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## **ONE HEALTH: A COMPREHENSIVE APPROACH FOR ADDRESSING HEALTH THREATS AT THE HUMAN-ANIMAL-ENVIRONMENT INTERFACE**

### **Introduction**

1. The aim of this policy on One Health is to foster coordination and collaboration among the different governance frameworks of human, animal, plant, and environmental health programs in order to better prevent and prepare for current and future health challenges at the human-animal-environment interface. Of priority concern for One Health are risks that affect the systems on which society depends—health, agriculture/animal production, and environment. The policy includes six strategic lines of action that can provide valuable guidance for the actions of national health authorities and for the technical cooperation activities of the Pan American Sanitary Bureau (PASB or the Bureau).

2. Population growth, unplanned urbanization, deforestation, and forest encroachment have blurred the boundaries between the human and animal populations together with the globalization of travel and trade, affecting the whole ecosystem. These challenges influence the relationships between humans, animals, and the environment and require strategic and cross-cutting One Health approaches. Solutions to these challenges can only be properly understood through interdisciplinary and multisectoral strategies addressing the health of people, animals, and our shared environments. The links between human, animal, and environmental health, and agriculture, along with the implications of globalization and the impact of humans on the environment, have exacerbated the risks at the human-animal-environment interface.

3. Health challenges at the human-animal-environment interface that could be addressed by the adoption and implementation of this policy include, among others, diseases of zoonotic origin, antimicrobial resistance (AMR), and food safety. Worldwide, about 60% of the infectious organisms known to be pathogenic to humans are zoonotic, having an animal source or origin (1, 2). Moreover, over 70% of emerging human pathogens are zoonotic. Zoonotic pathogens are twice as likely to be associated with emerging diseases as non-zoonotic pathogens. They impose high financial and societal costs globally. The most recent high-impact example is COVID-19, caused by

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SARS-CoV-2. This virus spilled over from an unknown source and is now causing a global pandemic of a magnitude not seen since the 1918 influenza pandemic. The International Monetary Fund has concluded that the contraction of 7 percent in the gross domestic product (GDP) of Latin America and the Caribbean in 2020 was the sharpest in the world and exceeded the global slowdown of 3.3 percent (3).

4. Antimicrobial resistance and unsafe food are other examples of high-impact health threats at the human-animal-environment interface. AMR is responsible for an estimated 700,000 annual deaths worldwide (4). The World Bank has estimated that by 2050, in a low AMR impact scenario, annual global GDP would likely fall by 1.1 percent, and the GDP shortfall would exceed US\$ 1 trillion<sup>1</sup> annually after 2030. In a high AMR impact scenario, global GDP would likely fall by 3.8 percent, with an annual shortfall of \$3.4 trillion by 2030 (5).

5. Unsafe food is estimated to cause 600 million cases of foodborne diseases and 420,000 deaths globally every year (6). The total productivity loss associated with foodborne disease in low- and middle-income countries is estimated to cost \$95.2 billion per year, and the annual cost of treating foodborne illnesses is estimated at \$15 billion (7).

6. One Health is a collaborative, multidisciplinary, and multisectoral approach that can address health threats at the human-animal-environment interface at subnational, national, and international levels, with the ultimate goal of achieving optimal health outcomes by recognizing the interconnections between people, animals, plants, and their shared environment. That interface, a defining feature of One Health, consists of the continuum of interactions among people, animals, and their environment allowing cross-species transmission of zoonotic and emerging pathogens (8). The Sustainable Development Goals (SDGs) and the Sustainable Health Agenda for the Americas 2018-2030 (SHAA2030) promote an integrated approach to health and development, emphasize equity and sustainability, and are relevant to all countries of the Region of the Americas. A multisectoral One Health approach that addresses the interconnectedness of the social, environmental, and economic determinants of health aligns with the SDG and SHAA2030 frameworks.

## **Background**

7. The development of effective mechanisms of collaboration between the public health, animal health, agricultural production, and environmental sectors has long been regarded as a priority for the Americas. The Pan American Health Organization (PAHO) has been promoting a multisectoral approach to the protection and promotion of human and animal health through technical cooperation in veterinary public health for several decades (9). The Inter-American Ministerial Meeting on Health and Agriculture (RIMSA) convened by PAHO dates to 1968. The Pan American Commission for Food Safety (COPAIA, Spanish Acronym) has advised the Organization on food safety matters since 2001.

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<sup>1</sup> Unless otherwise indicated, all monetary figures in this document are expressed in United States dollars.

8. The RIMSAs 17 ministerial meeting, hosted by Paraguay in 2016, was titled “One Health and the Sustainable Development Goals” (10). It emphasized the link between animal health and public health and their contribution to sustainable development. The meeting highlighted the importance of food safety as a priority for public health and food security and noted the challenges faced by countries of the Region in ensuring food safety. In addition, the use and misuse of antimicrobials in food production, appropriate antimicrobial use in human health, and the application of minimum standards to contain the discharge of antimicrobial manufacturing waste into the environment were also discussed. RIMSAs 17 underlined the critical role of multisectoral governance mechanisms and platforms for coordinating actions on the management of zoonoses, AMR, and food safety, and it called for strengthening early warning and rapid response mechanisms geared to the threats of emerging and reemerging diseases of zoonotic origin.

9. Regarding collaboration between the health and environment sectors, the 1992 United Nations Conference on Environment and Development, held in Rio de Janeiro, Brazil, laid the basis for moving forward with concerted efforts (11). The adoption of the Pan American Charter on Health and Environment in Sustainable Human Development in 1995 (12) was followed by joint meetings of the health and environment ministers of the Americas in 2002 and 2005 (13, 14).

10. In 2008, the Food and Agriculture Organization of the United Nations (FAO), the World Organisation for Animal Health (OIE), and the World Health Organization (WHO) published *Contributing to One World, One Health: A Strategic Framework for Reducing Risks of Infectious Diseases at the Animal-Human-Ecosystems Interface* (15). The Strategic Framework laid the basis for responding to H5N1 influenza and future pandemics. This was followed in 2010 by a joint publication that established the “Tripartite” strategic partnership between FAO, OIE, and WHO dedicated to addressing health risks at the animal-human-environment interface (16). In 2020, the Tripartite, in close consultation with the United Nations, established the One Health Global Leaders Group on Antimicrobial Resistance as a key global governance structure. In November 2020, the United Nations Environment Programme (UNEP) was invited to join the Tripartite, which established the One Health High-Level Expert Panel to provide guidance on One Health-related matters to improve cooperation among governments.

11. Regional collaboration and coordination among FAO, OIE, and PAHO is very well established; more recently, an agreement between UNEP and PAHO has been signed. Furthermore, the Organization also has formal collaborative agreements with other regional organizations such as the Inter-American Institute for Cooperation on Agriculture (IICA) and the International Regional Organization for Plant and Animal Health (OIRSA). In addition, the Organization collaborates with the Permanent Veterinary Committee of the Southern Cone, the Andean Technical Committee for Agricultural Health of the Andean Community, and the Caribbean Animal Health Network, among several other animal health networks.

## Situation Analysis

12. An ecological perspective recognizes health as an outcome of social-ecological systems, with sustainability implications. Systemic interactions between societies and related ecosystems are influenced by resources, governance, and users in given social, economic, and political settings. There have been calls to establish a holistic approach to preventing epidemic and epizootic disease and to maintaining ecosystem integrity for the benefit of humans, their domesticated animals, and foundational biodiversity (17). Recent global changes in social-ecological systems include urbanization, globalization, human population growth, increased consumption, climate change, and loss of habitat and biodiversity. These changes have created an environment that favors the emergence and spillover of pathogens. Determinants of health, including unsafe water, sanitation, and hygiene services, as well as air pollution and mismanagement of chemicals such as pesticides and mercury, may lead to negative health impacts in humans, animals, and plants. Deforestation and wildlife exploitation may lead to changes in the contact between animals and humans, which in turn may lead in certain conditions to outbreaks of infectious diseases. At the same time, disease outbreaks can pose a major threat to biodiversity, along with habitat destruction, introduction of invasive species, pollution, population growth, and overharvesting.

13. Tropical zones in Latin America, such as the Amazon Basin, Gran Chaco, Lacandon Jungle, and La Mosquitia, can benefit from One Health actions, including research and surveillance programs targeting wildlife, livestock, and people to detect the emergence of known or novel zoonoses, as well as to institute pandemic prevention programs that build capacity and infrastructure to prevent and control outbreaks (18).

14. Strategies for the management of risks at the human-animal-environment interface need to include all three components for a systemic approach and to maximize impact and sustainability. Examples of such an approach include the elimination of human rabies through systematic canine rabies vaccination, surveillance and control of avian influenza to mitigate the risk of zoonotic transmission, and the “farm to table” approach to reduce the risk of foodborne diseases transmission throughout the food chain. Furthermore, it is important to acknowledge that in addition to policies within the human, animal, and environmental health sectors, health outcomes associated with zoonotic diseases, AMR, and food safety depend on policies and programs of other sectors such as finance, trade, education, and development.

15. To better prepare for the next emerging zoonotic disease epidemic and to continue progress toward the elimination of endemic zoonotic diseases, risk analysis systems need to be improved by incorporating data from microorganisms, animals, humans, and the environment. This is critical to the implementation of One Health. Surveillance in animals must consider their potential roles as vectors or hosts and must include wildlife, synanthropic, and domestic animals. Animal production operations, particularly small peri-domestic and hunter/trader operations, would need to be mapped and analyzed in an ecological framework to decipher their interaction with human populations, both urban and

rural, and their interaction with wildlife and the environment. Above all, there is a clear need for countries to develop the capacity to maintain an effective early warning and rapid response system to detect and respond to outbreaks of national and international concern and to share information about such outbreaks rapidly and transparently. A proactive One Health system should not allow people to become sentinels of health threats at the human-animal-environment interface, but should first and foremost aim at prevention, as well as early detection and rapid response in at-risk animal populations, thereby preventing human cases.

16. Meeting these challenges will require a shift away from the simplistic medicalization of health and toward systemic, transdisciplinary approaches. These approaches should draw on contributions from a wide range of fields, including ecology, agronomy, human medicine, veterinary medicine, epidemiology, engineering, information technology, data science, and social and environmental science. Community input is also essential (19).

### ***Endemic Diseases of Zoonotic and Vector-borne Origin***

17. Endemic zoonoses have a tremendous societal impact on population groups living in situation of vulnerability, especially indigenous and Afro-descendant people and those living in isolated rural areas in poverty. Of concern are several neglected tropical diseases (NTDs) that are also of zoonotic origin. They include leishmaniasis, Chagas disease, cysticercosis, taeniasis, rabies, and brucellosis. NTDs were estimated to affect approximately 2 billion people at the turn of the millennium (20). While NTDs impose a heavy burden of disease, much of it is disabling rather than lethal. The breakdown of disability-adjusted life years (DALYs) due to NTDs was estimated in 2012 at 56% years lost due to disability (YLD) and 44% years of life lost (YLL) globally (21).

18. The burden of vector-borne diseases is highly dependent on environmental and socioeconomic factors, including globalization of travel and trade, unplanned urbanization, and climate change. The Plan of Action on Entomology and Vector Control 2018-2023 (Document CD56/11) (22) aims to strengthen regional and national capacity for the prevention and control of key vectors and reduce the transmission of vector-borne diseases through multisectoral action and collaboration. Furthermore, the Integrated Management Strategy for Arboviral Disease Prevention and Control in the Americas (23) highlights the importance of integrated vector control and environmental management. In the Region of the Americas there are examples of successful initiatives, based on the One Health principles, addressing vector-borne and zoonotic endemic diseases (24-26).

### ***Emerging and Reemerging Infectious Diseases of Zoonotic Origin***

19. The emergence and reemergence of zoonotic diseases in wildlife, domestic animals, and humans are fundamentally conditioned by anthropogenic changes in the environment that intensify contact between animals, people, and disease agents, sometimes exacerbated by the increased mobilization and trafficking of wildlife as well as by increasing inequities

and social disparities. Other drivers include the intensification of farming practices to support a growing world population, leading to habitat destruction, human encroachment, and climate change (27).

20. The pandemic caused by SARS-CoV-2 has highlighted the societal challenge posed by the emergence of novel infectious agents. As of 31 May 2021, there are 67,472,965 confirmed cases of COVID-19 in the Region of the Americas, with 1,653,255 reported deaths (28). However, the risk and potential consequences of a pandemic were clearly signaled many times over the years by the spread of highly pathogenic H5N1 influenza and Severe Acute Respiratory Syndrome (SARS) in 2003, the public health emergency of international concern caused by H1N1 influenza in 2009, and the outbreaks of Middle East Respiratory Syndrome (MERS) in 2012, H7N9 influenza in 2013, and Ebola in West Africa in 2014. These diseases can generate significant economic and social costs (3, 29). Furthermore, some 70% of the public health emergencies in the Americas reported to WHO in 2007 and 2008 were classified as zoonoses or communicable diseases common to humans and animals (30). The environment and wildlife are also important factors driving the persistent risk of diseases caused by arboviruses with avian or mammal reservoir such as Eastern equine encephalitis virus, Venezuelan equine encephalitis virus, and West Nile virus, which in recent years have affected Canada, Mexico, the United States of America, Central and South America, and several Caribbean islands.

### ***Antimicrobial Resistance***

21. The 700,000 or more deaths that AMR is now estimated to cause every year could grow to 10 million by 2050 (4). These estimated figures frame the impact of AMR on human health. Resistant microorganisms are present in humans, animals, food, and the environment. Complex and interlinked drivers are increasing the prevalence of AMR, which is mainly caused by use of antimicrobials in humans and animals and by the pollution of the environment (31). Therefore, antimicrobial stewardship programs, particularly the restriction of medically important antimicrobials, should be an essential component of AMR containment programs in human and animal medicine, along with effective and evidence-based infection prevention interventions (32).

22. Inadequate housing, water, sanitation and hygiene, access to vaccines, and other disease prevention measures, including human and animal waste management, accelerate the emergence and spread of resistant genes and pathogens among and between humans, animals, and the environment (33). Efforts to address the emergence and spread of AMR must address the interconnections between livestock, aquaculture, food systems, pharmaceutical production, waste management, and human health. Antimicrobials and antimicrobial-resistance genes, and pathogens can move throughout the ecosystem, promoting the emergence and spread of AMR. For example, the use and misuse of antibiotics in livestock and aquaculture for treatment and growth promotion has contributed to accelerating the emergence and spread of foodborne antibiotic-resistant pathogens with implications for animal health, food security, and food safety (34-36). Effective

surveillance and integration of surveillance data across sectors are necessary to inform intervention to limit the emergence and spread of AMR.

23. An increasing number of countries in the Region are now implementing initiatives based on the One Health principles for AMR, bringing together areas of action in the health, agriculture, and livestock sectors, as reflected in their national action plans on AMR.<sup>2</sup> Furthermore, various countries in the Region have prohibited the use of medically important antimicrobials for growth promotion. However, major challenges remain with respect to implementing holistic and multisectoral actions, overcoming the reduction in resources allocated, and promoting education and behavioral changes across the different sectors.

### ***Food Safety***

24. Foodborne diseases are fundamentally linked with trends in trade and consumer demand and with economic and environmental policies. The safety and quality of food depend upon where it is grown (environment), how it is grown (human-animal-environment interaction), and how it is consumed (human interaction). Humans need safe food and water to maintain their vital functions. Food safety cannot be effectively addressed without a One Health approach. There is a very delicate equilibrium between the health of people, the health of animals, and the health of the environment. Should this equilibrium be broken, human health will be affected the most.

25. Responsible food production and consumption are essential to ensure healthy humans, healthy animals, and a healthy environment in the long term. If good practices are not applied along the food value chain, food can become an important vehicle of microbiological and chemical hazards (37). Foodborne diseases are caused by the ingestion of contaminated food and comprise a broad group of illnesses caused by enteric pathogens, parasites, chemical contaminants, and biotoxins. These diseases reduce societal productivity, impose substantial stress on the health care system, and reduce economic output because of decreased consumer confidence, food losses, and impaired access to domestic and export markets, impacting trade and tourism and threatening food security. In the Region of the Americas, an estimated 77 million people (including 31 million children under age 5) fall ill every year from contaminated food, resulting in more than 9,000 deaths (3).

### **Proposal**

26. The One Health policy is intended to provide guidance to Member States and the Bureau on best practices and governance frameworks that are strategic and systematized and that can be adopted, adapted, and implemented by countries of the Region, taking into

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<sup>2</sup> As of 2020, 18 countries reported having multisectoral working groups or coordination committees on AMR led by the government, following the Global Action Plan on Antimicrobial Resistance and the Regional Plan of Action on Antimicrobial Resistance. These are, by definition, One Health initiatives insofar as they involve different sectors and joint plans for AMR.

account national contexts, needs, and priorities, and supported by technical cooperation. The One Health policy builds on existing mandates and plans (22-23, 38-40) and on the experience of PAHO and other relevant organizations in driving positive health outcomes by working with stakeholders beyond the health sector. The policy proposes the following six strategic lines of action.

***Strategic Line of Action 1: Carry out analysis and mapping of the complex interactions between actors and processes in the fields of human, animal, plant, and environmental health in specific national contexts***

27. Health risks related to the human-animal-environment interface cannot be managed by any one entity or sector in isolation. Effective solutions must come through collaboration between the different actors, sectors, and disciplines involved in the field. Such collaboration, however, is often lacking. Governmental and nongovernmental institutions may at times be working at the human-animal-environment interface with little or no awareness of what others are doing, much less any communication or coordination between them. Stakeholder analysis and mapping is an essential first step toward ensuring coordination and communication between relevant parties, sharing knowledge and resources, building synergies, and identifying gaps. One Health needs to include a range of partners drawn not only from the health sector but also from the animal health and production, agriculture and environmental, as well as those working in other fields such as the social determinants of health. Infrastructure and resource mapping are also needed to ensure the best use of existing tools, policies, initiatives, and expert networks.

***Strategic Line of Action 2: Establish multidisciplinary, multisectoral, consensus-driven mechanisms for One Health governance, for stewardship and financing of functional structures working across institutions and enabling coordination, communication, engagement, and collaboration, and for access to relevant knowledge and resources***

28. To deliver and implement One Health, national authorities must recognize and embrace the significant interrelated public health benefits and contributions that may be achieved by considering the interactions between human, animal, plant, and environmental health. Countries must also ensure the institutionalization and implementation of One Health through robust governance mechanisms that promote multisectoral work to achieve positive health outcomes through collaborative actions. One Health governance mechanisms should be led by government with the participation of nongovernmental stakeholders and the community, including indigenous populations and groups living in situation of vulnerability. Adoption of these principles aims to increase efficiency and sustainability of public health interventions relevant to the human-animal-environment interface. It will also ensure better planning and prioritization of activities.



***Strategic Line of Action 3: Strengthen the multidisciplinary and intersectoral aspects of existing mechanisms and frameworks related to the human-animal-environment interface***

29. Countries of the Americas are already working within several mechanisms and frameworks that are relevant to the human-animal-environment interface. These include, among others, *a)* the International Health Regulations (IHR), which provide the overarching legal framework that defines rights and responsibilities for handling public health events and emergencies that have the potential to cross borders; *b)* the Codex Alimentarius, which provides internationally recognized standards, codes of practice, guidelines, and other recommendations relating to food, food production, and food safety; *c)* the OIE international standards, which aim to ensure the sanitary safety of international trade in terrestrial and aquatic animals and their products; *d)* the Tripartite monitoring and evaluation framework for the Global Action Plan on Antimicrobial Resistance, which aims to generate data with which to assess the delivery of the Global Action Plan objectives and inform operational and strategic decision making on AMR; *e)* the International Food Safety Authorities Network (INFOSAN), which seeks to prevent the international spread of contaminated food and foodborne disease, and to strengthen food safety systems globally; *f)* the WHO global strategy on health, environment, and climate change, which provides a vision and way forward on the transformation needed to improve lives and well-being sustainably through healthy environments; *g)* the United Nations Convention on Biological Diversity Guidance Note on Integrating Biodiversity Considerations into One Health Approaches, which assists parties to the Convention and other relevant stakeholders in aligning with One Health approaches that consider biodiversity and ecosystem dynamics; *h)* the PAHO Integrated Sustainable Framework for the Elimination of Communicable Diseases, designed to reduce the burden and tackle the elimination of a set of communicable diseases and related conditions in the Americas; and *i)* the OIE Wildlife Health Framework.

***Strategic Line of Action 4: Foster multisectoral activities, including strategic planning, emergency preparedness and response, integrated disease and health surveillance and reporting, laboratory testing and networks, and best practices to drive evidence-based collaborative actions underpinned by risk analysis and encompassing risk assessment, management, and communication***

30. To ensure success within a One Health framework, a culture of shared responsibility among the participating sectors for the outcomes of a technical activity is essential. Each sector brings its own specific resources and responsibilities and contributes to a shared accountability. The formulation of a national One Health strategic roadmap will identify the technical activities to be undertaken, which will differ depending on the identified priority health threats at the human-animal-environment interface.

31. Technical activities should be backed up by a sound risk analysis component. This analysis should examine the likelihood and potential impact of a given risk, factors that shape the risk, and options for managing the risk. Of priority concern are risks that affect

the systems on which society depends—health, agriculture/animal production, and environment. Risk-based analysis should include the different drivers of disease emergence, including human behaviors, cultural and socioeconomic factors, environmental determinants, agricultural practices, climate change, and occupational conditions. Better understanding and anticipation of risk, including predictive models, can help build risk mitigation options that will reduce reliance on a resource-intensive response. Engaging the community and academia is critical to ensure support for and implementation of risk management strategies and successful risk reduction.

***Strategic Line of Action 5: Embrace digital health solutions, scientific tools, and emerging technologies that facilitate One Health initiatives***

32. Access to and use of digital health solutions, scientific tools, and emerging technologies such as artificial intelligence, blockchain, wearables, big data, geographic information systems, next-generation sequencing, and exchanging information platforms is becoming one of the critical factors for the success of public health interventions. Global, regional, and national frameworks for digital transformation processes are central to the globalized world. The adoption of new technologies is key to the implementation of One Health, given the fundamental need for cloud-based platforms and digital solutions that support access to and exchange of data between the different sectors in a safe, ethical, and interoperable way. This will contribute to upgraded and strengthened information systems and to data disaggregation and stratification.

***Strategic Line of Action 6: Promote research and capacity building on health threats at the human-animal-environment interface across different sectors and disciplines***

33. Understanding and advancing One Health as a transdisciplinary approach will require generation and dissemination of new knowledge. It is critical that academia, research-funding bodies, and national institutes of health across the Region become actively engaged in undertaking and supporting research and capacity building on health threats at the human-animal-environment interface. Academic centers should be encouraged to include One Health in their curricula. There is a need for research to strengthen multisectoral collaboration and knowledge sharing, breaking down silos and barriers between the different sectors and disciplines. Research teams that include different expertise and disciplinary backgrounds will facilitate a broader viewpoint and allow the human-animal-environment interface to be researched as a coherent whole. This would include, for instance, applied research to identify hotspots and understand challenges limiting zoonotic disease control and elimination. There is also a need to promote research and development of vaccines, antimicrobials, alternatives to antimicrobials, and diagnostics for human and animal health. Scientific peer-reviewed journals should be encouraged and enabled to publish high-quality research results relevant to the One Health approach.

34. The PAHO cross-cutting themes of equity, gender, ethnicity, and human rights apply to the six strategic lines of action.

## **Monitoring and Evaluation**

35. The Pan American Sanitary Bureau will report to the Governing Bodies on the implementation of this policy. A monitoring and evaluation framework will be developed, taking into consideration guidance and frameworks already in place (41-45). The monitoring and evaluation framework will also leverage existing initiatives and systems for collecting data and reporting on issues related to One Health.

## **Action by the Executive Committee**

36. The Executive Committee is invited to review the policy on One Health: A Comprehensive Approach for Addressing Health Threats at the Human-Animal-Environment Interface, provide any comments it deems pertinent, and consider approving the proposed resolution presented in Annex A.

Annexes

## **References**

1. Taylor LH, Latham SM, Woolhouse ME. Risk factors for human disease emergence. *Philos Trans R Soc Lond B Biol Sci.* 2001;356(1411):983-989. Available from: <https://doi.org/10.1098/rstb.2001.0888>
2. Jones K, Patel N, Levy M, et al. Global trends in emerging infectious diseases. *Nature* 2008; 451:990-993. Available from: <https://doi.org/10.1038/nature06536>
3. International Monetary Fund. *World Economic Outlook: Managing Divergent Recoveries.* Washington, DC: IMF; 2021 [cited 2021 June 4]. Available from: <https://www.imf.org/en/Publications/WEO/Issues/2021/03/23/world-economic-outlook-april-2021>
4. Review on Antimicrobial Resistance. *Tackling drug-resistant infections globally: final report and recommendations.* London: Review on Antimicrobial Resistance; 2016. Available from: [https://amr-review.org/sites/default/files/160525\\_Final%20paper\\_with%20cover.pdf](https://amr-review.org/sites/default/files/160525_Final%20paper_with%20cover.pdf)
5. World Bank. *Drug-resistant infections: a threat to our economic future.* Washington, DC: World Bank; 2017 [cited 2021 May 22]. Available from: <https://www.worldbank.org/en/topic/health/publication/drug-resistant-infections-a-threat-to-our-economic-future>

6. World Health Organization. WHO estimates of the global burden of foodborne diseases: foodborne disease burden epidemiology reference group 2007-2015. Geneva: WHO; 2015. Available from: <https://apps.who.int/iris/handle/10665/199350>
7. Jaffee S, Henson S, Unnevehr L, Grace D, Cassou E. The safe food imperative: accelerating progress in low- and middle-income countries. Washington, DC: World Bank; 2019 [cited 2021 May 24]. Available from: <https://openknowledge.worldbank.org/handle/10986/30568>
8. Reperant L, Osterhaus A. The human-animal interface. In: Atlas R, Maloy S, eds. One health. Washington, DC: ASM Press; 2014: 33-52. Available from: <https://doi.org/10.1128/microbiolspec.oh-0013-2012>
9. PanAmerican Health Organization. Quincuagésimo cuarto aniversario del Programa de Salud Pública Veterinaria 1948-2002: el aporte de las ciencias veterinarias a la salud pública en el ámbito de la Organización Panamericana de la Salud. Washington, DC: PAHO; 2003. Available in Spanish from: <https://iris.paho.org/handle/10665.2/51260>
10. Pan American Health Organization. RIMSA 17 recommendations. 17th Inter-American Ministerial Meeting on Health and Agriculture; 2016 Jul 21-22; Asunción. Asunción: PAHO; 2016 [cited 2021 Feb 25]. Available from: <https://iris.paho.org/handle/10665.2/51520>
11. United Nations. Report of the United Nations Conference on Environment and Development, Rio de Janeiro, Brazil, 3-14 June 1992. Vol. 1, resolutions adopted by the Conference. New York: UN; 1993 (Document A/CONF.151/26/Rev. 1) [cited 2021 Feb 23]. Available from: <https://www.un.org/en/conferences/environment/rio1992>
12. Pan American Health Organization. Américas en armonía: plan regional de acción para implementar la Carta Panamericana sobre Salud y Ambiente en el Desarrollo Humano Sostenible. Washington, DC: PAHO; 1995. Available in Spanish from: <https://iris.paho.org/handle/10665.2/36678>
13. Pan American Health Organization. Report on the Meeting of the Health and Environment Ministers of the Americas (HEMA). 26th Pan American Sanitary Conference, 54th Session of the Regional Committee of WHO for the Americas; 2002 Sep 23-27; Washington, DC. Washington, DC: PAHO; 2002 (Document CSP26/27) [cited 2021 March 20]. Available from: <https://www.paho.org/en/documents/csp2627-report-meeting-health-and-environment-ministers-americas-hema>
14. Organization of American States. Meeting of Ministers of Health and Environment of the Americas, June 16-17, 2005, Mar del Plata, Argentina. Washington DC: OAS; 2005. Available from: <https://www.oas.org/dsd/Documents/CompendiumofDocuments.pdf>

15. Contributing to One World, One Health: a strategic framework for reducing risks of infectious diseases at the animal-human-ecosystems interface. Consultation document produced by Food and Agriculture Organization of the United Nations, World Organisation for Animal Health, World Health Organization, United Nations Children's Fund, World Bank, and UN System Influenza Coordinator. Paris: OIE; 2008. Available from: [https://www.preventionweb.net/files/8627\\_OWOH14Oct08.pdf](https://www.preventionweb.net/files/8627_OWOH14Oct08.pdf)
16. Food and Agriculture Organization of the United Nations, World Organisation for Animal Health, and World Health Organization. The FAO-OIE-WHO collaboration: sharing responsibilities and coordinating global activities to address health risks at the animal-human-ecosystems interfaces. A Tripartite concept note. Geneva: WHO; 2010. Available from: [https://www.who.int/foodsafety/zoonoses/final\\_concept\\_note\\_Hanoi.pdf](https://www.who.int/foodsafety/zoonoses/final_concept_note_Hanoi.pdf)
17. Wildlife Conservation Society. The Manhattan Principles on "One World, One Health." New York: WCS; 2004. Available from: <https://oneworldonehealth.wcs.org/About-Us/Mission/The-Manhattan-Principles.aspx>
18. Allen T, Murray K A, Zambrana-Torrel C, Morse S, Rondinini C, Di Marco M, et al. Global hotspots and correlates of emerging zoonotic diseases. *Nat Commun* 2017;8(1124):1-10. Available from: <https://doi.org/10.1038/s41467-017-00923-8>
19. United Nations Environment Program. Healthy planet, healthy people. Our Planet 2015 (May). Nairobi: UNEP; 2015. Available from: <https://www.unep.org/resources/report/our-planet-healthy-planet-healthy-people>
20. Hotez PJ, Molyneux DH, Fenwick A, Kumaresan J, Sachs SE, Sachs JD, et al. Control of neglected tropical diseases. *N Engl J Med* 2007;357(10):1018-1027. Available from: <https://doi.org/10.1056/NEJMra064142>
21. Fitzpatrick C, Nwankwo U, Lenk E, de Vlas SJ, Bundy D. An investment case for ending neglected tropical diseases. In: Disease control priorities, vol. 6. 3rd ed. Washington, DC: World Bank; 2017. Available from: <http://dcp-3.org/chapter/2377/investment-case-ending-neglected-tropical-diseases>
22. Pan American Health Organization. Plan of action on entomology and vector control 2018-2023 [Internet]. 56th Directing Council, 70th Session of the Regional Committee of WHO for the Americas; 2018 Sep 23-27; Washington, DC. Washington, DC: PAHO; 2018 (Document CD56/11) [cited 2021 May 24]. Available from: [https://www3.paho.org/hq/index.php?option=com\\_docman&view=download&category\\_slug=56-directing-council-english-9964&alias=45774-cd56-11-e-poa-entomology-774&Itemid=270&lang=en](https://www3.paho.org/hq/index.php?option=com_docman&view=download&category_slug=56-directing-council-english-9964&alias=45774-cd56-11-e-poa-entomology-774&Itemid=270&lang=en)

23. Pan American Health Organization. Integrated Management Strategy for Arboviral Disease Prevention and Control in the Americas. Washington, DC: PAHO; 2020. Available from: <https://iris.paho.org/handle/10665.2/52492>
24. Leandro AS, Lopes RD, Martins CA, Rivas AV, da Silva I, Galvão SR, et al. The adoption of the One Health approach to improve surveillance of venomous animal injury, vector-borne and zoonotic diseases in Foz do Iguacu, Brazil. *PLoS Negl Trop Dis* 2021;15(2):e0009109. Available from: <https://doi.org/10.1371/journal.pntd.0009109>
25. Irabedra P, Ferreira C, Sayes J, Elola S, Rodríguez M, Morel N, et al. Control programme for cystic echinococcosis in Uruguay. *Mem Inst Oswaldo Cruz* 2016;111(6):372-377. Available from: <https://doi.org/10.1590/0074-02760160070>
26. Oura C, Mahase-Gibson A, Stephen C, eds. Caribbean resilience and prosperity through One Health [Internet]. St. Augustine, Trinidad and Tobago: University of the West Indies; 2017 [cited 2021 Mar 18]. Available from: [http://www.cwhc-rsf.ca/docs/technical\\_reports/Caribbean\\_Resilience.pdf](http://www.cwhc-rsf.ca/docs/technical_reports/Caribbean_Resilience.pdf)
27. Cutler SJ, Fooks AR, van der Poel WHM. Public health threat of new, reemerging, and neglected zoonoses in the industrialized world. *Emerg Infect Dis* 2010;16(1):1-7. Available from: [http://wwwnc.cdc.gov/eid/article/16/1/08-1467\\_intro.htm](http://wwwnc.cdc.gov/eid/article/16/1/08-1467_intro.htm)
28. Pan American Health Organization. PAHO Daily COVID-19 Update: 31 May, 2021. Washington, DC: PAHO; 2021 [cited 2021 May 31]. Available from: <https://www.paho.org/en/covid-19-global-and-regional-daily-update>
29. Qiu W, Chu C, Mao A, Wu J. The impacts on health, society, and economy of SARS and H7N9 outbreaks in China: a case comparison study. *Journal of Environmental and Public Health* 2018; article ID 2710185. Available from: <https://doi.org/10.1155/2018/2710185>
30. Schneider MC, Aguilera XP, Smith RM, Moynihan MJ, Barbosa da Silva J, Aldighieri S, et al. Importance of animal/human health interface in potential Public Health Emergencies of International Concern in the Americas. *Rev Panam Salud Publica* 2011; 29(5):371-379. Available from: <https://iris.paho.org/bitstream/handle/10665.2/9526/a11v29n5.pdf?sequence=1&isAllowed=y>
31. Holmes AH, Moore LSP, Sundsfjord A, Steinbakk M, Regmi S, Karkey A, et al. Understanding the mechanisms and drivers of antimicrobial resistance. *Lancet* 2016; 387:176-187. Available from: [https://doi.org/10.1016/S0140-6736\(15\)00473-0](https://doi.org/10.1016/S0140-6736(15)00473-0)

32. Wirtz VJ, Herrera-Patino JJ, Santa-Ana-Tellez Y, Dreser A, Elseviers M, Vander Stichele RH. Analyzing policy interventions to prohibit over-the-counter antibiotic sales in four Latin American countries. *Trop Med Int Health* 2013;18(6):665-673. Available from: <https://doi.org/10.1111/tmi.12096>
33. De Andrade LO, Pellegrini Filho A, Solar O, Rígoli F, de Salazar LM, Serrate PC, Ribeiro KG, Koller TS, Cruz FN, Atun R. Social determinants of health, universal health coverage, and sustainable development: case studies from Latin American countries. *Lancet* 2015;385(9975):1343-1351. Available from: [https://doi.org/10.1016/S0140-6736\(14\)61494-X](https://doi.org/10.1016/S0140-6736(14)61494-X)
34. Bengtsson-Palme J, Larsson J. Concentrations of antibiotics predicted to select for resistant bacteria: proposed limits for environmental regulation. *Environ Int* 2016;86:140-149. Available from: <https://doi.org/10.1016/j.envint.2015.10.015>
35. Pan American Health Organization. Epidemiological alert: enterobacteriaceae with plasmid-mediated transferable colistin resistance, public health implications in the Americas. 2016 Jun 10. Washington, DC: PAHO; 2016 [cited 2021 Jan 10]. Available from: <https://iris.paho.org/handle/10665.2/50636>
36. He T, Shen Y, Schwarz S, Cai J, Lv Y, Li J, et al. Genetic environment of the transferable oxazolidinone/phenicol resistance gene *optrA* in *Enterococcus faecalis* isolates of human and animal origin. *J Antimicrob Chemother* 2016;71(6):1466-1473. Available from: <https://doi.org/10.1093/jac/dkw016>
37. Wielinga PR, Schlundt J. One Health and Food Safety. In: Yamada A, Kahn L, Kaplan B, Monath T, Woodall J, Conti L., eds. *Confronting emerging zoonoses*. Tokyo: Springer; 2014. Available from: [https://doi.org/10.1007/978-4-431-55120-1\\_10](https://doi.org/10.1007/978-4-431-55120-1_10)
38. Pan American Health Organization. Plan of action for the elimination of neglected infectious diseases and post-elimination actions 2016-2022. 55th Directing Council of PAHO, 68th Session of the Regional Committee of WHO for the Americas; 2016 Sep 26-30; Washington, DC. Washington, DC: PAHO; 2016 (Resolution CD55.R9) [cited 2021 Jan 10]. Available from: <https://www.paho.org/en/documents/cd55r9-plan-action-elimination-neglected-infectious-diseases-and-post-elimination-actions>
39. Pan American Health Organization. Plan of action on antimicrobial resistance. 54th Directing Council of PAHO, 67th Session of the Regional Committee of WHO for the Americas; 2015 Sep 28-Oct 2; Washington, DC. Washington, DC: PAHO; 2015 (Resolution CD54.R15) [cited 2021 Mar 1]. Available from: <https://www.paho.org/en/documents/resolution-cd54r15-plan-action-antimicrobial-resistance-2015>

40. World Health Organization. Strengthening efforts on food safety. 73rd World Health Assembly; 2020 Aug 3; Geneva. Geneva: WHO; 2020 (Resolution WHA73.5) [cited 2021 Mar 2]. Available from:  
[https://apps.who.int/gb/ebwha/pdf\\_files/WHA73/A73\\_R5-en.pdf](https://apps.who.int/gb/ebwha/pdf_files/WHA73/A73_R5-en.pdf)
41. World Health Organization. Global action plan on antimicrobial resistance. Geneva: WHO; 2016 [cited 2021 May 19]. Available from:  
<https://apps.who.int/iris/handle/10665/193736>
42. World Health Organization, Food and Agriculture Organization of the United Nations, and World Organisation for Animal Health. Taking a multisectoral, One Health approach: a Tripartite guide to addressing zoonotic diseases in countries. Geneva: WHO; 2019. Available from: <https://apps.who.int/iris/handle/10665/325620>
43. Food and Agriculture Organization of the United Nations and World Health Organization. Food control system assessment tool: introduction and glossary. Food safety and quality series, no. 7/1. Rome: FAO; 2019. Available from:  
<https://www.who.int/publications/i/item/9789241515719>
44. World Organisation for Animal Health. OIE tool for the evaluation of performance of veterinary services. 7th ed. Paris: OIE; 2019. Available from:  
<https://www.oie.int/en/solidarity/pvs-pathway/>
45. United Nations. Global indicator framework for the Sustainable Development Goals and targets of the 2030 Agenda for Sustainable Development [Internet]. 71st General Assembly of the United Nations; 2017 Jul 6; New York. New York: UN; 2017 (Resolution A/RES/71/313) [cited 2021 Mar 8]. Available from:  
[https://unstats.un.org/sdgs/indicators/Global%20Indicator%20Framework%20after%202020%20review\\_Eng.pdf](https://unstats.un.org/sdgs/indicators/Global%20Indicator%20Framework%20after%202020%20review_Eng.pdf)



## 168th SESSION OF THE EXECUTIVE COMMITTEE

*Virtual Session, 21-25 June 2021*

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CE168/13, Rev. 1  
Annex A  
Original: English

### ***PROPOSED RESOLUTION***

#### **ONE HEALTH: A COMPREHENSIVE APPROACH FOR ADDRESSING HEALTH THREATS AT THE HUMAN-ANIMAL-ENVIRONMENT INTERFACE**

##### ***THE 168th SESSION OF THE EXECUTIVE COMMITTEE,***

(PP) Having reviewed the policy on *One Health: A Comprehensive Approach for Addressing Health Threats at the Human-Animal-Environment Interface* (Document CE168/13, Rev. 1),

##### ***RESOLVES:***

(OP) To recommend that the 59th Directing Council adopt a resolution along the following lines:

#### **ONE HEALTH: A COMPREHENSIVE APPROACH FOR ADDRESSING HEALTH THREATS AT THE HUMAN-ANIMAL-ENVIRONMENT INTERFACE**

##### ***THE 59th DIRECTING COUNCIL,***

(PP1) Having reviewed the policy on *One Health: A Comprehensive Approach for Addressing Health Threats at the Human-Animal-Environment Interface* (Document CD59/\_\_);

(PP2) Bearing in mind that the COVID-19 pandemic has done much to reverse the gains achieved in recent decades on poverty reduction and on health and well-being in the Region of the Americas;

(PP3) Recognizing that the health outcomes associated with health threats at the human-animal-environment interface such as zoonotic diseases, antimicrobial

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resistance (AMR), and food safety issues depend on policies and programs inside and outside the health sector and that strategies for the management of risks at the human-animal-environment interface need to include other sectors and disciplines to maximize impact and ensure sustainability;

(PP4) Acknowledging that the socioeconomic development of the Region of the Americas has been supported by its increasing agricultural production, and role as a global food producer and exporter, thereby it is crucial to protect such achievements from the impact of zoonotic diseases, antimicrobial resistance, and food safety problems that not only endanger the health of the population, particularly the most vulnerable, but also hinder the socioeconomic development of communities and industries such as tourism and international trade in animal and animal products;

(PP5) Cognizant that One Health is a collaborative, multidisciplinary, and multisectoral approach that can contribute to addressing health threats at the human-animal-environment interface,

***RESOLVES:***

(OP)1. To approve the policy on *One Health: A Comprehensive Approach for Addressing Health Threats at the Human-Animal-Environment Interface* (Document CD59/\_\_\_).

(OP)2. To urge Member States, taking into account their contexts, needs, vulnerabilities, and priorities, to adopt, adapt, and implement this policy:

- a) establish or strengthen current multidisciplinary, multisectoral, consensus-driven mechanisms for One Health governance, including policies and actions for the stewardship and finance of functional structures working across institutions and enabling coordination, communication, engagement, and collaboration, and for access to relevant knowledge and resources;
- b) foster multisectoral technical activities including strategic planning, emergency preparedness and response, rapid and transparent information, data and sample sharing, in accordance with relevant international agreements, integrated surveillance, laboratory strengthening, and other best practices, with demonstration projects to drive scientific evidence-based collaborative actions;
- c) incorporate a risk analysis approach, taking into account human behavior and other drivers, particularly those challenges that affect the systems on which society depends—health, agriculture/animal production, and environment;
- d) promote training and education of the workforce on One Health, adopt new technologies including digital solutions and scientific tools, and foster research agendas on the human-animal-environment interface.

(OP)3. To request the Director to:

- a) apply the One Health approach within the Pan American Sanitary Bureau through inter-programmatic actions fostering the effective use of the Pan America Health Organization's comprehensive portfolio of knowledge, expertise, and access to stakeholders on health challenges such as food safety, zoonotic diseases, and AMR;
- b) coordinate, promote, and provide technical cooperation to support countries and territories in implementing One Health in collaboration with relevant human, animal, plant, and environmental health partners and stakeholders, including those from the social determinants field;
- c) secure political, managerial, administrative, and financial support for the implementation of One Health by advocating and promoting it, in collaboration with other international and regional entities from the fields of human, animal, and environmental health, as well as by mobilizing external resources;
- d) report to the Governing Bodies on the progress made and challenges faced in implementation of this policy in 2026 and 2031.

## Report on the Financial and Administrative Implications of the Proposed Resolution for PASB

1. **Agenda item:** 4.6 One Health: A Comprehensive Approach for Addressing Health Threats at the Human-Animal-Environment Interface

2. **Linkage to [Strategic Plan of the Pan American Health Organization 2020-2025](#) and/or [Program Budget of the Pan American Health Organization 2020-2021](#):**

*Outcome 1:* Increased response capacity of integrated health services networks (IHSNs), with emphasis on the first level of care, to improve access to comprehensive, quality health services that are equitable, gender- and culturally sensitive, rights-based, and people-, family-, and community-centered, toward universal health

*Outcome 4:* Increased response capacity of integrated health services networks (IHSNs) for prevention, surveillance, early detection and treatment, and care of communicable diseases, including vaccine-preventable diseases

*Outcome 8:* Increased equitable access to essential medicines, vaccines, and other health technologies that are safe, affordable, clinically effective, cost-effective, and quality-*assured*, and rational use of medicines, with strengthened regulatory systems that contribute to achieving universal access to health and universal health coverage

*Outcome 9:* Strengthened stewardship and governance by national health authorities, enabling them to lead health systems transformation and implement the essential public health functions for universal health

*Outcome 12:* Risk factors for communicable diseases reduced by addressing the determinants of health through intersectoral action

*Outcome 17:* Health systems strengthened to achieve or maintain the elimination of transmission of targeted diseases

*Outcome 18:* Increased capacity of health actors to address social and environmental determinants of health with an intersectoral focus, prioritizing groups in conditions of vulnerability

*Outcome 20:* Integrated information systems for health developed and implemented with strengthened capacities in Member States and the Pan American Sanitary Bureau

*Outcome 21:* Increased capacity of Member States and the Pan American Sanitary Bureau to generate, analyze, and disseminate health evidence and translate knowledge for decision making at national and subnational levels

*Outcome 23:* Strengthened country capacity for all-hazards health emergency and disaster risk management for a disaster-resilient health sector

*Outcome 24:* Countries' capacities strengthened to prevent and control epidemics and pandemics caused by high-impact and/or high-consequence pathogens

*Outcome 25:* Rapid detection, assessment, and response to health emergencies

*Outcome 26:* Strengthened country leadership and capacity to advance health equity and gender and ethnic equality in health, within a human rights framework

**3. Financial implications:**

**a) Total estimated cost for implementation over the lifecycle of the resolution (including staff and activities):**

The estimated cost for implementation of this policy is approximately US\$ 1,000,000 per biennium. This does not include Member States' implementation costs, which will vary from country to country.

**b) Estimated cost for the 2022-2023 biennium (including staff and activities):**

The estimated cost for the biennium is approximately US\$ 1,000,000. It is estimated that the Director of PANAFTOSA and unit chiefs (P5) from three units involved with this initiative will contribute 10%-15% of their time to lead implementation of the initiative. Four or five technical advisors (P4) will contribute 15% of their time to participate in international dialogue and technical cooperation with countries.

**c) Of the estimated cost noted in b), what can be subsumed under existing programmed activities?**

Approximately US\$ 500,000, representing existing staff time contribution, will be covered with PAHO regular funds. Also, part of activities can be covered by funds allocated to zoonotic diseases, antimicrobial resistance, and food safety actions related to this initiative.

**4. Administrative implications:**

**a) Indicate the levels of the Organization at which the work will be undertaken:**

The work will be carried out at the country, subregional, and regional levels.

**b) Additional staffing requirements (indicate additional required staff full-time equivalents, noting necessary skills profile):**

N/A

**c) Time frames (indicate broad time frames for the implementation and evaluation):**

The One Health Policy is linked to the 2030 Agenda for Sustainable Development and the Sustainable Health Agenda for the Americas 2018-2030, and its implementation is proposed to cover the period 2021-2030.

## Analytical Form to Link Agenda Item with Organizational Mandates

1. **Agenda item:** 4.6 One Health: A Comprehensive Approach for Addressing Health Threats at the Human-Animal-Environment Interface

2. **Responsible unit:**

- Communicable Diseases and Environmental Determinants of Health (CDE): Pan American Center for Foot-and-Mouth Disease (CDE/AFT); Neglected, Tropical, and Vector Borne Diseases (CDE/VT); Climate Change and Environmental Determinants of Health (CDE/CE); Antimicrobial Resistance (CDE/AR)
- Health Emergencies (PHE)
- Other entities include Evidence and Intelligence for Action in Health (EIH) and the Office for Equity, Gender, and Cultural Diversity (EGC)

3. **Preparing officers:** Dr. Marcos Espinal, Dr. Ottorino Cosivi, Dr. Sylvain Aldighieri, Dr. Luis Gerardo Castellanos, Dr. Pilar Ramon Pardo, Dr. Marcelo Korc

4. **Link between Agenda item and [Sustainable Health Agenda for the Americas 2018-2030](#):**

*Goal 1:* Expand equitable access to comprehensive, integrated, quality, people-, family-, and community-centered health services, with an emphasis on health promotion and illness prevention.

*Goal 3:* Strengthen the management and development of human resources for health (HRH) with skills that facilitate a comprehensive approach to health.

*Goal 5:* Ensure access to essential medicines and vaccines, and to other priority health technologies, according to available scientific evidence and the national context.

*Goal 6:* Strengthen information systems for health to support the development of evidence-based policies and decision-making.

*Goal 8:* Strengthen national and regional capacities to prepare for, prevent, detect, monitor and respond to disease outbreaks and emergencies and disasters that affect the health of the population.

*Goal 10:* Reduce the burden of communicable diseases and eliminate neglected diseases.

*Goal 11:* Reduce inequality and inequity in health through intersectoral, multisectoral, regional, and subregional approaches to the social and environmental determinants of health.

5. **Link between Agenda item and the [Strategic Plan of the Pan American Health Organization 2020-2025](#):**

As stated in Annex B, this policy will contribute to achieving Outcomes 1, 4, 8, 9, 12, 17, 18, 20, 21, 23, 24, 25, and 26 of the PAHO Strategic Plan 2020-2025.

**6. List of collaborating centers and national institutions linked to this Agenda item:**

The implementation of this policy will require multisectoral, multi-agency, inter-country, and inter-programmatic cooperation and collaboration, as well as the strengthening of alliances with partners at all levels. These include:

- Ministries of health and national government agencies, particularly on animal health, food safety, and the environment
- PAHO/WHO Collaborating Centers, including but not limited to the following: Collaborating Centre on Antimicrobial Resistance Surveillance, Administración Nacional de Laboratorios e Institutos de Salud “Dr Carlos Malbrán” (ANLIS, Argentina); Collaborating Centre for Control and Epidemiology of Rabies in Carnivores, Canadian Food Inspection Agency (Canada); Collaborating Centre on Environmental and Public Health, Fundação Oswaldo Cruz (FIOCRUZ, Brazil); Collaborating Centre for the Study and Control of Dengue, Instituto Nacional de Medicina Tropical Pedro Kourí (IPK, Cuba); Collaborating Centre on Antimicrobial Resistance in Foodborne and Environmental Bacteria, Servicio Nacional de Sanidad: Inocuidad y Calidad Agroalimentaria (SENASICA, Mexico); Collaborating Centre for Surveillance, Epidemiology and Control of Foodborne Diseases and other Enteric Pathogens, Centers for Disease Control and Prevention (CDC, United States of America).
- World Organisation for Animal Health (OIE)
- Food and Agriculture Organization of the United Nations (FAO)
- Inter-American Institute for Cooperation on Agriculture (IICA)
- International Regional Organization for Plant and Animal Health (OIRSA)
- United Nations Environment Programme (UNEP)

**7. Best practices in this area and examples from countries within the Region of the Americas:**

- Chilean Agency for Safety and Food Quality (ACHIPIA), <https://www.achipia.gob.cl/>
- Peru Permanent Multisectoral Commission on Food Safety, <http://www.digesa.minsa.gob.pe/compial/compial.asp>
- United States Centers for Disease Control and Prevention, <https://www.cdc.gov/onehealth/index.html>
- Uruguay National Honorary Commission for Zoonoses, <https://www.zoonosis.gub.uy>
- Oura C, Mahase-Gibson A, Stephen C. Caribbean resilience and prosperity through One Health [Internet]. St. Augustine, Trinidad and Tobago: University of the West Indies; 2017. Available from: [http://www.cwhc-rcsf.ca/docs/technical\\_reports/Caribbean\\_Resilience.pdf](http://www.cwhc-rcsf.ca/docs/technical_reports/Caribbean_Resilience.pdf)
- Schneider MC, Najera P, Pereira MM, Machado G, dos Anjos CB, Rodrigues RO, et al. Leptospirosis in Rio Grande do Sul, Brazil: an ecosystem approach in the animal-human interface. PLoS Negl Trop Dis 2015;9(11):e0004095. doi:10.1371/journal.pntd.0004095
- Vigilato MAN, Clavijo A, Knobl T, Silva HMT, Cosivi O, Schneider MC, Leanes LF, Belotto AJ, Espinal MA. Progress towards eliminating canine rabies: policies and perspectives from Latin America and the Caribbean. Phil Trans R Soc B 2013;368:20120143. <http://dx.doi.org/10.1098/rstb.2012.0143>

- Leandro AS, Lopes RD, Martins CA, Rivas AV, da Silva I, Galvão SR, et al. The adoption of the One Health approach to improve surveillance of venomous animal injury, vector-borne and zoonotic diseases in Foz do Iguaçu, Brazil. *PLoS Negl Trop Dis* 2021;15(2):e0009109. <https://doi.org/10.1371/journal.pntd.0009109>
- Irabedra P, Ferreira C, Sayes J, Elola S, Rodríguez M, Morel N, et al. Control programme for cystic echinococcosis in Uruguay. *Mem Inst Oswaldo Cruz* 2016;111(6):372-377. Available from: <https://doi.org/10.1590/0074-02760160070>
- Institute of Medicine. Improving food safety through a One Health Approach: workshop summary. Washington, DC: National Academies Press; 2012. Available from: <https://www.ncbi.nlm.nih.gov/books/NBK100665/>
- Parmley J, Leung Z, Léger D, et al. One health and food safety—the Canadian experience: a holistic approach toward enteric bacterial pathogens and antimicrobial resistance surveillance. In: Institute of Medicine, ed., Improving food safety through a One Health approach: workshop summary. Washington, DC: National Academies Press; 2012. Available from: <https://www.ncbi.nlm.nih.gov/books/NBK114511/>

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**8. Financial implications of this Agenda item:**

The estimated cost for the implementation of this initiative is approximately US\$ 1,000,000 per biennium.

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