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COMMITTEE ON AGRICULTURE

SUB-COMMITTEE ON LIVESTOCK

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Reducing future wildlife-borne spill-over of disease pathogens to domestic animals and humans

Queries on the substantive content of the document may be addressed to:

Mr Keith Sumption

Chief Veterinary Officer

Animal Production and Health Division (NSA)

Tel: +39 06 570 53371

I. Introduction

1. About 60 percent of emerging infectious diseases are zoonotic, the majority (72 percent) of which originate in wildlife[1]. COVID-19 evidenced that prevention and early detection of pathogen spill-over at wildlife-livestock-human interfaces is more cost-effective than pandemic response.[2] Early warning and evidence-based risk mitigation require a One Health approach.[3] Biodiversity, ecosystems

[1] Jones, K. E., Patel, N. G., Levy, M. A., Storeygard, A., Balk, D., Gittleman, J. L., & Daszak, P. (2008). *Global trends in emerging infectious diseases*. Nature, 451(7181), 990–993. https://doi.org/10.1038/nature06536

[2] Dobson, A. P., Pim, S. L., Hannah, L., Kaufman, L., Ahumad, J. A., And, A. W., Bernstein, A., Busch, J., Daszak, P., Engelmann, J., Kinnair, M. F., Li, B. V., Loch-Temzelides, T., Lovejoy, T., Nowak, K., Roehrdan, P. R., & Va, M. M. (2020). *Ecology and economics for pandemic prevention: Investments to prevent tropical deforestation and to limit wildlife trade will protect against future zoonosis outbreaks*. In Science (Vol. 369, Issue 6502, pp. 379–381). Science.

[3] FAO, World Organisation for Animal Health (OIE) & World Health Organization (WHO). 2021. *Joint Tripartite (FAO, OIE, WHO) and UNEP Statement: Tripartite and UNEP support OHHLEP's definition of "One Health"* [online]. [Cited 30 December 2021]. www.fao.org/3/cb7869en/cb7869en.pdf.

protection and restoration are preventive interventions.[4] This document serves as an information document to the discussion document COAG:LI/2022/5 *Strengthening national coordinated capacities to manage the risks of animal diseases and emerging zoonoses through the One Health approach.*

II. Challenges

2. Infectious diseases emerge and spill over from wildlife to humans and/or domestic animals due to:[5]

- land-use change and human encroachment;
- agricultural intensification;
- uncontrolled wildlife harvesting, farming, trade and consumption;
- lack of timely spill-over detection; and
- insufficient biosecurity along domestic and wild animal value chains.

3. Monitoring and mitigation of drivers and risks remain challenging, due to:

- Lack of adequate and coherent policies, legislation, and engagement of ministries responsible for biodiversity, natural resource management and the environment:[6]
    - One Health mostly practised by public and animal-health sectors;
    - ecosystem dimensions of One Health poorly understood;
    - limited health risk assessment in land use and forest planning;
    - key data from natural resource management sectors (e.g. planned or observed changes in land/forest cover; wildlife population, harvesting quantities, health status; anthropogenic encroachment) not routinely shared;
    - weak upstream and interface surveillance; and
    - no integrated One Health early warning systems.
- Lack of regulations and controls in wildlife harvesting, farming, trade and consumption:[7]
    - extent and patterns not well understood;
    - insufficient/absent regulatory frameworks;
    - limited understanding of zoonotic disease risks from consumed, traded and farmed wildlife;
    - limited monitoring and control of infectious diseases in wildlife; and
    - unsustainable blanket bans.

[4] Keesing, F., Belden, L., Daszak, P., Dobson, A., Drew Harvell, C. Holt, R.D., Hudson, P. et al. 2010. Impacts of biodiversity on the emergence and transmission of infectious diseases. *Nature*, 468: 647–652. https://doi.org/10.1038/nature09575.

[5] FAO, French Agricultural Research Centre for International Development (CIRAD), Center for International Forestry Research (CIFOR) & Wildlife Conservation Society (WCS). 2020. *White paper: Build back better in a post-COVID-19 world – Reducing future wildlife-borne spillover of disease to humans: Sustainable Wildlife Management (SWM) Programme* [online]. [Cited 30 December 2021]. http://www.fao.org/3/cb1503en/cb1503en.pdf.

[6] World Bank. 2018. *One Health: Operational Framework for Strengthening Human, Animal, and Environmental Public Health Systems at their Interface* [online]. [Cited 30 December 2021]. https://documents1.worldbank.org/curated/en/703711517234402168/pdf/123023-REVISED-PUBLIC-World-Bank-One-Health-Framework-2018.pdf.

[7] FAO. 2020. *One Health legislation: Contributing to pandemic prevention through law* [online]. [Cited 30 December 2021]. https://www.fao.org/3/ca9729en/ca9729en.pdf.

III. Solutions

4. FAO supports Members in:

- Establishing and strengthening inclusive national multi-sectoral coordination initiatives:
    - ensuring equitable involvement of natural resource, environment, animal (i.e. wildlife, domestic, aquatic) and human health sectors in One Health programming and implementation as per the tripartite zoonoses guide;[8]
    - addressing gaps in One Health capacity and infrastructure, as evidenced by FAO's assessment tools, through dedicated programmes, e.g. the Emergency Centre for Transboundary Animal Diseases[9] and the COVID-19 Response and Recovery Programme;[10]
    - better using information from forestry, wildlife management, habitat degradation, climate change, ecosystem and biodiversity loss, e.g. as per FAO/EcoHealth Alliance study on reducing emerging infectious disease risk in forest ecosystems (manuscript and policy brief in preparation); FAO's Health, Wildlife and Livelihoods Initiative in Asia (in progress); and the Sustainable Wildlife Management (SWM) Programme[11] One Health component;
    - applying national multisectoral risk assessment[12] and management in development planning (for land use, agricultural development, health-care facilities);
    - enhancing health event data from surveillance, early warning and response activities through quality data collection, ensuring access by relevant sectors;
    - monitoring risk factors and drivers, e.g. the role of intact and effectively managed forests and biodiversity in the mitigation of climate change and pathogen spill-over risk using the SEPAL platform;[13]
    - ensuring provision of expertise, information and data by the natural resources sector for timely pathogen spill-over detection and enhanced understanding of risks, e.g. facilitated by an FAO survey on national wildlife surveillance data sharing mechanisms; and
    - engaging communities to foster understanding of risks for positive behaviour change.
- Development of regulatory frameworks for safe and sustainable wildlife harvesting, farming, trade and consumption:
    - inclusive (i.e. socially acceptable, respectful) legislative reform, aligned with international frameworks (Convention on International Trade in Endangered Species

[8] FAO, OIE & WHO. 2019. *Taking a Multisectoral One Health Approach: a Tripartite Guide to Addressing Zoonotic Diseases in Countries* [online]. [Cited 30 December 2021]. www.fao.org/documents/card/en/c/CA2942EN/

[9] FAO. 2021. ECTAD - FAO's Emergency Centre for Transboundary Animal Diseases. In: *FAO*. Rome. [Cited 30 December 2021]. https://www.fao.org/emergencies/fao-in-action/ectad/en/.

[10] FAO. no date. Resource Mobilization: FAO COVID-19 Response and Recovery Programme. In: *FAO*. Rome. [Cited 30 December 2021]. https://www.fao.org/partnerships/resource-partners/covid-19/en/.

[11] FAO, CIRAD, CIFOR & WCS. 2020. *SWM Sustainable Wildlife Management Programme* [online]. [Cited 30 December 2021]. https://www.swm-programme.info/.

[12] WHO, FAO & OIE. 2020. *Joint Risk Assessment Operational Tool (JRA OT): An Operational Tool of the Tripartite Zoonoses Guide* [online]. [Cited 30 December 2021]. http://www.fao.org/3/cb1520en/cb1520en.pdf.

[13] FAO. No date. *Assessment of deforestation and forest degradation and related direct drivers using SEPAL* [online]. [Cited 30 December 2021]. https://www.fao.org/redd/news/deforestation-et-degradation-en-afrique-centrale.

of Wild Fauna and Flora [CITES];[14] Convention on Biological Diversity [CBD][15]), e.g. SWM Legal Toolkit and Hub;[16] and

- regulation of wildlife-related activities and biosecurity requirements, mitigating resulting socio-economic and environmental impacts through provision of safe practices or acceptable alternatives, e.g. SWM management models and collaborative partnership on SWM guiding principles.[17]

[14] CITES. No date. *Convention on International Trade in Endangered Species of Wild Fauna and Flora* [online]. [Cited 30 December 2021]. https://cites.org/eng.
[15] United Nations Environment Programme. No date. *Convention on Biological Diversity* [online]. [Cited 30 December 2021]. https://www.cbd.int/.
[16] FAO, CIRAD, CIFOR & WCS. 2020. Legal hub. In: *SWM Sustainable Wildlife Management Programme* [online]. [Cited 30 December 2021]. https://swm-programme.info/web/guest/legal-hub.
[17] FAO. 2020. *The COVID-19 challenge: Zoonotic diseases and wildlife – Collaborative Partnership on Sustainable Wildlife Management's four guiding principles to reduce risk from zoonotic diseases and build more collaborative approaches in human health and wildlife management* [online]. [Cited 30 December 2021]. https://www.fao.org/3/cb1163en/cb1163en.pdf.