联合国粮食及农业组织 | Food and Agriculture Organization of the United Nations | Organisation des Nations Unies pour l'alimentation et l'agriculture | Продовольственная и сельскохозяйственная организация Объединенных Наций | Organización de las Naciones Unidas para la Alimentación y la Agricultura | منظمة الأغذية والزراعة للأمم المتحدة

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COMMITTEE ON FORESTRY

Twenty-sixth Session

3-7 October 2022

Agriculture and forestry linkages

Executive Summary

At its 164th and 165th Sessions the FAO Council requested FAO "to showcase and promote existing and complementary practices between agriculture activities and the conservation, restoration and sustainable use of forests, avoiding deforestation and maintaining ecosystem services, noting that agriculture and forestry can synergistically support sustainable development".[i] It also suggested that the Committee on Forestry (COFO) "review the drivers of the expansion of agricultural land in light of sustainable forest management",[ii] and requested "strengthening coordination between COFO and COAG on cross-sectoral matters, and recommended that future papers dealing with inter-related issues between agriculture and forests be presented to both COFO and COAG".[iii]

This document is presented to the 28th Session of the Committee on Agriculture (COAG) and the 26th Session of COFO. It highlights opportunities for closer integration between the agriculture and forestry sectors in order to address global challenges, including ending hunger, halting deforestation, and combating climate change, land degradation and desertification, and biodiversity loss. Accelerated progress is essential, and one critical area for action is the need for a more integrated approach to agriculture and forestry, social and economic policies, and social protection in particular. Special attention will be given to Indigenous Peoples as right and knowledge holders, who are guardians of 80 percent of our planet's biodiversity and 11 percent of the world's forests[1].

Drawing on the latest evidence and data on land use change, this document provides an overview of the multiple linkages between the agriculture and forest sectors, including common challenges and opportunities. It stresses the need for a cross-sectoral approach and the importance of scaling up innovative approaches required to achieve transformation towards more sustainable agrifood systems, including forestry, to achieve the Sustainable Development Goals (SDGs), and highlights examples from relevant FAO initiatives.

[1] World Bank. 2008. *The Role of Indigenous Peoples in Biodiversity Conservation the Natural but Often Forgotten Partners*. Washington, D.C. Cited 19 September 2021. https://documents1.worldbank.org/curated/en/995271468177530126/pdf

Suggested action by the Committee

The Committee is invited to:

- recommend FAO to further identify opportunities to improve complementarity between the agriculture and forest sectors, strengthen coordinated policy responses in addressing common challenges, and improve understanding of synergies and trade-offs between agriculture and forestry;

- call on FAO to continue to collect and analyse necessary data and evidence, including on the direct and underlying drivers of deforestation and land degradation, by further enhancing consistency between agricultural and forest data sets, and by compiling case studies and best practices, and *to report back* to the next respective sessions of COFO 27 and COAG 29;

- invite FAO to conduct, subject to available extra-budgetary resources, a global assessment of the status and scaling-up potential of agroforestry, building on, improving and integrating methodologies related to measuring the extent and status of agroforestry and trees on agricultural land, and *to report* on progress to the next respective sessions of COFO 27 and COAG 29; and

- encourage FAO to continue playing an active role in relevant international fora, by promoting open dialogue on enhancing sustainable production and reducing the environmental impact of agrifood systems.

The Committee may wish to invite Members to:

- promote greater and inclusive policy coherence between the agriculture and forest sectors, including through integrated land use planning and landscape approaches, with a special focus on women, youth and Indigenous Peoples;

- support small-scale producers, including youth and women, family farmers, local communities, Indigenous Peoples and producer organizations, by safeguarding access to land whilst enhancing access to resources and markets and contributing to sustainable and gender-responsive value chains. This may be achieved, as appropriate, through the development of clear and consistent legal frameworks; recognition of customary rights to natural resources; and provision of equal opportunities to women and men;

- enhance mainstreaming of biodiversity in the agriculture and forestry sectors by promoting sustainable agroforestry practices, land restoration and development of sustainable agricultural and forestry products value chains; and

- strengthen extension services that take a holistic approach to promote sustainable agrifood systems, agroforestry and sustainable forest management in an integrated and inclusive manner, while combating climate change and using biodiversity in a sustainable way.

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I. Introduction

1. At its 164th and 165th Sessions, the FAO Council requested FAO "to showcase and promote existing and complementary practices between agriculture activities and the conservation, restoration and sustainable use of forests, avoiding deforestation and maintaining ecosystem services, noting that agriculture and forestry can synergistically support sustainable development".[iv] It also suggested that the Committee on Forestry (COFO) "review the drivers of the expansion of agricultural land in the light of sustainable forest management",[v] and requested "strengthening coordination between COFO and COAG on cross-sectoral matters, and recommended that future papers dealing with inter-related issues between agriculture and forests be presented to both COFO and COAG".[vi]

2. The purpose of this document is to highlight opportunities for closer integration between the agriculture and forestry sectors in order to address global challenges, including hunger and malnutrition, poverty and inequalities, climate change, land degradation, and biodiversity loss. It is presented to the 28th Session of the Committee on Agriculture (COAG) and the 26th Session of COFO.

II. Common challenges facing agriculture and forestry

3. *Hunger, malnutrition and the COVID-19 pandemic.* Despite efforts to achieve SDG 2 (Zero Hunger), hunger and malnutrition in all its forms are on the rise. About one-tenth of the global population – up to 811 million people – were undernourished in 2020, around 15 per cent more than in 2019. The challenges have grown with the COVID-19 pandemic and related containment measures, which have highly affected women. There are also serious regional disparities, with about 21 percent of the population facing hunger in Africa, 9.1 per cent in Latin America and the Caribbean, and 9.0 percent in Asia.[2] It is estimated that by 2050 food production will have to increase by over 50 percent, compared to 2012, to meet projected demands.[3] This needs to be achieved without limiting progress toward other Sustainable Development Goals (SDGs), including those relating to gender equality (SDG5), water (SDG 6), energy (SDG 7), climate action (SDG 13), and terrestrial ecosystems (SDG 15).

4. *Climate change.* Climate change is adversely affecting agrifood systems, including forests and other natural resources, and is exacerbating hunger and poverty. The United Nations Framework Convention on Climate Change (UNFCCC) and the Paris Agreement's goals to limit global warming will not be met without significant reductions in greenhouse gas (GHG) emissions.[4] Approximately 23 percent of total anthropogenic GHG emissions (from 2007 to 2016) derived from agriculture, forestry and other land use, notably through deforestation.[5] Halting deforestation, restoring degraded forests and promoting sustainable land management can provide up to one-third of climate mitigation needed between now and 2030, to stabilize global warming below 1.5°C[6] while building resilience and supporting adaptation to climate change impacts. The Koronivia Joint Work on Agriculture under the UNFCCC acknowledges the unique role of agriculture and is focusing on adaptation, soils,

[2] FAO. 2021. *The State of Food Security and Nutrition in the World 2021*. https://www.fao.org/3/cb4474en/online/cb4474en.html
[3] FAO. 2018. *The future of food and agriculture – Alternative pathways to 2050*. Rome. https://www.fao.org/3/I8429EN/i8429en.pdf
[4] IPCC. 2021. *Sixth Assessment Report. Summary for Policy Makers B.1.* https://www.ipcc.ch/report/ar6/wg1/downloads/report/IPCC_AR6_WGI_Headline_Statements.pdf
[5] IPCC. 2019. Special Report on Climate Change and Land. https://www.ipcc.ch/srccl/chapter/technical-summary
[6] C 2021/28, para 38 https://www.fao.org/3/nf649en/nf649en.pdf

nutrient use, livestock, and the socio-economic and food security dimensions of climate change across the agricultural sectors.[7]

5. *Biodiversity loss.* Biodiversity is key to food security and nutrition. The agricultural sectors are critically dependent on biodiversity and have the potential to contribute to its protection. Sustainable agriculture and sustainable forestry are key to reversing trends that lead to biodiversity loss, damaged ecosystems, deforestation, and the overall degradation of natural resources. Forests have a fundamental role in helping to realize ambitions to halt biodiversity loss globally.[8] However, deforestation and forest degradation continue to take place at alarming rates, resulting in significant loss of biodiversity.[9]

6. *A cross-sectoral approach and concerted action* are needed to address the common challenges facing the agriculture and forestry sectors. The UN Secretary-General's Chair Summary and Statement of Action of the 2021 UN Food Systems Summit highlighted the urgent need for a systems approach.[10] The 2021 Glasgow Leaders' Declaration on Forests and Land Use at the UNFCCC Conference of Parties COP26 emphasized the critical and interdependent roles of forests of all types, biodiversity and sustainable land use in enabling the world to meet climate goals and the SDGs.[11] The UN Convention to Combat Desertification (UNCCD) took note of the *Voluntary Guidelines on the Responsible Governance of Tenure of Land, Fisheries and Forests in the Context of National Food Security (VGGT),*[12] and of the role that Indigenous Peoples' knowledge can play in the context of national food security, and recognized their potential contribution to the effective implementation of the UNCCD 2018−2030 Strategic Framework. The COP15 of the Convention on Biological Diversity (CBD) is expected to adopt a Post-2020 Global Biodiversity Framework (P2020 GBF), which will set the direction for global action on biodiversity over the next decade and beyond. The first draft of the P2020 GBF includes goals, targets, and indicators to reduce threats to biodiversity, enhance the sustainable use of biodiversity, and ensure the fair and equitable sharing of benefits from the use of genetic resources. Many of these targets are closely related to FAO's mandate, in particular in agriculture and forestry.

III. Opportunities for improving complementarity

Interconnections between agriculture and forestry

7. There are multiple linkages between agrifood systems, including forests. In many rural areas, farmers work in both agriculture and forestry, and around 40 percent of all agricultural lands have over 10 percent tree cover.[13] Forests and trees offer ecosystem services that are crucial for agriculture: they are integral to the water cycle; they help reduce soil erosion and enhance nutrient cycling; they provide habitat for pollinators; they create shade and shelter from wind and sandstorms, and they provide supplementary feed for livestock. Forest and tree products improve food security by providing income, as well as food products of high nutritional value, and this can be vital for the poorest and most vulnerable.[14] Indigenous Peoples' territories cover 28 percent of the world's land surface, harbour 80 percent of the planet's biodiversity[15] and intersect with 40 percent of all terrestrial protected areas and ecologically intact landscapes (for example, boreal and tropical primary forests, savannas and marshes. [16] In addition, around 2.4 billion people use firewood or charcoal for cooking their food: those most

[7] FCCC/CP/2017/11/Add.1, 4/CP.23
[8] Millennium Ecosystem Assessment, page 79. https://www.millenniumassessment.org/documents/document.273.aspx.pdf
[9] C 2021/28, para 35 https://www.fao.org/3/nf649en/nf649en.pdf
[10] https://www.un.org/en/food-systems-summit/news/making-food-systems-work-people-planet-and-prosperity
[11] https://ukcop26.org/glasgow-leaders-declaration-on-forests-and-land-use
[12] https://www.fao.org/3/i2801e/i2801e.pdf
[13] Zomer, R.J et al. 2009. *Trees on farm: analysis of global extent and geographical patterns of agroforestry*. ICRAF Working Paper 89. Nairobi, Kenya, World Agroforestry Centre.
[14] FAO. 2018 *State of the World's Forests 2018*, page 15. https://www.fao.org/documents/card/en/c/I9535EN/.
[15] World Bank. 2008. The Role of Indigenous Peoples in Biodiversity Conservation the Natural but Often Forgotten Partners. Washington, D.C. Cited 19 September 2021. https://documents1.worldbank.org/curated/ en/995271468177530126/pdf
[16] Garnett, S.T., Burgess, N.D., Fa, J.E., Fernández-Llamazares, Á., Molnár, Z., Robinson, C.J., Watson, J.E.M. et al. 2018. *A spatial overview of the global importance of Indigenous lands for conservation. Nature Sustainability*, 1(7): 369–374. https://www.nature.com/articles/s41893-018-0100-6

dependent on woodfuel are often vulnerable groups in developing countries.[17] It is estimated that 60 million Indigenous Peoples rely on various forest ecosystems, which are part of their food systems and are also highly susceptible to the effects of climate change.

8. The main trade-off between agriculture and forests relates to competition for land. Since 1990, an estimated 420 million hectares of forest have been lost through deforestation.[18] The first findings from the FAO Global Remote Sensing Survey[19] revealed that, over the period from 2000 to 2018, agriculture remained the main driver of deforestation in all regions except Europe, where urban and infrastructure development had more impact. These results indicate that agricultural expansion drives almost 90 percent of global deforestation: 52.3 percent of forest loss is due to conversion into cropland, 37.5 percent is due to livestock grazing, 5.6 per cent is due to urban and infrastructure development, and 4.6 per cent is due to other causes.[20] Indirect, underlying drivers of forest loss include population growth, changing income levels, insecure land tenure and ineffective land use governance.[21] Furthermore, wide evidence shows that women are significantly disadvantaged compared to men with regard to their land rights for all dimensions associated with agricultural land (ownership, management, transfer and economic rights)[22]. Globally, about 15 percent of all landholders are women, with significant differences between regions[23].

Need for policy coherence and integrated land use planning

9. Increasing agrifood productivity without restricting progress towards other SDGs requires policy coherence, effective governance and the use of appropriate policy tools that target the underlying causes of unsustainable practices and existing inequalities. Many sectoral policies, such as those relating to water, energy, built infrastructure, and agrifood systems, including forestry, have major implications for land use and must be aligned with policies addressing other SDGs. Conservation measures can also imply trade-offs with poverty reduction efforts.[24] To achieve the necessary policy coherence, strong institutional coordination is needed, both horizontally (between different national government ministries and agencies) and vertically (between national and sub-national levels and stakeholders).[25]

10. Integrated land use planning is essential, with a cross-sectoral approach that brings together multiple stakeholders to identify needs and balance trade-offs. The active engagement of all relevant stakeholders is essential for securing commitment to effective implementation.[26] The rights of all stakeholders, including women, youth and Indigenous Peoples, must be respected throughout the development and implementation of land use policies, programmes and plans.[27]

Need for better data and evidence

11. Effective use of data and evidence is necessary to inform decisions and catalyse support for an inclusive and equitable transformation of the agriculture and forestry sectors. Important sources of data include the FAOSTAT[28] statistics on agricultural and forests products and the *Global Forest Resources Assessments (FRA).*[29] There is, however, a need for further analytical work on: the drivers of change in land use and forest loss; the synergies between agriculture and forestry at the landscape

[17] FAO. 2018. *State of the World's Forests 2018*, pages 22-24. https://www.fao.org/documents/card/en/c/I9535EN
[18] *Global Forest Resources Assessment 2020.* Key findings, page 4. https://www.fao.org/3/ca8753en/ca8753en.pdf
[19] https://www.fao.org/3/cb7449en/cb7449en.pdf
[20] FAO. 2021. *FAO Remote Sensing Survey.* https://www.fao.org/3/cb7449en/cb7449en.pdf. https://www.fao.org/newsroom/detail/cop26-agricultural-expansion-drives-almost-90-percent-of-global-deforestation/en
[21] FAO. 2016. *State of the World's Forests,* pages 20-22. https://www.fao.org/publications/sofo/2016/en
[22] FAO . 2018. *The Gender Gap in Land Rights*. https://www.fao.org/3/I8796EN/i8796en.pdf
[23] FAO . 2018. *The Gender Gap in Land Rights*. https://www.fao.org/3/I8796EN/i8796en.pdf
[24] Davis, B., Lipper, L. & Winters, P. 2022. *Do not transform food systems on the backs of the rural poor*. Food Sec. https://doi.org/10.1007/s12571-021-01214-3
[25] OECD (Organisation for Economic Co-operation and Development). 2020. *Towards Sustainable Land Use: Aligning Biodiversity, Climate and Food Policies*. OECD Publishing. Paris. https://doi.org/10.1787/3809b6a1-en
[26] FAO. 2021. *The State of the World's Land and Water Resources for Food and Agriculture,* pp 44-52. https://www.fao.org/3/cb7654en/cb7654en.pdf
[27] See *Voluntary Guidelines on the Responsible Governance of Tenure*. https://www.fao.org/3/i2801e/i2801e.pdf
[28] https://www.fao.org/faostat/en/#home
[29] https://www.fao.org/forest-resources-assessment/en/

and farm levels; and the value of forest foods. More efforts should also be made to enhance the consistency of agricultural and forest data sets, such as those relating to global land use and production, including land and water, and to ensure that data is made widely available in an easy-to-use manner through open-access, on-line databases. The FAO Hand-in-Hand Initiative as an evidence-based, country-led, and country-owned initiative to accelerate agricultural transformation and sustainable rural development. Its geospatial platform offers tools to combine actions on agriculture, forestry and other areas, using integrated geospatial, bio-physical and socio-economic data.

Need for scaling up innovative approaches

12. Capacity development may be required to inclusively and equally provide the technical, financial and institutional support necessary for scaling up the innovative approaches that will increase sustainable food production and build resilience. This entails the following key elements: continued investment in research and development; dissemination of knowledge, including traditional knowledge, through extension services; policy implementation; and strengthening of forest and farm producer organizations. The latter aims to add value to agriculture and forest products, develop markets and facilitate access to finance, and ensure adequate representation of women and youth.

13. Looking ahead, there is a need to develop and scale up more sustainable agrifood systems, drawing on the potential of innovation for sustainable agricultural production. Some of the technologies that helped achieve significant increases in agricultural productivity over the past 50 years, such as under the Green Revolution, led to unintended environmental and social impacts. Advances in agricultural research have broadened the technical palette for land and water management, and options for farmers now include: conservation agriculture; reduction of synthetic chemical inputs; increase production of high value, nutrient-dense crops; agroecological approaches; superior and adapted plant and animal genetic resources; improved livestock management, including appropriate feeding, animal health and welfare measures; application of inclusive digital-technology solutions; and effective use of traditional knowledge. [30,31,32,33,34,35]

14. Restoring degraded terrestrial ecosystems for sustainable food production constitutes a priority at international and national levels. The Bonn Challenge has received pledges from over 60 countries to restore 350 million hectares of degraded and deforested landscapes by 2030, and 115 countries have made commitments to restore over 1 billion hectares under the UN Decade on Ecosystem Restoration (2021-2030). These landscape restoration initiatives will create opportunities to increase the availability of land for sustainable agricultural production within a mosaic of land uses.[36] The P2020 GBF will include a specific target on the restoration of degraded ecosystems. Access to social protection can play a key role in fostering sustainable natural resource management practices.

15. Agroforestry includes a wide range of land-use systems where trees (and other woody perennials) are managed in conjunction with agricultural crops or livestock, or both.[37] Agroforestry systems can help increase biodiversity, conserve soils, enhance agricultural yields and strengthen livelihood resilience of men and women farmers and forest dwellers.[38] Achieving these benefits is dependent upon skilled management and the necessary enabling conditions, including secure tenure for both land and trees and access to capital and markets.[39] To provide a solid evidence base in support of

[30] CFS 2021/48/2, *Policy recommendations on agroecological and other innovative approaches for sustainable agriculture and food systems that enhance food security and nutrition*. https://www.fao.org/3/nf777en/nf777en.pdf
[31] FAO. 2021. *The State of the World's Land and Water Resources for Food and Agriculture*, page 43,
[32] https://www.fao.org/conservation-agriculture/en
[33] https://www.fao.org/3/cb2186en/CB2186EN.pdf
[34] https://www.fao.org/digital-agriculture/en
[35] FAO & CIRAD (Centre de coopération internationale en recherche agronomique pour le développement). 2021. *Fruit and vegetables – Opportunities and challenges for small-scale sustainable farming.* https://www.fao.org/documents/card/en/c/cb4173en; https://doi.org/10.1007/s12571-019-00970-7
[36] https://www.decadeonrestoration.org; https://www.bonnchallenge.org/; https://www.unep.org/news-and-stories/story/panel-unveils-10-guiding-principles-campaign-revive-earth
[37] https://www.fao.org/forestry/agroforestry/80338/en
[38] https://doi.org/10.1016/j.agee.2020.106899; https://doi.org/10.1080/17565529.2018.1447903
[39] https://agroforestrynetwork.org/wp-content/uploads/2018/09/Scaling-up-agroforestry-Potential-Challenges-and-Barriers.pdf

countries' efforts to scale up sustainable agroforestry, there is a need for more comprehensive information on the global extent, status and benefits of agroforestry, and its scaling-up potential.

16. Agrosilvopastoral systems are a type of agroforestry where livestock are integrated with crops, pastures and trees or shrubs within the same landscape. These systems can be particularly important for food security and nutrition, livelihoods and resilience in drylands, where suitable grazing management and husbandry practices can help prevent degradation and desertification.[40,41,42] In 2020, COAG endorsed the Global Programme on Sustainable Dryland Agriculture[43] which aims at empowering small-scale producers in dryland zones by promoting innovations in crop, soil, water, livestock, fisheries and forest management. Meanwhile, through the *Grazing with trees* initiative, FAO is drawing upon farmers' and pastoralists' knowledge to enhance the role of agrosilvopastoral systems in promoting food security and restoring dryland forests and rangelands, and is providing related guidance.[44]

17. Continued mainstreaming of biodiversity is a key area for action in both the agriculture and forestry sectors. The *FAO Strategy on Mainstreaming Biodiversity across Agricultural Sectors*[45] adopted in 2019 and its 2021-23 Action Plan for its Implementation[46] recognize that achieving food security and nutrition for all depends on biodiversity. The Strategy was developed to reduce the negative impacts of unsustainable agricultural practices on biodiversity, to promote a transition to sustainable agricultural practices, and to conserve, enhance, preserve and restore biodiversity. The Action Plan offers technical and policy support for Members to develop and implement their own normative and standard-setting instruments related to biodiversity, and to increase knowledge sharing and the uptake of biodiversity-friendly practices across agriculture and forestry. The draft P2020 GBF includes targets relating to restoring ecosystems (target 2), reducing nutrient, pesticide and plastic pollution from agriculture and other sources (target 7), the sustainable use of wild species (target 9) and the sustainable use of biodiversity across agriculture and forestry (target 10). FAO's work is of major importance for the success of the P2020 GBF. These frameworks can support joint consideration of mainstreaming biodiversity by forestry and agriculture and enhance the implementation.

18. There is a need to support Indigenous Peoples' food systems and to promote inclusive, biocentric and multifunctional restoration and conservation approaches led by Indigenous Peoples, ensuring their rights to land, territories, forests, and other natural resources, while respecting self-governing mechanisms and Free, Prior and Informed Consent (FPIC). Nomadism, shifting cultivation and biocentric approaches need to be respected, understood, and supported as territorial management practices that generate food while protecting biodiversity, providing ecosystem services, and reducing deforestation. Indigenous Peoples' food systems, including use of forest foods, can provide exemplars of sustainable agrifood systems that are climate-resilient, nutritious and respectful of nature. The Global-Hub on Indigenous Peoples' Food Systems and the Globally Important Agricultural Heritage Systems (GIAHS) Programme offer a knowledge-dialogue to gather evidence-based contributions on Indigenous Peoples' and traditional food systems, support the well-being of Indigenous Peoples and help preserve ancestral territorial management practices and food systems that have fed Indigenous Peoples for centuries.[47] Also, achieving gender equality and women's empowerment is central to FAO's mandate of eradicating hunger, malnutrition and rural poverty. At both policy and strategic level, FAO works closely with governments to support policymakers in their efforts to review and strengthen laws and legal frameworks in the forest sector to be more gender-responsive.

[40] For definition of drylands see https://www.fao.org/3/i0372e/i0372e.pdf (Annex 1)
[41] FAO. 2021. *Pastoralism – Making variability work. FAO Animal Production and Health Paper No. 185.* Rome. https://www.fao.org/3/cb5855en/cb5855en.pdf
[42] FAO. 2021. *Le pastoralisme au Tchad, un potentiel à développer avec des investissements responsables et structurants*. Rome. https://www.fao.org/documents/card/fr/c/cb4837fr
[43] See also COAG/2020/INF/15 and C 2021/21, paras 75-81 and 102-103
[44] COFO/WG-DF/2021/6
[45] https://www.fao.org/3/ca7722en/ca7722en.pdf
[46] https://www.fao.org/3/cb5515en/cb5515en.pdf
[47] https://www.fao.org/indigenous-peoples/global-hub/en

19. The harvest and trade in wild meat is important for food security, livelihoods, and cultural identity of millions of rural people in tropical and subtropical regions. Wild meat is also consumed in cities for status or tradition. The harvesting and trade in meat from wild animals is of growing concern because of its ecological impacts, its unsustainability and its links with zoonotic diseases. The COVID-19 pandemic underscored the close links between human, animal, and plant health, and the need for a multidisciplinary One Health approach. To address these challenges, FAO is leading a Sustainable Wildlife Management Programme to improve the governance and management of hunting, to reduce demand for meat from wild animals, and to minimize risks of exposure to pathogens at human-wildlife-livestock-ecosystem interfaces.[48]

20. There is scope to increase food production in cities, and the COVID-19 pandemic has highlighted the importance of local food production in building resilience.[49] The FAO Green Cities Initiative promotes multifunctional green infrastructure, including spaces for growing food and for urban forests, while the FAO City Region Food System Programme is strengthening rural-urban linkages.[50,51]

Need to promote responsible agricultural supply chains

21. Since 1995, international trade in food and agriculture has more than doubled in real terms, and this has included growth in global value chains based on agricultural commodities.[52] The World Resources Institute's 2021 *Global Forest Review* highlights the links between deforestation and the production of beef, soy, palm oil, cocoa, coffee, rubber and planted timber.[53] Some countries are developing regulatory frameworks to reduce the risk of products associated with illegal deforestation and forest degradation from entering their markets. Countries have also been active in using supply and demand-side measures and consumers' awareness to reduce deforestation risks. Key international commitments have included the 2030 Agenda for Sustainable Development, with its target to halt deforestation by 2030[54], the 2015 New York Declaration on Forests and, most recently, the 2021 Glasgow Leaders' Declaration on Forests and Land Use at the UNFCCC COP26. In addition, private sector companies have taken voluntary steps to eliminate deforestation from their supply chains, and additional commitments were made at COP26. Related guidance on standards for responsible business conduct is available and a Forests, Agriculture and Commodity Trade Dialogue is ongoing.[55,56,57,58] However, further concerted efforts are still needed. Experience gained through the Forest Law Enforcement, Governance and Trade (FLEGT) process demonstrated the importance of close partnership between countries and with local communities and Indigenous Peoples when market-based measures are being developed and implemented, and the need for transparency in data and monitoring frameworks.[59]

IV. The way forward

22. In 2021, the FAO Conference at its 42nd Session adopted the FAO Strategic Framework 2022-31, which seeks to support the 2030 Agenda through the transformation to MORE efficient, inclusive, resilient and sustainable agrifood systems for *better production*, *better nutrition*, a *better environment*, and a *better life*, leaving no one behind. [60]

[48] https://doi.org/10.4060/cb1503en
[49] https://www.fao.org/3/cb1020en/CB1020EN.pdf
[50] https://www.fao.org/green-cities-initiative/en
[51] https://www.fao.org/in-action/food-for-cities-programme/overview/crfs/en
[52] FAO. 2020. *The State of Agricultural Commodity Markets 2020*. Rome. https://www.fao.org/3/cb0665en/online/cb0665en.html
[53] World Resources Institute. 2021. *Global Forest Review*. https://research.wri.org/gfr/forest-extent-indicators/deforestation-agriculture
[54] Sustainable Development Goal 15, target 15.2
[55] FAO & OECD. 2016. *OECD-FAO Guidance for Responsible Agricultural Supply Chains.* OECD Publishing, Paris. https://doi.org/10.1787/9789264251052-en.
[56] WEF. 2021. *Insight Report on Forests, Food Systems and Livelihoods: Trends, Forecasts and Solutions to Reframe Approaches to Protecting Forests* p 29. https://www3.weforum.org/docs/WEF_Forests_Food_Systems_and_Livelihoods_2021.pdf.
[57] https://www.gov.uk/government/publications/cop26-world-leaders-summit-on-action-on-forests-and-land-use-2-november-2021/world-leaders-summit-on-action-on-forests-and-land-use.
[58] https://ukcop26.org/forests-agriculture-and-commodity-trade-a-roadmap-for-action
[59] https://www.fao.org/in-action/eu-fao-flegt-programme/background/en
[60] https://www.fao.org/about/strategy-programme-budget/strategic-framework/en

23. The FAO Strategic Framework 2022-31 includes 20 Programme Priority Areas (PPAs) which provide an opportunity to address and improve complementarity between agriculture and forestry sectors, and strengthen coordinated policy responses in addressing common challenges. The importance of social inclusion and innovation is recognised by the PPAs "Innovation for sustainable agriculture production" (BP1), "Small-scale producers' equitable access to resources" (BP4), "Digital agriculture" (BP5), "Gender equality and rural women's empowerment" (BL1), "Inclusive rural transformation" (BL2) and "Agriculture and food emergencies" (BL4). The PPA "Reducing food loss and waste" (BN4) will help reduce pressure for agricultural land expansion by increasing available food supplies. The urgent need to protect, restore and promote sustainable use of ecosystems and combat climate change is addressed in the PPAs "Climate change mitigating and adapted agrifood systems" (BE1), "Bioeconomy for sustainable food and agriculture" (BE2) and "Biodiversity and ecosystem services for food and agriculture" (BE3). Through the implementation of these cross-sectoral PPAs and the Accelerators on Technology and Innovation, the FAO Strategic Framework 2022-31 can help improve food security, improve nutritionwhile reducing pressure on the world's forests.

24. Major FAO initiatives aim at increasing synergies between agriculture and forestry also include the FAO-Global Environmental Facility (GEF) partnership and FAO-led Green Climate Fund (GCF) programmes and projects. Two GEF-7 Impact Programs were recently launched, the Sustainable Forest Management Impact Program on Dryland Sustainable Landscapes [61] and the Food Systems, Land Use and Restoration Impact Program,[62] totalling contributions for USD 104 million and USD 345 million, respectively. In addition, FAO's GCF portfolio includes interventions addressing deforestation and currently totals USD 945 million.[63] Another key FAO initiative that can improve complementarity is the Global Action on Green Development of Special Agricultural Products: One Country One Priority Product (OCOP) for 2021-25.[64]

25. There is a primary role for governments in setting a coherent policy and planning framework that is conducive to promoting linkages and complementarity between agriculture and forestry. Sources of funding include the private sector and the voluntary contributions, as well as the public sector, at both national and international levels. Importantly, the significant amount of funding for adaptation measures that comes from public resources highlights the lead role of governments in climate change mitigation and adaptation efforts.[65] In addition, the voluntary carbon markets that offer payments to agriculture and forest sectors for reducing GHG emissions are rapidly evolving.[66,67]

26. A recent study by FAO, the UN Development Programme and the UN Environment Programme found that the USD 540 billion paid annually in agricultural support to producers is heavily biased towards measures that are distorting, unequally distributed, and harmful for the environment and human health. The study reported that, by repurposing this assistance to agricultural producers, governments could make food systems more efficient and more supportive of healthy lives, nature and climate.[68]

27. To address the global challenges of hunger, malnutrition, and poverty, climate change, land degradation and biodiversity loss, it is imperative to transform agrifood systems through an integrated, cross-sectoral and inclusive approach that reflects the multiple linkages between the agriculture and forest sectors. While this process should be led by governments and international organizations, it should also draw upon the experience and actions of practitioners, women, youth and Indigenous Peoples, and the opportunities offered by sustainable technologies and practices. By achieving better

[61] https://www.fao.org/gef/dryland-sustainable-landscapes/en
[62] https://www.folur.org/
[63] https://www.fao.org/gcf/our-work/en
[64] https://www.fao.org/news/story/en/item/1438036/icode
[65] IPCC report. 2022. *Summary for Policymakers.* IPCC_AR6_WGII_SummaryForPolicymakers.pdf
[66] Institute of International Finance. 2021. *Getting to Net-Zero: the Vital Role of Global Carbon Markets.* https://www.iif.com/Portals/0/Files/content/Regulatory/10_26_2021_netzero.pdf
[67] https://unfccc.int/topics/land-use/workstreams/redd/what-is-redd; https://redd.unfccc.int
[68] FAO, UNDP and UNEP. 2021. *A multi-billion-dollar opportunity – Repurposing agricultural support to transform food systems*, pp xiii and xvi. Rome. https://doi.org/10.4060/cb6562en

synergies between forestry and agriculture, it will be possible to move towards a collaborative approach that seeks "win-win solutions" and leads to MORE efficient, inclusive, resilient and sustainable agrifood systems for *better production*, *better nutrition*, a *better environment*, and a *better life*, leaving no one behind.

[i] FAO. 2020. Report of the Hundred and Sixty-fifth Session of the FAO Council (CL 165/REP). Rome. https://www.fao.org/3/ne381en/ne381en.pdf
[ii] CL 164/REP.
[iii] CL 165/REP.
[iv] CL 165/REP.
[v] CL 164/REP.
[vi] CL 165/REP.