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FAO ACTIVITIES ON BIODIVERSITY FOR FOOD AND AGRICULTURE FOR FOOD SECURITY, NUTRITION AND HUMAN HEALTH

TABLE OF CONTENTS

		Paragraphs
I.	Introduction	1–4
II.	FAO activities on biodiversity for food and agriculture and food security and nutrition	5–29
III.	FAO activities on biodiversity for food and agriculture and human health	
IV.	Developments in other fora	57–71

I. INTRODUCTION

1. In reviewing its Multi-Year Programme of Work (MYPOW), at its Sixteenth Regular Session, in 2017, the Commission on Genetic Resources for Food and Agriculture (Commission) took note of the many interactions that take place between agricultural production, biodiversity for food and agriculture (BFA) and human health, beyond direct effects on nutrition.¹ It added to the MYPOW the development of a concept note on BFA and human health for consideration at its Eighteenth Regular Session. It also added the issue of health to its workstream on nutrition.²

2. At its Seventeenth Regular Session, the Commission decided that the agenda for its Nineteenth Regular Session should include a review of work on biodiversity and nutrition and health.³

3. A report on activities and a concept note on BFA and health were provided to the Commission at its Eighteenth Session.⁴ A detailed report on FAO activities was provided in the information document *FAO activities on biodiversity for food and agriculture for food security, nutrition and human health.*⁵ At its Eighteenth Regular Session, the Commission noted the importance of the "One Health" approach and other holistic approaches to the achievement of the 2030 Agenda for Sustainable Development and the related Sustainable Development Goals (SDGs)⁶ and requested FAO to consider the contribution of BFA and genetic resources for food and agriculture (GRFA) to nutrition and the "One Health" approach, based on scientific evidence and within FAO's mandate.⁷

4. This document provides an overview of FAO activities addressing the links between BFA and GRFA, food security and nutrition and human health. It updates the information provided to the Commission at its Eighteenth Regular Session.

II. FAO ACTIVITIES ON BIODIVERSITY FOR FOOD AND AGRICULTURE AND FOOD SECURITY AND NUTRITION

5. In the FAO Strategic Framework 2022–31 and the Organization's Programme of Work and Budget 2022–23 the "better nutrition" aspiration aims to end hunger and achieve food security and improved nutrition in all its forms, including by promoting nutritious food and increasing access to healthy diets. It includes five programme priority areas (PPAs): healthy diets; nutrition for the most vulnerable; safe food; food loss and waste; and markets and trade.⁸ Nutrition is recognized as a key technical theme of a cross-cutting nature. FAO's Governing Bodies have requested a dedicated cross-organizational strategy on nutrition, with specific accountability to Members.

Vision and Strategy of FAO's Work in Nutrition

6. The Vision and Strategy of FAO's Work in Nutrition, adopted at the 166th Session of the FAO Council,⁹ which takes an agrifood systems approach and aims to guide and support the Organization in its mission to raise levels of nutrition,¹⁰ addresses the relationship between nutrition and biodiversity. This relationship is highlighted, in particular, under the Strategy's Action Areas 1 and 2¹¹ and its Action Area 5.¹²

Healthy diets

7. Actions that ensure healthy diets from sustainable food systems have huge potential to contribute to the achievement of SDGs such as ending hunger and malnutrition in all its forms,

¹ CGRFA-16/17/22, paragraph 26.

² CGRFA-16/17/Report Rev.1, Appendix C; CGRFA-17/19/Report, Appendix F, Annex 1.

³ CGRFA-17/19/Report, Appendix F, Annex 1.

⁴CGRFA-18//21/2.

⁵ CGRFA-18/21/2/Inf.1.

⁶ CGRFA-18/21/Report, paragraph 13.

⁷ CGRFA-18/21/Report paragraph 14.

⁸ C 2021/3, Figure 1.

⁹ CL 166/REP paragraph 24.b.

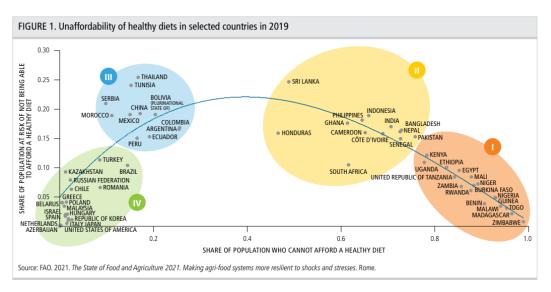
¹⁰ PC 130/5 Rev.1.

¹¹ PC 130/5 Rev.1, paragraph 26.

¹² PC 130/5 Rev.1, paragraph 29.

promoting healthy lives and wellbeing for all, reducing inequalities, combating climate change and its impacts, protecting biodiversity and enhancing sustainable consumption and production.

8. Although many factors influence good nutrition, healthy diets are a prerequisite. Such diets are adequate, safe, diverse and balanced in terms of quantity and quality. However, healthy diets are unaffordable to a large part of the global population.¹³



9. FAO pledged to expand and enhance support for better nutrition and healthy diets for all at the Tokyo Nutrition for Growth Summit in 2021.¹⁴ FAO is committed to including the objective of enabling access to healthy diets as a priority in 90 percent of new action plans related to agrifood systems, including action plans for biodiversity, climate change, and science and technology. FAO is also committed to making 87 percent of its projects across agrifood systems nutrition-sensitive by 2025, including those that support biodiversity. This percentage will be maintained or increased over the period to 2030. The commitment is monitored through FAO's Nutrition Marker¹⁵ and is aligned with key performance indicator 3.A of the Vision and Strategy for FAO's Work in Nutrition.¹⁶

10. In 2021, FAO published Climate change, biodiversity, and nutrition nexus - Evidence and emerging policy and programming opportunities,¹⁷ a paper that identifies entry points within agrifood systems for improving biodiversity and diets - two levers that can be used to enhance nutrition and optimize environmental sustainability while ensuring social equity, especially for the most vulnerable people. It also presents recommendations for concrete actions by key stakeholders – governments, academia, civil society, the private sector and development partners – to build resilient, inclusive and sustainable agrifood systems.

In July 2022, FAO and the Centre de coopération internationale en recherche agronomique 11. pour le développement (CIRAD) co-organized an international conference on geographical indications (GIs)¹⁸ that brought together more than 200 researchers, policymakers and practitioners.¹⁹ A number of sessions addressed the topic of biodiversity and how GIs could be used for biodiversity conservation and help maintain traditional farming systems that allow habitats conducive to biodiversity to be maintained. The need for more research on this was noted.

- ¹⁴ https://www.fao.org/newsroom/detail/fao-pledges-upscaled-support-for-better-nutrition/en
- ¹⁵ FAO's Nutrition Marker: Guidance Note.

¹³ FAO, IFAD, UNICEF, WFP& WHO, 2020. The State of Food Security and Nutrition in the World 2020. Transforming food systems for affordable healthy diets. Rome, FAO. https://doi.org/10.4060/ca9692en

¹⁶ PC 130/5 Rev.1. Table 2 Key performance indicators 3.B.

¹⁷ FAO. 2021. Climate change, biodiversity and nutrition nexus – Evidence and emerging policy and programming opportunities. Rome. https://doi.org/10.4060/cb6701en ¹⁸ https://gi2021.sciencesconf.org/?forward-action=index&forward-controller=index&lang=en

¹⁹ https://gi2021.sciencesconf.org/browse/author

Monitoring and indicators

12. The High Level Panel of Experts on Food Security and Nutrition of the Committee on World Food Security (CFS), in its 2022 report, highlighted issues and options for data collection and analysis tools for food security and nutrition.²⁰

13. Robust indicators for sustainable healthy diets are critical for understanding trends, setting targets and monitoring progress at national and subnational levels. A recent FAO review²¹ concluded that research in this field is characterized by geographical imbalances, a narrow focus on health and environmental aspects and a lack of common measures. Measures registries could help stakeholders select appropriate indicators.

14. FAO, in collaboration with INFOODS, has developed the FAO/INFOODS Food Composition Database for Biodiversity (BioFoodComp). The database is a compendium of scrutinized analytical data (without any additional estimations, imputation or calculation of missing values). The latest version of the database (version 4.0) compiles composition values for foods at within-species level (i.e. variety/cultivar/breed level) and for wild and underutilized foods.²² It contains data on 10 156 foods, of which 3 118 (31 percent) are identified as wild plant and animal foods (belonging to more than 1 200 species).²³

15. World Agroforestry recently established the Priority Food Tree and Crop Composition database,²⁴ which includes many wild foods, for example baobab, desert date (*Balanites*) and wild spinach (amaranth)

16. "Digital sequence information" ("DSI") on GRFA contributes to food security and nutrition in that it is a fundamental tool for characterizing GRFA, breeding (including optimization for environmental contexts), creating new products and improving food safety. It contributes to databases and plays a fundamental role in environmental and biological research. For example, genebank accessions in the CGIAR are being assessed for nutritional traits. The use of high-throughput DNA-based sequencing methods, coupled with new developments in bioinformatics, allows the identification and characterization of the microbes within the body and their genes (the microbiome). "DSI" built by metabarcoding soil microbiota might help to improve food security and nutrition, either via direct supplementation with specific kinds of microbes or through the use of amendments that alter the soil microbial community. More examples can be found in Background Study Paper No. 68.²⁵

Awareness raising

17. International years and days are important opportunities to raise awareness about agricultural production systems and specific foods. In 2019, the United Nations General Assembly, at its 74th Session, designated 2021 as the International Year of Fruits and Vegetables. In 2021, at its 75th session, it declared 2023 the International Year of Millets.²⁶ 2024 had already, in 2017, been declared the International Year of Camelids. World Pulses Day is celebrated on 10 February.

²⁰ HLPE. 2022. Data collection and analysis tools for food security and nutrition: towards enhancing effective, inclusive, evidence-informed, decision making. A report by the High Level Panel of Experts on Food Security and Nutrition of the Committee on World Food Security. Rome. https://www.fao.org/3/cc1865en/cc1865en.pdf
²¹ Harrison, M.R., Palma, G., Buendia, T., Bueno-Tarodo, M., Quell, D. & Hachem, F. 2022. A scoping review of indicators for sustainable healthy diets. Frontiers in Sustainable Food Systems, 5: 822263. https://doi.org/10.3389/fsufs.2021.822263

²² FAO. 2017. *FAO/INFOODS Databases. Food composition database for biodiversity version 4.0 – BioFoodComp4.0. User guide.* Rome. https://www.fao.org/3/i7364e/i7364e.pdf

²³ The database and user guide are accessible at https://www.fao.org/infoods/infoods/tables-and-databases/faoinfoods-databases/en

²⁴ Stadlmayr, B., McMullin, S. & Jamnadass, R. 2019. *Priority Food Tree and Crop Food Composition Database: a user guide*. Version 1. Nairobi, World Agroforestry; see also http://apps.worldagroforestry.org/products/nutrition/

²⁵ Heinemann, J.A., Coray, D.S. & Thaler, D.S. 2018. *Exploratory fact-finding scoping study on "digital sequence information" on genetic resources for food and agriculture.* Background Study Paper No. 68. Commission on Genetic Resources for Food and Agriculture. Rome. FAO.

²⁶ https://www.fao.org/millets-2023/en

Support to countries

18. FAO helps countries to develop capacities to evaluate and monitor food security and nutrition situations, analyse options and implement agrifood systems policies and programmes that improve nutrition. It provides tools, guidance and support for efforts to scale up nutrition education and consumer awareness raising at national and local levels.

19. Under the Vision and Strategy for FAO's Work in Nutrition, FAO has committed itself to improving the nutritional awareness, literacy and expertise of all personnel at headquarters and at decentralized offices in order to strengthen its work in this field. This includes support for efforts to make use of entry points across the Organization's portfolio, including in its work on the conservation and use of biodiversity, to improve nutrition outcomes by enabling healthy diets for all.²⁷

20. In 2021, only 45 percent of FAO country offices reported having sufficient nutrition expertise to fully realize FAO's ambitious vision for nutrition. This highlighted the critical need to strengthen capacities to support positive nutrition outcomes at country level. Similarly, 62 percent of country offices indicated that they did not have sufficient human resources to oversee all biodiversity-related work.²⁸

21. In 2022, FAO implemented 336 projects that target nutrition as a principal objective and 915 that target it as a significant objective.²⁹ FAO assisted 35 countries with the development or revision of their food-based dietary guidelines and 30 countries with the development of school food and nutrition programmes.³⁰ One-hundred and eighty-three projects target biodiversity as a principal objective. A lower, but substantial, number of projects have been tagged as combining both biodiversity and nutrition.

Table 1: Number of FAO projects with biodiversity and nutrition markers operationally active or in final consultation in 2022

	Biodiversity as principal objective	Biodiversity as significant objective
Nutrition as principle objective	30	99
Nutrition as significant objective	66	291

Source: FAO Field Programme Management Information Systems (FPMIS) delete.

22. The Global Environment Facility (GEF) is funding an increasing number of national and regional projects with FAO involvement. In 2022, with the aim of maximizing nutrition sensitivity in investments and programming within GEF's eighth replenishment cycle (GEF-8), FAO convened a stocktaking exercise that highlighted best practices in GEF-6 and GEF-7 projects. It provided a list of potential entry points that could be considered in GEF's project design to ensure nutrition gains are achieved as co-benefits. Beyond the nutritional benefits of improved access to safe and nutritious foods as part of healthy diets, a nutrition-sensitive approach in GEF-8 programming could minimize potential trade-offs across activities, create business opportunities, increase the incomes of vulnerable communities and ultimately support environmental protection. The review of the GEF projects was based on a theory of change developed in the context of a FAO recent publication on the nexus of climate change, biodiversity and nutrition,³¹ whereby biodiversity and healthy diets are identified as two levers that can simultaneously deliver both nutritional and environmental benefits. FAO and the International Fund for Agricultural Development (IFAD) are now leading the GEF-8 Food Systems Integrated Programme.

²⁷ PC 130/5 Rev.1. Table 2 Key performance indicators 1.A and 1.B.

²⁸ Country Annual Reports (CARs) 2021.

²⁹ FAO Field Programme Management Information Systems (FPMIS).

³⁰ CFS 2021/49/6.

³¹ FAO. 2021. *Climate change, biodiversity and nutrition nexus – Evidence and emerging policy and programming opportunities.* Rome. https://doi.org/10.4060/cb6701en

23. In the Plurinational State of Bolivia, the GEF project Conservation and Sustainable Use of Agro-biodiversity to Improve Human Nutrition in Five Macro Eco-regions seeks to investigate the nutritional composition of Bolivian crop and plant species and increase the availability and accessibility of data on this, with the ultimate objective of improving human nutrition.^{32.}The Government of Peru implemented the GEF project³³ Sustainable Management of Agro-Biodiversity and Vulnerable Ecosystems Recuperation in Peruvian Andean Regions through Globally Important Agricultural Heritage Systems (GIAHS) Approach (2019–2022). This project contributed to the development of markets for agriculture biodiversity products to support conservation and sustainable use and local rural livelihoods. By promoting the marketing of food from diverse components of agrobiodiversity and improving income generation among smallholder farmers, the project also improved food security and nutrition for its beneficiaries.

Indigenous Peoples' food systems

24. In 2021, FAO released the book *Indigenous Peoples' food systems: Insights on sustainability and resilience from the front line of climate change.*³⁴ This publication provides an overview of Indigenous Peoples' food systems in terms of natural-resources management, access to markets, diet diversity, governance systems and links to traditional knowledge and indigenous languages.

25. During the UN Food Systems Summit, the Global-Hub on Indigenous Peoples' Food Systems³⁵-coordinated the drafting of the *White/Wiphala paper on Indigenous Peoples' food systems*,³⁶ which led to the creation of the Coalition on Indigenous Peoples' Food Systems. The Coalition was officially launched in October 2022, with FAO acting as its secretariat.³⁷

26. The publication *Labelling and certification schemes for Indigenous Peoples' foods*³⁸ – *Generating income while protecting and promoting Indigenous Peoples' values* was released in 2022 and analyses the potential for Indigenous Peoples to use labelling and certification schemes to market their food products. Specifically, it looks at schemes designed by, with and for Indigenous Peoples that can provide economic, social and environmental benefits while protecting and promoting Indigenous Peoples' unique values.

Role of the microbiome in human, animal and ecosystem health

27. FAO has further developed its work on the roles of microbiomes in human, animal and ecosystem health and on the roles of the gut microbiome and diet-related factors in the rapidly emerging diet-related non-communicable diseases epidemic.³⁹ It has published a study of how factors in agriculture and agrifood systems, including climate change, affect the soil microbiome and vice versa⁴⁰ and a paper on microbiome-related research and innovation in support of nutrition and the bioeconomy.⁴¹ Reviews of the scientific literature on how regulated substances, such as pesticides and veterinary drug residues, and contaminants, such as microplastics, affect the gut microbiome will be

³² https://www.thegef.org/projects-operations/projects/4577

³³ https://www.thegef.org/projects-operations/projects/9092

³⁴ FAO & Alliance of Bioversity International and CIAT. 2021. *Indigenous Peoples' food systems: Insights on sustainability and resilience in the front line of climate change*. Rome. https://doi.org/10.4060/cb5131en ³⁵ http://www.fao.org/indigenous-peoples/global-hub/en/

³⁶ FAO. 2021. The White/Wiphala Paper on Indigenous Peoples' food systems. Rome.

https://doi.org/10.4060/cb4932en

³⁷ https://www.fao.org/indigenous-peoples/news-article/en/c/1617890

³⁸ FAO & Alliance of Bioversity and CIAT 2022. *Labelling and certification schemes for Indigenous Peoples' foods – Generating income while protecting and promoting Indigenous Peoples' values.* Rome. https://doi.org/10.4060/cc0155en

 ³⁹ FAO. 2019. *Microbiome: The missing link?* Rome. http://www.fao.org/3/ca6767en/CA6767EN.pdf
 ⁴⁰ Kendzior, J., Warren Raffa, D. & Bogdanski, A. 2022. *The soil microbiome: a game changer for food and agriculture – Executive summary for policymakers and researchers*. Rome, FAO. https://doi.org/10.4060/cc0717en

⁴¹ Callens, K., Fontaine, F., Sanz, Y., Bogdanski, A., D'Hondt, K., Lange, L., Smidt, H. *et al.*, 2022. Microbiome-based solutions to address new and existing threats to food security, nutrition, health and agrifood systems' sustainability. *Frontiers in Sustainable Food Systems*, 6: 1047765. https://doi.org/10.3389/fsufs.2022.1047765

published in the first half of 2023. A similar review is under way for food additives and the gut microbiome, and a paper on the role of microbiome science in the prevention of all forms of malnutrition and non-communicable diseases is also being prepared.

28. FAO's work includes stakeholder dialogues through a global learning network (GLN) that build and sustain partnerships with multiple stakeholders. It prepared a science and innovation story on "The microbiome: our unseen ally in agrifood systems transformation".⁴² At the Science and Innovation Forum (Rome, October 2022),⁴³ a side event, "Microbiome research for a sustainable, healthy and safe food system", was organized by MicrobiomeSupport (a consortium led by the Austrian Institute of Technology under the European Union's Horizon 2020 research and innovation programme), which is a collaborator of the GLN. A video was prepared for the forum website.⁴⁴

29. FAO contributed to a documentary movie, "Microbiomes in our daily life", produced by the Microbiome Support Initiative.⁴⁵ It designed and facilitated multistakeholder dialogues on Transforming Agrifood Systems: Microbiome Science and Innovation meet Policy and Practice, Human Nutrition and Health (July 2022), and Agrifood Production and Plant Health (September 2022). It also contributed to conferences such as the MicrobiomeSupport Final Conference (Brussels, Belgium, 27–29 June 2022).

III. FAO ACTIVITIES ON BIODIVERSITY FOR FOOD AND AGRICULTURE AND HUMAN HEALTH

The One Health approach

30. One Health is central to FAO's agenda, as illustrated by the One Health PPA of the FAO Strategic Framework (2022–31). FAO promotes One Health as a key part of the sustainable transformation of the agrifood sector and global health security under the "better production" aspiration. The One Health PPA aims to strengthen national and international integrated One Health systems for human, animal, plant and environmental health by improving pest control, disease prevention and early warning and management of national and global health risks, including those related to antimicrobial resistance (AMR), and by addressing upstream drivers of the emergence of One Health threats, such as land-use change, climate change and loss of biodiversity.⁴⁶

31. In 2021, as part of efforts to mainstream the One Health approach, FAO established an internal coordination mechanism through the One Health Technical Working Group (OH-TWG), involving 18 divisions and decentralized offices across the Organization and expertise on, *inter alia*, plants, forestry, soil, water, food safety, livestock, legal issues and wildlife.

32. FAO also contributes to efforts to improve global health security by collaborating with the World Health Organization (WHO), the World Organisation for Animal Health (WOAH, founded as OIE) and the United Nations Environment Programme (UNEP). This collaboration addresses health challenges at the animal–human–ecosystems interface through multisectoral, multidisciplinary and transnational work at local, national, regional and global levels in the context of the One Health approach.⁴⁷

33. In 2021, FAO took the rotating chair of the so-called Tripartite (FAO, WHO and WOAH) until March 2022. At its annual executive meeting in March 2022, the Tripartite signed a memorandum of understanding with UNEP to formally establish the "Quadripartite", underscoring the importance of environmental health to efforts to ensure optimal health for humans, animals and plants.

⁴² https://www.fao.org/science-technology-and-innovation/resources/stories/the-microbiome-our-unseen-ally-in-agrifood-systems-transformation/en

⁴³ https://www.fao.org/science-technology-and-innovation/science-innovation-forum/en

⁴⁴ https://www.youtube.com/watch?v=hj2xqzmD2aM

⁴⁵ https://www.microbiomesupport.eu/documentary-movie/

⁴⁶ C 2021/3.

⁴⁷ Memorandum of Understanding between FAO and OIE and WHO and UNEP regarding cooperation to combat health risks at the animal–human–ecosystems interface in the context of the "One Health" approach and including antimicrobial resistance. https://www.fao.org/3/cb9403en/cb9403en.pdf

34. In December 2021, the One Health High Level Expert Panel (OHHLEP), with the support of the Quadripartite (the Tripartite and UNEP at the time), published the following definition of One Health:⁴⁸ "One Health is an integrated, unifying approach that aims to sustainably balance and optimize the health of people, animals and ecosystems. It recognizes the health of humans, domestic and wild animals, plants, and the wider environment (including ecosystems) are closely linked and inter-dependent. The approach mobilizes multiple sectors, disciplines and communities at varying levels of society to work together to foster well-being and tackle threats to health and ecosystems, while addressing the collective need for clean water, energy and air, safe and nutritious food, taking action on climate change, and contributing to sustainable development."

35. The Quadripartite published the One Health Joint Plan of Action (OH JPA) in October 2022.⁴⁹ The OH JPA offers a set of activities that aim to strengthen collaboration, communication, capacity building and coordination across all sectors involved in addressing health concerns at the human– animal–plant–environment interface. Its Action Track 6 focuses on One Health and the environment and aims to "Protect and restore biodiversity, prevent the degradation of ecosystems and the wider environment to jointly support the health of people, animals, plants and ecosystems, underpinning sustainable development." The Quadripartite is currently developing a guide to support the implementation of the OH JPA at regional and country levels.

36. To facilitate uptake and implementation of the OH JPA through the United Nations Sustainable Development Cooperation Framework, FAO led the development of a guide for country teams in collaboration with other Quadripartite partners. FAO has developed a One Health monitoring tool (OHMT) that assesses and measures the progress of One Health at regional and national levels.⁵⁰ It establishes countries profiles that will help countries find and address One Health gaps. The OHMT has been linked to all six action tracks of the OH JPA.

37. The 166th Session of the Council "welcomed FAO's One Health work, including the positive collaboration within the Tripartite and UNEP and their work to develop reporting mechanisms and a joint strategy and joint work plan on One Health". The need to develop a joint vision for One Health, including a joint work plan, was reinforced by the World Health Assembly's call, under resolution WHA74.7, to build on and strengthen existing cooperation between FAO, WHO, UNEP and WOAH.

38. The Programme Committee, at its 133 meeting, welcomed the enhanced coordination of One Health activities through the Quadripartite and stressed the importance of collaboration between FAO and the other Quadripartite partners.⁵¹ It took note of the development of the OH JPA⁵² by the Quadripartite under FAO's leadership.

39. In 2022, with FAO as chair, the Quadripartite conducted the One Health Intelligence Scoping Study⁵³ and recommended that immediate actions be taken to develop a global One Health Intelligence System (OHIS). This was endorsed in October 2022 in the G7 Roadmap for Practical Cooperation to Advance the G7 Act for Pandemic Readiness. The global OHIS would establish a framework for linking diverse data on disease events across a range of sectors and the contextual data that is needed for rapid risk assessments and early warning of One Health threats, including threats to biodiversity. A short-term development case study has already been put in motion with the inclusion of UNEP in the joint FAO–WOAH–WHO Global Early Warning System for health threats and emerging risks at the human–animal–ecosystems interface (GLEWS+). This will bring the environmental dimension into early-warning activities.

⁴⁸ WHO. 2021. *Tripartite and UNEP support OHHLEP's definition of "One Health"*. Joint Tripartite (FAO, OIE, WHO) and UNEP Statement. Geneva, Switzerland. https://www.who.int/news/item/01-12-2021-tripartite-and-unep-support-ohhlep-s-definition-of-one-health

 ⁴⁹ FAO, UNEP, WHO & WOAH. 2022. One Health Joint Plan of Action (2022–2026). Working together for the health of humans, animals, plants and the environment. Rome. http://www.fao.org/3/cc2289en/cc2289en.pdf
 ⁵⁰ https://www.fao.org/kenya/news/detail-events/en/c/1512532/

⁵¹ CL 170/11, paragraph 14d, c.

⁵² PC 133/3.

⁵³ FAO, UNEP, WHO & WOAH. 2022. *Quadripartite on health intelligence scoping study*. Rome. https://www.who.int/publications/m/item/quadripartite-one-health-intelligence-scoping-study

40. FAO and WOAH established a joint scientific network on animal influenza (OFFLU) to share technical advice, training and veterinary expertise with the organizations' members and with other international organizations to assist them in the prevention, diagnosis, surveillance and control of animal influenza and to exchange scientific data and biological materials (including virus strains) within the network, analyse such data and share them with the wider scientific community.

41. Global and regional Quadripartite and multisectoral collaboration mechanisms are in place to facilitate the implementation of One Health strategies and action plans. In collaboration with WHO and WOAH, FAO participates in capacity assessments of health systems, for example using standardized global tools such as the Joint External Evaluation and the Performance of Veterinary Services, and helps countries to build capacities based on the findings of such assessments through a One Health approach.

42. In 2019, FAO, WHO and WOAH published *Taking a multisectoral, One Health approach: A Tripartite guide to addressing zoonotic diseases (TZG) in countries*, ⁵⁴ which provides standard guidance and best practices for addressing zoonotic diseases and other health threats at the humananimal–environment interface. To further support countries with operational approaches, a suite of operational tools has been developed, and more are under development. FAO led the development of the Surveillance and Information Sharing Operational Tool (SIS OT)⁵⁵ to support countries in establishing and strengthening coordinated multisectoral surveillance systems and information-sharing mechanisms related to zoonotic diseases. To further support the implementation of One Health, FAO supports the piloting and full-scale roll-out of these tools as well as training programmes such as the updated training course "One Health at the wildlife-livestock-human-ecosystem interface: An introductory One Health short course".

43. FAO and the EcoHealth Alliance (EHA) organized an online technical expert meeting on reducing emerging infectious diseases risks through forest ecosystem health on 18 and 19 March 2021, which included a session on the role of wildlife. The results of this meeting and a further study by EHA led to the joint drafting of the policy brief *How natural resource management sectors can contribute to reducing emerging infectious diseases: the example of forest ecosystems*,⁵⁶ which was published on One Health Day (3 November) 2022. The policy brief provides recommendations directed at national government authorities in charge of natural-resources management, FAO governing bodies related to agriculture and forestry, and other relevant stakeholders, including those in charge of wildlife management.

44. Additionally, FAO produced a series of policy briefs in response to the global COVID-19 pandemic, including on biodiversity loss, habitat destruction and wild-meat consumption,⁵⁷ which were launched on World Environment Day 2020. A white paper,⁵⁸ *Build back better in a post-COVID-19 world: reducing future wildlife-borne spillover of disease to humans,* and an associated policy brief⁵⁹ were launched at the Global Landscape Forum in September 2020.

45. Following a request from the 22nd Session of FAO's African Forestry and Wildlife Commission, FAO, the International Union for Conservation of Nature's (IUCN) Species Survival Commission and Oxford University completed ten case studies that highlight good practices in engaging with local communities and citizens to understand and address human–wildlife conflict

 ⁵⁴ WHO, FAO & OIE. 2019. Taking a Multisectoral, One Health Approach: A Tripartite Guide to Addressing Zoonotic Diseases in Countries. Geneva, Switzerland. http://www.fao.org/3/ca2942en/ca2942en.pdf
 ⁵⁵ WHO, FAO, & WOAH. 2022. Surveillance and Information Sharing Operational Tool. Geneva, Switzerland. https://apps.who.int/iris/rest/bitstreams/1458099/retrieve

 ⁵⁶ FAO. 2022. How natural management resource sectors can contribute to reducing emerging infectious diseases: the example of forest ecosystems – Policy brief. Rome. https://www.fao.org/3/cc2752en/cc2752en.pdf
 ⁵⁷ FAO. 2020. Global emergence of infectious diseases: links with wild meat consumption, ecosystem disruption, habitat degradation and biodiversity loss. Rome. https://doi.org/10.4060/ca9456en

⁵⁸ FAO, CIRAD, CIFOR & 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. Rome, FAO. https://doi.org/10.4060/cb1503en

⁵⁹ FAO, CIRAD, CIFOR & WCS. 2020. Sustainable Wildlife Management (SWM) Programme Policy Brief -Build back better in a post COVID-19 world: Reducing future wildlife-borne spillover of disease to humans. Rome. https://doi.org/10.4060/cb1490en

situations and improve coexistence. The first six case studies, which come from the Plurinational State of Bolivia, Guyana, India, Kenya and the United Republic of Tanzania, were published in 2022.⁶⁰ The remaining four case studies will showcase experiences from FAO's past projects in Mozambique and Zimbabwe, the TransKalahari Predator Programme in Zimbabwe and Botswana, and the International Institute for Environment and Development's work on insurance schemes in Kenya. They are expected to be released in 2023.

46. "Digital sequence information" ("DSI") is indispensable for One Health in that it is used in monitoring the evolution of pathogens to analyse existing/potential risks at the animal–human– ecosystems interface and ensure vaccine matching for high-impact pathogens. "DSI" plays a fundamental role in understanding molecular epidemiology and provides scientific evidence for risk analysis, risk assessment and risk communication. Timely sequencing and sharing of "DSI" directly contribute to the adoption of appropriate risk-mitigation measures, as demonstrated, for example, by the global response to the COVID-19 pandemic, the WHO Pandemic Influenza Preparedness Framework, various foot-and-mouth disease control efforts and rinderpest eradication.⁶¹

Support to countries

47. FAO's expertise on One Health and agrifood systems continues to gain attention, and in recognition of this FAO has been selected as one of the 13 implementing entities (IEs) for the Pandemic Fund, a G20 initiative that aims to build and strengthen capacities for prevention of, preparedness for, and response to, future pandemics. FAO is actively working with other IEs, namely WHO and the United Nations Children's Fund (UNICEF), as well as with the World Bank, to jointly support low- and middle-income countries in the formulation and implementation of Pandemic Fund projects.

48. FAO supports its Members in their efforts to improve the capacity of their health systems to prevent, prepare for and respond to health threats that emerge at the human–animal–environment interface, as well as the drivers of such threats, and build capacities in technical areas such as risk assessment, epidemiology, laboratory diagnostics, biosafety and biosecurity, AMR, early-warning and alert systems, food safety and associated emergency outbreak responses. FAO co-monitors various animal pathogens and continuously updates the EMPRES Global Animal Disease Information System (EMPRES-i)⁶² and GLEWS+. With FAO assistance, 47 countries have accelerated the implementation of national action plans on AMR by applying the FAO Progressive Management Pathway for AMR (FAO-PMP-AMR), legal methodology, etc. In 2022, FAO implemented 24 projects whose titles referred to One Health, 28 whose titles referred to AMR and 12 whose titles referred to zoonotic diseases.

49. One important initiative contributing to FAO's work on sustainable use and management of wildlife resources is the Sustainable Wildlife Management (SWM) Programme⁶³. This global partnership seeks a brighter future for people and wildlife by conserving biodiversity and improving food security. The SWM Programme's Legal Hub⁶⁴ has been launched and currently provides free online access to policy and legal texts and analytical legal country profiles related to all sectors influencing sustainable wildlife management in Chad, the Congo, the Democratic Republic of the Congo, Egypt, Gabon, Guyana, Mali, Madagascar, Senegal, Suriname, Sudan and Zimbabwe. Furthermore, five legal diagnostic tools have been produced to assess the level of transposition into national law of, among others, the Convention on Biological Diversity (CBD), the Nagoya Protocol and the Cartagena Protocol. This aims to facilitate an informed multistakeholder dialogue in each country to support policy and law reform processes that promote sustainable wildlife management.

⁶⁰ Plurinational State of Bolivia: https://www.fao.org/3/cc1155en/cc1155en.pdf ; Guyana:

https://www.fao.org/3/cb8760en/cb8760en.pdf; India: https://www.fao.org/3/cb8761en/cb8761en.pdf; India: https://www.fao.org/3/cc1156en/cc1156en.pdf; Kenya: https://www.fao.org/3/cc1152en/cc1152en.pdf; United Republic of Tanzania: https://www.fao.org/3/cb8759en/cb8759en.pdf.

⁶¹ See CGRFA-19/23/5.

⁶² http://empres-i.fao.org

⁶³ https://www.swm-programme.info

⁶⁴ https://www.swm-programme.info/legal-hub

50. The SWM Programme has provided ongoing support to policy and legal reforms on hunting (Madagascar), wild meat (Gabon) and wildlife (the Congo, the Democratic Republic of the Congo and Zimbabwe) through high-level advocacy, multidisciplinary analyses, provision of legal expertise and direct support to multistakeholder working groups. Two side events on cross-sectoral legal analyses and support to countries were held, one at the14th meeting of the Conference of the Parties to the Ramsar Convention, held in Geneva, Switzerland, and the other at the 15th meeting of the Conference of the Parties to the CBD, held in Montreal, Canada, both in 2022. The development of a new legal analysis tool focused on improving One Health operationalization capacities was initiated based on the legal needs identified by the SWM site teams working in Gabon, the Congo and Guyana.

Other partnerships

51. As mentioned above, all FAO's work on One Health is done in partnership with other organizations. The following paragraphs describe a few of FAO's other partnerships.

52. FAO was a member of the CBD–WHO Interagency Liaison Group on Biodiversity and Health (2015–2020)⁶⁵ and since its establishment in 2021 is a member of the WHO–IUCN Expert Working Group on Biodiversity, Climate, One Health and Nature-based Solutions.⁶⁶

53. FAO works on SWM through initiatives such as the Collaborative Partnership on Sustainable Wildlife Management (CPW).⁶⁷ The strategic approach of the CPW was revised in July 2022 and now focuses on five thematic objectives: (i) supporting countries to ensure the legal, sustainable and safe use and trade of wildlife; (ii) raising awareness of the links between sustainable use of wildlife, food security, livelihoods, culture and the integrity of landscapes; (iii) promoting the prevention, management and reduction of human–wildlife conflict and enhance coexistence; (iv) embedding the sustainable use and management of wildlife in the One Health agenda; and (v) advocating for sustainable and inclusive wildlife economies.

54. During the COVID-19 pandemic, the CPW released a joint statement⁶⁸ calling for a pragmatic, factual and science-based approach to the wildlife-management challenges that had arisen as a consequence of the pandemic. The statement put forward four guiding principles intended to promote actions that reduce the risk that new zoonotic will arise and spread, while also contributing to the conservation of species and ecosystems and to the preservation of the livelihoods of the diverse groups that rely on wildlife for their incomes and sustenance.

55. The Third CPW Wildlife Forum discussed how to move from theory towards the implementation of policies and actions on SWM. It also discussed opportunities related to specific targets and critical indicators needed to ensure that the harvest and use of wildlife, as well as the wildlife trade, are sustainable, legal and safe, and that the decline of biodiversity is halted by 2030. The main outcomes are included in the synthesis report of the forum,⁶⁹ which was submitted to the third meeting of the CBD's Open-ended Working Group on the Post 2020 Global Biodiversity Framework, held in March 2022.

56. FAO, in collaboration with the Secretariat of the International Plant Protection Convention (IPPC), facilitated the implementation of the International Year of Plant Health in 2020.⁷⁰ In 2022, FAO and IPPC organized the first International Plant Health Conference,⁷¹ Protecting Plant Health in

⁶⁵ https://www.cbd.int/health/ilg-

health/#:~:text=The%20Interagency%20Liaison%20Group%20(ILG,Programme%20on%20Biodiversity%20and %20Health; https://www.who.int/news/item/01-01-2020-biodiversity-and-health-the-who-cbd-joint-work-programme

⁶⁶ https://www.who.int/news/item/30-03-2021-who-iucn-expert-working-group-biodiversity; see also CBD/SBSTTA/24/INF/26.

⁶⁷ http://www.fao.org/forestry/wildlife-partnership/en

⁶⁸ FAO. 2020. *The COVID-19 challenge: zoonotic diseases and wildlife*. October 2020 Joint CPW Statement. Rome. https://www.fao.org/3/cb1163en/CB1163EN.pdf

⁶⁹ https://s3.amazonaws.com/cbddocumentspublic-imagebucket-

¹⁵w2zyxk3prl8/afda445b0ffb5a4e7e6e330d21ff0bcf

⁷⁰ A/RES/73/252.

⁷¹ https://www.agiitoevents.com/event/a6e37cb4-c5a0-4a97-bafe-82a7d6ee4bd5/summary

a Changing World, and the International Workshop on Reducing the Introduction of Pests through the Sea Container Pathway.⁷²

IV. DEVELOPMENTS IN OTHER FORA

Food Systems Summit

57. In September 2021, the Secretary-General of the United Nations convened the UN Food Systems Summit (FSS) as part of the Decade of Action to achieve the SDGs by 2030. The FSS and its preparatory process provided an opportunity to highlight the important role that biodiversity plays in underpinning ecosystem functions and services that are essential for the productivity and sustainability of food systems. The following five action areas emerged from the FSS process to help inform the transitions needed to realize the vision of the 2030 Agenda:

- (1) Nourish All People;
- (2) Boost Nature-based Solutions;
- (3) Advance Equitable Livelihoods, Decent Work and Empowered Communities;
- (4) Build Resilience to Vulnerabilities, Shocks and Stresses; and
- (5) Accelerating the Means of Implementation.

58. The Rome-based Agencies – FAO, IFAD and the World Food Programme – jointly lead a coordination hub that collaborates with, and draws upon, wider UN system capacities to support follow-up to the FSS. The hub collaborates with UN resident coordinators and UN country teams. In 2023, the Secretary-General will convene, at FAO, a global stock-taking meeting to review progress in implementing the outcomes of this process and its contributions to the 2030 Agenda.

59. The School Meals Coalition was launched at the FSS. More than 60 countries from the global North and South, along with more than 60 partners (including UN agencies, NGOs, think tanks and academic partners), came together to improve and restore school meals programmes as a transformational platform for food and education systems. School meals programmes do more than provide food, particularly when they are linked to other health and nutrition interventions that further contribute to children's growth, development and learning, such as food education, deworming and access to water and sanitation. Integrated school health and nutrition programmes are one of the most impactful and efficient ways of supporting the growth and development of schoolchildren and adolescents. They help to combat child poverty, hunger and malnutrition in all its forms. They attract children to school and support children's learning and long-term health and well-being. School meal programmes can also serve as springboards for the transformation of food systems. Where possible, they should use locally grown food, supporting national and local markets and food systems, improving opportunities for smallholder farmers and local catering businesses, many of which are led by women. Through such school feeding programmes, governments can also promote the use of products from a diverse range of components of agrobiodiversity in the school menus, as has been done for example in Brazil and Kenya.

60. The Coalition for Action on Healthy Diets from Sustainable Food Systems for Children and All brings UN Member States, UN agencies, civil society organizations, academic institutions and social movements to work towards a shared vision of a world where all people are eating healthy diets from sustainable food systems and to promote the growth and development of individuals, communities, and nations, today and into the future, while addressing climate change and biodiversity loss.

61. The Coalition was launched in May 2022. The following frontrunner countries, plus the European Commission, have joined the coalition: Brazil, Chile, Denmark, Ecuador, Ethiopia, Finland, Ghana, the Kingdom of the Netherlands, Nigeria, Norway, Slovenia, Sudan, Sweden, Switzerland, the United Arab Emirates and Yemen. Its secretariat consists of UN agencies (FAO, UNEP, UNICEF and WFP) and is supported by the UN Nutrition Secretariat, the Scaling Up Nutrition movement, the entities formerly leading the United Nations Forum on Sustainability Standards action tracks (GAIN,

⁷² https://www.ippc.int/en/core-activities/capacity-development/sea-containers/international-workshop-on-reducing-the-introduction-of-pests-through-the-sea-container-pathway

EAT, WWF, CARE, Club of Rome and Consumers International), food systems experts at the International Livestock Research Institute and the Centre for Food Policy, City, University of London, and youth representatives.

UN Decade of Action on Nutrition

The UN Decade of Action on Nutrition aims to accelerate implementation of the commitments of the Second International Conference on Nutrition (ICN2), achieve the global nutrition and diet-related non-communicable disease targets by 2025, and contribute to the realization of the SDGs by 2030. Detailed progress reports were provided to the CFS.⁷³

Committee on World Food Security

62. The Voluntary Guidelines on Food Systems and Nutrition (VGFSyN),⁷⁴ which were endorsed by the CFS in February 2021 at its 47th Session, recognize that enhancing BFA contributes to the sustainability and resilience of food systems and to safeguarding healthy diets for current and future generations. With support from UN Nutrition, FAO has developed an online dissemination platform of supporting evidence²⁵ to assist FAO Members and their stakeholders in the implementation of the VGFSyN. This platform includes UN-published documents that provide detailed guidance on the biodiversity-related recommendations of the VGFSyN.

63. FAO is actively promoting the use of the VGFSyN as a tool to support opportunities to build resilient, inclusive and sustainable agrifood systems, ensuring access to healthy diets from sustainable food systems through policies and programmes on food systems, climate, biodiversity and nutrition. Numerous events bringing together partners and stakeholders from different contexts around the world, including side events at the 49th and 50th Sessions of the CFS, have allowed robust exchanges of ideas and increased awareness of the potential of the VGFSyN.

Committee on Agriculture and its Subcommittee on Livestock

64. In October 2020, the 27th Session of the Committee on Agriculture (COAG) requested FAO "to produce a comprehensive, science and evidence-based global assessment of the contribution of livestock to food security, sustainable food systems, nutrition and healthy diets" (the Assessment).⁷⁶ The preparation of the Assessment is being overseen by COAG's newly established Sub-Committee on Livestock.

65. At its First Session in March 2022, the Sub-Committee reviewed the proposed approach, scope, content, timeline and stakeholder involvement of the Assessment and the progress that had been made in its implementation.⁷⁷ According to the proposed approach, the assessment would follow an agrifood systems approach and apply a One Health perspective to assess the economic, social and environmental sustainability dimensions linked to the 2030 Agenda for Sustainable Development. It would consist of four component documents that would be developed over a period of four years (2021–2024) and provide the basis for a synthesis document. The Sub-Committee welcomed the inclusive process used in the preparation of the first component of the Assessment and requested FAO to continue preparing the Assessment, with a view to presenting the other three component documents to subsequent sessions of the Sub-Committee. It encouraged Members to consider the impact of livestock policies, programmes and legislative frameworks on nutrition outcomes and to update national food-based dietary guidelines so that they adequately consider terrestrial animal source food (TASF) and specific nutrient requirements across the human life course.

⁷³ CFS 2021/49/6; CFS 2019/46/3; CFS 2017/44/INF/17.

⁷⁴ https://www.fao.org/cfs/vgfsn/en/%3f

⁷⁵ https://www.fao.org/evidence-platform-agri-food-systems-nutrition/en

⁷⁶ C 2021/21.

⁷⁷ COAG:LI/2022/2.

66. Component Document 1 of the Assessment⁷⁸ describes the world nutrition situation, dietary patterns and food systems in relation to TASFs. It comprehensively analyses the evidence on the nutrient and bioactive composition of TASFs and their importance in human nutrition, along with their effects on human health over life courses. Related policies, legal issues and regulations are analysed. The key findings⁷⁹ are based on a review of 123 food-based dietary guidelines from 94 countries, 79 policy documents from 60 countries relating to non-communicable diseases, and legislation, policies and programmes related to both food and agriculture and nutrition (35 documents). A specific section focuses on food safety and food-borne diseases related to TASFs at all stages of the supply chain, from producer to consumer. The document concludes by introducing relevant emerging topics. The key findings have been published in a brochure.⁸⁰

67. Also for the first session of the COAG Sub-Committee on Livestock, FAO produced an information document on reducing the spillover of wildlife-borne pathogens to domestic animals and humans.⁸¹

Convention on Biological Diversity

68. At its 15th meeting, the Conference of the Parties to the CBD addressed biodiversity and health. Decision CBD/COP/15/L.17 makes multiple references to the One Health and other holistic approaches. It invites the Quadripartite Alliance for One Health, the One Health High-Level Expert Panel and others to take into account the linkages between health and biodiversity and the need for the One Health approach, among other holistic approaches, while recognizing social determinants of health and socioeconomic inequities. The COP further invited the GEF, Parties to the CBD and others to consider providing support for mainstreaming biodiversity and health linkages. It requested the CBD Secretariat to produce an updated version of the draft global action plan for biodiversity and health, based on wide consultations, recognizing the issues of equity, including through the fair and equitable sharing of benefits arising from the utilization of genetic resources, and report back to the CBD's Subsidiary Body on Scientific, Technical and Technological Advice with a view to recommendations being made for consideration by the 16th meeting of the Conference of the Parties to the CBD. The question of the fair and equitable sharing of benefits arising from the utilization of genetic resources in relevant health sectors, and especially with respect to "DSI", remained unsolved in this decision. More details are given in the documents Shaping and assessing access and benefitsharing country measures⁸² and Digital sequence information: Prospects, challenges and policy developments.83

World Health Organization

69. The World Health Assembly resolution on pandemic preparedness calls for international actors to "strengthen partnerships, global coordination and cooperation in response to infectious diseases based on lessons learned from COVID-19 and previous public health emergencies of international concern and fostering a One Health, whole-of-society and health systems strengthening approach, including between WHO and relevant multilateral organizations …".⁸⁴

70. Access and benefit-sharing plays a role in the negotiations of a WHO convention, agreement or other international instrument on pandemic prevention, preparedness and response. More details are given in the document *Access and benefit-sharing for genetic resources for food and agriculture*.⁸⁵

⁷⁸ FAO. 2023. Contribution of terrestrial animal source food to healthy diets for improved nutrition and health outcomes – An evidence and policy overview on the state of knowledge and gaps. Rome, FAO. https://doi.org/10.4060/cc3912en

⁷⁹ FAO. 2022. Contribution of terrestrial animal source food to healthy diets for improved nutrition and health outcomes – Key messages. Rome. https://www.fao.org/3/cc0946en/cc0946en.pdf

⁸¹ COAG:LI/2022/INF/6.

⁸¹ COAG:LI/2022/INF/6.

⁸² CGRFA-19/23/4.2.

⁸³ CGRFA-19/23/5.

⁸⁴ A74/A/CONF./2.

⁸⁵ CGRFA-19/23/4.2.

United Nations Framework Convention on Climate Change

FAO supported the organization of a high-level Quadripartite event at the 27th meeting of the Conference of the Parties to the United Nations Framework Convention on Climate Change on how environmental challenges such as climate change can be tackled from a One Health perspective. The discussion delved into Action Track 6 of the OH JPA, focusing on how the environment sector could be better integrated into One Health implementation. FAO raised the need for the use of data on deforestation and biodiversity loss to apply the strong linkages to zoonotic diseases and spillover risks.

Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services

71. The seventh work programme of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) includes a thematic assessment of the interlinkages among biodiversity, water, food and health. The first external review of the chapters of this nexus assessment took place in early 2023.⁸⁶ A Workshop on Biodiversity and Pandemics was convened by IPBES in July 2020.⁸⁷

⁸⁶ https://ipbes.net/nexus

⁸⁷ IPBES. 2020. Workshop Report on Biodiversity and Pandemics of the Intergovernmental Platform on Biodiversity and Ecosystem Services. P. Daszak, C. das Neves, J. Amuasi, D. Hayman, T. Kuiken, B. Roche, C. Zambrana-Torrelio, *et al.* Bonn, Germany, IPBES secretariat. DOI:10.5281/zenodo.4147317 https://ipbes.net/sites/default/files/2020-

^{12/}IPBES%20Workshop%20on%20Biodiversity%20and%20Pandemics%20Report_0.pdf