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TRANSFORMING AGRICULTURE AND FOOD SYSTEMS: HALTING DEFORESTATION AND PROMOTING SUSTAINABLE PRODUCTION AND CONSUMPTION OF FOREST PRODUCTS

Executive Summary

This paper highlights the multiple contributions of forests and trees to sustainable agriculture and food systems. It argues that halting deforestation must be an integral element in the sustainable transformation of food systems, along with promoting legal and sustainable forest value chains. The paper outlines actions that can help harness positive interactions and deliver a transformation of agriculture and food systems that will halt deforestation and promote sustainable production and consumption.

Suggested actions by the Committee on Forestry

In order to strengthen contributions from the forest sector to the transformation of food systems and halting deforestation, the Committee requests FAO to:

- Integrate forestry in FAO's work on food systems and promote synergies and address trade-offs between forestry and agriculture in initiatives and projects to achieve the Sustainable Development Goals, including through consideration of forestry in COVID-19 pandemic recovery measures and in FAO's Hand-in-Hand Initiative.
- Enhance FAO's cross-sectoral work on transforming food systems to feed the planet without deforestation, contributing to the UN System-wide efforts to "Turning the tide on deforestation" co-led by FAO, and to include an action area on halting deforestation under the 2021 UN Food Systems Summit.
- Engage with public, private sector and civil society stakeholders and initiatives aiming at halting deforestation and at promoting legal and sustainable forest and agriculture commodity value chains.

The Committee invites countries to:

- Ensure policy coherence and align public incentives across sectoral environmental and economic policies to halt deforestation, promote deforestation-free supply chains, and transform food systems.

- Promote responsible production and consumption of forest and agriculture products and their contributions to the circular economy, including through the adoption of policy and technological innovations for increased tenure security, legality, enhanced efficiency in production, improved market access and inclusion of smallholders and forest communities in sustainable forest value chains.

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I. The contribution of forests to sustainable food systems

1. Around 37 percent of the global land is devoted to agriculture (FAOSTAT 2020¹), while 31 percent of global land is occupied by forests (FAO 2020²). Multiple linkages and relationships exist between these two major land uses. In many countries, food security is intimately related to forests and trees. They provide a variety of animal and plant-based food products and 1 billion people depend to some extent on wild foods – meat, berries, mushrooms and fish (Burlingame, 2000³). For millions of rural people and indigenous communities across the tropics and subtropics, wild meat represents the primary source of protein, fat and micronutrients (Coad et al. 2019⁴). An estimated 2.4 billion people – in both urban and rural settings – use firewood or charcoal for cooking (FAO, 2014⁵) and over 60 percent of rural Africans would not be able to eat cooked food without the fuelwood from forests and trees.

2. Forests also contribute to productivity and resilience in agriculture. For instance, agriculture is reliant on water and forested watersheds which provide three-quarters of accessible freshwater (MEA 2005⁶), with many irrigated areas relying on water services supplied by upstream forested areas. Trees in agricultural landscapes provide shade, shelter from the winds and can play an important habitat modification role fostering enhanced levels of biodiversity (both above and below ground) and hence support associated ecological functions underpinning ecosystem services such as water infiltration, soil health, pest control or pollination. As an example, an estimated 75 percent of the 115 leading food crops globally - together representing 35 percent of global food production - benefit from pollination by animals (Klein et al. 2007⁷), many of which live in forests. In addition, forests help mitigate and adapt to climate change – a crucial role for agriculture that will become increasingly important with

¹ FAOSTAT 2020. <http://www.fao.org/faostat/en/#data/RL/visualize>. Consulted on 23.07.2020.

² FAO 2020. Global Forest Resources Assessment – Main report. Rome.

³ Burlingame, B. 2000. Editorial: Wild nutrition. *Journal of Food Composition and Analysis*, 13: 99–100.

⁴ Coad L, Fa JE, Abernethy K, van Vliet N, Santamaria C, Wilkie D, El Bizri HR, Ingram DJ, Cawthorn DM and Nasi R. 2019. Towards a sustainable, participatory and inclusive wild meat sector. Bogor, Indonesia: CIFOR.

⁵ FAO. 2014. State of the World's Forests 2014. Rome. [also available at <http://www.fao.org/3/a-i3710e.pdf>].

⁶ MEA. 2005. Ecosystems and human well-being: current state and trends. Washington, DC, Island Press.

⁷ Klein, A.M., Vaissiere, B.E., Cane, J.H., Steffan-Dewenter, I., Cunningham, S.A., Kremen, C. & Tscharntke, T. 2007. Importance of pollinators in changing landscapes for world crops. *Proceedings of the Royal Society B – Biological Sciences*, 274: 303–313.

time. Farmers are well aware of these benefits and as a result, 40 percent of all agricultural lands have more than 10 percent tree cover (Zomer et al. 2009⁸).

3. Trees outside forests also play a critical role in moving towards more sustainable food systems. The integration of trees in agricultural lands can help retain or boost the concentration of nutrients in soils and permit sustainable intensification, avoiding or reducing degradation. Trees on farms can also provide a ready supply of food, fuel, fodder, fibre and other benefits, supporting farmers' livelihoods. If adequately planned and managed, agroforestry can boost productivity and incomes, providing economic, social and environmental benefits for land users at both farm and landscape levels.

4. Socioeconomic benefits from using forests and trees are equally essential for sustainable food systems as tree farming and selling of wood and non-wood forest products are common components of rural income, providing a means to purchase food or to invest in agriculture production. FAO (2017⁹) estimated that more than 40 million people – 1.2 percent of the global workforce – were engaged in commercial fuelwood and charcoal activities to supply urban centres. In periods of seasonal scarcity or external shocks, forest income for rural households can reach 20 percent to 28 percent of their overall income and is sometimes close to the share of income originated from crops (Angelsen et al. 2014¹⁰).

II. Forest cover loss and agriculture

5. The Global Forest Resources Assessment (FRA) 2020 reports a net loss of 178 million hectares of forest since 1990, with severe impact on the provision of ecosystem services, conservation of biodiversity and climate change. Even though FRA 2020 confirms a decrease in the rate of global forest loss over time, patterns are uneven across regions. While the northern hemisphere and higher-income countries are increasing their forest cover, South-East Asia, Sub-Saharan Africa and Latin America still lose forest land at an alarming rate. In 2010-2020, Africa had the largest annual rate of net forest loss, at 3.9 million hectares, followed by South America, at 2.6 million hectares (see COFO/2020/4.2 for further details).

6. Conversion of forest land for agricultural use is the key driver of deforestation. Estimates suggest that 40 percent of deforestation in tropical and subtropical countries is driven by commercial agriculture, and 33 percent by subsistence agriculture (Hosonuma et al. 2012¹¹). In Latin America and South-East Asia commercial-scale drivers dominate while in Sub-Saharan Africa deforestation is linked predominantly to subsistence. However, recent years have seen an increase in commercial agriculture also in Africa. Recognizing this, agriculture is the most prominent sector intervention prioritised in national strategies to reduce emissions from deforestation and forest degradation across all regions.

7. Issues in production systems leading to forest cover loss include insecurity of rights, informality and illegality. Tenure is crucial to the livelihoods of billions of people. Lack of tenure security often obstructs investment in and adoption of long term sustainable practices and is closely related to issues of governance¹². Informality of economic activities likewise impedes adequate

⁸ Zomer, R.J., Trabucco, A., Coe, R. & Place, F. 2009. Trees on farm: analysis of global extent and geographical patterns of agroforestry. ICRAF Working Paper 89. Nairobi, Kenya, World Agroforestry Centre.

⁹ FAO. 2017. Sustainable woodfuel for food security. A smart choice: green, renewable and affordable. Working paper. Rome. [also available at <http://www.fao.org/3/a-i7917e.pdf>].

¹⁰ Angelsen et al. (2014) Environmental Income and Rural Livelihoods: A Global-Comparative Analysis. In World Development, vol. 64. Supplement 1, December 2014, pp. S12-S28.

¹¹ Hosonuma et al. (2012) An assessment of deforestation and forest degradation drivers in developing countries. In: Environmental Research Letters, Volume 7, Number 4.

¹² See <http://www.fao.org/tenure/en/> for the "Voluntary Guidelines on the Responsible Governance of Tenure of Land, Fisheries and Forests in the Context of National Food Security" endorsed by the Committee on World Food Security and related work of FAO.

support to promote sustainable management and related value chain development. Issues of tenure security, informality and illegality are also underlying causes of many of the agriculture-related fire outbreaks destroying forests at often massive scale. Crises, such as the COVID-19 pandemic, make these issues even more complex.

8. It is possible to increase agricultural productivity and food security while halting or even reversing deforestation, but it requires concerted action and strategies that are adapted to address local specificities and drivers of deforestation, commercial and subsistence (FAO 2016¹³). Efforts undertaken in the context of initiatives to reduce emissions from deforestation and forest degradation (REDD+) have significantly contributed to improving forest governance, including through landscape approaches facilitating the adoption of more integrated production systems.

9. The private sector has a pivotal role to play in reducing deforestation. Globally, the private sector, including large commercial companies dealing in key commodities such as beef, soy, palm oil, coffee, and cocoa, is a pre-eminent contributor to current deforestation rates. Voluntary measures by the private sector, such as certification schemes and moratoria on the purchase from deforested areas have contributed to reversing trends. Sector-wide and jurisdictional approaches have shown particular promise. However, results fall far short of the New York Declaration on Forests' target to eliminate deforestation from the production of agricultural commodities by 2020. In key supply chains, the number of companies with zero-deforestation commitments is still in the minority, and even these have been slow in implementation and insufficiently ambitious (NYDF, 2019)¹⁴.

10. The UN and FAO are spearheading commitments to change. At the Climate Action Summit in September 2019, the Secretary General of the UN called for scaling up action on "Turning the tide on deforestation", stating that "we must halt deforestation, restore degraded forests and change the way we farm". At a subsequent meeting of the UN Executive Committee in October 2019, the Secretary-General requested that the United Nations Environment Programme (UNEP) and FAO, in collaboration with other relevant entities, form a working group to follow up on a set of recommendations aimed at scaling up action by the UN system to halt deforestation. FAO has taken steps to enhance its cross-sectoral work on transforming food systems to feed the planet without deforestation, responding to the request of the UN Secretary-General and using existing mechanisms and platforms to scale up action at country level. This course of action should also be reflected in the preparation of the 2021 UN Food Systems Summit as well as in response measures to the COVID-19 pandemic¹⁵.

III. Forest value chains as part of sustainable agriculture and food systems

11. The direct generation of employment and income by formal wood products sectors account for an estimated US\$600 billion globally and over 13 million people employed in 2011 (FAO 2014¹⁶). When considering the wood sector forward and backward linkages to other sectors of the economy, these contributions more than double (Li et al, 2019¹⁷). Salaries paid by the forest sector in rural areas, along with incomes from forests and trees by communities, family farms and self-employed are a critical component to drive sustainable development in rural areas.

¹³ FAO 2016. State of the World's Forests. Forests and agriculture: land-use challenges and opportunities.

¹⁴ NYDF Assessment Partners. (2019). Protecting and Restoring Forests: A Story of Large Commitments yet Limited Progress. New York Declaration on Forests Five-Year Assessment Report. Climate Focus (coordinator and editor). Accessible at forestdeclaration.org.

¹⁵ See <http://www.fao.org/policy-support/coronavirus-pandemic/en/> for policy tools and publications to assist countries to respond to the novel coronavirus (COVID-19) crisis.

¹⁶ FAO 2014. State of the World's Forests 2014. Rome. [also available at <http://www.fao.org/3/a-i3710e.pdf>].

¹⁷ Li et al. (2019) The economic contribution of the world's forest sector. In: Forest Policy and Economics, Volume 100, March 2019, Pages 236-253.

12. Ensuring legality and sustainability of timber exports from tropical countries is an important step in moving towards sustainable forest production systems and has been one of the main achievements of global efforts to enhance forest law enforcement, governance and trade (FLEGT). FAO's related programme, supported by the European Union and other donors, is focused on production and trade legality and has contributed to developing timber supply chains compliant to high environmental and socioeconomic standards. The work in 26 tropical timber-producing countries has resulted in real transformation with firm stakeholder commitments at country level. The adoption of participatory approaches to agree on goals, to set up a monitoring framework and to deliver capacity building to all relevant stakeholders including forest communities and smallholders, can offer lessons learned to agricultural initiatives, in particular on approaches to deforestation-free agricultural commodity supply chains.

13. Sustainably managed natural and planted forests are also essential for the achievement of climate-resilient economies. The high reusability and recyclability of wood products offer numerous possibilities to mitigate carbon emissions and advance the circular economy. Continuous innovation has increased not only the number of possible uses of forest products but also efficiency in production, resulting in lower resource use per unit of final product (FAO 2018¹⁸).

IV. Harnessing positive interactions and delivering transformation

14. Transforming food systems demands thinking and acting beyond sectoral boundaries to address the main drivers of unsustainable practices and adopt cost-effective targeted interventions. Sustainable production models exist and can be scaled up in locally appropriate forms, adhering to principles of sustainable food and agriculture¹⁹ and taking into account guidance on responsible agricultural supply chains²⁰. Sustainable intensification based on greater resource efficiency and using integrated production systems such as agroforestry can reduce pressure on agricultural land expansion. Productivity gains must be complemented by measures to reduce agricultural land expansion into carbon and biodiversity-rich lands, in particular through evidence-based and consultative land use planning and enforcement. Promoting healthy diets, reducing food loss and waste and promoting a circular economy are critical and feasible measures to mitigate demand-side pressures on agricultural land expansion and deforestation and bring complementary health, biodiversity and climate benefits.

15. Globally, the private sector can and needs to be a champion for change. Still, robust results can only be achieved if governments exercise leadership and take decisive action to align incentives to meet strategic goals and ensure enabling regulation, monitoring and enforcement. Governments and international organizations need to engage in partnerships with the agricultural sector for shaping deforestation-free food systems. Reaching the necessary scale also requires consumer pressure and policy levers – regulatory and fiscal – in producing and importing countries.

16. Small scale producers are prominent in several global commodity chains driving deforestation. They require public support to ensure that a commitment to greater sustainability does not exclude them from markets. Engaging and strengthening producer organizations, long-term contracts and market access, technical and business advisory services, and access to finance are needed to assist in particular small producers in overcoming barriers to adoption of and in absorbing short term losses or disruptions in the transition to more sustainable production models. Concerted public investment and support are equally needed to reduce deforestation from small scale subsistence agriculture.

¹⁸ FAO. State of the Forests 2018. Forest pathways to sustainable development. FAO, Rome, Italy.

¹⁹ See <http://www.fao.org/sustainability/en/> for principles of sustainability for food and agriculture endorsed by FAO as well as 20 interconnected actions to guide decision-makers in transforming food and agriculture to achieve the SDGs.

²⁰ See <https://mneguidelines.oecd.org/oecd-fao-guidance.pdf> for the "OECD-FAO Guidance on Responsible Agricultural Supply Chains".

17. Digital innovations offer multiple new opportunities. Use of digitalization to disseminate good practices, create more agile and transparent governance instruments, and facilitate access to markets can accelerate the transformation of food systems. It can allow for the inclusion of forest-dependent communities, enable means for legal e-commerce for small and medium producers, facilitate financial inclusion, reduce the cost of extension and advisory services, as well as expand disaster management early warning systems.

18. Data and evidence, including through real-time alert systems, is instrumental for steering change and catalysing support through partnerships and cooperation. FAO is leading the Hand-in-Hand Initiative, supporting countries to use data to tailor and target policy interventions and investments in geographical areas where there are significant agricultural potential and high levels of poverty. Combining actions on agriculture, fisheries, forestry and other areas, the Initiative aims to reduce inefficiencies and increase sustainability by promoting higher integration, horizontal coordination and arrangements involving households and farmers, farm labourers, producer organizations, rural entrepreneurs, service providers and all other relevant stakeholders.

19. Greater public and private investment is required in order to accelerate the transformation of food systems in line with principles for responsible investments in agriculture and food systems²¹. Private finance is the primary resource driving business development, but only a fraction promotes sustainable production and food systems and reaches forest communities and smaller-scale enterprises. Public investment in public goods and de-risking can unlock large funding streams to underpin transformation at scale, including through results-based payments for reduced tropical deforestation.

20. Overall, policy coherence – in particular across agriculture, forestry, climate, biodiversity and economic policies – is the critical lever to enable change at scale to reach the Sustainable Development Goals. However, coherence is needed not just in the policies, but in how they are implemented across levels of government to incentivise change in practices.

²¹ See <http://www.fao.org/3/a-au866e.pdf> for "Principles for Responsible Investment in Agriculture and Food Systems" endorsed by the Committee on World Food Security.