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One Health Platform: Prevention of future pandemics through effective cross-sectoral engagement

Executive Summary

In 2018, the World Health Organization (WHO) reported 114 public health events in 35 Member Nations in Africa. Of these, 92 (81 percent) were due to infectious diseases including epidemics of zoonotic origin.¹ The wide-ranging impacts of these events are evident, for instance, in the aftermath of the Ebola Virus Disease (EVD) crisis in West Africa, which occurred between 2013 and 2016. The health crisis was responsible for more than 26 000 human deaths and significantly hampered both economic growth and social development. More recently, and on a much larger scale, the ongoing COVID-19 pandemic further underscores three main issues: (i) the interlinked nature between the health of humans, animals and the ecosystems, (ii) the required measures needed to control pandemics with huge negative spillover effects to critical sectors of the national, regional and global economies such as disruptions in food systems, disturbances in livelihoods, transport and trade, and (iii) the critical need for multi-sectoral and interdisciplinary engagements that are effective and expand beyond the conventional animal-human-ecosystem interfaces to further include participation of other sectors that bear the biggest impacts of such pandemics e.g. tourism, energy, air, trade and transport, education, etc.

This document discusses mechanisms and progress towards tackling the increasing threats to global health and socioeconomic progress posed by zoonotic diseases and towards preventing future pandemics, through improving multi-sector engagement, and developing a shared understanding of the complexity and effectiveness of responding to health risks at the human-animal-ecosystems interfaces. Achieving this will require application of the One Health (OH) approach and solutions characterized by multi-sector engagement and interdisciplinary cooperation that includes and extends beyond the animal, human and environmental health systems.

¹ <https://www.paho.org/en/documents/acute-public-health-events-assessed-who-regional-offices-africa-americas-and-europe-1>, page 17

Documents can be consulted at www.fao.org

Suggested action by the Regional Conference

The Regional Conference may wish to:

1. Provide guidance on One Health governance, including desired composition of membership of One Health Multi-Sectoral Coordination Mechanisms to improve sectoral integration by including additional sectors such as water, energy and air, and highlighting the essential role of local communities in implementing One Health;
2. Recognize the importance of incorporation of the One Health approach/One Health Joint Plan of Action into overarching policy documents and cooperation frameworks such as the United Nations Sustainable Development Cooperation Fund (UNSDCF) and enhance synergy between technical and financial partners to take charge of issues linked to the One Health approach; and
3. Provide advice on a coordinated approach to monitor the benefits of One Health to the Sustainable Development Goals (SDGs).

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I. Introduction

1. **Epidemic prediction:** Predicting the likely spatial and temporal occurrence of the next pandemic is difficult and the possibility that this may happen in Africa cannot be ruled out.² Threats and likelihood of EVD, the COVID-19 pandemic or other emerging diseases that might develop into a pandemic, are expected to increase as ecosystems undergo radical human-induced transformations. The anticipated increase in the demand for animal source foods in urban areas of Africa in the coming years is expected to lead to an increasing number of urban and peri-urban market-oriented livestock operators. In the coming decades and in view of the foregoing, the correlations between urbanization, urban and peri-urban livestock production systems, their transformation and associated socio-economic impacts, including the impacts on public health, the environment and livelihoods, will become increasingly complex and more difficult to manage.

2. **Changing scenarios and trends:** There are changing trends in areas such as increased mining and deforestation, rapid change in livestock production systems and more integrated markets and value chains, habitat fragmentation, expansion of frontiers in illegal wildlife and bush meat trade, uncontrolled urbanization and associated poor utilization and disposal of human and animal waste, overuse and misuse of antimicrobial medicines, transforming ecosystems in ways that increase the emergence, spillover, transmission, spread, and persistence of pathogens, thereby contributing to the likelihood of future pandemics.³

3. **Global Health risks:** To tackle the increasing threats to global health and socioeconomic progress posed by zoonotic diseases and prevent future pandemics, Africa must among other things, improve multi-sector engagement and coordinated efforts to understand the complexity of and effectively respond to health risks at the human-animal-ecosystems interfaces. Achieving this will be facilitated through the institutionalization and operationalization of the One Health approach and solutions characterized by multi-sector engagement and interdisciplinary cooperation that includes and extends beyond the animal, human and environmental health systems.⁴

4. **Collective actions:** One Health is an integrated, unifying approach that recognizes that the health of humans, domestic and wild animals, plants, and the wider environment (ecosystems) are closely linked and inter-dependent. It aims to achieve optimal and sustainable health outcomes for people, animals, and ecosystems. The approach mobilizes multiple sectors, disciplines and communities at all levels of society to work together to tackle threats to health and ecosystems, while addressing our collective needs for healthy food, water, energy and air, taking action on climate change, and promoting sustainable development.⁵

5. **One Health adoption:** One Health institutionalization and operationalization is hampered by the lack of proof of concept to support a One Health approach and its added monetary and non-monetary benefits, silo disciplinary mentality continues to exist and the domination of the field by a few disciplines has led to less commitment and interest of others in decision-making, right from the planning to the implementation of One Health interventions.⁶

² Wilke & Bergstrom. (2020). Predicting an epidemic trajectory is difficult. PNAS, 117 (46) 28549-28551; <https://doi.org/10.1073/pnas.2020200117>

³ Rousham EK, Unicomb L, Islam MA. 2018 Human, animal and environmental contributors to antibiotic resistance in low-resource settings: integrating behavioural, epidemiological and One Health approaches. Proc. R. Soc. B 285: 20180332, <http://dx.doi.org/10.1098/rspb.2018.0332>.

⁴ Zinsstag et al., (2011). From “one medicine” to “one health” and systemic approaches to health and well-being. Prev. Vet. Med, 101, 148-156

⁵ Joint Tripartite (FAO, OIE, WHO) and UNEP statement supporting OHHLEP’s definition of One Health <https://www.fao.org/3/cb7869en/cb7869en.pdf>

⁶ Fasina et al., (2021). The one health landscape in Sub-Saharan African countries. One Health, 13, 100325, <https://doi.org/10.1016/j.onehlt.2021.100325>

6. **Resilience:** Effective and efficient One Health Multi-sectoral Coordination Mechanisms (OH-MCMs) are essential towards building resilient health systems and improving the prevention of emergence of diseases, epidemics and at regional and country level, and thus, contribute to SDGs.

II. Transformational change is needed at all levels

7. A paradigm shift towards a fully integrated approach to health is crucial to prevent or reduce the effects of future pandemics. The shift entails systematic, multidisciplinary, cost-beneficial and multi-sectoral approaches, and transdisciplinary working with contributions from a wide range of professionals. In this regard, OH-MCMs will fast-track the multi-level integration of health systems and provide an enabling environment to prevent future pandemics and other emerging health threats.

8. The persistent gap between the performances of public, animal and environment health, including ecosystems, is also of great concern as revealed through the WHO Joint External Evaluations (JEE). Using One Health, all-hazards and whole-of-government approach, the Performance of Veterinary Services (PVS) and JEE reports and succeeding National Action Plans for Health Security (NAPHS) provide comprehensive evaluations of and information on the required resources and steps needed to improve the capacity of national health systems in order to prevent, detect and respond to public health emergencies, including pandemics. By November 2021, 48 out of 52 countries had completed their JEE evaluation in Africa.⁷

9. Apparently, some of the most critical weaknesses that are impeding One Health implementation are the lack of appropriate One Health institutional frameworks, inadequate representation of some sectors, inadequate policy, legislative and instruments, lack of human and material resources and One Health data. Establishing and strengthening OH-MCMs will be crucial to facilitate systemic thinking, holistic planning and shared responsibilities, infrastructures, processes and resources, and interdisciplinary and transdisciplinary research. In the Africa region, only 20 countries have established legally empowered OH-MCMs. Some countries have formalized the establishment of OH-MCMs under various institutional arrangements such as Presidential executive order (Benin, Burkina Faso, Côte d'Ivoire), Prime Minister order (Cameroon, Senegal), Ministerial executive order (Guinea), Multi-Sectoral Memoranda of Understanding (MoUs), zoonotic disease or topic specific technical working groups (e.g. the Zoonotic Disease Unit in Kenya, antimicrobial resistance [AMR] surveillance working groups, etc.).

10. At the global level, the FAO/OIE/WHO Tripartite and United Nations Environment Programme (UNEP) have been working together for years at the human-animal-environment interface,⁸ and have proven experience and confirmed impacts in promoting and applying One Health. From March 2021-2022, FAO has been chairing the Tripartite at global and regional level. A key achievement of the Tripartite will be the preparation of the One Health Joint Plan of Action (OH-JPA).⁹

11. The OH-JPA will provide a framework for joint, coordinated actions at global, regional and country levels, taking into account regional specificities, national and subnational context and priorities, as well as the level of progress in the implementation of One Health policies, legislations, strategies, financing and interventions.

12. At the FAO corporate level, One Health is identified as a major Programme Priority Area of the FAO Strategic Framework 2022-31.¹⁰ The Organization is taking bold strategic and programmatic steps to promote and mainstream One Health across divisions and programmes of work at global, regional and country levels. The Joint FAO/WHO Centre (Codex Food Standards and Zoonotic Diseases), was established in 2020 with the mission to reinforce the FAO contribution to Tripartite work on zoonotic diseases and AMR, and foster collaborations with UNEP.¹¹

13. At the regional level, the Africa Centres for Disease Control and Prevention, African Union Interafrican Bureau for Animal Resources, and Regional Economic Communities (RECs) are One Health policy and coordination mechanisms. Continental and regional level activities may involve the

⁷ <https://extranet.who.int/sph/jee>

⁸ <https://www.fao.org/3/i7377e/i7377e.pdf>

⁹ <https://www.fao.org/news/story/en/item/1401159/icode/>

¹⁰ <https://www.fao.org/3/cb7099en/cb7099en.pdf - page 17>

¹¹ <https://www.fao.org/3/nd208en/nd208en.pdf>

following: i) establishment or strengthening of political commitment and leadership; ii) setting up of institutional structures within the continental platforms and the RECs; iii) enhancement of management and coordination capacities at national and regional levels; iv) joint planning and implementation using epizootic frameworks to the One Health approach; and v) joint mobilization of technical and financial resources.¹²

14. At the country level, FAO and other development partners have been working with countries to conduct needs assessments, develop in-country business plans and proof of concept, carry out targeted training and workforce development, as well as to formalize and institutionalize the national One Health platforms. There is a need to ensure political commitment, sustained financing, coordinated efforts and increased visibility and advocacy for the use of the One Health approach.

III. Examples of some good practices and success stories

15. **Cameroon:** Following the outbreaks of zoonotic diseases such as Anthrax in 2005, Monkey Pox in 2014, highly pathogenic avian influenza (HPAI) in 2006, and in 2016, weak inter-sectoral coordination and inadequate resources came out evidently as some of the key factors hindering effective surveillance and interventions. Consequently, the country established a high-level multi-sectoral One Health coordination platform at the Prime Minister's Office to strengthen national public health surveillance and intervention systems. Political will and commitment, and leadership at the highest-level of government offered opportunities for dialogue to sensitize the Parliament on the importance of One Health that led to the design of a national programme for the prevention and fight against zoonoses.

16. **Ethiopia** established a One Health Steering Committee (OHSC) in 2016 to enhance collaboration between the animal and human health sectors to prevent, detect and respond, and control zoonotic diseases. The national OHSC facilitated the signing of the multi-sectoral One Health Memorandum of Understanding and led to the assessment of the progress made in the implementation of the joint animal and human health sector road map. The road map targets the prevention, detection, and response to zoonotic diseases and other health events at the animal-human interface. The National Animal Health Diagnostic and Investigation Centre (NAHDIC), most recently, has collaborated with the Ministry of Health on testing of zoonotic diseases such as HPAI, zoonotic tuberculosis, and Ebola and now for testing of COVID-19 on human specimens. The objective is to control these zoonotic diseases at the interface of animals and humans.

17. **Ghana:** The Accra Veterinary Laboratory supported the testing of human COVID-19 samples in the context of the COVID-19 pandemic control in accordance with international standards. This has opened the way to operationalize multi-sectoral cooperation at the country level.

18. **Kenya** established a multidisciplinary Middle East Respiratory Syndrome Coronavirus (MERS-CoV) Technical Working Group (MTWG) to enhance coordination and better understanding of the zoonotic risk of MERS-CoV at the camel-human-environment interface in the country. The MTWG brings together stakeholders from animal health, human health, and environment sectors to share information and knowledge on MERS-CoV research, and inform policy interventions and future research directions on MERS-CoV as well as other zoonotic coronaviruses.

19. **Tanzania:** A One Health multi-sectoral response to rabies outbreaks was conducted in Moshi District, United Republic of Tanzania in 2018; by the One Health Coordination Desk, the Muhimbili University of Health and Allied Science, and the Sokoine University of Agriculture, and the Moshi District Health and Livestock Departments. As a result, the population of Moshi (509 431) benefited directly from the reduced burden of zoonotic rabies, about 50 One Health students from human medicine, veterinary medicine, environmental science and health informatics were trained in the implementation of One Health in the field.

20. **Rwanda** has established a One Health Platform, which is composed of relevant ministries and national agencies to enhance collaboration between environmental, animal (wildlife and domestic), plant and human health, and is continuing to build future One Health workforce with required capacity

¹² Lokossou et al. (2021). Operationalizing the ECOWAS regional one health coordination mechanism (2016–2019): Scoping review on progress, challenges and way forward. *One Health*, 13, 100291, <https://doi.org/10.1016/j.onehlt.2021.100291>.

through higher institutions of learning. The platform led the preparation of the Rwanda One Health Strategic Plan 2019-2024 to ensure prevention and control of zoonotic diseases and other public health threats. It also contributes to the realization of the National Strategy for Transformation by improving public health, food safety and security, and hence significantly improve the socioeconomic status of the people of Rwanda. The strategy will also contribute to the realisation of the Sustainable Development Goals, including ending poverty (SDG1), ending hunger (SDG2) and achieving good health and well-being (SDG3). In addition, the One Health platform coordinated the formulation of the One Health Policy to provide guidance on the planning, monitoring and evaluation of all activities under the One Health approach countrywide.

21. **Senegal:** The Chair of Microbiology of the Faculty of Medicine, Pharmacy and Odontology at the Cheikh Anta Diop University of Dakar is supporting the Government of Senegal in the training of health professionals. In recognition of the importance of strengthening public and animal health capacities on AMR, an interuniversity international diploma on AMR was created. A total of 31 health professionals, including 9 veterinarians, were able to obtain the diploma on detection and surveillance of AMR and the prudent use of antimicrobials. This has facilitated the inclusion of AMR in national public and academic agendas and contributed to capacity development in this area.

IV. Global consensus and contribution to SDGs

22. Cost benefit analysis, cost benefit effectiveness, and cost-utility analysis of One Health interventions can contribute to understanding the benefits of the One Health approach to social sustainability, equity and health equity, solidarity, social cohesion.¹³ As One Health addresses health threats at the animal-human-environment interfaces, there is a global consensus that the application of One Health is essential for achieving multiple SDG targets including (1.5) on exposure to climate-related extreme events and other economic, social, and environmental shocks and disasters,¹⁴ (3.d) on early warning, risk reduction and management of national and global health risks¹⁵, and (15.8) on land and water ecosystems.¹⁶

23. One Health was discussed as a key agenda item during recently concluded high-level events including the G7 and the G20 Summits, among others.¹⁷ These events have offered historic opportunities to make significant progress for One Health.

V. Moving forward – Key action points to consider

24. Review/align regional and national One Health policies and legislative instruments to mainstream One Health approaches at all levels and strengthen One Health systems and healthy ecosystems;

25. Support Members to assess and monitor progress in One Health institutionalization and operationalization;

26. Support the efforts of Member Nations as they include One Health in UNDSFC programming, resource mobilization efforts through innovative funding and partnering mechanisms, monitoring and evaluation, and reporting;

27. Establish OH-MCMs at all levels (regional, national and sub national levels), including all relevant sectors;

¹³ Bodenham et al. (2021). Multisectoral cost analysis of a human and livestock anthrax outbreak in Songwe Region, Tanzania (December 2018–January 2019), using a novel Outbreak Costing Tool. *One Health*, 13, 100259, <https://doi.org/10.1016/j.onehlt.2021.100259>.

¹⁴ <https://unstats.un.org/sdgs/metadata/?Text=&Goal=&Target=1.5>

¹⁵ <https://unstats.un.org/sdgs/metadata/?Text=&Goal=3&Target=3.d>

¹⁶ <https://unstats.un.org/sdgs/metadata/?Text&Goal=15&Target>

¹⁷ <https://www.g7uk.org/uk-presidency-celebrates-g7-one-health-approach/>

28. Implement NAPHS and outcomes of National Bridging Workshops (NBWs¹⁸) and Tripartite Zoonoses Guide¹⁹ Operational Tools (Joint Risk Assessment,²⁰ Multisectoral Coordination Mechanisms, and Surveillance and Information Sharing) to foster regional and national capacity for global health risk reduction on enhancing regional preparedness to respond to emergencies and future pandemics; and

29. Support One Health operationalization at community level with context specific policy and institutional setting.

¹⁸ <https://extranet.who.int/sph/ihr-pvs-bridging-workshop>

¹⁹ <https://www.fao.org/ag/againfo/resources/en/publications/TZG/TZG.htm>

²⁰ <https://www.fao.org/documents/card/en/c/cb1520en/>