POST 2020 BIODIVERSITY FRAMEWORK EU SUPPORT

TOWARDS POST-2020 EXPERTISE ON #29

MAINSTREAMING: RECONCILING OUR FOOD SYSTEMS WITH NATURE

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The way we produce, consume, handle, and relate to food conflicts with nature. Unsustainable agricultural and food practices pressure planetary boundaries and damage our relationship with the environment. As CBD COP15, the UN Food Systems Summit and other significant international processes approach, 2021 is a year of important momentum for reconciling food systems with nature.

"BIODIVERSITY IS A UNIQUE PROPERTY OF PLANET EARTH, THE RESULT OF ALMOST FOUR BILLION YEARS OF EVOLUTION IN RESPONSE TO OUR PLANET'S DYNAMIC CLIMATE, HETEROGENEOUS LANDSCAPES AND WATERSCAPES. IT SHOULD BE CONSIDERED AN INSURANCE AGAINST THE UNPREDICTABLE CONDITIONS FACED BY NEW GENERATIONS OF ORGANISMS. IT IS THE PROPERTY THAT ENABLES SPECIES AND ECOSYSTEMS TO BE RESILIENT AND TO ADAPT TO HUMAN IMPACTS AND CLIMATE CHANGE. NOTHING CAN BE DONE IN AGRICULTURE WITHOUT BIODIVERSITY."
Braulio Dias, former Executive Secretary of the UN Convention on Biological Diversity

A decisive, cross-sectoral shift towards sustainable food systems is crucial to achieving the new goals and targets of the Convention on Biological Diversity (CBD), as well as the environmental dimension of the 2030 Agenda for Sustainable Development.

The biological diversity of forests and other ecosystems, livestock breeds, and crops (including neglected and underutilized species), provides nutrient-rich, culturally appropriate food that sustains our livelihoods. It also supports essential ecosystem services that are vital for food production, such as pollination, biological pest control, clean air and water provision, and nutrient recycling that produces fertile soils.

Therefore, the conservation, restoration, and sustainable use of biodiversity should be approached as core elements in designing food systems that protect and promote the various ecosystem services provided by nature.

Floating vegetable market (wholesale), karapura, rainawari, srinagar, India
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1. BIODIVERSITY AND FOOD SYSTEMS: TWO SIDES OF THE SAME COIN FOR SUSTAINABLE DEVELOPMENT

Biodiversity helps maintain life and is the basis of our socio-economic and cultural activities and food systems. For instance, soil biodiversity, ranging from megafauna to microorganisms, sustains all life forms above the ground. It is estimated that 90% of living organisms in terrestrial ecosystems, including certain pollinator species, spend part of their life cycle in soil habitats[1]. Biodiverse ecosystems are more resilient to environmental shocks and better equipped to mitigate and adapt to climate change [2].

Modern food systems [3] are taking their toll on biodiversity. The way our food is currently produced, processed, distributed, traded, and consumed is directly connected to the most critical drivers of biodiversity loss in particular: air, water, and soil pollution; dietary simplification; greenhouse gas emissions (GHG) and human-induced climate change*; the overexploitation of natural resources; the spread of plant and animal pathogens, and invasive alien species, and the fragmentation of habitats due to land use, land-use change and forestry (LULUCF) activities. Agricultural areas cover roughly 38% of global land[4], of which 33% is "moderately to highly degraded". Our food systems alone are responsible for 33,3% of global GHG emissions [5]. Their heavy dependence on synthetic fertilizers, pesticides, water, energy, and land is accelerating landscape simplification and the mass extinctions of animals, plants, and microorganisms[6]. All these alarming factors are quickly lowering ecosystems' resilience and threatening biodiversity for food and agriculture [7].

Business-as-usual, including modern production and consumption patterns, has several hidden costs for human and planetary health, such as non-communicable diseases (e.g., diabetes and obesity), antibiotic resistance, reduced resilience to climate...

Biodiversity for food and agriculture.
"The biodiversity that in one way or another contributes to agriculture and food production [...]. includes not only the domesticated crops and livestock raised by farmers and livestock keepers, the trees planted and harvested by forest dwellers and the aquatic species harvested or raised by fishers and aquaculture practitioners, but also the myriad other species of plants, animals and micro-organisms that underpin production, whether by creating and maintaining healthy soils, pollinating plants, purifying water, providing protection against extreme weather events, enabling ruminant animals to digest fibrous plant materials or delivering any of a range of other vital services." Source: FAO, 2019.

What are food systems?
According to FAO (2018), food systems "encompass the entire range of actors and their interlinked value-adding activities involved in the production, aggregation, processing, distribution, consumption and disposal of food products that originate from agriculture, forestry or fisheries, and parts of the broader economic, societal and natural environments in which they are embedded." Within this context, sustainable food systems are those that seek to achieve "food and nutrition security and healthy diets while limiting negative environmental impacts and improving socio-economic welfare. Sustainable food systems are therefore protective and respectful of biodiversity and ecosystems, as well as human well-being and social equity. As such, they provide culturally acceptable, economically fair, affordable, nutritionally adequate, safe and healthy foods in a way that balances agro-ecosystem integrity and social welfare" (CIAT, 2021).

...change, freshwater contamination and nutrient pollution of coastal zones, and other externalities.

The COVID-19 pandemic evidenced the underlying vulnerabilities of our global food system, affecting the livelihoods of millions [8] and pushing 115 million people into extreme poverty. It also highlighted the interconnectedness between the food, water, climate, pollution, health, and biodiversity crises [9], setting back efforts to combat hunger or poverty and achieve the Sustainable Development Goals (SDGs). The escalating risk of spillover events and emerging zoonotic diseases is directly connected to the hidden costs of production and consumption patterns, including increased habitat degradation, illegal wildlife trade, and unregulated markets [10]. Adopting the One Health Approach and systematically addressing such stressors can restore ecosystem services that protect humans and nonhumans [11], reinforce sustainable agricultural practices and support nature-positive food systems.

Biodiversity for food and agriculture has the potential to reduce agricultural pressures on ecosystems and species, conserve or restore healthy and fertile soils, and contribute to enhanced pollination and integrated pest and disease control. Agrobiodiversity makes farming systems more robust, sustainable, and resilient to shocks, maximizing resource use efficiency while reducing dependency on external inputs [12]. It improves human nutrition, and promotes the diversification of products and income opportunities, creating green jobs for youth and other food system actors.

Therefore, integrating biodiversity concerns into policy and practice is instrumental in a paradigm shift towards more sustainable food systems connected with nature. Finding pathways to mainstream biodiversity across agricultural sectors is crucial to supporting transformative change and bending the curve of biodiversity loss.

[1] Bardgett, R. D., and van der Putten, W. H. 2014. Belowground biodiversity and ecosystem functioning. Nature 515:505-511.

[2] Secretariat of the CBD Technical Series No. 89. (2017) The Lima Declaration on Biodiversity and Climate Change: Contributions from Science to Policy for Sustainable Development. Technical Series No.89. (Eds L. Rodríguez & I. Anderson) Secretariat of the CBD Montreal, 156 pages

[3] "Modern food system" is understood here as those post-industrial revolution, which are highly dependent on external inputs and large-scale farming. Lapatina, Ljubov & Ploeger, Angelika. (2013). Contradictions within the Modern Food System: Nutritional Disbalance across the Globe, Its Main Drivers and Possible Ways Out. Future of Food Journal. 1. 29-38. accessed 28 june 2021.

[4] The Forum for the Future. 2014. Key Challenges for a sustainable food supply: https://cutt.ly/CmdbPbc and FAO. 2017. The future of food and agriculture – Trends and challenges. https://cutt.ly/7mdbGhu

[5] Crippa, M., Solazzo, E., Guizzardi, D. et al. Food systems are responsible for a third of global anthropogenic GHG emissions. Nat Food 2, 198–209 (2021). https://cutt.ly/QmdbK9p

Wayanad, Kerala, India
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2. TRANSFORMING AGRICULTURAL POLICY AND PRACTICE TO RESET OUR RELATIONSHIP WITH NATURE

Mainstreaming biodiversity across food systems is a genuinely cross-cutting subject. It goes beyond applying safeguarding mechanisms to tackle biodiversity loss oror keeping endangered species out of harm's way in development processes. It is the process of fully reflecting biodiversity's potentials, needs, and risks in food policies, plans, and activities. It involves taking inclusive and integrative action to restore, conserve, and sustainably use biodiversity at every stage of policymaking and the development of new plans, programmes, and projects relating to food production and consumption. This includes redirecting harmful subsidies, rethinking incentives, and incorporating biodiversity concerns into local, subnational, and national food policies.

From the public sector's perspective, working collaboratively across sectors is key to the integration of biodiversity concerns into food systems-related policy and practice. Although agricultural, environmental, and health sectors are typically associated with food systems, mainstreaming biodiversity requires a joint effort with many other sectors including trade, tourism, finance, economy, planning, culture, or development. Strategic planning and effective communication are crucial to reaching an understanding of what mainstreaming biodiversity represents to each sector, outlining challenges, synergies, and opportunities. Policies that consider all stakeholders' perspectives create ownership, adherence, and commitment and are significant enablers of on-the-ground implementation of impactful and transformative strategies and action plans.

Biodiversity mainstreaming in policy and practice - Lao PDR: The Agrobiodiversity Initiative (TABI) is a joint programme of Lao PDR's Ministry of Agriculture and Forestry and the Swiss Agency for Development and Cooperation that seeks to enhance, conserve, manage, and sustainably use the biodiversity of farming and forest landscapes in northern Laos. TABI, which started in 2009, has (1) established partnerships with local and national authorities, civil society organizations, and the private sector; (2) identified, tested, and disseminated more than 20 agrobiodiversity-based livelihood models; (3) developed a participatory forest and land use planning, and management process (FALUPAM), and (4) currently has 180 agrobiodiversity-related projects.

+ Strength comes from diversity. All stakeholders have an essential role in successful biodiversity mainstreaming, particularly non-state actors:
+ The private sector can be a driving force to facilitate social and economic changes in food systems. It has the opportunity to make biodiversity the starting point of business operations and unlock new demands and trends in sustainability that can lead to new business development. A good example is the work of the World Economic Forum (WEF) on biodiversity loss risks.
+ **Women, youth, indigenous peoples and local communities (IPLCs)** are the guardians of biodiversity and fundamental actors in implementing mainstreaming. Strategies must include considerations of gender gaps, IPLCs' needs and priorities, food sovereignty, rights-based approaches, intergenerational equity, and the right to food.
+ Other non-governmental (civil society organizations, academia, i.a.) and subnational actors promote mainstreaming on the ground, by implementing advocacy and outreach strategies, producing evidence-based knowledge, advancing research, developing innovative technological solutions, providing necessary biodiversity data, and raising awareness on the nexus between biodiversity, water, food security, climate change, nutrition, and health.
+ **Multi-stakeholder partnerships and coalitions** can significantly contribute to mainstreaming processes and achieve global impact, such as Business for Nature and the Natural Capital Impact Group.
+ Lastly, in our role as consumers, we are all biodiversity mainstreaming stakeholders. We express the need for more sustainable, inclusive, and equitable food systems by opting for a locally sourced, healthier, and more diverse diet, reducing food loss and waste, and adequately disposing of and recycling our waste. This way we can drive decision-makers to raise ambitions for mainstreaming biodiversity into food and agriculture. Our choices shape the future of food systems.

"BIODIVERSITY IS BECOMING A CROSS-CUTTING THEME AT GLOBAL LEVEL. SO IS YOUTH. YOUTH AND YOUNG PROFESSIONALS IN AGRI-FOOD SYSTEMS HAVE A HUGE STAKE IN BIODIVERSITY PRESERVATION AND RESTORATION. YOUTH VIEWS ON BIODIVERSITY NEED TO HAVE A SEAT AT THE TABLE - DEMOCRATICALLY, CONSISTENTLY."
Genna Tesdall, YPARD Director

Putting biodiversity mainstreaming into practice is not an easy task to achieve, as is shown by the limited success achieved in global processes so far. Only a whole-of-government, whole-of-society approach that fosters synergies and multisectoral collaboration will lead to success. Laying out concrete SMART goals and targets at a global policy level and improving governance with a focus on responsiveness, transparency, and accountability at regional, national, and subnational level are necessary.

[6] Benton, Bieg, Harwatt, Pudassaini, and Wellesley. 2021. Food system impacts on biodiversity loss: for food system transformation in support of nature: https://cutt.ly/OmdbX5K

[7] 100 years of Agricultural Change: Some trends and figures related to Agrobiodiversity loss- refer to box 5: Building on Gender, Agrobiodiversity and Local Knowledge - a Training Manual: https://cutt.ly/imdbMI1

[8] IPES-Food. 2020. COVID-19 and the crisis in food systems: Symptoms, causes, and potential solutions: https://cutt.ly/nmdb379 and World Bank. Understanding Poverty. 2021: https://cutt.ly/emdb6x4

[9] UNEP. 2021. Making peace with nature: https://cutt.ly/hmdnrKz

[10] Protecting biodiversity to prevent the emergence of new infectious diseases- Inrae-News Summary: https://cutt.ly/NmdnoEu

[11] A Alonso Aguirre. 2017. Changing Patterns of Emerging Zoonotic Diseases in Wildlife, Domestic Animals, and Humans Linked to Biodiversity Loss and Globalization, ILAR Journal: https://cutt.ly/wmdnjPj

[12] Biodiversity International, 2017. Mainstreaming Agrobiodiversity in Sustainable Food Systems: Scientific Foundations for an Agrobiodiversity Index. Biodiversity International, Rome, Italy. Also, on Links between biodiversity and food systems CBD: https://cutt.ly/9mdnvPA

Oakland, United States
@Edgar Castrejon

Encouraging dialogue across different sectors and broader participation of all stakeholders is equally important to achieving an response to food system challenges. Ownership, support and participation of all actors are vital to ensuring a smooth and efficient transition period to a healthier sustainable food system.

3. A CALL FOR URGENT CROSS-SECTORAL, INTEGRATED ACTION

Biodiversity mainstreaming across and within agricultural sectors is a cornerstone of the post-2020 global biodiversity framework (GBF) process. It has been embedded in the CBD since its inception. COP13 (Cancun, Mexico) created momentum for mainstreaming and succeeded in bringing agricultural sectors closer to the biodiversity arena. Nonetheless, there was limited progress in achieving biodiversity mainstreaming [13] - especially in the context of food systems. The discussions leading up to the adoption of a new framework under the CBD represent a timely opportunity to reconnect our food systems with nature, reflecting this connection in renovated (or new) commitments, pledges, policies, and concrete initiatives across sectors and stakeholders.

+ National Biodiversity Strategies and Action Plans (NBSAPs) can serve as primary mainstreaming tools[14]. However, there is room for improvement in their (a) design – taking into consideration food system actors' views, (b) implementation, and (c) reporting mechanisms/templates. Countries should consider agrobiodiversity concerns when reviewing their NBSAPs, accounting for mitigation and adaptation measures, finance instruments, and enabling legal and institutional frameworks. A more effective translation of these into national policy and practice will also contribute to reaching mainstreaming targets.

+ Likewise, mainstreaming is currently limited to an informal advisory group in the CBD. Replacing it with a formal working group composed of representatives from diverse stakeholder groups and sectors [15], including women, youth, IPLCs, the private sector, and civil society, would secure its place as a key topic of the post-2020 agenda.

Transformative change to sustainable food systems requires acknowledging and internalizing the deep interconnection between biodiversity, food, agriculture, the environment, and human health. Recognizing and prioritizing biodiversity and the sustainability of our food systems is simply a matter of survival. Reaching the aligned and coordinated collaboration needed to mainstream biodiversity and support healthy food systems requires ambitious goals to be agreed upon at COP15. It demands solid outcomes from the UN Food Systems Summit, such as in Action Track 3 "boost nature-positive production," which aims to optimize and sustainably use natural resources along food value chains, reduce biodiversity loss, pollution, water use, soil degradation, and GHG emissions.

The post-2020 global biodiversity framework should facilitate the engagement of stakeholders at all levels, both nationally and internationally, as well as promoting rights-based approaches, and prioritizing the conservation, preservation, and restoration of ecosystem services. The international community should take proactive steps to fill in knowledge gaps, support countries in identifying needs and priorities, and mobilizing accurately assessed financial, human, and technical resources. This can be achieved by fostering synergies across disciplines to improve monitoring systems, internalize food trade externalities, collect gender disaggregated data, and build the capacity of food system actors [16]. From this common basis of ambition, the implementation of mainstreaming approaches has the potential to be one of the most significant contributors to achieving food-related SDGs and the CBD's objectives, particularly in the sustainable use of biodiversity.

"WEST AFRICA IS ONE OF THE BIODIVERSITY HOTSPOTS IN THE WORLD. ITS ECOSYSTEMS, FROM SAHEL, DRY SAVANNA TO TROPICAL FOREST PROVIDE HABITATS TO MANY SPECIES. ADDRESSING THE DRIVERS OF BIODIVERSITY LOSS REQUIRES SIGNIFICANT INVESTMENT IN MAINSTREAMING BIODIVERSITY FOR SUSTAINABLE FOOD SYSTEMS AND THE BENEFIT OF FUTURE GENERATIONS."

Binthia Stephen - Senior Policy Officer
FAO Subregional Office for West Africa

[13] Grumbin, R. Edward and Xu, Jianchu. 2021. Five Steps to Inject Transformative Change into the Post-2020 Global Biodiversity Framework. Bioscience: https://cutt.ly/6mdnM3k

[14] GEF. 2014. Mainstreaming biodiversity in practice: A STAP advisory document: https://cutt.ly/Tmdn8PJ

[15] Grumbin and Xu, 2021.

[16] Cecilia Bellora & Jean-Marc Bourgeon , 2016."Food trade, Biodiversity Effects and Price Volatility," CEPII Working Paper 2016-06 , March 2016, CEPII: https://cutt.ly/xmdmq1s

* All underlined are references to our related publications available here: https://cutt.ly/JmK78za

Cover photo
Picture of Post-2020 Biodiversity Framework - EU Support project's webinar "Transforming agri-food systems for biodiversity and sustainable development"

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