



Preventing the next zoonotic pandemic Building One Health capacity for natural resource managers

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The issue

Similar to the leading hypothesis for COVID-19 emergence, over 60 percent of human diseases have come from animals, and of those, most originated in wildlife and spilled over into people directly, or were transmitted to people via livestock. The main risk for a new pandemic is increased contact rates between wildlife, livestock and people, and globalization which can transport a disease around the world in a day. Increased human-wildlife contact takes place through wild meat hunting, butchering and marketing, extractive industries, the wildlife trade industry and informal wildlife farming. Livestock-wildlife-human contact takes place with expansion and intensification of livestock production, at live animal markets, and through deforestation, loss and degradation of natural habitats and encroachment on wildlife habitat by people and livestock. More than 80 percent of the rural poor (often women and children) are dependent on forests, livestock and wild meat, and they have limited awareness on risky behaviors, safe farming practices, and food safety precautions to limit the risk of disease spill-over. They are at high risk, specifically in low- and middle-income countries (LMIC) affected by deforestation and illicit exploitation and trade of forest and wildlife products and where medical, veterinary and animal production services, and food safety control systems are unlikely to be sufficiently capable to prevent, detect and respond to an emerging zoonotic disease. Food and Agriculture Organization of the United Nations, as a multi-disciplinary organization with a key role in One Health (OH), is in a unique position to engage the natural resources management, animal, veterinary and public health sectors, through its multiple technical units, decentralized offices and diverse expertise, to support countries to address drivers of disease emergence and transmission, to prevent further deforestation and biodiversity loss, and to reduce the impacts of emerging diseases on people, livelihoods, livestock, wildlife populations, national economies and food or nutrition security.

Significant progress has been made to date on improving national OH capacity in many countries globally, however, it is widely acknowledged that engagement with managers of forest and wildlife and other natural resources across sectors and production systems – such as agriculture, rangelands and livestock, and other land uses – has to be increased when addressing zoonotic disease prevention and control. Most OH financial and training resources are targeting veterinary and public health professionals, which represent the first line of defense during response efforts. However, to prevent pandemics and address the drivers of disease emergence and transmission in a sustainable, comprehensive OH manner, engagement of all natural resource managers is needed, and a careful evaluation of the risk factors known to be driving disease emergence or spillover is required and may include: modifications to natural habitats (deforestation and biodiversity loss, encroachment by farms/cities, environmental contamination); changes in agricultural practices (expansion/intensification of crop and livestock farming, waste

Budget

USD 22 million

Time frame

2021–2025

SDGs



Related FAO policy notes on COVID-19

- ▶ [The impact of COVID-19 on the forest sector: how to respond?](#)
- ▶ [Global emergence of infectious diseases: links with wild meat consumption, ecosystem disruption, habitat degradation and biodiversity loss](#)



management, antimicrobial use); and human behaviors (food choices, exotic pet ownership, wildlife farming). Addressing the capacity gaps of the OH approach within the ministries of forestry and wildlife, other natural resources and land use sectors is crucial. There is also a need to include forestry, wildlife, and natural resource management government sectors in capacity building to allow proper engagement in OH programming, implementation and monitoring with emphasis on preventing future pandemics.

The action

- 1 Conduct a capacity needs assessment targeting managers across different natural resources management related sectors** (forestry, wildlife, agriculture, livestock and other land use) to identify and assess the gaps and priority areas for capacity building to enable targeted professionals and practitioners become active players (together with the other sectors of public and animal health) in the planning, implementation and monitoring of the OH approach at national and sub-national levels.
- 2 Based on outcomes of the needs assessment, identify OH competencies, gaps and issues, followed by developing a comprehensive biodiversity, ecosystem, forestry and wildlife curriculum** that compliments in-service training programs currently in place to support ministries of health and veterinary services.
- 3 Develop a training and capacity development program** to train natural resource managers (including forestry/wildlife/ agriculture/livestock and other land use sectors) and the animal and public health stakeholders in addressing drivers of disease emergence through an inclusive OH collaboration. The training would include, but not be limited to:
 - The role of natural resource managers in joint risk assessments and risk management.
 - Disease impacts on wildlife, livestock and people and the importance of OH.
 - Preventing pandemic risk by preserving and restoring habitat, biodiversity and ecosystems, and minimising encroachment via sustainable and resilient land use planning.
 - Support sustainable, climate smart, eco-friendly agricultural development needed to mitigate and adapt to climate change and contribute to sustainable agriculture and water management.
 - Providing tools for improving management of wildlife farms, wildlife trade and wildlife value chains including good practices for preventing contact with and spill over of disease agents.
 - Promote good practices for the sustainable management and restoration of forests, agrosilvopastoral systems and grasslands.

- Promote good practices for food safety along informal value chains (trade and markets).

- 4 Develop indicators and a monitoring and evaluation framework** to evaluate and track progress in the capacities of the environment and natural resources management sectors in effective implementation of the OH Programming.
- 5 Implement One Health training for in-service natural resource management professionals** in 20 high-risk low- and middle-income countries, selected by taking into consideration the ongoing FAO Hand-in-Hand and other initiatives in Africa such as the Sustainable Wildlife Programme and the African Forestry and Wildlife Action Programme.
- 6 Implement training of trainers program.** In conjunction with trainings, potential in-country national trainers will be identified from the first cohort of trained professionals. These professionals, if interested, will be trained to become the future trainers in order to create sustainable capacity within Africa for this program.

In the first year, the OH competencies needs assessment will be implemented in 10 countries and it will be completed in the second year along with the development of the comprehensive biodiversity, ecosystem, forestry and wildlife training curriculum. OH capacity development activities for natural resource management professionals will be implemented in years 3–5. Ultimately, this program will reduce the risk for pandemic disease emergence at the most important human-wildlife-livestock-ecosystem interfaces.

Expected results

- 1 An inclusive national OH competencies needs assessment completed for 20 countries.**
- 2 A comprehensive biodiversity, ecosystem, forestry and wildlife curriculum developed for natural resource managers responsible for agriculture, forestry, wildlife, environment, livestock and land use, taking into consideration required OH competencies and knowledge gaps.**
- 3 Training program implemented to prevent pandemics and address priority OH issues relevant to ministries of health and agriculture, veterinary services, forestry, wildlife, and environment. The training focuses on addressing drivers of disease emergence and pandemic risk factors and fills gaps in OH programming specifically aiming to increase engagement and capacity of in-service natural resource, forest and wildlife managers.**
- 4 A One Health capacity monitoring and evaluation framework is consultatively developed based on**



established indicators and tracks progress as well as evaluating capacity of natural resource managers.

- 5 A training of trainers program established to ensure sustainability of the in-service training for natural resource management professionals.
- 6 Capacity of public and private professionals working in the environmental and related natural resource management sectors is improved to safeguard and restore biodiversity, natural habitats and ecosystems through joint training at national and regional levels with the goal of preventing and mitigating spillover of pathogens across the human-wildlife-livestock interfaces.

Programme links

This work is linked to FAO's Hand-in-Hand Initiative, Food Systems Transformation, Sustainable production intensification and value chain development in Africa, food safety and the innovation Programme. On the forestry side, this work is linked to the African Forestry and Wildlife Commission (AFWC) 22nd Session recommendations and action program, FAO's strategy and recommendations of the Africa multi-stakeholder dialogue on mainstreaming biodiversity across agricultural sectors, the Sustainable Wildlife Management Program, the African Forest Landscape Restoration Initiative (AFR100), Africa' Great Green Wall and the United Nations decades on ecosystem restoration and family farming. On the animal and public health side, this work is linked to the tripartite OH strategy, OH training course at the human-wildlife-livestock-ecosystem interface, making food and agriculture more sustainable, the Global Early Warning Systems (GLEWS), Emergency Prevention System for Animal Health (EMPRES-AH), anti-microbial resistance (AMR) and food safety, Farmer and Pastoralist Field Schools, OH platforms,

steering committees and national action plans, Africa Sustainable Livestock 2050, and broader development investment programs including achieving Sustainable Development Goals and Malabo commitments.

Country focus

Twenty low-middle income countries with:

- high risks of interaction between wildlife, livestock and people.
- Degraded or at-risk ecosystems (deforestation) that have the potential for restoration and conservation or sustainable management.
- Dependency on wild meat as a protein-source food and live animal markets.
- OH programs that may not properly engage ministries of forestry, wildlife and environment.
- Member countries of AFWC and AFR100

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