aspects of policy development, political will, enabling regulatory frameworks, investment and the institutionalization of intersectoral governance.
- **Pathway 2:** Organizational development, implementation and sectoral integration – encompasses all aspects of the implementation of One Health, including the scaling up of capacity development at regional and country level, community engagement and mobilization for action, multisectoral coordination, collaboration and communication, and the equitable integration of sectors.
- **Pathway 3:** Data, evidence and knowledge – encompasses the strengthening of the scientific evidence base, knowledge translation into data for evidence, technical tools, protocols and guidelines, information and surveillance systems.

The OH JPA is built around six action tracks (see next section) with specific objectives for achieving expected medium-term outcomes. Each objective is associated with the implementation of several high-level actions, each with a set of specific activities, clear deliverables and timeline. The action tracks are the thematic pillars of the OH JPA, so are

considered the first building block of the theory of change. The action tracks and their high-level actions are mapped out across the three pathways to collectively drive change in the outcomes of the OH JPA and contribute to the desired impact.

FIGURE 2: OVERVIEW OF THE THEORY OF CHANGE FOR THE OH JPA



The theory of change is underpinned by key assumptions that must exist to create an enabling environment, as well as barriers that prevent the OH JPA outcomes in the causal pathway from being achieved. Activities contributing to high-level actions in each action track were designed to work around these barriers.

LEGEND

Action tracks

- AT1. Enhancing One Health capacities to strengthen health systems
- AT2. Reducing the risks from emerging and re-emerging zoonotic epidemics and pandemics
- AT3. Controlling and eliminating endemic zoonotic, neglected tropical and vector-borne diseases
- AT4. Strengthening the assessment, management and communication of food safety risks
- AT5. Curbing the silent pandemic of AMR
- AT6. Integrating the environment into One Health

...Barriers

- Wider socio-political context: climate crisis, emerging threats, conflict, global hunger and inequalities
- Powerful donors/stakeholders having undue influence over prioritisation and resource allocation
- Limited availability and inadequate use of legal and regulatory frameworks to support One Health practices
- Poor communication: language and cultural barriers among disciplines and sectors, and between countries
- Insufficient community inclusion
- Lack of cooperation between internal and external stakeholders, limited engagement with the environmental sector and professional segregation
- Limited standardisation around One Health curricula and competency-based frameworks to support education of the One Health workforce
- Commercial, academic, reputational and profit motives, supersede knowledge sharing, technology transfer and collaborative capacity building approaches
- Limited evidence of scalable, effective implementation of One Health initiatives

➔ Assumptions

- Political will and financing is in place (and can be mobilised) at the global, national and local levels. Funding can be mobilised flexibly to ensure all action tracks are sufficiently funded
- The four organizations and associated sectors can collaborate and harmonise their practices without territorialism, competition and silos adversely impacting on the work
- The OH JPA enhances equity and empowers stakeholders, including civil society, disadvantaged groups and indigenous communities
- Learning, innovation, and adaptation are intensified by collaborative and cross sectoral work
- The OH JPA can effectively disseminate and foster a wider understanding of One Health approaches and concepts across relevant segments of society and at all levels

5 - IMPACT

A world better able to prevent, predict, detect, and respond to health threats and improve the health of humans, animals, plants, and the environment while contributing to sustainable development



4 - LONG-TERM OUTCOMES

Improved health of humans, animals, plants and the environment while identifying sustainable system-wide One Health solutions that allow our ecosystems to thrive in harmony

Reduced risk and impact of health threats at the human-animal-plant-environment interface using a One Health approach efficiently, effectively, and equitably



3 - MEDIUM-TERM OUTCOMES

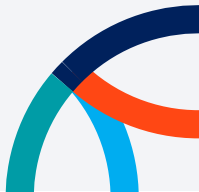
Improved coordination, communication and alignment of One Health activities and capacity building efforts, including in the provision of technical support, normative frameworks, research, education and guidance

Organizations collaborate and synergize effectively to build advocacy, political will and leverage investment for an evidence-based One Health approach

Strengthened cross-sectoral capacities to co-design and implement inclusive and equitable multi-level workplans and strategies in line with One Health principles

Improved and harmonized One Health tools, technologies and practices that integrate data and knowledge are developed, disseminated and utilized

Note: Three overarching pathways (1, 2 and 3) encompass the change processes linking the action tracks to the outcomes and impact. The six action tracks can be found in the coloured wheel (see legend) and the high-level actions corresponding to each action track are numbered in the same colour. Each high-level action sits on a line of the same colour and contributes to one or more of the three pathways, as illustrated by the shaded boxes. Collectively, all actions on the pathways contribute to the achievement of medium-term outcomes, but there are barriers (vertical dotted line) and assumptions (blue arrow) that need to be considered to ensure success. Achieving the medium-term outcomes paves the way for achievement of the envisaged long-term outcomes and impact.



2.2 Impact, outcomes and operational objectives

The vision (impact) of the OH JPA and its future iterations, expressed as the desired impact within a 15-20-year timeline, is:

A world better able to prevent, predict, detect and respond to health threats and improve the health of humans, animals, plants and the environment while contributing to sustainable development.

The goal is expressed in two **long-term outcomes**, which are expected to be achieved in alignment with the 2030 Agenda:

- **Long-term outcome 1:** Improved health of humans, animals, plants and the environment while identifying sustainable system-wide One Health solutions that allow our ecosystems to thrive in harmony.
- **Long-term outcome 2:** Reduced risk and impact of health threats at the human–animal–plant–environment interface using a One Health approach efficiently, effectively and equitably.

To achieve these long-term outcomes, the OH JPA will accelerate action towards four **key medium-term outcomes** by 2026:

- **Medium-term outcome 1:** Effective collaboration and synergy to build advocacy and political will and to leverage investment for an evidence-based One Health approach.
- **Medium-term outcome 2:** Improved coordination, communication and alignment of One Health activities and capacity-building efforts, including in the provision of technical support, normative frameworks, research, education and guidance.
- **Medium-term outcome 3:** Strengthened cross-sectoral capacity to co-design and implement inclusive and equitable multilevel workplans and strategies in line with One Health principles.

- **Medium-term outcome 4:** Improved and harmonized One Health tools, technologies and practices that integrate data and knowledge are developed, disseminated and utilized.

Operational objectives

The OH JPA sets out the following action-oriented operational objectives that are interlinked with the goals and outcomes of the OH JPA:

- Provide a framework for collective and coordinated action to mainstream the One Health approach at global, regional, national and community level to work towards the vision described above.
- Provide upstream policy and legislative advice and technical assistance to help set national targets and priorities across the sectors for the development and implementation of One Health legislation, initiatives and programmes.
- Promote collaboration, learning and exchange within and between nations, sectors, disciplines and groups of society for the collective generation of knowledge and solutions and to promote equitable access to current and future technologies and tools.
- Take stock of existing cross-sectoral global and regional initiatives around One Health, identify and advise on synergies and overlaps, and support coordination.
- Mobilize and make better use of resources across sectors, disciplines and stakeholders.

2.3 Guiding principles

The following guiding principles establish a set of values to guide the development and implementation of the OH JPA at every level.

Cooperation and shared responsibility: The OH JPA emphasizes One Health as a shared responsibility and recognizes the crucial role of cooperation among countries, regional organizations and other international organizations and stakeholders in supporting national efforts to effectively address the health threats identified in this OH JPA. The OH JPA recognizes the expertise and abilities of these key stakeholders as essential resources for its effective implementation, coordination and oversight.

Multisectoral action and partnership: Development and implementation of the OH JPA at all levels requires concerted multisectoral action, with engagement by all relevant disciplines and sectors, public and private, to address the challenges. Collaboration across and between all stakeholders at all levels shall be fostered, guided by a shared vision to realize the multiplicative benefits of a more comprehensive One Health approach and outcomes.

Gender equality: All efforts to implement the OH JPA support gender equity and women's empowerment and take a gender-sensitive perspective, bearing in mind vulnerabilities specific to each national context, consistent with the 2030 Agenda for Sustainable Development.

Inclusiveness and equity: The OH JPA adopts a conducive framework to enhance inclusiveness and equity in the formulation of One Health policies, legislation and practices. The OH JPA emphasizes the importance of addressing inclusively and respectfully all stakeholders, including local communities and organizations. These local stakeholders have a central role in the identification of the local challenges and in the design and implementation of locally adapted One Health solutions. The OH JPA recognizes the need for community engagement by ensuring active participation and communication with the communities. Local and traditional knowledge from communities should be recognized and mobilized in tandem with scientific knowledge and research results generated through the various activities of the OH JPA.

Part 3.

Action tracks

The OH JPA is structured around six action tracks (areas of action) for addressing key health challenges at the human–animal–plant–environment interface that require a One Health approach. The action tracks are interdependent. They also capture a systems approach required to reduce health threats shared by humans, animals, plants and the environment and contribute to achieving sustainable health and food systems, as well as improved ecosystem management.

FIGURE 3: THE SIX OH JPA ACTION TRACKS



The activities listed in the action tracks are what the four organizations can offer collectively to support the mainstreaming of One Health.

Action tracks are supported by the following cross-cutting principles: i) adopting systems thinking, ii) fostering advocacy and communication and public-private partnership (PPP), iii) enhancing governance, institutional and legal frameworks, and iv) using the traditional knowledge of Indigenous Peoples and local communities, as appropriate. These cross-cutting issues have been adopted to find connections between the six action tracks and to help look at shared underlying issues.

Action track 1: Enhancing One Health capacities to strengthen health systems

One Health collaborative capacities are needed to strengthen health systems and promote healthy ecosystems.

The components and interrelationships of healthy ecosystems are intact, such that they are resilient to change and stressors and allow a wide range of living beings to thrive. Efforts are needed to promote environmental sustainability, preserve biodiversity and prevent further environmental degradation and depletion.

Functioning and effective health systems also play a critical role in the prevention and management of infectious zoonotic and production diseases, AMR, food safety and other hazards.

Effective One Health coordination, backed by appropriate regulatory frameworks, is needed to dismantle existing barriers caused by professional and sectoral segregation and to implement mechanisms to: i) address issues holistically, ii) deal with complexity and ambiguity, iii) negotiate trade-offs and identify win-win solutions, and iv) agree on priorities, funds and collective actions (including monitoring and evaluation). Ideally, this would happen with the engagement of representatives of the relevant sub-systems from all levels, including citizens. The wide engagement of people with different expertise and experience will allow the partiality of disciplinary and sectoral knowledge to be bridged in complex systems. The lessons of COVID-19 to build a better, more holistic and integrated system will be taken into account in developing such One Health systems.

This action track is overarching and focuses on strengthening One Health collaborative capacity to support global, regional and national One Health coordination for the integrated management and regulation of issues at the animal–human–plant–environment interface and to promote the health of humans, animals, plants and ecosystems. It is cross-cutting and may affect the other action tracks. It includes the definition of expected One Health competencies and capacities; One Health needs assessments; the creation of processes for agreement on desired outcomes for the health of humans, animals, plants and ecosystems; joint prioritization and decision-making taking into account human, animal, plant and environmental needs and effects; comprehensive risk analysis at a systemic level; the development of effective policies and legislation; and the creation of enabling environments for One Health operationalization. With this action track, FAO, UNEP, WHO and WOAHA intend to develop frameworks, methodologies, guidelines and tools to inform their approach to One Health and strengthen the capacity of Members, Member States and State Parties to implement it at regional, national and local level, also exploiting resources already available (see Annex 2).

Objective

Provide adequate guidance and tools for the effective implementation of multisectoral approaches to promote the health of humans, animals, plants and ecosystems and to prevent and manage risks at the human–animal–plant–environment interface.

Action 1.1. Establish the foundations for One Health capacities

This action is dedicated to assessing which One Health capacities are available and needed and making plans to build or strengthen them to: i) tackle risks arising at the human–animal–plant–environment interface and ii) promote healthy ecosystems for all. It has a focus on systems thinking, needs assessment and joint planning and prioritization. It includes activities that are intended to generate concrete methodologies, competencies and tools for planning One Health capacity at global, regional, national and local level.

It requires the definition of One Health capacities and competencies, an analysis of existing gaps and the ability to design, plan and implement leadership, decision-making, strategies and governance; sustainable frameworks, infrastructures and competencies; affordable economic models and financial mechanisms; and monitoring and evaluation processes.

TABLE 1: ACTIVITIES, DELIVERABLES AND TIMELINE OF ACTION 1.1

Activities	Deliverables	Timeline (years)		
		1	2–3	4–5
1.1.1 Develop mechanisms to support an overarching One Health governance and legal framework	<ul style="list-style-type: none"> Methodologies, tools and pilot tests for: the identification of policy and legislative instruments relevant to One Health, including sector-specific and cross-cutting legislation relevant to this JPA and its action tracks the assessment of existing frameworks, methodologies and tools and of governance and regulatory gaps 	✓	✓	
1.1.2 Define One Health institutional and workforce capacities and develop methodologies and tools to assess national One Health performances and identify needs	<ul style="list-style-type: none"> Definition of One Health competencies and capacities at institutional and individual levels Mapping and integration of existing methodologies and tools, and new methodologies and tools and pilot tests for: national capacities for One Health and the performance of systems at the human–animal–plant–environment interface One Health competencies workforce learning needs assessment Support for the application of tools and assessments provided Identified learning needs identified opportunities to strengthen One Health coordination 	✓	✓	

Activities	Deliverables	Timeline (years)		
		1	2-3	4-5
1.1.3 Define planning mechanisms for One Health coordination, including collaborative governance mechanisms, policies and legal frameworks, and capacity-building strategies applicable at global, regional, national and local level	<ul style="list-style-type: none"> • Blueprint (or planning schemes and models) applicable to the Quadripartite’s Members, Member States and State Parties • Collaborative workshops and initiatives to bring together actors from the planning of human, animal and environmental health to develop shared One Health roadmaps • Plans for joint One Health strategies, procedures and policies, Including governance and regulatory frameworks • Plans for One Health capacity building at regional, sub-regional, national and local level 		✓	
1.1.4 Define processes and develop methodologies for assessing countries’ vulnerabilities to One Health challenges, and link with appropriate evidence-based preparedness and response capabilities to tackle risks from emerging and re-emerging pathogens and diseases, leading to improvements in the health of humans, animals, plants and the environment at a systems level	<ul style="list-style-type: none"> • Mapping and integration of existing methodologies and tools, as well as new methodologies and tools and pilot tests for: • Analysis of countries’ vulnerabilities – system performance and efficiency/effectiveness monitoring and evaluation • Disease-specific networking 		✓	✓
1.1.5 Design a monitoring and evaluation framework for the continuous improvement of the organizations’ and national One Health actions, performance and capacities	<ul style="list-style-type: none"> • Mapping and integration of existing methodologies and tools, as well as new methodologies, tools and pilot tests to implement a One Health monitoring and evaluation framework at organizational and country level • Use of the monitoring and evaluation framework by the four organizations 		✓	✓
1.1.6 Establish financial needs to build One Health capacity at global, regional and national level	<ul style="list-style-type: none"> • Mapping of existing One Health financial mechanisms and their effectiveness • Mapping of existing national funds and potential sources related or applicable to One Health • Methodologies to develop cost-benefit analysis and/or a business case of the One Health operationalization • Economic analysis and/or a business case for One Health investments at global, regional, national and local level defining financial/ investment needs, striving for balance across sectors 	✓	✓	✓
1.1.7 Develop methodologies and tools to advocate for and promote political prioritization of One Health work in regional, national and local sustainable development strategies and plans	<ul style="list-style-type: none"> • Develop business cases to demonstrate the cost-effectiveness of the One Health approach for health systems • Support for political prioritization through the development of economic case studies on One Health • Facilitate, where requested, national strategies or other forms of political commitment (such as inclusion in SDG implementation strategies or action plans or Voluntary National Reviews) to support national ministers/ interministerial processes and regional/subregional processes resulting in political commitment • Written political contributions/interventions on One Health advocacy and promotion for regional and sub-regional forums 	✓	✓	✓

Action 1.2. Generate mechanisms, tools and capacities to establish a One Health-competent workforce and the frameworks/processes to facilitate One Health work

This action represents One Health at work and proposes a set of activities to strengthen the workforce, develop resources, tools, mechanisms and solutions to operationalize it. It also builds on several existing programmes and generates competent One Health enablers and facilitators, as well as the structures and frameworks to facilitate One Health work in practice, so that the competent workforce will be able to mobilize multiple and collaborative competencies towards coordinated approaches and efforts.

TABLE 2: ACTIVITIES, DELIVERABLES AND TIMELINE OF ACTION 1.2

Activities	Deliverables	Timeline (years)		
		1	2-3	4-5
1.2.1 Facilitate the implementation of joint processes and workplans for One Health work	<ul style="list-style-type: none"> • Mapping of existing mechanisms and tools for One Health operationalization and their integration into the new guidelines • Guidelines for stakeholders to design joint processes for One Health operationalization and collaborative workplans, including vision integration, prioritization, negotiation, definition of agreed outcomes and shared values, evidence needs, and collective actions • Guidelines for risk assessment design • Guidelines applied by organizations • Workshops and other peer-to-peer approaches 	✓	✓	
1.2.2 Facilitate One Health capacity building, including workforce development in all relevant sectors	<ul style="list-style-type: none"> • Mapping of existing opportunities, resources and curricula at global, regional and national levels • Definition of access and selection criteria and processes; evaluation of capacity-building programmes • Mechanisms to build synergies and avoid duplication in capacity-building delivery • Competency-based frameworks, training programmes, courses, plans and e-learning resources • Workforce development tools • Job descriptions for One Health professionals • Simulation exercises to build and strengthen One Health competencies • Monitoring and evaluation tools to assess capacity building 	✓	✓	✓
1.2.3 Support and promote the next generation of One Health practitioners, researchers and technical officers	<ul style="list-style-type: none"> • Internships, placements, mentorship schemes and a competency framework for junior One Health practitioners, researchers and technical officers 	✓	✓	✓

Activities	Deliverables	Timeline (years)		
		1	2-3	4-5
1.2.4 Develop frameworks and mechanisms for public participation, including Indigenous Peoples, and their horizontal and vertical integration into One Health	<ul style="list-style-type: none"> Participatory methods to engage society in the One Health culture and framework based on knowledge management, taking into account that humans, animals, food, plants and ecosystems are closely linked and interdependent One Health knowledge management processes, expert knowledge-sharing platforms and communities of good practice Processes and guidelines for risk communication and community engagement, including participatory methods based on robust risk communication schemes, enabling bottom-up approaches Mechanisms and methods to integrate stakeholder knowledge Processes, guidelines and methods used by countries 		✓	✓
1.2.5 Promote One Health cross-sectoral collaboration and partnerships, including PPP	<ul style="list-style-type: none"> Mapping and integration of existing guidelines for partnership implementation Guidelines on effective partnerships (including PPP) Mechanisms for scientific and technical collaboration and cooperation based on the One Health approach 		✓	✓
1.2.6 Develop operational tools to support science-based One Health coordinated strategic technical actions	<ul style="list-style-type: none"> Operational guidelines and tools for science-based One Health action coordination Use of knowledge and evidence in decisions on strategic technical actions (including One Health networks or communities of practice) Mapping of opportunities for enhanced technology transfer and developing mechanisms to strengthen participation 		✓	✓
1.2.7 Provide guidance on the appropriate use of integrated One Health information, surveillance and emergency response systems, taking into account humans, animals, food, plants and ecosystems	<ul style="list-style-type: none"> Mapping and integration of existing resources Guidelines for prioritization, strategic decision-making and risk management for the effective use of One Health information systems Guidelines for simulation exercises 		✓	✓

Action 1.3. Generate an enabling environment for the effective implementation of One Health

This action is key to ensuring that the One Health approach can be used to its full potential. It spans several activities, from monitoring the implementation and enforcement of regulatory frameworks to the availability of sustainable financing, from information systems to technologies and from transparency to communication – essentially all of the support structures required for One Health work to operate effectively. This action also builds an important foundation for the other action tracks and will facilitate the work of the four organizations and support their Members, Member States and State Parties.

TABLE 3: ACTIVITIES, DELIVERABLES AND TIMELINE OF ACTION 1.3

Activities	Deliverables	Timeline (years)		
		1	2–3	4–5
1.3.1 Provide guidance and tools for transparent and trusted One Health collaborative governance, mechanisms, policies and regulatory frameworks	<ul style="list-style-type: none"> Guidelines to enable transparent information sharing to build solid governance based on trust Advocacy measures conducted for joint One Health strategies, procedures and policies, including governance, mechanisms, policies and regulatory frameworks Developed and disseminated One Health roadmaps 		✓	✓
1.3.2 Promote effective communication structures and information and data-sharing systems across organizations, sectors and society	<ul style="list-style-type: none"> Inventory of tools and best-practice examples Effective communication structures and information sharing systems for One Health established in the four organizations for the benefit of internal and external audiences, including stakeholders responsible for resource mobilization Guidelines for implementation at national level and pilot tests 		✓	✓
1.3.3 Generate mechanisms for joint funding and resource mobilization	<ul style="list-style-type: none"> Joint One Health funding mechanisms established Funding mobilized to support OH JPA actions Resource integration and sharing mechanisms defined 	✓	✓	✓
1.3.4 Promote One Health task forces and working groups with a clear mandate for internal coordination	<ul style="list-style-type: none"> Coordinated actions and information sharing within and between the organizations Guidelines for internal coordination 	✓	✓	

Action track 2: Reducing the risks from emerging and re-emerging zoonotic epidemics and pandemics

Emerging and re-emerging zoonotic pathogens with epidemic and pandemic potential pose a major threat to humans, animals and society through their immense health, social, economic and security impacts. Prevention, preparedness, early warning, early detection, response and recovery to these threats require coordinated One Health approaches that integrate the environmental dimension to preserve biodiversity, build resilience and ensure sustainable health, livelihoods and food systems. Cohesive and collaborative global efforts that tackle emerging diseases at source are imperative.

This action track focuses on: i) understanding the drivers of (re-)emerging zoonotic diseases and related processes and pathways, including ecosystem degradation, land-use and habitat change, environmental and climatic factors, as well as harvesting, farming and the trade of animals, wild and domestic; ii) developing risk mitigation measures, including the maintenance of resilient healthy ecosystems, early interventions aimed at reversing or halting environmental degradation and biodiversity loss, the regulation of farming and trade in wildlife and wild animal products, and the reduction of spillover risks at key animal value-chain points and wildlife–domestic animal–human interfaces, including live animal markets (traditional markets); and iii) enhancing sustainable

and targeted One Health surveillance, early warning and response mechanisms in ecosystems, targeting animal–human–environment interfaces and key animal value-chain points. The focus will be on known (re-)emerging zoonotic diseases previously identified to have epidemic and pandemic potential, while also considering “Disease X”, caused by a yet unknown zoonotic pathogen and with the potential to develop into a future epidemic/pandemic.

Objective

Reduce the risk and minimize the local and global impacts of zoonotic epidemics and pandemics by understanding the linkages and drivers of emergence and spillover, adopting upstream prevention measures and strengthening One Health surveillance, early warning and response systems.

Action 2.1. Understand the drivers of emergence, spillover and spread of zoonotic pathogens

This action reviews existing knowledge of drivers, processes and pathways and establishes baselines for monitoring purposes. It proposes targeted research to fill outstanding knowledge gaps.

Activities in this action focus on diseases and risks identified as priorities by WHO and the priority diseases agreed by the Quadripartite (for example, as outlined in the Tripartite workplan and the OH JPA).

TABLE 4: ACTIVITIES, DELIVERABLES AND TIMELINE OF ACTION 2.1

Activities	Deliverables	Timeline		
		1	2–3	4–5
2.1.1 Develop guidance to conduct coordinated and systematic data collection, operational and behavioural research and risk assessments on the drivers, processes and pathways for zoonotic disease emergence, spread and persistence, as well as to characterize intact resilient eco- and health systems and their effect on disease prevention, supporting countries in implementation	<ul style="list-style-type: none"> • Mapping of existing resources • Quadripartite/OHHLEP guidance • Reports, publications • Policy papers and recommendations 	✓	✓	✓

Activities	Deliverables	Timeline		
		1	2-3	4-5
2.1.2 Develop standardized protocols and standard operating procedures for harmonized One Health research and data collection to facilitate data generation, sharing, comparison and meta-analyses	<ul style="list-style-type: none"> • Harmonized protocols and normative standards • Dataset for pooled data analysis 	✓	✓	✓
2.1.3 Identify drivers and indicators to monitor their impacts on zoonotic disease emergence, re-emergence and spread, including those that can lead to increased interfaces or disruptions of natural host-pathogen dynamics	<ul style="list-style-type: none"> • Reports/publications • Prediction models of potential transmission scenarios related to climate change • Policy papers/advice 	✓	✓	✓
2.1.4 Develop a One Health indicator framework to monitor the health of humans, wildlife, domestic animals, vectors and the environment, including in intact, resilient eco- and health systems to establish baselines, and support countries in monitoring changes over time/ along development gradients	<ul style="list-style-type: none"> • Joint indicator framework developed • Databases on baselines and observed change • List of identified triggers for early warning • Mechanisms/agreements for information sharing established 	✓	✓	✓
2.1.5 Support countries in building science-policy interfaces to ensure that scientific knowledge, including from assessments, syntheses and reviews, is translated into action	<ul style="list-style-type: none"> • Mapping of existing resources • Science to policy platforms • Indicators for science-based targets • Reports • Workshops • Policy support methodologies and tools • Scenarios and models 	✓	✓	✓
2.1.6 Identify One Health research gaps and priorities, develop a research agenda and advocate for funding to find sustainable solutions to reduce the risk of disease emergence	<ul style="list-style-type: none"> • List of One Health research gaps • List of One Health research priorities • One Health research agenda • Yearly meetings/initiatives to review and update the research agenda • Fundraising (individually or jointly) 	✓	✓	✓

Action 2.2. Identify and prioritize targeted, evidence-based upstream interventions to prevent the emergence, spillover and spread of zoonotic pathogens

This action identifies and prioritizes targeted, evidence-based upstream interventions to prevent the emergence, spillover and spread of zoonotic pathogens by tackling the drivers. Environmental drivers should be considered in health and biodiversity risks assessments and interventions, and vice versa. The action further identifies sustainable solutions, nature-based where applicable, that ensure the inclusion of the knowledge of Indigenous Peoples.

TABLE 5: ACTIVITIES, DELIVERABLES AND TIMELINE OF ACTION 2.2

Activities	Deliverables	Timeline (years)		
		1	2-3	4-5
2.2.1 Support countries in conducting joint One Health risk assessments and mapping, leading to evidence-based and targeted risk management and communication	<ul style="list-style-type: none"> • Recommendations on risk-based management measures and communication messaging • Policies and best-practice guidelines • Harmonized protocols and normative standards 	✓	✓	✓
2.2.2 Incorporate land-use planning in health and biodiversity risks assessment, and vice versa	<ul style="list-style-type: none"> • Risk assessment reports • Recommendations on risk-based management measures and communication messaging • Policies and best-practice guidelines • Harmonized protocols and normative standards for One Health risk assessment 	✓	✓	✓
2.2.3 Establish standards for the management of ecosystem processes at all levels to support resilience, including mainstreaming habitat degradation prevention and biodiversity protection in food systems to maximize co-benefits	<ul style="list-style-type: none"> • Mapping of existing resources • Policies and best-practice guidelines • Harmonized protocols and normative standards • Verification through biodiversity and habitat indicator monitoring 	✓	✓	
2.2.4 Engage with local communities, including Indigenous Peoples, to identify sustainable solutions, nature-based where applicable, for the prevention and control of emerging and re-emerging zoonotic diseases to increase community preparedness and resilience	<ul style="list-style-type: none"> • Reports, manuscripts, publications from research • Policy papers, best-practice guidelines, recommendations • Harmonized protocols, questionnaires and normative standards for main/priority topics to be covered 	✓	✓	✓

Activities	Deliverables	Timeline (years)		
		1	2-3	4-5
2.2.5 Conduct anthropological and participatory research to identify key risky behaviours, as well as acceptance and feasibility of risk mitigation measures, ensuring gender-based approaches and leveraging traditional knowledge of Indigenous Peoples and local communities as appropriate and with prior and informed consent	<ul style="list-style-type: none"> • Reports, manuscripts, publications from research • Policy papers/advice/best-practice guidelines • Harmonized protocols and normative standards 	✓	✓	✓
2.2.6 Raise awareness among key stakeholders about the benefits of healthy ecosystems, identified risk factors and drivers, as well as solutions for risk mitigation and spillover prevention that are nature-based where applicable, acceptable and sustainable	<ul style="list-style-type: none"> • Communication strategies developed • Community engagement strategies developed • Risk communication and awareness materials targeted at different audiences and communication channels • Communication training for policymakers 		✓	✓
2.2.7 Support countries in implementing enabling, evidence-based and gender-sensitive regulatory frameworks for the prevention and control of zoonotic epidemics/pandemics along value chains, including livestock and wildlife	<ul style="list-style-type: none"> • Legislation review • Harmonized protocols and normative standards 		✓	✓
2.2.8 Support countries in putting into action existing global strategies on zoonotic diseases and ensure synergy and cohesiveness at a global, regional, and national level	<ul style="list-style-type: none"> • Development of regional and global strategies or the updating of existing ones • Cross-border/regional meetings or workshops to develop/harmonize action plans 	✓	✓	✓
2.2.9 Develop guidance on economic analyses to quantify the costs and benefits of preventive interventions and use the results to advocate for sustainable financing in these interventions	<ul style="list-style-type: none"> • Mapping of existing resources • Guidance, reports, manuscripts, publications from research • Policy briefs and recommendations 	✓	✓	✓
2.2.10 Support countries in conducting analysis of legislation relevant for each sector to identify potential gaps and issues that need to be addressed to reduce the emergence and spillover of diseases	<ul style="list-style-type: none"> • Reports, manuscripts, publications from research • Policy briefs and recommendations • Evidence base to sustain and support the reinforcement of public policies framework 	✓	✓	

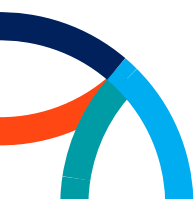
Action 2.3. Strengthen national, regional and global One Health surveillance, early warning and response systems

This action aims to ensure the timely detection of emerging and re-emerging zoonotic diseases through sustainable and targeted One Health surveillance and early warning, to establish triggers for action and to develop evidence-based decision-support tools.

TABLE 6: ACTIVITIES, DELIVERABLES AND TIMELINE OF ACTION 2.3

Activities	Deliverables	Timeline (years)		
		1	2-3	4-5
2.3.1 Develop operational tools and resources to conduct targeted One Health surveillance at human-animal-ecosystem interfaces and a mechanism for multisectoral data sharing, per Quadripartite/OHHLEP guidance, supported by robust regulatory frameworks	<ul style="list-style-type: none"> • Mapping of existing resources • Quadripartite/OHHLEP guidance and tools • Surveillance reports • Disease notifications • Health certification • Dashboards and maps depicting the epidemiological disease situation 	✓	✓	✓
2.3.2 Develop guidance on progressive control and management pathways that apply a One Health approach in strengthening biosecurity for existing and potentially re-emerging zoonotic diseases (such as zoonotic influenza viruses, MERS-CoV, SARS-CoV-2, Ebola and Rift Valley fever) and support countries with implementation	<ul style="list-style-type: none"> • Mapping of existing resources • Quadripartite/OHHLEP guidance • Health certification • Assessed improvement of progressive disease control 	✓	✓	✓
2.3.3 Develop and maintain country capacity for managing biohazards according to applicable international standards, regulations and legal frameworks (International Air Transport Association, Nagoya Protocol, International Treaty on Plant Genetic Resources for Food and Agriculture, Pandemic Influenza Preparedness Framework, etc.), including good biosecurity, the safe storage and transport of infectious substances and the sharing of genetic resources, pathogens, vaccines and medicines using the Access and Benefit Sharing system	<ul style="list-style-type: none"> • Workshops/training • Harmonized protocols and normative standards 	✓	✓	✓
2.3.4 Develop a pathogen monitoring framework for wildlife and the environment, including in wildlife habitats, on farming and trade routes and along the wild meat and products value chain, and support countries with implementation	<ul style="list-style-type: none"> • Monitoring framework • Databases on baselines and observed change • List of identified triggers for action • Policy papers, best-practice guidelines, recommendations • Harmonized protocols and normative standards 	✓	✓	✓

Activities	Deliverables	Timeline (years)		
		1	2-3	4-5
2.3.5 Support countries in conducting pathogen surveillance at the human–animal–environment interface through technical networks to support predictive epidemic intelligence, including the monitoring of trends in pathogen mutation and evolution and microbial diversity in wildlife, as well as the prediction or spillover potential of novel zoonotic pathogens	<ul style="list-style-type: none"> • Forecasts and early warning reports • Reports, manuscripts, publications from research • Risk assessment reports • Policy briefs and recommendations for risk mitigation • Strengthened lab and epi (epidemiology) networks 	✓	✓	✓
2.3.6 Build collaborative predictive epidemic intelligence systems (at national, regional and global level) to identify high-risk interfaces and hotspots for spillover, incorporating relevant environmental and climate data and data on the establishment of reservoirs and vector species in new geographic areas	<ul style="list-style-type: none"> • Mapping of existing resources • Cross-border/regional meetings or workshops to share information and provide collaborative analysis • Forecasts and early warning reports • Reports, manuscripts, publications from research • Risk assessment reports • Policy briefs and recommendations for risk mitigation 	✓	✓	✓
2.3.7 Use pandemic risk assessment approaches (such as WHO’s Tool for Influenza Pandemic Risk Assessment – TIPRA, molecular risk assessment, or FAO’s EMPRES-i Genetic Module) to proactively identify pre-pandemic vaccine candidates for existing zoonotic pathogens to inform vaccine production	<ul style="list-style-type: none"> • Mapping of existing resources • Reports, manuscripts, publications from research • Risk assessment reports • Policy briefs and recommendations for risk mitigation 	✓	✓	✓
2.3.8 Leverage innovations and new technologies in disease surveillance, rapid response and control	<ul style="list-style-type: none"> • New technologies/technological solutions • New diagnostics, vaccines, therapeutics • Technology transfer • Innovative approaches (for example, for surveillance, diagnostics, advanced characterization, testing algorithms, etc.) • Technology transfer hubs set up • Quality-assured manufacturing capacity to support sustainable and greater equitable access to medical and other countermeasures for disease control (across humans, animals and ecosystems) 	✓	✓	✓



Action track 3: Controlling and eliminating endemic zoonotic, neglected tropical and vector-borne diseases

Communities bearing the greatest burdens of endemic zoonotic, neglected tropical and vector-borne diseases are almost always those with little political influence or resource. To develop effective control plans, therefore, it is essential to build awareness and demand for services from affected communities by understanding their attitudes and knowledge, especially about animals and the environment, and to boost their capacity. To ensure sustainability, countries should be supported and encouraged to own these community-centric strategies and to allocate sufficient domestic resources to the challenge. Reducing the burden of these diseases has clear long-term benefits for communities, animals and the environment, as well as for the broader economy, improving livelihoods, health equity and social cohesion. Increasing capacity to detect endemic zoonotic, neglected tropical and vector-borne diseases also increases the likelihood of early detection of pathogens with epidemic or pandemic potential.

Endemic zoonotic, neglected tropical and vector-borne diseases may be concentrated in certain localities. Resource allocation is very limited and data on the real burden of disease are scarce and unreliable. Mis- and under-diagnosis is common due to the lack of easy-to-use, locally available or technically adequate diagnostic tools, while information-gathering and surveillance rarely address human–animal–environment relationships beyond animals of production value. There are already many surveillance tools, agreed standards, data sources, legislation and policies that apply to the control of endemic zoonotic, neglected tropical and vector-borne diseases. Many of these can be strengthened, for example, in the area of mandatory reporting, and integrated into all sectors as relevant, avoiding duplication and redundancy. The new Road Map for Neglected Tropical Diseases 2021–2030 (WHO, 2021) also calls for the intensification of cross-cutting approaches and aims to address key gaps, especially in disease surveillance, diagnostics, monitoring and evaluation, access and logistics, advocacy and funding.

This action track addresses the challenges outlined above, building on existing measures and integrating them into the strengthening of broader systems, to provide numerous opportunities for endemic zoonotic, neglected tropical and vector-borne disease-control activities with a One Health approach.

Objective

Reduce the burden of endemic zoonotic, neglected tropical and vector-borne diseases by supporting countries in implementing community-centric, risk-based solutions, strengthening policy and legal frameworks from the local to the global level and across sectors, and increasing political commitment and investment.

Action 3.1 Enable countries to develop and implement community-centric and risk-based solutions to endemic zoonotic, neglected tropical and vector-borne disease control using a One Health approach involving all relevant stakeholders.

This action aims to promote the implementation of control measures by building awareness and demand for control of endemic zoonotic, neglected tropical and vector-borne diseases from within communities and among stakeholders in relevant sectors. Key areas for development are data surveillance, management and information sharing, the implementation of control activities, stakeholder training, (risk) communication and community engagement.

Ideally, the epidemiology of endemic zoonotic, neglected tropical and vector-borne diseases at local level should be well understood and affected communities engaged in the design and implementation of surveillance and data management systems, outbreak response, training and communication. Drivers of and disincentives to participation need to be understood and addressed in order to create trust and ensure sustained action.

This action builds resilient animal and human populations to better withstand infectious diseases by supporting countries in implementing a community-centric, One Health approach that engages stakeholders beyond the health sectors, spanning educators, local government, experts in WASH services, waste management, agriculture, food safety, climatology and biodiversity, in addition to urban developers, indigenous, community and city leaders and media representatives.

TABLE 7: ACTIVITIES, DELIVERABLES AND TIMELINE OF ACTION 3.1

Activities	Deliverables	Timeline (years)		
		1	2-3	4-5
3.1.1 Provide integrated guidance and resources to countries to help build capacity and resilience, empower communities and increase engagement and awareness of endemic zoonotic, neglected tropical and vector-borne disease prevention, diagnosis, control and treatment	<ul style="list-style-type: none"> Guidance and resource material on risk communication and community engagement for integrated community awareness and behavioural change On request, integrated multisectoral training of professionals, paraprofessionals and laboratory staff working on the health of humans, animals and/or the environment Resources and support for campaigns to mobilize communities to address endemic zoonotic, neglected tropical and vector-borne diseases 	✓	✓	✓

Activities	Deliverables	Timeline (years)		
		1	2-3	4-5
3.1.2 Provide countries with operational tools and resources for integrated multisectoral surveillance and mapping of risk areas for endemic zoonotic, neglected tropical and vector-borne diseases and their vectors from national to local level	<ul style="list-style-type: none"> • Tools to create national risk maps that detect at-risk communities and risk areas • Guidance on the surveillance of endemic zoonotic, neglected tropical and vector-borne diseases • Diagnostic needs ideally defined as target product profiles • Advocate for diagnostic tools and reporting mechanisms accessible at community level • Support the strengthening of laboratory capacity across the different sectors, including enhanced exchange and networks 	✓	✓	✓
3.1.3 Support countries in providing access to quality vaccines, medicines and basic WASH services, agricultural water use and waste management, including animal waste and carcass disposal, and the training of communities across sectors to address endemic zoonotic, neglected tropical and vector-borne diseases	<ul style="list-style-type: none"> • Professional and community awareness raised across sectors • Access to quality vaccines, medicines and effective supply chains • Advocate for the integration of endemic zoonotic, neglected tropical and vector-borne diseases and (Agri-)WASH and waste management activities at community level • On request WASH training • Guidance on biosecurity and the safe disposal of animal waste and carcasses 	✓	✓	✓
3.1.4 Strengthen information, awareness and control of vector- and rodent-borne diseases and their specific threat to urban centres	<ul style="list-style-type: none"> • Global risk assessment, mapping, prediction and forecasting • Control strategies for priority diseases strengthened, as identified by countries • Validated guidance and training for rodent control programmes • Support community engagement and mobilization in vector control • National and regional networks to support training and education developed and promoted • Enhance vector surveillance and monitoring and evaluation • Support integrated vector management, particularly for the prevention and control of vector-borne diseases • Support Global Vector Control Response 2017–2030 (WHO, 2017a) • Support the Global Integrated Arbovirus Initiative 	✓	✓	✓

Action 3.2. Ensure the harmonized application of One Health principles at all levels by implementing practical measures to strengthen local, national, regional and global policy frameworks for the control and prevention of endemic zoonotic, neglected tropical and vector-borne diseases.

This action aims to strengthen and harmonize all relevant protocols on control programmes, data, surveillance and information sharing, as well as legal and policy frameworks related to the prevention and control of endemic zoonotic, neglected tropical and vector-borne diseases in a One Health context. This requires operationalizing integrated surveillance systems, capacity building, control and risk management practices and prevention planning at global, national, regional and local level.

Activities supporting this action help to deliver more systematic, vertically integrated and centralized data collection across sectors to improve knowledge about the burden of disease, identify risk groups, target actions, increase efficiency, improve diagnostics, identify research gaps, increase the awareness and expertise of healthcare providers, and raise awareness.

TABLE 8: ACTIVITIES, DELIVERABLES AND TIMELINE OF ACTION 3.2

Activities	Deliverables	Timeline (years)		
		1	2-3	4-5
3.2.1 Support countries to include endemic zoonotic, neglected tropical and vector-borne diseases when establishing national One Health mechanisms and One Health disease-control strategic plans	<ul style="list-style-type: none"> Guidance on endemic zoonotic, neglected tropical and vector-borne disease integration in One Health platforms and strategic plans at national and sub-national levels Facilitated dialogue and coordination between national stakeholders and improved awareness of synergies across sectors Advocate for the integration of endemic zoonotic, neglected tropical and vector-borne disease control in national strategies, plans and programmes on the health of animals, humans and the environment, cascaded into sub-national strategies if relevant 	✓	✓	✓
3.2.2 Support countries in strengthening disease reporting and integrated data collection, information sharing and outbreak response to build multisectoral, One Health coordinated national surveillance and risk management capacity, grounded in appropriate regulatory frameworks, and encourage notification to and alignment with regional and global frameworks and existing priority disease programmes	<ul style="list-style-type: none"> Support countries in collecting and reporting disaggregated data on endemic zoonotic, neglected tropical and vector-borne diseases as relevant Guidance for standardized indicators and tools, harmonized protocols with data shared across sectors in a timely manner Countries trained in the usage of the Surveillance and Information Sharing Operational Tool (SIS-OT) to establish or strengthen coordinated One Health surveillance and information sharing systems Support coordinated surveillance reports, policies and programmes Cross-disease data analysis and visualization Guidance on the surveillance of endemic zoonotic, neglected tropical and vector-borne diseases 	✓	✓	✓

Activities	Deliverables	Timeline (years)		
		1	2-3	4-5
3.2.3 Provide resources and support to countries for linking and integrating single sector and specialized disease programmes and health information systems	<ul style="list-style-type: none"> • Countries guided and supported in collecting and reporting disaggregated data on endemic zoonotic, neglected tropical and vector-borne diseases, as relevant • Countries collect and report disaggregated data on endemic zoonotic, neglected tropical and vector-borne diseases as relevant • Opportunities identified for joint usage of infrastructure and logistics, broadening the scope of already existing networks (such as cold-chains, control programmes and vaccination campaigns) 	✓	✓	✓
3.2.4 Provide resources and support to countries for implementing proven disease-control strategies as, for example, proposed by <i>Zero by 30: the Global Strategic Plan to Eliminate Human Deaths from Dog Mediated Rabies by 2030</i> (WHO, FAO and OIE, 2018), as a way of operationalizing a One Health approach	<ul style="list-style-type: none"> • Countries supported in establishing WOA–endorsed national control programmes for identified priority diseases, for example, for rabies • Advocate the use of tools, services and guidance provided by international expert groups and networks, such as the United Against Rabies Forum working groups • Increased the uptake and use of available education material and resources, such as the Open WHO One Health Rabies course • Facilitate communication between stakeholders and partners, use of synergies (such as partnership mapping) 	✓	✓	✓

Action 3.3. Increase political commitment and investment in the control of endemic zoonotic, neglected tropical and vector-borne diseases, by advocating for and demonstrating the value of a One Health approach.

This action aims to establish a common vision between the Quadripartite, affected countries and territories, local governments, cities and other stakeholders to increase political commitment and investment in endemic zoonotic, neglected tropical and vector-borne disease control and prevention using a One Health approach. Agencies and countries should draw on the many existing strategies for disease control and elimination to ensure messaging and advocacy is consistent and effective.

The action ensures accountability for actions, be they global, national or local, removes barriers to progress and creates strong partnerships and networks as a basis for sustainable, long-lasting action.

TABLE 9: ACTIVITIES, DELIVERABLES AND TIMELINE OF ACTION 3.3

Activities	Deliverables	Timeline (years)		
		1	2–3	4–5
3.3.1 Leverage the use and implementation of already existing capacity evaluation tools and roadmaps at all levels to accelerate control of endemic zoonotic, neglected tropical and vector-borne diseases (WHO, 2017a; 2021a; 2021c; WHO, FAO and OIE, 2017; 2018)	<ul style="list-style-type: none"> • Common vision for advocacy and political engagement • Shared targets, consistent messaging • Uptake of WHO's <i>Ending the neglect to attain the Sustainable Development Goals. One Health: approach for action against neglected tropical diseases 2021–2030 guide</i> (WHO, 2022) 	✓	✓	✓
3.3.2 Promote country ownership and galvanize international collaboration to support One Health policies and legislation for endemic zoonotic, neglected tropical and vector-borne diseases	<ul style="list-style-type: none"> • One Health including endemic zoonotic, neglected tropical and vector-borne diseases inserted in high political agendas • Use of economic case studies to leverage the importance of endemic zoonotic, neglected tropical and vector-borne diseases by demonstrating its impacts • Best-practice guidance for sustainable control programmes of endemic zoonotic, neglected tropical and vector-borne diseases • Where applicable, encourage indemnity payments for loss of animals or animal products 		✓	✓
3.3.3 Build evidence base for One Health approach in reducing disease burden and socioeconomic impact of endemic zoonotic, neglected tropical and vector-borne diseases across relevant sectors, from global to national levels	<ul style="list-style-type: none"> • Identified drivers of endemic zoonotic, neglected tropical and vector-borne diseases, as well as the underlying sociocultural and economic reasons for disease transmission, data gaps and needs • Animal and human global burden of disease studies • Endemic zoonotic, neglected tropical and vector-borne diseases impact database 		✓	✓
3.3.4 Support countries to build the investment case and develop sustainable financing and governance mechanisms for cost-effective endemic zoonotic, neglected tropical and vector-borne diseases control through implementation of One Health principles	<ul style="list-style-type: none"> • Guidance to build investment case • Showcase examples/pilots and recommendations on best practices • Advocate for country buy-in and investment in national plans for endemic zoonotic, neglected tropical and vector-borne disease programmes 		✓	✓

Action track 4: Strengthening the assessment, management and communication of food safety risks

Food and the complex systems involved in the pathways from production to consumption sit at the nexus of the human–animal–plant–environment interface. The ways in which food is produced may not only affect the safety of the final product, but also the health and welfare of animals, the health of plants and the contamination of the environment. Reciprocally, the environment of food production and the health

of animals and the contamination of plants may impact food safety. This close interconnectivity means a One Health approach is critical to addressing food safety, and food safety is critical to promoting One Health.

This action track builds on the WHO Global Strategy for Food Safety 2022–2030 (WHO, 2021b) and the joint FAO–WHO coordination framework being developed to support the implementation of FAO (FAO, 2021a) and WHO (WHA, 2020) food safety strategies at global, regional and national level. The action track builds on this momentum to advocate for food safety and support the implementation of both FAO and WHO strategies under the One Health approach without interfering with their governance and structures.

The action track will systematically and holistically aim to mainstream a One Health approach in food safety efforts from a food systems perspective with specific actions to address the risks to animal, environment and human health and food safety in the continuum from production to consumption. It is both complementary to and synergistic with the other action tracks, notably: food and live animals are subject to contamination or infection from the environment (action track 6), foodborne bacteria are becoming more resistant to antimicrobials (action track 5), some foodborne infections are new and emerging (action track 2), while others (such as cysticercosis, echinococcosis, foodborne trematodiasis) are neglected, underlining the need for integrated health approaches (action track 3).

Objective

Promote awareness, policy changes and action coordination among stakeholders to ensure that humans, animals and ecosystems achieve health and remain healthy in their interactions with and along the food supply chain.

Action 4.1. Strengthen the One Health approach in national food control systems and food safety coordination

Strengthening national food safety systems begins with establishing or improving critical infrastructure and components of food control systems, including food safety legislation, standards and guidelines, laboratory capacity, food control activities and emergency preparedness and response capacity.

This action aims to promote One Health for food safety coordination and set out how the four partner organizations will assist countries in establishing, implementing and strengthening national food control systems by evaluating and improving key components that will help to reduce the risks associated with unsafe food, ensuring food authenticity and enhancing fair and safe trade in food, including strengthening countries' – especially LMICs' – sanitary and phytosanitary capacity.

TABLE 10: ACTIVITIES, DELIVERABLES AND TIMELINE OF ACTION 4.1

Activities	Deliverables	Timeline (years)		
		1	2-3	4-5
4.1.1 Develop a One Health framework for food safety, capturing the pathways and connections in food safety activities that lead to positive and negative health outcomes in humans, animals and the environment –throughout the food supply chain	<ul style="list-style-type: none"> • Framework and indicators 		✓	
4.1.2 Support countries in conducting a baseline assessment of their food control system, particularly on critical elements that affect human, animals, plants and the health of the environment	<ul style="list-style-type: none"> • Food control systems assessed, taking into account the adoption of the One Health approach 	✓	✓	✓
4.1.3 Provide technical supporting tools (checklists, legal frameworks evaluations, etc.) and strengthen capacity building for countries in the development of food control systems and regulatory frameworks that incorporate more systematically the regulatory frameworks under a One Health approach	<ul style="list-style-type: none"> • Tools, policy briefs and training materials developed 	✓	✓	✓
4.1.4 Provide guidance for the management of food safety risks according to a One Health approach	<ul style="list-style-type: none"> • Technical guidance (scientific risk synthesis and risk assessment materials) developed and published 	✓	✓	✓
4.1.5 Support countries in incorporating or strengthening the One Health approach in food safety incident and emergency response plans	<ul style="list-style-type: none"> • Increased participation in the International Food Safety Authorities Network (INFOSAN) among Members, Member States and State Parties • Support for the development of National Food safety emergency and response plans, taking into consideration the One Health approach 	✓	✓	✓
4.1.6 Provide scientific and technical assistance with the aim of enhancing the participation of countries in the standard-setting work of the Codex Alimentarius Commission and relevant work of the WOH and facilitate its implementation through a multisectoral, coordinated approach	<ul style="list-style-type: none"> • Scientific and technical support provided to countries to improve their participation in standard-setting organizations 	✓	✓	✓
4.1.7 Employ a global food safety campaign to sensitize and educate about the use of the One Health approach in this area among different stakeholders	<ul style="list-style-type: none"> • World Food Safety Day, highlighting the interconnectedness of food safety and One Health, reaches its targeted audience • World Food Day reaches its targeted audience • Specific communication campaigns developed to address food safety under One Health 	✓	✓	✓

Action 4.2. Utilize and improve food systems data and analysis, scientific evidence and risk assessment in developing policy and making integrated risk management decisions

The collection, utilization and interpretation of data are the foundation for building evidence-based food safety systems. This action aims to help countries utilize food systems information and approaches, scientific evidence and risk assessment to the greatest extent feasible in developing policy and legislation, in making risk management decisions to reduce the burden of foodborne diseases and ensure safer food, and in allocating resources to strengthen national food safety systems.

TABLE 11: ACTIVITIES, DELIVERABLES AND TIMELINE OF ACTION 4.2

Activities	Deliverables	Timeline (years)		
		1	2-3	4-5
4.2.1 Develop/update guidelines and innovative approaches on best practice in adopting One Health concepts into food safety risk analyses	<ul style="list-style-type: none"> Guidelines, tools developed for incorporating broader One Health concepts into food safety risk analyses 	✓	✓	✓
4.2.2 Provide technical support and develop training programmes to ensure all countries can conduct food safety risk analysis under a One Health approach and through a food systems lens	<ul style="list-style-type: none"> Training courses, materials and webinars held for multisectoral food safety risk analysis Train-the-trainer programmes 	✓	✓	✓
4.2.3 Support countries in strengthening their capacity to identify and evaluate new and emerging food safety issues, including those arising at the human-animal-plant-environment interface	<ul style="list-style-type: none"> Training courses and workshops on risk assessment conducted and policy advice generated for emerging food safety risks, in particular, those arising from the human-animal-plant-environment interface 	✓	✓	✓
4.2.4 Support countries in exploring new communication channels to emphasize the central role of food safety across the entire food system and in operational and governance decision-making at national and other levels, and to guide adequate food safety investment	<ul style="list-style-type: none"> Communication strategy that takes into consideration the different goals and stakeholders 	✓	✓	✓

Action 4.3. Foster the adoption of the One Health approach in national foodborne disease surveillance systems and research for the detection and monitoring of foodborne disease and food contamination

Without knowing the incidence and burden of disease associated with hazard/food combinations, the prioritization of mitigation actions will be difficult and food safety improvements will be suboptimal. Data on disease occurrence and the burden of foodborne hazards, combined with knowledge of chemical, microbiological and physical source attribution, will be crucial in assessing the costs and benefits of current and novel control measures. Thus, an effective surveillance system to address foodborne diseases requires the integration of human and animal disease surveillance with environmental and food monitoring.

This action aims to strengthen integrated surveillance for foodborne pathogens and food contaminants at the human–animal–plant–environment interface, adopting a One Health approach. This will allow countries to detect, prevent and respond to food-related public health issues more effectively.

TABLE 12: ACTIVITIES, DELIVERABLES AND TIMELINE OF ACTION 4.3

Activities	Deliverables	Timeline (years)		
		1	2–3	4–5
4.3.1 Support countries in strengthening legislation and programmes for foodborne disease monitoring and surveillance, including the surveillance of antimicrobial-resistant foodborne pathogens	<ul style="list-style-type: none"> Guidance provided on integrated foodborne disease surveillance Guidance provided on the surveillance of antimicrobial resistance in foodborne pathogens Guidance provided on linking contamination in foods with animal disease data and human illnesses 	✓	✓	✓
4.3.2 Manage databases and tools to collect, improve access to and interpret relevant food safety data and other information, including water, food and wildlife meat	<ul style="list-style-type: none"> Food safety databases open for public (feed by stakeholders) Capacity building programmes developed for food safety data collection and management 	✓	✓	✓
4.3.3 Support countries in strengthening surveillance systems for estimating and sharing data on the burden of foodborne illness and attributing illnesses to specific food sources, to better target prevention and control measures under a One Health approach	<ul style="list-style-type: none"> Scientific advice provided on cost-effective food safety risk management based on public health burden Support provided on strengthening laboratory capacity Support provided on surveillance and epidemiological investigation of foodborne cases and outbreaks considering the human–animal–plant–environment interface 	✓	✓	✓
4.3.4 Enhance One Health-related research on the transmission of foodborne pathogens and food contaminants at the human–animal–plant–environment interface	<ul style="list-style-type: none"> Scientific advice provided on the transmission and control of certain emerging and re-emerging foodborne pathogens and food contaminants at human–animal–environment interface 	✓	✓	✓

Action track 5: Curbing the silent pandemic of AMR

AMR poses a major global threat across the human, animal, plant, food and environmental sectors. Limiting the emergence and spread of resistant pathogens and determinants is critical to preserving our ability to treat diseases in humans, animals and plants, reduce food safety and security risks, protect the environment and maintain progress towards the SDGs, including those on poverty, hunger, health and well-being, inequality, clean water and sanitation, work and economic growth, responsible consumption and production, and partnerships.

Because AMR has multiple drivers and needs to be tackled on many fronts, a One Health approach is essential to ensure that all sectors and stakeholders communicate and work effectively together.

Building on the momentum of greater collaboration, the Quadripartite has developed a Strategic Framework for collaboration on AMR (WHO, FAO, OIE and UNEP, 2022). This Framework reflects the joint work of the four organizations to advance a One Health response to AMR. It broadly supports the implementation of the five pillars of the Global Action Plan on AMR (WHO, 2015a) and strengthens global AMR governance. A forthcoming joint workplan sets out how the organizations will collaborate to deliver the vision of the Framework. This workplan focuses on activities undertaken by the four organizations collaboratively and complements the individual organizations' existing workplans and budgets.

The objectives and activities of action track 5 are aligned with the Strategic Framework for collaboration on AMR and its joint workplan. Embedding the joint workplan in the OH JPA will ensure AMR-related activities and investment are coherent and synergized across other areas of Quadripartite One Health collaboration and foster lesson learning among other groups, including on communication and information systems.

Objective

Take joint action to preserve antimicrobial efficacy and ensure sustainable and equitable access to antimicrobials for responsible and prudent use in human, animal and plant health.

Action 5.1. Strengthen the capacity and knowledge of countries to prioritize and implement context-specific collaborative One Health work to control AMR in policy, legislation and practice

This action supports AMR control at country level, ensuring inter-agency coordination, technical support and capacity development. With Quadripartite support, country-owned, sustainable One Health governance ensures effective and balanced national AMR responses.

TABLE 13: ACTIVITIES, DELIVERABLES AND TIMELINE OF ACTION 5.1

Activities	Deliverables	Timeline (years)		
		1	2-3	4-5
5.1.1 Support balanced, functional, well-represented national inter-agency coordination mechanisms, and One Health approaches to AMR National Action Plan (NAP) implementation	<ul style="list-style-type: none"> LMICs supported in implementing One Health approaches to AMR in line with the AMR Multi-Partner Trust Fund (MPTF) results matrix 	✓	✓	✓
5.1.2 Provide technical support and capacity development activities for countries in targeted areas	<ul style="list-style-type: none"> Guidance for countries on integrated surveillance of AMR/antimicrobial use developed Capacity development and actions on environment within sector policy and global partnership strengthened Guidance on multisectoral/One Health AMR governance at national level updated Guidance to include AMR in the UN Sustainable Development Cooperation Framework disseminated and support provided to countries with implementation One Health assessment tool for AMR-relevant legislation finalized and piloted Tailored strategies and materials for awareness and campaigns on AMR developed and shared, including for World Antimicrobial Awareness Week Countries supported in developing their own monitoring and evaluation approaches Evidence base for social, gender, environmental and economic assessments of AMR impact developed and strengthened Capacity development support to MPTF country-supported programmes on priority environmental activities in NAP 	✓	✓	✓
5.1.3 Ensure effective management of the AMR MPTF	<ul style="list-style-type: none"> MPTF country and global programmes effectively supported Effective lesson learning and knowledge management 	✓	✓	✓

Action 5.2. Reinforce global and regional initiatives and programmes to influence and support One Health responses to AMR

This action supports coordination mechanisms and activities aimed at mobilizing demonstrated political engagement and resourcing at the global and regional level to support AMR control at country level.

TABLE 14: ACTIVITIES, DELIVERABLES AND TIMELINE OF ACTION 5.2

Activities	Deliverables	Timeline (years)		
		1	2-3	4-5
5.2.1 Coordinate the global One Health response to AMR	<ul style="list-style-type: none"> Effective coordination and support provided by the Quadripartite Joint Secretariat (QJS) to promote One Health/AMR response across the four organizations Global promotion, advocacy and political engagement conducted Coordination and monitoring of the workplan implemented Coordination and inter-agency engagement and partnership fostered MPTF effectively managed and expanded 	✓	✓	✓
5.2.2 Develop and update standards and technical advice on global best practice	<ul style="list-style-type: none"> Investment case advocated for and built to support AMR financing Enhanced collaboration with governments, development partners and other stakeholders to mainstream the investment case findings into strategies and operational plans at all levels Harmonized guidance by the four organizations on the use of antimicrobials in different sectors Support provided to medicines regulatory authorities Repository of tools and e-learning materials developed and updated on a regular basis Understanding of the relationships between gender, equity and AMR strengthened 	✓	✓	✓
5.2.3 Support global advocacy efforts	<ul style="list-style-type: none"> Joint AMR awareness activities across the One Health spectrum planned and implemented, including World Antimicrobial Awareness Week Global advocacy on addressing AMR in the environment (including high-level political events) 	✓	✓	✓
5.2.4 Develop a prioritized research agenda to provide direction for investment	<ul style="list-style-type: none"> Evidence gaps/research questions at the interface between humans, animals, plants and the environment mapped Research questions to inform policy identified and prioritized 	✓	✓	
5.2.5 Conduct monitoring and evaluation and reporting of the Global Action Plan on AMR	<ul style="list-style-type: none"> Tripartite biennial global report on AMR (under the Global Action Plan (GAP) monitoring and evaluation framework) to monitor progress of the GAP produced and disseminated Annual Tripartite AMR country self-assessment survey (TrACCS) conducted and results disseminated Tripartite Integrated System for Surveillance on AMR and Antimicrobial Use (TISSA) platform established and operationalized 	✓	✓	✓
5.2.6 Strengthen regional collaboration on AMR	<ul style="list-style-type: none"> Regional coordination and provision of technical support for NAP implementation to countries ensured Engagement with regional political and economic groups conducted Advocacy and communication activities undertaken Regional partnerships fostered 	✓	✓	✓

Action 5.3. Strengthen global AMR governance structures.

Through this action, the four organizations provide support to the interrelated structures to strengthen accountability for and global governance of AMR: i) the Global Leaders Group on AMR, which performs a global advisory and advocacy role, with the primary objective of maintaining the urgency of and public support for political momentum behind and visibility of the AMR challenge on the global agenda; ii) a multi-stakeholder partnership platform to facilitate stakeholder engagement on AMR that includes members of the Quadripartite organizations, United Nations agencies, interested governments, civil-society organizations, the private sector and academia; and iii) an Independent Panel on Evidence for Action on AMR.

TABLE 15: ACTIVITIES, DELIVERABLES AND TIMELINE OF ACTION 5.3

Activities	Deliverables	Timeline (years)		
		1	2-3	4-5
5.3.1 Support the interrelated structures to strengthen accountability for and global governance of AMR	<ul style="list-style-type: none"> • Secretariat service provided by the QJS to the Global Leaders Group on AMR • Regular meetings of the Global Leaders Group held • Global Leaders Group action plan is monitored • Technical advisory groups supported • Establishment and operation of the multi-stakeholder partnership platform on AMR supported by the QJS • Establishment and operation of the Independent Panel on Evidence for Action on AMR supported 	✓	✓	✓

Action track 6: Integrating the environment into One Health

There is increasing recognition that the health of humans, domestic and wild animals, plants and the environment are closely linked and interdependent. Every form of environmental degradation has direct or indirect negative consequences for human and animal health. The effects of air, water and soil pollution on human and animal health are well documented. For example, biological and chemical pollutants in wastewater and the run-off from livestock farms enhance the propagation of antimicrobial-resistant genes in the environment. Land-use change driven by agricultural, industrial and urban expansion leads not only to the unprecedented degradation of natural habitats, threats to ecosystem integrity and food security, deforestation and an alarming loss of biodiversity, but also drives the emergence and spread of disease and provides pathways for the spillover of emerging pathogens between domestic animals, wildlife and humans. In addition to air pollution of the indoor or outdoor environment by chemical, physical or biological agents, freshwater and ocean pollution leads to the accumulation of toxic chemicals, heavy metals and microplastics in the human food chain, causing adverse health outcomes in humans and domestic and wild animals.

These and many other negative consequences of human activity are compounded by climate change, which only multiplies these threats, exacerbating their impact and undermining the resilience of environmental and ecological systems.

To prevent and mitigate these threats, the biodiversity conservation, environmental, public health and animal health/veterinary sectors need to understand these interlinkages, speak with one voice and implement One Health in a harmonized approach. The mandates and priorities of the environmental sector need to be fully integrated into the One Health approach, including by integrating environmental data into One Health decision-making, fostering a better understanding of environmental issues in the One Health community and boosting the capacity of the environmental sector and institutions to have an equal voice at the One Health table and in decision-making.

Objective

Protect and restore biodiversity, prevent the degradation of ecosystems and the wider environment to jointly support the health of people, animals, plants and ecosystems, underpinning sustainable development.

Action 6.1. Protect, restore and prevent the degradation of ecosystems and the wider environment

This action enumerates a series of activities that can be jointly implemented by the four organizations, in partnership with other entities, to help protect the environment and prevent its further degradation. The activities are intended to promote a shared and better understanding of the health threats posed by unhealthy environments to wildlife, livestock and people, to collaboratively engage in partnerships with civil society, the private sector and other stakeholder groups, and to adopt policies, legislation and practices that promote the sustainable management of nature, ensure healthy ecosystems and communities and prevent encroachment by urban centres or agriculture/farms.

TABLE 16: ACTIVITIES, DELIVERABLES AND TIMELINE OF ACTION 6.1

Activities	Deliverables	Timeline (years)		
		1	2-3	4-5
6.1.1 Identify and quantify the main anthropogenic factors leading to environmental degradation that negatively impact the health of ecosystems, animals, plants and people	<ul style="list-style-type: none"> Knowledge products on the interlinkages between the health of the environment, ecosystems, animals, plants and people are used to support policymaking 	✓	✓	✓

Activities	Deliverables	Timeline (years)		
		1	2-3	4-5
6.1.2 Enhance private-sector and non-governmental organization (NGO) engagement in sustainable natural resource management, restoration activities and best practices, including climate-smart and environmentally sound healthcare	<ul style="list-style-type: none"> The private sector and non-conservation-oriented NGOs are measurably contributing to halting the degradation of the environment and to promoting its conservation and restoration 		✓	
6.1.3 Promote the transition towards sustainable, climate-smart, agroecological approaches to sustainable agriculture, aquaculture livestock production and non-timber forest products, including through regulation, to reduce risks to the health of the environment, animals, plants and people	<ul style="list-style-type: none"> Toolkits, policy guidance, economic analyses and other tools to reduce agricultural intensification and increase agroecological approaches are developed 		✓	✓
6.1.4 Jointly promote the importance of enhancing the integrity of all ecosystems and the services they provide to support healthy and resilient populations of all species	<ul style="list-style-type: none"> Preparing joint publications, seminars and policy dialogues/debates involving all relevant sectors at all levels (including decision makers) 	✓	✓	✓
6.1.5 Support the development and adoption of policies and legislation to protect the rights of Indigenous Peoples and local communities to sustainably use and trade in natural resources	<ul style="list-style-type: none"> Develop legal guidance and cross-sectoral policy impact analyses to support policy development to protect the rights of Indigenous Peoples and local communities 	✓	✓	✓
6.1.6 Support the development of legal, sustainable, resilient and inclusive wildlife-based economies while managing the risks of unregulated and illegal wildlife farming and trade	<ul style="list-style-type: none"> Evidence of support to sustainable national and regional wildlife economy strategies 	✓	✓	✓
6.1.7 Support and link activities to Nationally Determined Contributions (NDCs), National Biodiversity Strategies and Action Plans (NBSAPs) and other commitments under multilateral environmental agreements (MEAs) and Health National Adaptation Plan (H-NAP) commitments made by national governments to address climate change and environmental degradation	<ul style="list-style-type: none"> Evidence of support to the integration of One Health considerations in national reporting obligations such as NDCs and NBSAPs 		✓	✓
6.1.8 Convene relevant sectors to facilitate integrated land- and sea-use planning that incorporates human, animal and environmental co-benefits and yields sustainable land and water management	<ul style="list-style-type: none"> Guidance developed on land- and sea-use plans that take health and environment into account Good practice guidance for conducting multi-stakeholder, integrated land- and sea-use planning processes produced based on lessons learned 	✓	✓	✓

Activities	Deliverables	Timeline (years)		
		1	2-3	4-5
6.1.9 Develop and promote the implementation of joint guidelines for the environmentally sound management of public health, medical and veterinary operations and their waste	<ul style="list-style-type: none"> Evidence of support for the development, adoption and implementation of joint guidelines 		✓	✓
6.1.10 Promote, inform and support the sound management of chemicals and waste, including wastewater, and the prevention, reduction and control of pollution into air, water and soil, in order to minimize threats to the health of ecosystems, animals, plants and people	<ul style="list-style-type: none"> Guidelines and plans for the sound management of chemicals and waste 		✓	✓

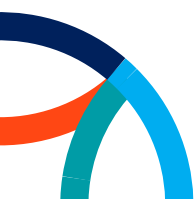
Action 6.2. Mainstream the health of the environment and ecosystems into the One Health approach

This action seeks to integrate the mandates, priorities, functions and knowledge of the forestry, wildlife, biodiversity, natural resource management and environmental sectors into One Health in an effort to promote and support the development of One Health policies, plans and actions that are more inclusive of environmental knowledge, data and risk factors.

TABLE 17: ACTIVITIES, DELIVERABLES AND TIMELINE OF ACTION 6.2

Activities	Deliverables	Timeline (years)		
		1	2-3	4-5
6.2.1 Map the evidence on the socioeconomic impacts of environmental degradation (including land-use change, biodiversity loss, pollution and waste, and climate change)	<ul style="list-style-type: none"> Special reports developed, such as technical reports and policy briefs Scientific platform established to collate scientific publications addressing this topic Governing bodies of Tripartite organizations take action in line with the evidence provided to address drivers of environmental degradation 		✓	
6.2.2 Map out, review and revise existing tools with a view to improving multisectoral collaboration (such as IHR-PVS, NBWs and the Tripartite operational tools under the Tripartite Zoonoses Guide (WHO, FAO and OIE, 2020)) to ensure that environmental considerations are well integrated, and develop new tools to support the integration of the environmental aspects of One Health, as needed	<ul style="list-style-type: none"> New tools are developed and existing tools are revised to integrate environmental aspects 		✓	

Activities	Deliverables	Timeline (years)		
		1	2-3	4-5
6.2.3 Identify incentives and co-benefits, and raise awareness of the central role of the environmental sector, the importance of its participation and its role in One Health	<ul style="list-style-type: none"> • Awareness and communication plan established by the Quadripartite to support the mainstreaming/integration of environmental considerations into One Health • Targeted communications and tools to support the integration of the environmental sector into One Health • Coordinated communication campaigns among the partners • Editorials and other articles published and disseminated through various media outlets 	✓	✓	✓
6.2.4 Develop and implement mechanisms and partnerships to review and ensure the integration of ecosystem health and the environment into One Health policies and programmes and ensure equity among sectors and groups on One Health platforms at all levels	<ul style="list-style-type: none"> • Support the establishment of multi-stakeholder partnership platforms • Quadripartite coordination mechanisms established • Best practices/guidelines developed for the systematic inclusion of the environmental sector into One Health platforms and policies 	✓	✓	✓
6.2.5 Support the review, update and implementation of relevant national plans, policies, legislation and programmes to integrate all dimensions of One Health, including those on biodiversity, the environment and climate change	<ul style="list-style-type: none"> • Support the review of country-level One Health coordination mechanisms • Template/checklist developed to support the review of national plans and policies to adjust-adapt-include environmental considerations • Lessons learned on the implementation of relevant projects is documented 	✓	✓	✓
6.2.6 Support the implementation of the Convention on Biological Diversity Global Action Plan on Biodiversity and Health, related action plans and operational frameworks	<ul style="list-style-type: none"> • Progress reports on the uptake and implementation of action plans • Workshops organized at country level to support implementation when required 		✓	
6.2.7 Support the integration of health and environment considerations, including risks, into the impact assessments and performance standards of the International Finance Corporation (IFC) and other financial institutions	<ul style="list-style-type: none"> • Revised impact assessments and performance standards of the IFC and other financial institutions, taking into account environmental considerations 		✓	✓
6.2.8 Communicate to decision makers at all levels the importance and economic value of a healthy environment to promote healthy and resilient societies and economies	<ul style="list-style-type: none"> • Joint communications strategy and implementation plan • Development of communications materials • Policy briefs • Policy dialogue on environment, biodiversity and health approaches • Joint statements targeting/tailored to policymakers • Joint communication campaigns 		✓	✓



Activities	Deliverables	Timeline (years)		
		1	2-3	4-5
6.2.9 Promote national-level recognition of the human right to a clean, healthy and sustainable environment (as unanimously approved by the United Nations Human Rights Council in October 2021)	<ul style="list-style-type: none"> • Joint advocacy strategy and implementation plan • Advocacy briefs 	✓	✓	✓
6.2.10 Promote the adoption of climate-smart and environmentally sound health systems	<ul style="list-style-type: none"> • Waste management standards for human and animal/plant health and research operations • Health workforce interventions • Energy interventions • Water, sanitation and healthcare waste interventions • Infrastructure, technology and product interventions • Tools to assist healthcare (animal and human) facilities assess their resilience to climate change and pollution threats 	✓	✓	✓

Action 6.3. Integrate environmental knowledge, data and evidence into One Health decision-making

Environment sector-sourced data and evidence are integrated at all levels of decision-making to protect biodiversity and the wider environment, promote sustainable development and identify and mitigate health threats.

TABLE 18: ACTIVITIES, DELIVERABLES AND TIMELINE OF ACTION 6.3

Activities	Deliverables	Timeline (years)		
		1	2-3	4-5
6.3.1 Map interoperability between health, animal disease and environmental databases and information systems	<ul style="list-style-type: none"> • Mapping of existing databases for (human and animal) health and environmental data, including existing links and degree of interoperability 	✓		
6.3.2 Establish linkages between disease databases and environmental databases to support risk modelling, shared information and informed/science-based decision and policymaking	<ul style="list-style-type: none"> • Relevant databases are connected through application programming interfaces and data can be analysed in a holistic way • Environmental data are directly accessible from health databases, and vice and versa, facilitating analysis and risk modelling studies 		✓	
6.3.3 Develop joint information management systems and analytical tools integrating ecosystem, environmental, animal and human health knowledge and data	<ul style="list-style-type: none"> • New Information Management System platform integrating ecosystem, animal and human health data and knowledge • Agreement between contributing organizations • Results generated by analytical tools used by decision makers 		✓	

Activities	Deliverables	Timeline (years)		
		1	2-3	4-5
6.3.4 Develop appropriate mechanisms/guidelines to ensure the participation of indigenous and local communities including their traditional knowledge to guide One Health decision-making	<ul style="list-style-type: none"> • Production of a formal mechanism or guidelines to include traditional knowledge into One Health decision-making 	✓		
6.3.5 Establish partnerships with universities and research centres to fill knowledge gaps and monitor environmental impacts on health (both positive and negative)	<ul style="list-style-type: none"> • Research agenda is developed and financed • New evidence is produced and disseminated, including to policymakers 	✓		
6.3.6 Translate environmental knowledge and data to improve policies and legislation and propose practical solutions to prevent and mitigate health threats at the interfaces	<ul style="list-style-type: none"> • Production of practical guidelines to prevent and mitigate specific health threats • Development of public and animal health policies integrating environmental data into their programmes 	✓		
6.3.7 Develop a One Health needs assessment toolkit to evaluate interoperability, mechanisms and working relationships between sectors at country level	<ul style="list-style-type: none"> • Updated NBW tool produced, integrating environmental sector • Support provided to countries to conduct NBW roadmaps integrating the environmental sector • Support provided so NBW roadmaps are included in national health plans • The Tripartite Zoonoses Guide operational tools (Joint Risk Assessment, Multisectoral Coordination Mechanism, and Surveillance and Information Sharing) integrate the environmental sector into guidelines and implementation 	✓		
6.3.8 Engage with citizen science on data collection for monitoring the health of the environment to inform action	<ul style="list-style-type: none"> • Crowdsourced data contribute to surveillance and monitoring systems globally 	✓		

Action 6.4. Create an interoperable One Health academic and in-service training programmes for environmental, medical, agricultural and veterinary sector professionals

This action aims to: i) strengthen the capacity of natural resource management and environmental sector professionals and institutions to participate in an interoperable way with human and animal professionals to address zoonoses, AMR and food safety threats and to support One Health policies, legislation and interventions; ii) strengthen the capacity of medical and animal health/veterinary sector professionals and institutions to integrate environmental considerations, participate interoperably with environmental professionals, address linkages between health and the environment, and support One Health policies, legislation and interventions; and iii) jointly/simultaneously strengthen the capacity of medical, veterinary and environment sector professionals to influence decision-making on health and development and ensure all sectors are adequately equipped to collaborate and integrate the priorities of all sectors.

TABLE 19: ACTIVITIES, DELIVERABLES AND TIMELINE OF ACTION 6.4

Activities	Deliverables	Timeline (years)		
		1	2-3	4-5
6.4.1 Develop advocacy training and tools for environmental decision makers and professionals to influence decision makers in other sectors	<ul style="list-style-type: none"> Advocacy training and tools developed and used by relevant sectors 	✓	✓	✓
6.4.2 Develop and roll out a national environment sector needs assessment tool to benchmark institutional and individual capacity to participate interoperably in all aspects of One Health in support of Field Training Programme for Wildlife, Environment, Biodiversity and Ecosystems Professionals (FTP-WEBE)	<ul style="list-style-type: none"> National environment sector needs assessment developed Support provided to undertake national, sub-regional and/or regional environmental sector needs assessments Support to develop sub-regional and/or regional environment sector capacity development implementation plans (by Regional Economic Commissions) 	✓	✓	✓
6.4.3 Develop an interoperable One Health training course (FTP-WEBE) for in-service professionals – a complement to the Field Epidemiology Training Programme (FETP), Field Epidemiology Training Programme for Veterinarians (FETPV) and Field Epidemiology and Laboratory Training Programme (FELTP) – targeting professionals in ministries responsible for natural resource management (wildlife, biodiversity, ecosystems, environment), climate and other environmental issues	<ul style="list-style-type: none"> Interoperable environmental sector One Health training modules and course developed Interoperable environmental sector One Health training delivered on biodiversity, ecosystems and wildlife Environment sector professionals understand how to contribute to One Health at national and subnational level Environment sector has the capacity to influence One Health policy and identify and implement environmental sector priorities as part of national and subnational One Health programmes National One Health policies and priorities reflect the mandates and interests of environment ministries and are expanded beyond zoonoses, AMR and food safety 	✓	✓	
6.4.4 Develop and ensure the inclusion of training for in-service medical, public health and veterinary professionals on the importance of and interlinkages between biodiversity conservation, links between health and the environment, how environmental destruction contributes to disease emergence, and the importance of integrating the environment sector into One Health collaborations	<ul style="list-style-type: none"> At least three training modules are developed that include the environment (biodiversity and ecosystem health) and its importance and interlinkages One Health collaboration across sectors and interfaces The impact of diseases on wildlife populations and conservation 	✓	✓	✓

Activities	Deliverables	Timeline (years)		
		1	2-3	4-5
6.4.5 Ensure that systems thinking is a core module for academic and in-service One Health professionals	<ul style="list-style-type: none"> Systems thinking is integrated into core modules in One Health undergraduate and graduate degrees, training courses and certificates for medical, veterinary and environment sector undergraduate and graduate school candidates 	✓	✓	✓
6.4.6 Support the development of core modules on environment, biodiversity and ecosystem health in the medical, veterinary and public health academic curricula and research agendas	<ul style="list-style-type: none"> Core modules developed on environment, biodiversity and ecosystem health to be included in One Health undergraduate and graduate degrees, training courses and certificates for medical, veterinary and environment sector undergraduate and graduate school candidates 	✓	✓	✓
6.4.7 Support faculty training and the development of core modules on public health in environmental academic curricula	<ul style="list-style-type: none"> Core modules developed on public health in environmental academic curricula in One Health undergraduate and graduate degrees, training courses and certificates for medical, veterinary and environment sector undergraduate and graduate school candidates 	✓	✓	✓
6.4.8 Develop a One Health introductory course that can be delivered simultaneously to in-service professionals from all One Health sectors (health, animal health, environment) and serves as a prerequisite to FETP, FETPV and FTP-WEBE training	<ul style="list-style-type: none"> Joint training modules developed and delivered to in-service professionals FETP, FETPV and FTP-WEBE endorse this joint introductory One Health course as a prerequisite 	✓	✓	

Part 4. Governance, implementation and monitoring

Governance

The proposed global governance structure considers the requirements for achieving the impact and long-term outcomes of the OH JPA, as well as the medium- and immediate short-term outcomes. It should ensure the provision of platforms and opportunities to engage all relevant stakeholders, mobilize action and resources and address the complex challenges outlined in the action tracks. The principle of governance is to build on the existing mechanisms and avoid creating unnecessary and complex structures. The governance of the OH JPA will be as follows:

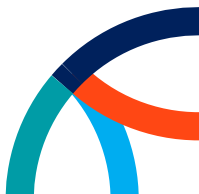
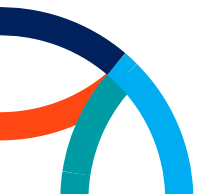
- The Quadripartite executives are accountable for the implementation of the OH JPA and will provide leadership and oversight of its implementation, ensuring the engagement of their regional, sub-regional and country offices, as relevant.
- The executives, in consultation with senior Quadripartite representatives and the Secretariat, will be responsible for making or facilitating all programmatic, financial and resource decisions related to delivering the OH JPA based on pre-agreed workplans. The implementation arrangements will be kept under review and revised periodically by the Quadripartite Secretariat.
- The organization that acts as the rotating annual chair of the Quadripartite will lead the coordination of the implementation of the OH JPA and report to the Quadripartite Executive Annual Meeting on progress.
- The governance of the OH JPA will be supported as follows:
 - The four organizations will coordinate the implementation of the OH JPA through the Quadripartite Secretariat.
 - The OHHLEP will play an advisory role to senior Quadripartite management (executives and senior representatives) and to the Quadripartite Secretariat, to ensure science-based implementation and updates to the OH JPA with evidence, data and knowledge generated.
 - Similar structures will be considered at the regional/sub-regional level to ensure effective implementation of the OH JPA at country level.
 - The four organizations may seek to engage other stakeholders for input and advice to support the implementation of OH JPA, as needed.
 - The four organizations will establish dialogue with countries to support the

acceleration of One Health progress by providing practical action, tools and support mechanisms that countries can draw on for their One Health planning and implementation.

Implementation, monitoring and evaluation

- The OH JPA will be supported by an implementation framework with workplans at global, regional and country level to translate the objectives and high-level actions and activities described in the OH JPA into context-specific activities at all levels, with the four organizations contributing to implementation within their capacities, competencies and available resources. The goal of the implementation plan is to generate impact at country level.
- A joint process will be established to develop the implementation framework in consultation with the Quadripartite regional coordination mechanisms and their respective Members.
- The OH JPA aims to engage wider stakeholders, including NGOs, CSOs, the private sector and academia, on particular themes and activities of the OH JPA and to help with advocacy and maintaining the urgency, public support, political momentum and visibility of the One Health approach. This may include organizing regular consultation forums and high-level conferences at appropriate milestones in the implementation of the OH JPA.
- The Quadripartite regional coordination mechanisms, where they exist, mirror the role of the global Secretariat at regional level, focusing on facilitating advocacy and operationalizing One Health at a regional and country level. A key responsibility of the regional coordination will be to link the OH JPA to a workplan at the regional and country level, with clear roles and responsibilities for each partner.
- The Quadripartite will develop a monitoring and evaluation framework with targets and indicators that are relevant to the selected deliverables of each action track to measure and facilitate reporting on OH JPA progress for its initial duration of five years.
- The targets of the OH JPA will be linked to reflect their contribution to attaining the relevant targets of the SDGs.

-
- Implementation at country level may be linked to United Nations Sustainable Development Framework implementation under the United Nations Resident Coordinator System and guided by the One Health guideline developed by the Quadripartite for this purpose.
 - A One Health toolkit will be developed that incorporates various existing tools, as well as new ones that will further support the implementation of the OH JPA.



Part 5.

Investing in One Health

Resource mobilization strategy

Significant, sustainable and streamlined financing is critical and will be necessary to put the OH JPA into action, fostering greater efficiency and coalition building to support countries in operationalizing One Health at scale. The Quadripartite foresees working with a wide range of actors, as funding partners are required to enable an integrated package of global goods and technical support to countries, and leveraging longer-term and more sustainable financial investments to ensure One Health outcomes.

The approach to resource mobilization will be harmonized across the Quadripartite resource mobilization task team, to ensure strong coordination and oversight. To facilitate this, a joint approach is proposed, whereby resource partnerships are called for along key lines of the OH JPA and provide integrated support. The joint approach will govern resource mobilization endeavours and avoid fragmentation of effort.

The Quadripartite resource mobilization strategy will take into account the current ecosystem of existing instruments, building on a combination of elements that may include one or more financial mechanisms, financing sources and in-kind contributions, lead agents or intermediaries, beneficiaries or principal stakeholders. Existing multi-donor/-partner trust funds will be pursued to help expand the One Health portfolio in LMICs and incentivize and facilitate coordinated technical support. Potential new mechanisms will be explored where gaps exist.

In line with the framework, the Quadripartite will preferentially pursue unearmarked funding that enables the flexibility, predictability, efficiency and effectiveness of One Health operations, particularly at national level and in LMICs.

Beyond funding for Quadripartite action, it will be necessary to leverage longer-term investments for countries to sustain One Health action and this will take the form of various partnerships and financial flows (state institutions, international financial institutions and non-state actors, including the private sector). The Quadripartite's work to ensure a solid return on investment for One Health will be critical in this regard.

The way forward

The Quadripartite stands ready to engage in coordinated dialogue with interested partners to further detail its needs and advocate for resource mobilization, as outlined.

Key actions

- Review the current ecosystem of funding and financing options for One Health work at global, regional and country level.
- Based on the review, agree on a joint approach.
- Proactively engage with a wide variety of partners (state and non-state) through key events, dialogue and consultations, matching joint strategic interests with the OH JPA.
- Explore options to establish closer working arrangements and synergies through structures such as the World Bank. Here, work on the return on investment will be key to demonstrating the financial and holistic value of pursuing a One Health approach.
- Adopt a consolidated resource mobilization strategy.

Appendices

Appendix 1: Glossary

Term	Description
Agrifood system	The entire range of actors and their interlinked value-adding activities involved in the production, aggregation, processing, distribution, consumption and disposal of food products that originate from agriculture, forestry or fisheries, as well as food industries and the broader economic, societal and natural environments in which they are embedded.
Antimicrobials	Antimicrobials are agents used to prevent, control and treat infectious diseases in humans, animals and plants. They include antibiotics, fungicides, antiviral agents and parasiticides. Disinfectants, antiseptics, other pharmaceuticals and natural products may also have antimicrobial properties.
Antimicrobial resistance	Antimicrobial Resistance (AMR) occurs when bacteria, viruses, fungi and parasites no longer respond to antimicrobial agents. As a result of drug resistance, antibiotics and other antimicrobial agents become ineffective and infections become difficult or impossible to treat, increasing the risk of disease spread, severe illness and death.
Biodiversity	The variability of living organisms from any source, including, among other things, terrestrial ecosystems and marine and other aquatic ecosystems and the ecological complexes of which they are part; it includes diversity within species, between species and of ecosystems.
Ecosystem	A dynamic complex of plant, animal and microorganism communities and their non-living environment, interacting as a functional unit in a particular physical environment. Ecosystems may be small and simple, like an isolated pond, or large and complex, like a specific tropical rainforest or a coral reef in tropical seas.
(The) Environment	The natural world or physical surroundings in general, either as a whole or within a particular geographical area.
Environmental degradation	The deterioration in environmental quality from ambient concentrations of pollutants and other activities and processes, such as improper land use and natural disasters.
Environmental determinants of health	External environmental factors, not related to behaviour, at global, regional, national and local level, which influence the health status of humans and animals, including physical, chemical and biological factors.
Environmental health	The branch of public health concerned with studying and regulating factors in the environment that affect human health and disease and those with alleviating detrimental effects; often attributive; (also) the general condition of the natural environment.
Health of the environment	The extent to which the environment is able to function, maintain biological and chemical processes, adapt to change or cope with the impacts of human activity.
Ecosystem health	The extent to which an ecosystem (or group of ecosystems) is able to function, maintain ecological and evolutionary processes, adapt to change and cope with the impacts of human activity.
Emerging infectious disease (EID)	A disease that has either appeared and affected a population for the first time, or has existed previously, but is rapidly spreading, either in terms of the number of individuals getting infected, or to new geographical areas.
Endemic infectious disease	An infectious disease that occurs frequently in a specific population or geographical area, often in cycles, and may remain there indefinitely.

Term	Description
Epidemic infectious disease	An outbreak of a disease that spreads quickly and affects one or more populations at the same time in a small geographic area.
Food safety	Assurance that food will not cause adverse health effects to the consumer when it is prepared and/or eaten according to its intended use.
Food security	When all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life.
Food systems	Complex and multidimensional webs of activities, resources and actors involving the production, processing, handling, preparation, storage, distribution, marketing, access, purchase, consumption and loss and waste of food, as well as the outputs of these activities, including social, economic and environmental outcomes.
Global health security	For the purpose of this document, global health security considers all activities required, both proactive and reactive, to minimize the impact of global health threats that endanger the health of humans, animals, plants and their environment across geographical regions and international boundaries.
Health system	A system consisting of all organizations, people and actions whose primary intent is to promote, restore or maintain health.
Integrated vector management	A rational decision-making process to optimize the use of resources for vector control.
Natural environment	All living and non-living things that occur naturally in a particular region where human impact is kept under a certain limited level.
Neglected tropical diseases (NTDs)	Ancient diseases of poverty that impose a devastating human, social and economic burden on more than 1 billion people worldwide, predominantly among the most vulnerable, marginalized populations in tropical and subtropical areas. The NTDs currently prioritized by WHO are a diverse set of 20 diseases and disease groups, namely, Buruli ulcer, Chagas disease, dengue and chikungunya, dracunculiasis, echinococcosis, foodborne trematodiasis, human African trypanosomiasis, leishmaniasis, leprosy, lymphatic filariasis, mycetoma, chromoblastomycosis and other deep mycoses, onchocerciasis, rabies, scabies and other ectoparasitoses, schistosomiasis, soil-transmitted helminthiasis, snakebite envenoming, taeniasis/cysticercosis, trachoma and yaws.
Pandemic	An outbreak of a disease that occurs over a wide geographic area (such as multiple countries or continents) and typically affects a significant proportion of the population.
System approach	Based on the principle that everything is interrelated and interdependent. A system is composed of related, dependent and interacting elements that, jointly, produce a unified whole. Adopting this approach, a system and its subsystems are studied in their interrelationships rather than in isolation and the system outputs are considered to be produced through joint efforts of subsystems. In a systems approach, attention is paid to the overall effectiveness of the system rather than the effectiveness of subsystems.
Transboundary animal diseases (TADs)	Epidemic diseases that are highly contagious or transmissible and have the potential for very rapid spread, irrespective of national borders, causing serious socioeconomic and possibly public health consequences; their control/management, including exclusion, requires cooperation between several countries.
Vector	An insect or any living carrier that transports an infectious agent from an infected individual to a susceptible individual or its food or immediate surroundings.
Vector-borne diseases	Illnesses caused by parasites, viruses and bacteria that are transmitted by vectors.
Waterborne diseases	Illnesses caused by parasites, viruses and bacteria that are transmitted by water.
Zoonoses (zoonotic diseases)	Infectious diseases that can be spread between animals and humans, by food, water, fomites or vectors.

Appendix 2: Examples of OH JPA-relevant Quadripartite initiatives

Action track (AT) and action	Examples of existing, relevant programmes/activities/initiatives
AT 1, action 1	<ul style="list-style-type: none"> • <i>Tripartite Zoonoses Guide: Operational tools and approaches for zoonotic diseases</i> (WHO, FAO & OIE, 2020) • <i>Multisectoral Preparedness Coordination Framework: Best practices, case studies and key elements of advancing multisectoral coordination for health emergency preparedness and health security</i> (WHO, 2020b) • <i>International Health Regulations (2005): IHR monitoring and evaluation framework</i> (WHO, 2018) • WOAHP Performance of Veterinary Services (PVS) Pathway • WHO benchmarks for IHR capacities (WHO, 2019) • IHR-PVS NBWs (WOAH, n.d.b) • National Action Planning for Health Security • Global Strategic Preparedness Network • <i>Strategic toolkit for assessing risks: a comprehensive toolkit for all-hazard health emergency risk assessment</i> (WHO, 2021d) • WOAHP • OHHLEP portfolio of key issues, knowledge and evidence gaps and evidence-based recommendations for global, regional, national and local action (WHO, 2021e) • UNEP/WHO/Africa Institute Environmental Observatories for the Sound Management of Chemicals in Africa • Tools, methodologies, frameworks and reports on pollution, environment and health. Examples from UNEP include: <i>Implementation Plan "Towards a Pollution-free Planet"</i> (UNEP, 2019) and <i>Towards a Pollution-Free Planet: background report</i> (UNEP, 2017). Information and resources are available at Beat Pollution. • Reports on impacts of pollution and actions to prevent them. Examples include: <i>Air Pollution and Development in Africa: Impacts on Health, the Economy and Human Capital</i> (UNEP, 2021a); <i>Actions on Air Quality: A Global Summary of Policies and Programmes to Reduce Air Pollution</i> (UNEP, 2021b); <i>Synthesis Report on the Environmental and Health Impacts of Pesticides and Fertilizers and Ways to Minimize Them</i> (UNEP, 2022a); and <i>Environmental Dimensions of Antimicrobial Resistance – Summary for Policymakers</i> (UNEP, 2022b). • <i>Compendium of WHO and other United Nations guidance on health and environment</i> (WHO, 2021f) • Inter-agency mechanisms on environment and health at the global, regional, subregional and national level (interministerial regional forums, regional issue-based inter-agency coalitions, national interministerial committees, etc.) • <i>One Health Operational framework for strengthening human, animal and environmental public health systems at their interface</i> (World Bank, 2018) • National One Health platforms

Action track (AT) and action	Examples of existing, relevant programmes/activities/initiatives
AT 1, action 2	<ul style="list-style-type: none"> • WOAH strengthening capabilities for veterinary epidemiology and biosurveillance: Tripartite One Health Field Epidemiology Competency Framework; competency guidelines; curricula guidelines; continuing education model and guidelines; mentorship programmes; guidelines for evaluation certification • FETP and FETPV • Global Laboratory Leadership Programme (GLLP) and other laboratory training programmes • Training Programmes in Epidemiology and Public Health Intervention Network (TEPHINET) • WHO One Health Tool • One Health University Networks • Multidisciplinary research consortia (Prezode, DeepVzn, etc.) • Respective FAO/WOAH/WHO/UNEP training academies/platforms and programmes • WOAH PVS Pathway (WOAH, n.d.a) • SDG 17.14.1 methodology to measure mechanisms for policy coherence on sustainable development (UNEP, n.d) • Public Health Officers Training Laboratorium (PHOLab – Italian G20 Presidency) • WOAH/OIE PPP handbook (OIE, 2019a) • WOAH • OHHLEP portfolio of key issues, knowledge and evidence gaps and evidence-based recommendations for global, regional, national and local action (WHO, 2021e) • WOAH Twinning Programme
AT 1, action 3	<ul style="list-style-type: none"> • One Health platforms • WHO Hub for pandemic and epidemic intelligence • Legal technical assistance programmes of respective organizations (such as the UNEP Montevideo Programme for the development and periodic review of environmental law, and related platforms such as LEAP; OIE PVS Pathway) • Financial/funding mechanisms
AT 2, action 1	<ul style="list-style-type: none"> • Existing risk analysis/assessment guidance, such as FAO's guidance on a value-chain approach to animal disease risk management (FAO, 2011a) and technical guidelines on rapid risk assessment for animal health threats (FAO, 2021b) • Tripartite Zoonoses Guide: Operational tools and approaches for zoonotic diseases (WHO, FAO and OIE, 2020) • Existing research agendas (WHO Blueprint; STAR-IDAZ International Research Consortium on Animal Health)
AT 2 action 2	<ul style="list-style-type: none"> • Existing risk analysis/assessment guidance, such as FAO's guidance on a value-chain approach to animal disease risk management (FAO, 2011a) and technical guidelines on rapid risk assessment for animal health threats (FAO, 2021b) • <i>Tripartite Zoonoses Guide Joint Risk Assessment</i> (WHO, WOAH/OIE and FAO, 2020) • Tripartite Zoonoses Guide Joint Risk Assessment country reports

Action track (AT) and action	Examples of existing, relevant programmes/activities/initiatives
AT 2, action 3	<ul style="list-style-type: none"> • Tripartite Zoonoses Guide Surveillance and Information Sharing Operational Tool country reports • Disease information systems (FAO's EMPRES-i; WOA's WAHIS; WHO's Event Information System) • WHO Hub for pandemic and epidemic intelligence • One Health Intelligence Scoping Study reports • Existing progressive management pathways (PMPs) (FMD-PCP Progressive Control Pathway for Foot-and-Mouth Disease; aquaculture PMP; Global Alliance for Rabies Control, or SARE) • FAO capacity assessment reports (laboratory mapping tool, surveillance evaluation tool) • PVS and joint external evaluation reports • Risk assessments performed by the Quadripartite or individually • Forecasts and alerts (such as those by FAO on Rift Valley fever and avian influenza) (see, for example, FAO 2019a; 2021d)
AT 3, action 1	<ul style="list-style-type: none"> • Handbook and posters from Tripartite Asia on taenia as material for education and awareness • Combining preventive chemotherapy programmes in humans with pig treatment and vaccination for taeniasis • Taenia mapping tools • Taenia diagnostics in pigs as a proxy for human infection
AT 3, action 2	<ul style="list-style-type: none"> • IHR-PVS bridging workshops (WOAH, n.d.b) • Rabies SARE assessment • <i>Tripartite Zoonoses Guide: A Tripartite Guide to Addressing Zoonotic Diseases in Countries</i> (WHO, FAO and OIE, 2019) • Generalized One Health Framework (Ghai <i>et al.</i>, 2021) • INFOSAN encouraging Member States to designate emergency contact and focal points and to promote rapid information sharing, partnership and collaboration to strengthen capacity to manage food safety emergencies, including outbreaks of foodborne zoonotic diseases
AT 3, action 3	<ul style="list-style-type: none"> • IHR-PVS Bridging Workshops (bringing stakeholders together to identify and raise awareness about common areas, support joint planning to increase commitment and identify synergies) (WOAH, n.d.b) • WASH toolkit: WASH and health working together – a “how-to” guide for NTD programmes • Generalized One Health Framework (Ghai <i>et al.</i>, 2021)
AT 4, action 1	<ul style="list-style-type: none"> • <i>Draft WHO Global Strategy for Food Safety 2022–2030</i> (WHO, 2021b) • FAO/WHO Food Control Assessment Tool • WOAH PVS Pathway tools • Codex Alimentarius Commission
AT 4, action 2	<ul style="list-style-type: none"> • WHO foodborne diseases surveillance manual (WHO, 2017b) • <i>WOAH Terrestrial Animal Health Code</i> (OIE, 2019) • <i>WOAH Manual of Diagnostic Tests and Vaccines</i> (OIE, 2013) • <i>WHO Guide to healthy food markets</i> (WHO, 2006) • AMR GAP (WHO, 2015a)

Action track (AT) and action	Examples of existing, relevant programmes/activities/initiatives
AT 4, action 3	<ul style="list-style-type: none"> • Foodborne Disease Burden Epidemiology Reference Group (FERG) • <i>Estimating the burden of foodborne diseases: A practical handbook for countries</i> (WHO, 2021g) • WHO foodborne diseases surveillance manual (WHO, 2017b) • <i>WHO International Health Regulation (2005)</i> (WHO, 2018)
AT 5, action 1	<ul style="list-style-type: none"> • Strategic Framework on AMR and joint workplan (WHO, FAO, OIE and UNEP, 2022) • GAP on AMR (WHO, 2015a) • AMR MPTF Results Matrix • FAO Action Plan on AMR 2021–2025 (FAO, 2021c) • <i>OIE Strategy on Antimicrobial Resistance and the Prudent Use of Antimicrobials</i> (OIE, 2016)
AT 5, action 2	<ul style="list-style-type: none"> • Strategic Framework on AMR and joint workplan (WHO, FAO, OIE and UNEP, 2022) • GAP on AMR (WHO, 2015a) • FAO Action Plan on AMR 2021–2025 (FAO, 2021c) • <i>OIE Strategy on Antimicrobial Resistance and the Prudent Use of Antimicrobials</i> (OIE, 2016)
AT 5, action 3	<ul style="list-style-type: none"> • Strategic Framework on AMR and joint workplan (WHO, FAO, OIE and UNEP, 2022) • GAP on AMR (WHO, 2015a) • Inter-Agency Coordination Group on Antimicrobial Resistance report (IACG, 2019)
AT 6, action 1	<ul style="list-style-type: none"> • Wildlife corridor projects • RED++ initiative • Devonshire Initiative • Preventing Zoonotic Disease Emergence (Prezode) • International Alliance Against Health Risks in Wildlife Trade • WOAH Wildlife Health Framework • Sustainable Wildlife Management Programme (consortium) • UN Decade on Ecosystem Restoration • MEAs and Flyway partnerships • Collaborative Partnership on Sustainable Wildlife Management
AT 6, action 2	<ul style="list-style-type: none"> • IHR-PVS NBWs (WOAH, n.d.b) • <i>Guidance on Integrating Biodiversity Considerations into One Health Approaches</i> (CBD, 2017) • Emerging Infectious Diseases Prevention, Preparedness, and Response Project for China • National wildlife and environmental health capacity assessment tools • FAO Biodiversity Mainstreaming Platform • Nature for Health project (Consortium)

Action track (AT) and action	Examples of existing, relevant programmes/activities/initiatives
AT 6, action 3	<ul style="list-style-type: none"> • National Wildlife Health Information Systems (such as Brazil's SISS-GEO) • Climate anomaly forecasting for early warning systems, such as the World Meteorological Organization and the US National Aeronautics and Space Administration (NASA); Colombia's climate and health bulletin • EMPRES-i • Epidemic Intelligence from Open Sources (EIOS A) • WAHIS and WAHIS Wild • Economic and Social Research Institute and open-source Global Information System tools • Global Biodiversity Information Facility • iNaturalist database • World Environment Situation Room • UN Biodiversity Lab • Environmental Observatories for the Sound Management of Chemicals in Africa (ChemoObs) (including risk calculators and costs of inaction calculators) • Analytical contributions to Common Country Assessments as part of United Nations Sustainable Development Cooperation Framework preparation • <i>Compendium of WHO and other UN guidance on health and environment</i> (WHO, 2021f) • Regional interministerial forums on health and environment (Asia Pacific Forum on Health and Environment, European Environment and Health Ministerial Process, African Interministerial Conference on Environment and Health)
AT 6, action 4	<ul style="list-style-type: none"> • FT-WEBE and FETP • FETPV and In-Service Applied Veterinary Epidemiology Training (ISAVET) • Needs Assessment and impact assessment tools, for example for national wildlife health programmes and country assessments of environmental health services (currently being piloted) • FAO Virtual Learning Center training courses • Introductory One Health Training course (7 technical modules) – FAO Regional Office for Asia and the Pacific Virtual Learning Center • Global Framework for Transboundary Animal Diseases (GF-TADs) • FAO manuals on highly pathogenic avian influenza (FAO, 2013a; 2013b; FAO and OIE, 2008), bats (FAO, 2011b) and other technical subjects (see, for example, FAO, 2019b; 2021e; 2021f) • WHO/WOAH One Health workforce initiative • WOAH/OIE National Focal Point for Wildlife training cycles and manuals • The Tripartite One Health FETP Competency Framework

References

- Adisasmito, W.K., Almuhaireh, S., Behraves, C.B., Bilivogui, P., Bukachi, S.A., Casas, N. *et al.* 2022. One Health: A new definition for a sustainable and healthy future. *PLoS Pathogens*, 18(6): e1010537. Cited 10 October 2022. <https://journals.plos.org/plospathogens/article?id=10.1371/journal.ppat.1010537>
- Antimicrobial resistance collaborators. 2022. Global burden of bacterial antimicrobial resistance in 2019: a systematic analysis. *The Lancet*, 399(10325): 629–625. <https://pubmed.ncbi.nlm.nih.gov/35065702/>
- CBD (Convention on Biological Diversity). 2017. *Guidance on Integrating Biodiversity Considerations Into One Health Approaches*. Montreal, Canada. <https://www.cbd.int/doc/c/8e34/8c61/a535d23833e68906c8c7551a/sbstta-21-09-en.pdf>
- FAO (Food and Agriculture Organization of the United Nations). 2011a. A value chain approach to animal diseases risk management: Technical foundations and practical framework for field application. Rome. <https://www.fao.org/3/i2198e/i2198e.pdf>
- FAO. 2011b. *Investigating the role of bats in emerging zoonoses: Balancing ecology, conservation and public health interest*. Rome. <https://www.fao.org/3/i2407e/i2407e00.pdf>
- FAO. 2013a. *Lessons from HPAI: A technical stocktaking of outputs, outcomes, best practices and lessons learned from the fight against highly pathogenic avian influenza in Asia 2005–2011*. Rome. <https://www.fao.org/3/i3183e/i3183e.pdf>
- FAO. 2013b. *Addressing the avian influenza A(H7N9) emergency: Guidelines for emergency risk-based surveillance*. Rome. <https://coin.fao.org/coin-static/cms/media/16/13708347270700/aq244e.pdf>
- FAO. 2019a. *Real-time monitoring and forecasting of Rift Valley fever in Africa*. Rome. <https://www.fao.org/publications/card/fr/c/CA5511EN/>
- FAO. 2019b. *Swab and tissue sample collection procedures enhancing MERS-CoV detection in camels: An illustrative guideline*. Rome. <https://www.fao.org/3/ca7428en/CA7428EN.pdf>
- FAO. 2021a. *Report of the twenty-seventh Session of the Committee on Agriculture (28 September–2 October 2020)*. Rome. <https://www.fao.org/3/ne021en/ne021en.pdf>
- FAO. 2021b. *Technical guidelines on rapid risk assessment for animal health threats*. FAO Animal Production and Health Guidelines No. 24. Rome. <https://www.fao.org/family-farming/detail/en/c/1398059/>
- FAO. 2021c. *The FAO Action Plan on Antimicrobial Resistance 2021–2025*. Rome. <https://www.fao.org/family-farming/detail/en/c/1456387/>
- FAO. 2021d. *Driving preparedness and anticipatory actions through innovation: A web-based Rift Valley fever Early Warning Decision Support Tool*. Rome. <https://www.fao.org/documents/card/en/c/cb5875en/>
- FAO. 2021e. *Recommendations for the epidemiological investigation of SARS-CoV-2 in exposed animals*. Rome. <https://www.fao.org/documents/card/en/c/cb7140en>
- FAO. 2021f. *Investigating potential recombination of MERS-CoV and SARS-CoV-2 or other coronaviruses in camels: Supplementary recommendations for the epidemiological investigation of SARS-CoV-2 in exposed animals*. Rome. <https://www.fao.org/3/cb7141en/cb7141en.pdf>
- FAO & OIE (World Organization for Animal Health). 2008. *The Global Strategy for Prevention and Control of H5N1 Highly Pathogenic Avian Influenza*. Rome, FAO. <https://www.fao.org/3/aj134e/aj134e00.pdf>
- FAO & OIE. 2021. *GF-TADs Strategy for 2021–2025. Enhancing control of transboundary animal diseases for global health*. Rome. <https://www.fao.org/documents/card/en/c/cb6800en>
- FAO, OIE & WHO (World Health Organization). 2010. *Sharing responsibilities and coordinating global activities to address health risks at the animal-human-ecosystems interfaces: A Tripartite Concept Note*. Rome, FAO. <https://www.fao.org/3/ak736e/ak736e00.pdf>
- FAO, OIE & WHO. 2017. *The Tripartite's Commitment, Providing multi-sectoral, collaborative leadership in addressing health challenges*. Geneva, Switzerland, WHO. https://www.who.int/zoonoses/tripartite_oct2017.pdf
- Ghai, R.R., Wallace, R.M., Kile, J.C., Shoemaker, T.R., Vieira, A.R., Negron, M.E. *et al.* 2021. A generalizable one health framework for the control of zoonotic diseases. *Scientific Reports*, 12: 8588. Cited 10 October 2022 <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9124177/>
- IACG (Interagency Coordination Group on Antimicrobial Resistance). 2019. *No time to wait: Securing the future from drug-resistant infections*. New York. https://www.who.int/docs/default-source/documents/no-time-to-wait-securing-the-future-from-drug-resistant-infections-en.pdf?sfvrsn=5b424d7_6
- OIE. 2013. *Manual of Diagnostic Tests and Vaccines for Terrestrial Animals 2013*. Paris. <https://www.fao.org/fileadmin/templates/rap/files/meetings/2014/140318-reference.pdf>
- OIE. 2016. *The OIE Strategy on Antimicrobial Resistance and the Prudent Use of Antimicrobials*. Paris. https://www.woah.org/fileadmin/Home/eng/Media_Center/docs/pdf/PortailAMR/EN_OIE-AMRstrategy.pdf

- OIE. 2019a. *The OIE PPP Handbook: Guidelines for Public-Private Partnerships in the veterinary domain*. Paris. https://www.woah.org/fileadmin/Home/eng/Media_Center/docs/pdf/PPP/oie_ppp_handbook-20190419_Enint_BD.pdf
- OIE. 2019b. *Terrestrial animal health code: Volume 1 – General provisions*. Paris. https://rr-europe.woah.org/wp-content/uploads/2020/08/oie-terrestrial-code-1_2019_en.pdf
- OIE. 2021. *OIE Wildlife Health Framework: Protecting Wildlife Health to Achieve One Health*. Paris. https://www.woah.org/fileadmin/Home/eng/International_Standard_Setting/docs/pdf/WGWildlife/A_Wildlifehealth_conceptnote.pdf
- United Nations. 1992. *Convention on Biological Diversity*. New York. <https://www.cbd.int/doc/legal/cbd-en.pdf>
- United Nations. 2014. *Water and Health How Does Safe Water Contribute to Global Health?* New York.
- UNDESA (United Nations Department of Economic and Social Affairs). 2022. *World Population Prospects: The 2022 Revision* [online]. New York: United Nations Data Portal. Cited 10 October 2022 <https://population.un.org/dataportal/data/indicators/49/locations/900/start/1950/end/2100/line/linetimeplotsingle>
- UNEP (United Nations Environment Programme). *n.d. Methodology for SDG-indicator 17.14.1: Mechanisms in place to enhance policy coherence for sustainable development*. Nairobi. https://wedocs.unep.org/bitstream/handle/20.500.11822/38262/SDG17.14.1_methodology.pdf?sequence=1
- UNEP. 2017. *Towards a pollution-free planet: background report*. Nairobi. <https://www.unep.org/resources/report/towards-pollution-free-planet-background-report-0?ga=2.54279661.457354715.1659517826-1935360419.1651144954>
- UNEP. 2019. *Implementation Plan “Towards a Pollution-free Planet”*. Nairobi. <https://leap.unep.org/content/unea-resolution/implementation-plan-towards-pollution-free-planet>
- UNEP. 2020. *Preventing the next pandemic - Zoonotic diseases and how to break the chain of transmission*. Nairobi. <https://www.unep.org/resources/report/preventing-future-zoonotic-disease-outbreaks-protecting-environment-animals-and>
- UNEP. 2021a. *Air Pollution and Development in Africa: Impacts on Health, the Economy and Human Capital*. Nairobi. <https://www.unep.org/resources/report/air-pollution-and-development-africa-impacts-health-economy-and-human-capital>
- UNEP. 2021b. *Actions on Air Quality: A Global Summary of Policies and Programmes to Reduce Air Pollution*. Nairobi. <https://www.unep.org/resources/report/actions-air-quality-global-summary-policies-and-programmes-reduce-air-pollution>
- UNEP. 2022a. *Synthesis Report on the Environmental and Health Impacts of Pesticides and Fertilizers and Ways to Minimize Them: Envisioning a Chemical-safe World*. Nairobi. <https://wedocs.unep.org/20.500.11822/38409>
- UNEP. 2022b. *Environmental Dimensions of Antimicrobial Resistance – Summary for Policymakers*. Nairobi. <https://www.unep.org/resources/report/summary-policymakers-environmental-dimensions-antimicrobial-resistance>
- WHA (World Health Assembly). 2020. *Strengthening efforts on food safety*. WHA73.5. Geneva, Switzerland. https://apps.who.int/gb/ebwha/pdf_files/WHA73/A73_R5-en.pdf
- WHA. 2021. *Strengthening WHO preparedness for and response to health emergencies*. WHA74.7. Geneva, Switzerland. https://apps.who.int/gb/ebwha/pdf_files/WHA74/A74_R7-en.pdf
- WHO. 2006. *A guide to healthy food markets*. Geneva, Switzerland. <https://apps.who.int/iris/handle/10665/43393>
- WHO. 2015a. *Global Action Plan on Antimicrobial Resistance*. Geneva, Switzerland. <https://www.who.int/publications/i/item/9789241509763>
- WHO. 2015b. WHO’s first ever global estimates of foodborne diseases find children under 5 account for almost one third of deaths. Press release [online], 12 March 2015. <https://www.who.int/news/item/03-12-2015-who-s-first-ever-global-estimates-of-foodborne-diseases-find-children-under-5-account-for-almost-one-third-of-deaths>
- WHO. 2017. *Global vector control response 2017–2030*. Geneva, Switzerland. <https://www.who.int/publications/i/item/9789241512978>
- WHO. 2017b. *Strengthening surveillance of and response to foodborne diseases*. Geneva, Switzerland. <https://www.who.int/publications/i/item/strengthening-surveillance-of-and-response-to-foodborne-diseases>
- WHO. 2018a. *International Health Regulations (2005): IHR monitoring and evaluation framework*. Geneva, Switzerland. [https://www.who.int/publications/i/item/international-health-regulations-\(2005\)-ihr-monitoring-and-evaluation-framework](https://www.who.int/publications/i/item/international-health-regulations-(2005)-ihr-monitoring-and-evaluation-framework)
- WHO. 2018b. *WHO Research and Development Blueprint: 2018 Annual review of diseases prioritized under the Research and Development Blueprint*. Geneva, Switzerland. https://www.who.int/docs/default-source/blue-print/2018-annual-review-of-diseases-prioritized-under-the-research-and-development-blueprint.pdf?sfvrsn=4c22e36_2
- WHO. 2019. *WHO benchmarks for International Health Regulations ((IHR) capacities*. Geneva, Switzerland. <https://www.who.int/publications/i/item/9789241515429>
- WHO. 2020a. *WHO global strategy on health, environment and climate change: the transformation needed to improve lives and wellbeing sustainably through healthy environments*. Geneva, Switzerland. <https://www.who.int/publications/i/item/9789240000377>
- WHO. 2020b. *Multisectoral preparedness coordination framework: Best practices, case studies and key elements of advancing multisectoral coordination for health emergency preparedness and health security*. Geneva, Switzerland. <https://www.who.int/publications/i/item/9789240006232>
- WHO. 2021a. *Ending the neglect to attain the Sustainable Development Goals: A road map for neglected tropical diseases 2021–2030*. Geneva, Switzerland. <https://www.who.int/publications/i/item/9789240010352>
- WHO. 2021b. *Draft WHO Global Strategy for Food Safety 2022–2030*. Geneva, Switzerland. <https://www.who.int/publications/m/item/draft-who-global-strategy-for-food-safety-2022-2030>
- WHO. 2021c. *Ending the neglect to attain the Sustainable Development Goals: A global strategy on water, sanitation and hygiene to combat neglected tropical diseases, 2021–2030*. Geneva, Switzerland. <https://apps.who.int/iris/handle/10665/340240>

- WHO. 2021d. *Strategic toolkit for assessing risks: a comprehensive toolkit for all-hazards health emergency risk assessment*. Geneva, Switzerland. <https://www.who.int/publications/item/9789240036086>
- WHO. 2021e. New international expert panel to address the emergence and spread of zoonotic diseases. Press release, 20 May 2021. Geneva, Switzerland. <https://www.who.int/news/item/20-05-2021-new-international-expert-panel-to-address-the-emergence-and-spread-of-zoonotic-diseases>
- WHO. 2021f. *Compendium of WHO and other UN guidance on health and environment*. Geneva, Switzerland. <https://www.who.int/tools/compendium-on-health-and-environment>
- WHO. 2021g. *Estimating the burden of foodborne diseases: A practical handbook for countries*. Geneva, Switzerland. <https://www.who.int/publications/item/9789240012264>
- WHO. 2022. *Ending the neglect to attain the sustainable development goals. One Health: approach for action against neglected tropical diseases 2021-2030*. Geneva, Switzerland. <https://www.who.int/publications/item/9789240042414>
- WHO, FAO & OIE. 2017. *Roadmap for Zoonotic Tuberculosis*. Geneva, Switzerland. <https://www.who.int/publications/item/9789241513043>
- WHO, FAO & OIE. 2018. *Zero by 30: the global strategic plan to end human deaths from dog-mediated rabies by 2030*. Geneva, Switzerland. <https://www.who.int/publications/item/9789241513838>
- WHO, FAO & OIE. 2020. *Tripartite Zoonoses Guide: Operational tools and approaches for zoonotic diseases*. Geneva, Switzerland. <https://www.who.int/initiatives/tripartite-zoonosis-guide>
- WHO, OIE & FAO. 2020. *Joint Risk Assessment Operational Tool (JRA OT): An Operational Tool of the Tripartite Zoonoses Guide*. Geneva, Switzerland. <https://www.fao.org/documents/card/en/c/cb1520en/>
- WHO, FAO, OIE & UNEP. 2022. *Strategic framework for collaboration on antimicrobial resistance*. Geneva, Switzerland. <https://www.who.int/publications/item/9789240045408>
- World Bank. 2018a. *One health: Operational framework for strengthening human, animal, and environmental public health systems at their interface*. Washington, DC. <https://documents.worldbank.org/en/publication/documents-reports/documentdetail/961101524657708673/one-health-operational-framework-for-strengthening-human-animal-and-environmental-public-health-systems-at-their-interface>
- World Bank. 2018b. Food-borne Illnesses Cost US\$ 110 Billion Per Year in Low- and Middle-Income Countries. Press release [online], 23 October 2018. Washington, DC. <https://www.worldbank.org/en/news/press-release/2018/10/23/food-borne-illnesses-cost-us-110-billion-per-year-in-low-and-middle-income-countries>
- WOAH (World Organisation for Animal Health). n.d.a. Performance of Veterinary Services (PVS) Pathway [online]. Paris. <https://www.woah.org/en/what-we-offer/improving-veterinary-services/pvs-pathway/?l=1>
- WOAH. n.d.b. WHO-IHR/OIE-PVS National Bridging Workshops [online]. Paris. <https://tr-europe.woah.org/en/our-missions/one-health/ihr-pvs-national-bridging-workshops-nbw/>



For more information on One Health,
please visit our websites:

FAO: www.fao.org

UNEP: www.unep.org

WHO: www.who.int

WOAH: www.woah.org

ISBN 978-92-5-136957-9



9 789251 369579

CC2289EN/1/10.22