

A close-up photograph of a person's hand with a gold ring on the ring finger, resting on dark, rich soil in a garden bed. A vibrant green leafy plant is in the foreground. In the background, there are wooden garden beds and black plastic mulch.

FOOD FORWARD NBSAPS

Integrating Food Systems in National Biodiversity Strategies
and Action Plans

WWF Food Practice

WWF is an independent conservation organization, with more than 35 million followers and a global network active through local leadership in over 100 countries. WWF's mission is to stop the degradation of the planet's natural environment and to build a future in which people live in harmony with nature, by conserving the world's biological diversity, ensuring that the use of renewable natural resources is sustainable, and promoting the reduction of pollution and wasteful consumption. The WWF Food Practice works to transform the global food system to support WWF's mission. The Food Practice's vision is a food system which provides nutritious food to all current and future generations while protecting our planet. To help achieve this goal, the Food Practice works across nature-positive food production, healthy and sustainable diets, and food loss and waste.

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1. EXECUTIVE SUMMARY

EXECUTIVE SUMMARY

Progress towards the global biodiversity goals requires agriculture and food systems transformation. Agriculture and food production is a key driver of biodiversity loss and climate change. The loss of biodiversity, in turn, reduces ecosystems' capacities to weather the effects of climate change and to provide vital services including food. Global biodiversity also plays a role in climate regulation and carbon sequestration in the agriculture and food systems.

The Kunming-Montreal Global Biodiversity Framework (GBF), which was adopted in 2022 under the Convention on Biological Diversity (CBD), sets out an ambitious pathway with 4 overarching goals and 23 Action Targets for 2030 to reach the global vision of a world living in harmony with nature by 2050. CBD Parties commit to implementing measures as part of their National Biodiversity Strategies and Action Plans (NBSAPs) with the participation of Indigenous peoples and local communities. NBSAPs are the primary implementation instrument of governments at the national level. The design, implementation, and gradually increased ambition of NBSAPs are underpinned by mechanisms for monitoring, reporting, and stocktaking.

Policy goals and measures in NBSAPs should take a whole-of-society approach and be linked to scientific evidence. Their implementation is supported by a range of domestic and international financing mechanisms that draw from public and private sources. NBSAPs provide a unique opportunity to implement synergistic food systems policy measures for nature, climate, and people – contributing

to global biodiversity and climate goals simultaneously. This implies strengthening NBSAPs through nature-positive agriculture and food production measures complemented by healthy and sustainable food consumption and reduction of food loss and waste. Altogether, such measures can accelerate global progress towards the 23 GBF Action Targets and lay the ground for a life in harmony with nature by 2050.

Through an analysis of NBSAPs, this report shows that while many countries are recognising that food systems are a crucial part of progress towards the GBF Targets, additional measures and implementation of these plans are needed.

This report assesses the updated NBSAPs (23 submissions) and National Targets (41 submissions) submitted by 64 Parties under the GBF as of September 30, 2024. For simplicity, the report uses NBSAPs to refer to both 'NBSAPs' and 'National Targets' submissions.

WWF's NBSAP We Need Checklist aims to support countries when revising their NBSAPs to ensure these plans are ambitious, actionable, aligned with the GBF, and delivered on time. To complement the work on the "NBSAPs We Need," this report focuses on the integration of food systems in NBSAPs.



KEY FINDINGS

Overall, there is a positive trend as 97% of 64 assessed NBSAPs and National Targets submissions include at least one measure related to agriculture and food systems. However, the coverage of food systems measures varies across NBSAPs and categories of measures.

- **58 NBSAPs** have included measures for nature-positive food production.
- **15 NBSAPs** have integrated measures focusing on food production, healthy and sustainable consumption, and food governance.
- **32 assessed NBSAPs** take a holistic food systems approach. These NBSAPs include targets and policy measures addressing nature-positive food production, food loss and waste reduction, the promotion of healthy and sustainable food consumption, as well as measures for inclusive and sustainable governance.

This report assesses whether NBSAPs and National Targets include food systems measures across four categories.



CATEGORY 1: NATURE-POSITIVE FOOD PRODUCTION

All NBSAPs include at least one relevant policy measure related to nature-positive food production:

Policy measures included	# of NBSAPs
Reducing harmful agricultural inputs	42
Organic farming	19
Agroecological practices	23
Enhancing soil health	58
Integrated production systems	16
Sustainable livestock	27
Sustainable fishing	54
Sustainable aquaculture	42



CATEGORY 2: REDUCING FOOD LOSS AND WASTE

While several NBSAPs include measures related to food waste, most countries lack plans for addressing food loss in the supply chains.

Policy measures included	# of NBSAPs
Reducing food loss	5
Food composting	2
Food waste	25
Improved storage or supply chains	14
Circular economy	9
Waste management	20



CATEGORY 3: HEALTHY AND SUSTAINABLE DIETS

While several NBSAPs include measures related to shifting to sustainable and healthy diets, sustainable procurement as well as other measures that create environments for making healthy food choices were largely missing from the assessed NBSAPs.

Policy measures included	# of NBSAPs
Sustainable consumption and diets	30
Sustainable food procurement	8
Creating accessible urban farms	4
Increasing access to sustainable food	8
Promoting sustainable or eco-certification	14
Marketing of sustainable food	10



CATEGORY 4: INCLUSIVE FOOD GOVERNANCE

While the majority of NBSAPs include several measures that support building strong policy governance, major gaps remain for supporting marginalized groups who are key enablers of food systems transformation.

Policy measures included	# of NBSAPs
Inclusion of local communities	42
Strengthening role of Indigenous peoples	20
Supporting smallholder farmers	19
Recognizing role of farmer organizations	2
Land tenure measures	15
Payment for Ecosystem Services	16
Land-use and sea-use planning	42
Subsidy reform	28
Conserving food genetic diversity	35
Food security and resilience	27



KEY RECOMMENDATIONS

Food systems both drive biodiversity loss and provide opportunities to address the issue. Transforming food systems to be nature-positive is an important lever to achieve biodiversity conservation and restoration as well as to deliver on global climate and sustainable development goals. The CBD COP16 and the updated NBSAPs offer a momentous opportunity for countries to adopt ambitious targets and plans under the GBF that drive immediate action for nature-positive food systems.

At the national level, Parties must:

1. Ensure inclusive policy processes for developing and implementing NBSAPs. By examining food systems holistically from production to consumption, national policymakers should work together with all stakeholders across food systems through inclusive participatory approaches to prepare and implement NBSAPs.
2. Include all parts of food systems in NBSAPs for progress towards all GBF targets. This includes measures for nature-positive food production, reducing food loss and waste and shifting to sustainable and healthy diets which are less commonly considered in the current NBSAPs.
3. Adopt a clear and comprehensive finance strategy for NBSAPs implementation that includes reducing and redirecting harmful subsidies in the agriculture and food systems and aligning current finance flows to biodiversity, climate, and food interventions by considering synergies and trade-offs.
4. Increase public funding and support private investment in food systems interventions including agroecological programs and projects that benefit nature, climate, and food security. This must ensure adequate and equitable allocation and timely and direct access to finance from all sources by Indigenous peoples and local communities, family farmers, women, youth, and other rights holders.
5. Strengthen good governance principles, inclusiveness, transparency, and accountability in engaging stakeholders to enable dialogue and collaboration across agendas and at multiple levels and priority areas, and to connect different interventions for addressing agriculture and food system issues.
6. Assess and strengthen institutional capacity and governance at the national level to help share knowledge and lessons learned in policy planning, implementation, and governance, and the effectiveness and coherence of these interventions.
7. Align NBSAPs targets and measures for agriculture and food systems with the Nationally Determined Contributions, National Adaptation Plans, Long Term Strategies, land degradation neutrality plans, and other national policy priorities for sustainable development.

At the CBD COP level, Parties must:

1. Commit to adoption and implementation of concrete measures to address the drivers of biodiversity loss in food systems, with a focus on equitably reducing the global footprint of consumption and overconsumption to return within planetary limits and mainstreaming biodiversity in agriculture and food systems.
2. Adopt or agree to develop indicators to monitor progress in agriculture and food systems across all relevant targets at least including Target 10 (sustainable management), Targets 16 (sustainable consumption), 14 (mainstreaming), and 1 (spatial planning).
3. Adopt a clear and comprehensive finance strategy for GBF implementation that includes reducing and redirecting harmful subsidies in the agriculture and food systems and aligning current finance flows to biodiversity, climate, and food interventions to increase holistic policymaking in agriculture food systems.
4. Enable and increase direct access by family farmers, fisherfolks, Indigenous peoples, and local communities to international finance for nature and climate.
5. Build synergies with other international goals by paving the way for further integrating nature and climate actions through food systems at the upcoming nature and climate related COPs and by recognizing the links between nature, peace and conflict.

A top-down view of a dark, damp forest floor covered in fallen leaves and twigs. Various tropical fruits and plants are arranged in a semi-circular pattern. On the left, there are several large, round, brown fruits, some cut open to reveal white interiors. In the center, there are clusters of small red berries, green berries, and yellow berries. To the right, there are more red berries, some dark brown, and several large, spiky, orange-red fruits. At the bottom, there are several large, dark, bumpy fruits. The overall scene is a rich display of biodiversity in a tropical forest setting.

2. SETTING THE SCENE

BIODIVERSITY AND FOOD SYSTEMS

Biodiversity is of fundamental importance for human life on Earth but is being lost at alarming rates. Biodiversity provides vital goods such as food, water, energy, and medicine as well as ecosystem services such as climate and water regulation and removal of pollution. In addition, biodiversity contributes to human health and well-being by providing spaces for recreation, learning, or traditional practices that are central to people's quality of life and cultural integrity.¹ In October 2024, the Living Planet Index—an important indicator of the state of global biological diversity— showed that since 1970, there has been an average decline of 73% in species populations globally. Freshwater biodiversity is hit the hardest with freshwater species populations declining by 85% compared to the declines in terrestrial species (69%) and marine (56%) during the same period.² The loss of wildlife poses a threat to the food system itself. For example, near extinction of certain pollinators threatens agricultural production and food systems' ability to cope with climate change impacts. Furthermore, 52% of agricultural production land is degraded.³ Food systems account for 27% of global greenhouse gas (GHG) emissions and thus drive climate change, which also has a negative impact on biodiversity.⁴

The global food system is a key driver of biodiversity loss.⁵ It is responsible for 70% of freshwater use and 90% of global tropical deforestation. Along with freshwater depletion, food production has resulted in the widespread modification of river systems by agricultural infrastructure (e.g., irrigation dams), conversion of wetlands for agriculture and aquaculture, and pollution. Loss of natural habitats driven by agricultural expansion threatens over 80% of all threatened terrestrial bird and mammal species while overfishing is the leading cause of biodiversity loss in marine ecosystems. **Figure 1** summarizes some of the negative environmental impacts of food systems.

The food system drives biodiversity loss in the water and on land. Almost 38% of marine fish stocks classified as overfished. Overfishing undermines the resilience of marine ecosystems, making them more susceptible to crossing regional tipping points. Freshwater fisheries are also under pressure as populations of migratory fishes have declined by an average of 81% since 1970 due to habitat alteration, overharvest, pollution, and climate change. Industrial fishing takes place across more than half (55%) of the ocean, with most fishing concentrated in shallow and coastal zones, leading to increasing habitat degradation and risks to threatened species.⁶ In addition, over 3 million hectares of mangroves and other coastal habitats have been converted to support aquaculture, particularly shrimp and tilapia farming, and the conversion continues.⁷

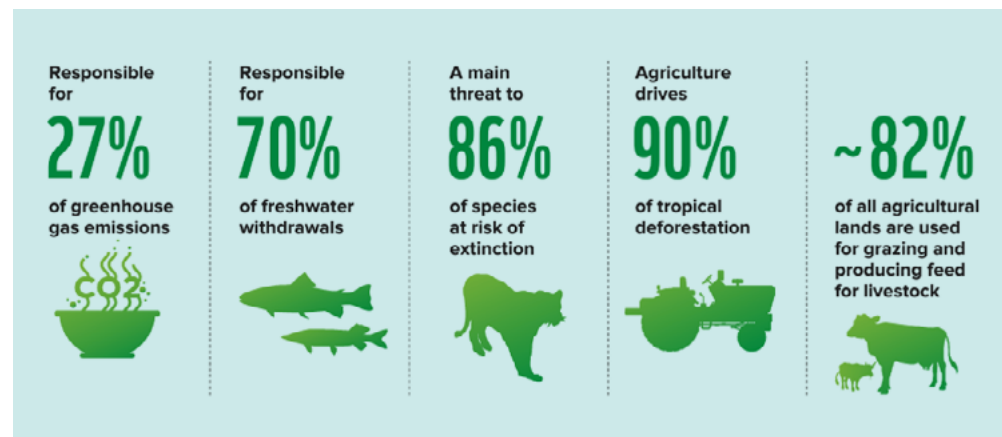


Figure 1. Current food systems impacts on nature and climate. Source: WWF 2024 Living Planet Report

The diversity of food produced for consumption has also declined steeply.⁸ More than 90% of crop varieties have disappeared from farmers' fields and half of the breeds of many domestic animals have been lost, resulting in a global food system in which 75% of all production and consumption is dedicated to just 12 plants and 5 animals.⁹ The concentration on a few species and the global loss of local varieties and breeds of domesticated and wild plants and animals threaten food availability by undermining the resilience of agricultural systems to threats such as pests, pathogens, and climate change. Less diversity of edible plant and animal species also means that global diets will become more homogeneous and less nutritious.¹⁰

Biodiversity loss due to ecosystem degradation is reducing food systems' capacity to deliver sufficient healthy food for human consumption. Biodiversity loss means that there are fewer plants, animals, and microorganisms that are critical to the ecosystem services such as pollination, clean water, or soil fertility that agriculture absolutely needs. The loss of these ecosystem services makes it harder for agricultural producers to grow the crops that are needed to feed the growing global population.¹¹ For example, 75% of crop species that are significant for global food production rely on pollination by animals, primarily insects.¹² More than 40% of these crops depend on wild pollinators. A complete loss of pollinators would cause global deficits in fruits, vegetables, and stimulants, significant market disruptions, and nutrient deficiencies.¹³

However, food systems can be the crucial lever for biodiversity conservation and restoration.¹⁴ Functioning agroecosystems—which include crop cultures, orchards, meadows, pastures, tropical plantations or shifting cultivation systems, silvo-pastoral or mixed cropping systems, rice paddies, agroforestry systems, or home gardens—can enhance or provide important ecosystem services including pollination, pest control, conservation of genetic diversity for future agricultural use, soil retention, soil fertility regulation, or nutrient cycling. For example, perennial vegetation supports biodiversity in general and beneficial organisms in particular. Crop diversity with polycultures, cover crops, crop rotations, and agroforestry can reduce the abundance of insect pests that specialize on a particular crop, while providing refuge and alternative prey for natural enemies of pests. Agricultural practices like minimal use of pesticides, no-tillage, or crop rotation with mass-flowering crops can benefit wild pollinators.¹⁵

There is a broad range of principles, policies, and practices that can be adopted to promote direct or indirect enhancements of biodiversity at different levels of the food system. These include specific farm-level practices such as agroecology and other forms of nature-positive agriculture, landscape-level approaches such as integrated spatial planning or community seed exchanges, and systems-level measures such as subsidy and tenure reform.¹⁶



HOW GBF TARGETS ARE LINKED TO FOOD SYSTEMS

Agriculture and food systems provide tremendous opportunities for UNCBD Parties to strengthen their NBSAPs and make progress on the GBF Targets as most of these Targets directly or indirectly relate to policies and practices in food systems. Table 1 summarizes how the GBF Targets are relevant for food systems.

Table 1. Targets and links to agriculture and food systems

GBF Target	Linkage to Agriculture and Food Systems
#1: Plan and Manage all Areas to Reduce Biodiversity Loss	Land-use planning and sustainable management of natural ecosystems directly linked to food systems are crucial for reducing biodiversity loss associated with food systems. Food production causes 70% of terrestrial biodiversity loss and 50% of freshwater biodiversity loss. ¹⁷
#2: Restore 30% of all Degraded Ecosystems	Nature-positive and agroecological food production holds great potential to support restoration of degraded ecosystems. Current food systems are responsible for most of the environmental degradation, depletion of natural resources, and biodiversity loss. ¹⁸
#3: Conserve 30% of Land, Waters and Seas	Specific production practices such as agroecology can contribute to conservation of terrestrial, aquatic, and marine ecosystems and help to mitigate the risks of ecosystem degradation and resource depletion from food systems. ¹⁹
#4: Halt Species Extinction, Protect Genetic Diversity, and Manage Human-Wildlife Conflicts	Strengthening protection of species and enhancing genetic diversity in food systems is needed to mitigate the threat the food systems pose to biodiversity. 86% of the 28,000 species facing extinction are at risk primarily due to habitat destruction and the impacts of intensive farming practices. ²⁰
#5: Ensure Sustainable, Safe and Legal Harvesting and Trade of Wild Species	Sustainable, safe, and legal harvesting and trade of wild species for food purposes is necessary to avoid overexploitation of wild species in food systems. The direct exploitation of wild species for food and non-food purposes is the leading driver of biodiversity loss in marine ecosystems and the second largest in terrestrial and freshwater ecosystems. ²¹
#6: Reduce the Introduction of Invasive Alien Species by 50% and Minimize Their Impact	Measures to control invasive alien species in food systems help to minimize the contributions of food systems to the spread of invasive alien species through global trade of agricultural and non-agricultural products. ²²

GBF Target	Linkage to Agriculture and Food Systems
#7: Reduce Pollution to Levels That Are Not Harmful to Biodiversity	Reduced soil, water, and air pollution from inputs such as chemical and natural fertilizers and pesticides of production machinery contributes to reducing harmful impacts on biodiversity as well as ecosystem functions and services. ²³
#8: Minimize the Impacts of Climate Change on Biodiversity and Build Resilience	Nature-positive and agrobiodiverse food systems build and enhance ecosystems resilience against climate change impacts. Measures for nature-positive food systems also mitigate climate change itself since food systems are a major driver of climate change, accounting for 27% of global greenhouse gas emissions. ²⁴
#9: Manage Wild Species Sustainably to Benefit People	The sustainable management of wild species such as wild fish supports food security and cultural practices, particularly for vulnerable populations, by ensuring continued access to products and services from ecosystems that are crucial for livelihoods. ²⁵
#10: Enhance Biodiversity and Sustainability in Agriculture, Aquaculture, Fisheries, and Forestry	Sustainable management and use of terrestrial, aquatic, and marine ecosystems are key to reducing pressures on biodiversity and preventing the further transgression of planetary boundaries. Between 18 and 33% of agricultural lands currently do not have sufficient biodiversity to provide ecosystem services such as pollination, biological pest control, and climate regulation as well as to prevent soil erosion, nutrient loss, and water contamination. The poor state of biodiversity degrades ecosystem functions, creates risks to food security, and compromises the resilience and sustainability of food production. ²⁶
#11: Restore, Maintain and Enhance Nature's Contributions to People	Healthy terrestrial, aquatic, and marine ecosystems are a direct source of food as well as a source of services such as pollination, soil health, and water regulation which are critical for resilience of food systems. ²⁷
#12: Enhance Green Spaces and Urban Planning for Human Well-Being and Biodiversity	Urban farms, integrated into green urban spaces, are important for enhancing food self-sufficiency, reducing reliance on imported produce, promoting resilience and healthy diets, and strengthening local biodiversity in urban and peri-urban areas. ²⁸

GBF Target	Linkage to Agriculture and Food Systems
#13: Increase the Sharing of Benefits from Genetic Resources, Digital Sequence Information and Traditional Knowledge	Ensuring equitable access to plant genetic resources for agricultural research and breeding while protecting the rights of Indigenous peoples and local communities and ensuring equal benefit sharing enhances sustainable agriculture and global food resilience, thereby supporting food security. ²⁹
#14: Integrate Biodiversity in Decision-Making at Every Level	Fully integrating biodiversity considerations within and across all levels of government and sectors that govern, and influence food systems can address biodiversity loss driven by food production and ensure resilience of food and agricultural systems. ³⁰
#15: Businesses Assess, Disclose and Reduce Biodiversity-Related Risks and Negative Impacts	Action by businesses and financial institutions involved in food systems play a crucial role in addressing biodiversity loss from food systems. Among all companies in the S&P Global Broad Market Index, consumer staples companies in the food, beverage, and agriculture sectors have the largest ecosystem footprint. ³¹ At the same time, companies in these sectors are highly dependent on natural ecosystems and their biodiversity. ³²
#16: Enable Sustainable Consumption Choices to Reduce Waste and Overconsumption	Reducing food waste and shifting to sustainable and healthy diets are key to address unsustainable consumption patterns, including overconsumption, and reduce the global footprint of consumption that have accelerated global biodiversity loss in the past 50 years. ³³
#17: Strengthen Biosafety and Distribute the Benefits of Biotechnology	Biotechnology can reduce pressure on natural resources by providing tools for the sustainable development of agriculture and fisheries. When integrated with other agricultural production methods, modern biotechnology has the potential to contribute to meeting global food needs, diversify food supplies, and improve processing systems and trade in food and agriculture. ³⁴
#18: Reduce Harmful Incentives by at Least \$500 Billion per Year, and Scale Up Positive Incentives for Biodiversity	Reforming financial incentives for food production is a key lever to reduce biodiversity loss from food systems, including forest and ecosystem loss. USD 520 billion in subsidies support intensive, commercial agriculture that contributes to deforestation and soil degradation. Additionally, USD 50 billion in subsidies incentivize overfishing, while USD 350 billion are spent on unsustainable water management, much of which is linked to food production as 70% of freshwater withdrawals are used for growing food. ³⁵

GBF Target	Linkage to Agriculture and Food Systems
#19: Mobilize \$200 Billion per Year for Biodiversity From all Sources, Including \$30 Billion Through International Finance	Finance for transforming food systems can have significant positive impacts on biodiversity and food security but investments and financial transfers averaging USD 500 billion per year are needed between now and 2050. ³⁶ About USD 200 billion is needed for investments in rural infrastructure, the protection and restoration of forests, the reduction of food loss and waste, and support for dietary shifts and agricultural research and development. The remaining USD 300 billion is needed to ensure affordable food for all. ³⁷
#20: Strengthen Capacity-Building, Technology Transfer, and Scientific and Technical Cooperation for Biodiversity	Strengthening capacity-building, technology transfer, innovation, and scientific cooperation in food systems can enhance biodiversity conservation and climate adaptation and mitigation, especially in developing countries. ³⁸ Many developing countries implement measures in their agriculture sector such as improved crop and post-harvest food management. ³⁹
#21: Ensure That Knowledge Is Available and Accessible to Guide Biodiversity Action	Making traditional knowledge of nutritious and agrobiodiverse foods accessible and available while respecting the rights of knowledge holders such as Indigenous Peoples and local communities can protect biodiversity and strengthen food and agricultural systems. Integrated and participatory biodiversity management as well as free, prior, and informed consent are vital for accessing traditional knowledge. ⁴⁰
#22: Ensure Participation in Decision-Making and Access to Justice and Information Related to Biodiversity for all	Inclusive decision-making and access to information related to biodiversity, especially for Indigenous Peoples and local communities, benefits local ecosystems. The integration of traditional knowledge and practices into strategies for biodiversity and food systems promote culturally relevant and sustainable food production methods such as traditional hunting and fishing, agroforestry, rotational farming, and community-based conservation management systems. ⁴¹
#23: Ensure Gender Equality and a Gender-Responsive Approach for Biodiversity Action	Integrating a gender-responsive approach in decision-making on biodiversity and food systems can enhance food systems sustainability as women often play a key role in managing natural resources used for food production and promoting sustainable agriculture and fisheries. ⁴²

THE NBSAPS WE NEED

NBSAPs provide national-level strategic guidance on the protection and management of biodiversity within a country and are the main tool guiding implementation of the GBF at the national level. Each CBD Party is expected to review or update its NBSAP to align it with the GBF Targets. The Goals and Targets set out in the GBF formulate the efforts that are required globally to halt and reverse nature loss by 2030.

As most implementation of the GBF will happen at the national level, NBSAPs should reflect the highest possible level of ambition permitted by national circumstances. With ambitious NBSAPs, the international community can protect, conserve, and sustainably use biodiversity while ensuring fair and equitable sharing of its benefits, halt, and reverse biodiversity loss by 2030, and secure a nature-positive future. According to WWF, the comprehensive and ambitious “NBSAPs we need” have the characteristics shown in Table 2.⁴³

Launched on September 30, 2024, [WWF’s NBSAP Tracker](#) provides assessment on the progress and content of the NBSAPs revision according to the above Checklist. The NBSAP Tracker also shows which countries have already submitted revised NBSAPs since COP15, which countries have only submitted revised National Targets and which countries haven’t done either. The NBSAP Tracker webpage features an interactive map where you can explore the different country assessments and a handy table that provides an overview of the assessment results of both the revised NBSAPs and the National Targets. There is also a link to dive deeper into the individual country assessments. As more countries continue to submit revised NBSAPs or National Targets 6, WWF will continue to add country assessments on this tracker.

In addition, [WWF’s Solving the Great Food Puzzle](#) provides a framework for identifying and implementing the right solutions that are rooted in the environmental, social, and cultural contexts of countries around the world. It introduces a new approach to transforming food systems by identifying place-based solutions that are rooted in the environmental, social, and cultural contexts of countries around the world. Using a newly developed food systems typology to simplify and accelerate implementation, countries are categorized into six Food System Types based on socioeconomic and environmental factors, including biodiversity richness, carbon reserves, and risks to freshwater. For each Food System Type, 20 actions are ranked by their potential to drive food system transformation across six strategic action areas: Natural resource management, Governance and institutions, Education and knowledge, Technology, Trade and Finance.

Table 2. WWF’s criteria for ambitious NBSAPs. See: [WWF NBSAPs We Need Checklist](#)

NBSAPs should include following areas	NBSAPs should include following elements
Ambition	<ol style="list-style-type: none"> 1. Alignment with the global mission of halting and reversing biodiversity loss by 2030 2. Integration of Specific, Measurable, Achievable, Realistic and Timebound (SMART) qualitative and quantitative targets and actions in the national context 3. Integration of actions with highest impact 4. Reducing threats to biodiversity and addressing natural ecosystem and species loss 5. Meeting people’s needs and addressing the drivers of biodiversity loss 6. A roadmap or action plan, including policy, legal, fiscal, economic, and other actions, for each target, defining what needs to be done to achieve the target
Whole of government and whole of society approach	<ol style="list-style-type: none"> 7. High level coordination 8. Integration into national policy frameworks 9. Inclusiveness and participation
Means of implementation	<ol style="list-style-type: none"> 10. Cross convention alignment 11. Budgeting, finance, and investment 12. International support 13. Built-in Nature-based solutions 14. Capacity building
Human rights-based approach	<ol style="list-style-type: none"> 15. Human right principles
Tracking progress and accelerating action over time	<ol style="list-style-type: none"> 16. National targets reflect headline indicators 17. A detailed national tracking system 18. National reporting 19. Mechanism for accelerated implementation

METHODOLOGY

This report reviews the updated NBSAPs and National Targets submitted by 64 Parties under the GBF as of September 30, 2024.² The objective of the review was to determine whether and to what extent agriculture and food systems measures are incorporated in NBSAPs and National Targets.

The review involved three steps:

1. Gathering information from each NBSAP:

An assessment framework was used to identify information related to food systems in each NBSAP and published national targets. The framework included a list of more than 60 keywords related to sustainable food systems across four intervention areas: Nature-positive Food Production, Reducing Food Loss and Waste, Sustainable and Healthy Diets, and Inclusive Food Governance. By performing a keyword search, relevant textual contents were extracted from each NBSAP and published targets and captured in the assessment framework along with information on associated GBF targets. In addition to extracting information based on the specific keywords, the extracted information included content that may not have had the exact keywords but was still pertinent to the identified policy intervention areas. This captured relevant content even when exact keywords were not used, but the intent or subject matter aligned with the policy focus areas.

2. Assessing the quality of food systems measures in NBSAPs:

An analysis framework gauged the degree and scope of food systems measures within all reviewed NBSAPs. Extracted keywords were assigned to the corresponding policy measures and then mapped to the appropriate policy intervention areas, Nature-Positive Food Production, Reducing Food Loss and Waste, Sustainable and Healthy Diets and Inclusive Food Governance.

3. Identifying trends and gaps:

Trends in the integration of food systems were analysed following two main strategies:

a) we identified and counted the total number of policy measures under each intervention area across all NBSAPs. This allowed us to determine the most and least incorporated intervention across the assessed NBSAPs;

b) for each policy measure within the four intervention areas, we calculated how many of the 64 NBSAPs and National Targets included at least one policy relevant to that measure. This allowed us to identify the most and least incorporated policy measures under each intervention area across the NBSAPs.

² While a total of 83 Parties to the UNCBD submitted their NBSAPs and/or National Targets as of September 30, 2024, given time constraints, this analysis excluded 19 of them that were not in English.



3. FINDINGS

Almost all 64 assessed NBSAPs and National Targets mentioned measures related to agriculture and food systems. These fall under 30 policy measures that refer to specific actions, strategies, or regulations aimed at integrating food systems considerations in biodiversity conservation and restoration efforts. These measures are sorted into four categories: nature-positive food production, reducing food loss and waste, shifting to sustainable and healthy diets, and inclusive food governance interventions.



1. NATURE-POSITIVE FOOD PRODUCTION

Nature-positive food production systems advance the protection and restoration of nature by relying on regenerative and agroecological practices that enhance the richness and abundance of biodiversity in land and water, and rehabilitate the functions of degraded natural systems to deliver a climate-positive future in which people and nature can thrive.^{44,45} Practices including organic farming, agroforestry, and regenerative farming have gained prominence as approaches to protect, manage, and restore nature, as well as to reduce emissions, while providing healthy food and securing the livelihoods of the people that produce it.⁴⁶

Almost all 64 NBSAPs mention at least one policy measure relevant to nature-positive food production.

Enhancing soil health and sustainable fishing practices are among the most mentioned policy measures. Measures to reduce harmful inputs and sustainable aquaculture practices receive a moderate level of attention. Integrated production systems, sustainable livestock, agroecology, and organic farming are less frequently highlighted compared to other policy measures. **See Figure 2.**

Policy measures relevant to nature-positive food production are included in most NBSAPs except for agroecology and organic farming which are more common among NBSAPs of developed countries although they are also present in the NBSAPs of a few developing countries like Mexico, Benin, Tonga, Ethiopia, and Kenya. Table 3 shows which nature-positive food production measures appear in which NBSAPs. Table 4 provides examples of nature-positive food production measures.

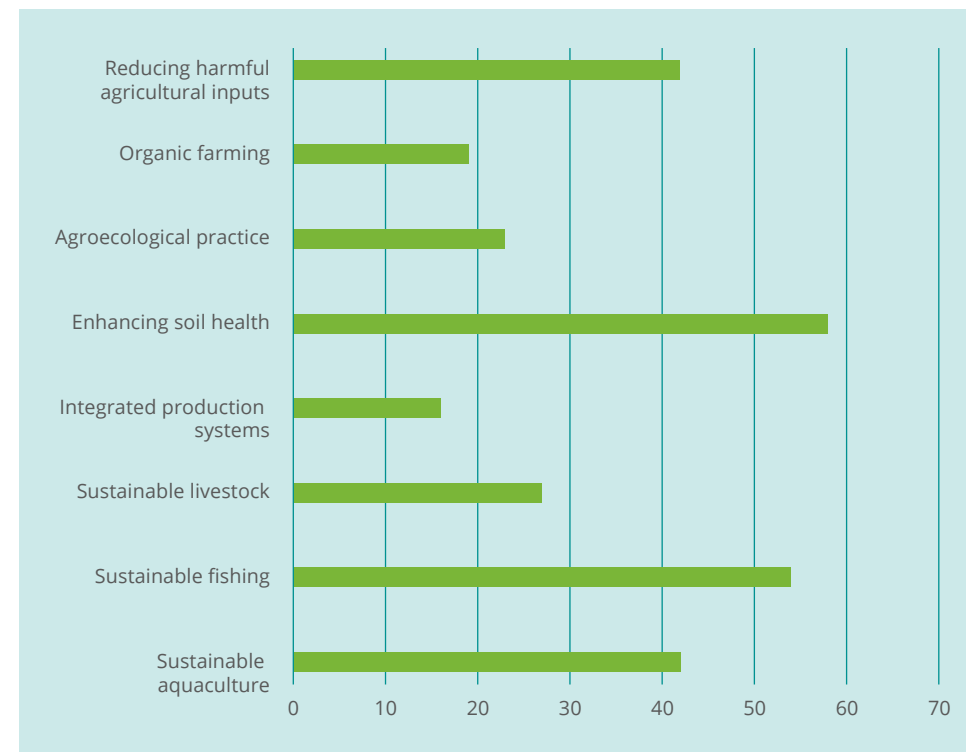


Figure 2. Number of NBSAPs mentioning food production-related measures

Table 3. Presence of nature-positive food production measures in NBSAPs and National Targets

Countries	Reducing harmful inputs	Agroecology	Organic farming	Enhancing soil health	Integrative crop-livestock systems	Sustainable livestock	Sustainable fishing	Sustainable aquaculture
 AUSTRIA	✓		✓	✓		✓	✓	✓
 BURKINA FASO					✓		✓	
 CAMEROON	✓			✓			✓	
 CANADA	✓	✓		✓		✓	✓	✓
 CHINA	✓	✓		✓		✓	✓	✓
 CUBA				✓			✓	✓
 THE EU	✓	✓	✓	✓	✓	✓	✓	✓
 FRANCE	✓	✓	✓	✓	✓	✓	✓	✓
 HUNGARY	✓	✓	✓	✓		✓	✓	
 IRELAND	✓	✓	✓	✓			✓	✓
 ITALY	✓	✓	✓	✓	✓	✓	✓	✓
 JAPAN	✓		✓	✓		✓	✓	✓
 JORDAN	✓							
 LUXEMBURG	✓	✓	✓	✓	✓			
 MALAYSIA							✓	✓
 MEXICO	✓	✓		✓	✓	✓	✓	✓

Countries	Reducing harmful inputs	Agroecology	Organic farming	Enhancing soil health	Integrative crop-livestock systems	Sustainable livestock	Sustainable fishing	Sustainable aquaculture
 SPAIN	✓	✓	✓	✓	✓		✓	
 SURINAME		✓			✓		✓	
 THE REPUBLIC OF KOREA	✓		✓	✓			✓	✓
 UGANDA	✓			✓	✓	✓	✓	✓
 BENIN	✓	✓		✓			✓	
 BANGLADESH	✓			✓			✓	✓
 LESOTHO	✓			✓			✓	✓
 DOMINICAN REPUBLIC				✓			✓	✓
 COLOMBIA	✓	✓						
 CENTRAL AFRICAN REPUBLIC	✓			✓			✓	✓
 EQUATORIAL GUINEA	✓		✓	✓			✓	✓
 ANGOLA		✓		✓			✓	✓
 INDONESIA	✓			✓			✓	✓
 CHAD	✓			✓			✓	✓
 GABON				✓			✓	✓
 INDIA	✓			✓	✓	✓	✓	✓

Countries	Reducing harmful inputs	Agroecology	Organic farming	Enhancing soil health	Integrative crop-livestock systems	Sustainable livestock	Sustainable fishing	Sustainable aquaculture
 AFGHANISTAN				✓	✓	✓	✓	
 MALTA	✓	✓	✓	✓			✓	✓
 TONGA	✓	✓	✓	✓	✓	✓	✓	
 PAKISTAN				✓		✓	✓	✓
 SOMALIA		✓		✓			✓	✓
 FINLAND	✓	✓		✓			✓	
 LIBERIA		✓		✓			✓	✓
 MONGOLIA				✓				
 ETHIOPIA		✓		✓		✓		
 UZBEKISTAN	✓			✓		✓	✓	
 ISRAEL	✓			✓			✓	
 CROATIA			✓	✓			✓	✓
 UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND	✓	✓		✓		✓	✓	✓
 VANUATU				✓				
 LEBANON	✓			✓			✓	✓
 COMOROS				✓	✓		✓	✓

Countries	Reducing harmful inputs	Agroecology	Organic farming	Enhancing soil health	Integrative crop-livestock systems	Sustainable livestock	Sustainable fishing	Sustainable aquaculture
 YEMEN	✓			✓			✓	✓
 RWANDA	✓			✓			✓	✓
 NEPAL	✓		✓	✓				
 GHANA	✓			✓	✓	✓	✓	✓
 MALAWI				✓			✓	✓
 NIGERIA	✓			✓	✓	✓	✓	✓
 MOZAMBIQUE	✓			✓		✓	✓	✓
 KENYA	✓	✓	✓	✓	✓	✓	✓	✓
 REPUBLIC OF MOLDOVA	✓	✓		✓	✓	✓	✓	✓
 SUDAN	✓		✓	✓		✓	✓	✓
 CAMBODIA						✓	✓	✓
 SWEDEN	✓		✓	✓				
 AZERBAIJAN	✓			✓		✓	✓	✓
 BHUTAN				✓		✓	✓	

Table 4. Examples of food production measures identified in the reviewed NBSAPs and National Targets

Measures	NBSAP examples		GBF Targets under which policy measure is included in the NBSAPs
Sustainable soil management	 The Republic of Korea	Develop and distribute technology to enhance soil carbon storage in farmlands and ensure the conservation of grassland to increase greenhouse gas storage.	8
Agroecology	 Canada	Ensure that areas under agriculture, aquaculture, fisheries, and forestry are managed sustainably, through the sustainable use of biodiversity, including through a substantial increase of the application of biodiversity friendly practices, such as sustainable intensification, agroecological and other innovative approaches.	10
Integrated agriculture production systems	 Burkina Faso	Improve the processing of agroforestry and fishery products by improved agro-sylvo-pastoral and fisheries production. Main policy measures under this include: (i) promotion of environmentally friendly product processing techniques and technologies (ii) technical capacity-building for stakeholders.	5, 9, 10, 11, 17, 19, 23
Organic farming	 France	Biodiversity protection will be considered in agricultural labels to encourage agroecological practices, in particular organic farming, which will reach 21% of the utilized agricultural area by 2030, or high environmental value certification, which will be reinforced, and the low-carbon label.	7, 10
Agricultural inputs	 The Republic of Korea	Provide financial support for purchases of organic farming supplies and green manure seeds and for soil testing and consulting services to reduce the use of pesticides and chemical fertilizers that harm the environment.	7, 10
Sustainable fishing	 Canada	Expand the implementation of the Sustainable Fisheries Framework, including developing reference points and other components of the precautionary approach framework for all key stocks per the annual SFF Work Plan, applying the Fisheries Act Fish Stocks Provisions, and conducting sustained, coordinated, and intensive aerial pollution surveillance over all waters under Canadian jurisdiction through the Aerial Surveillance Program is one of the areas of action.	5
Livestock	 Mexico	By 2026, a national strategy is in place to promote biodiversity-friendly livestock farming practices.	10
Aquaculture	 Cuba	Achieve greater efficiency and yield in aquaculture productions that use intensive and extensive farming systems, through sustainable management in at least 20% of the reservoirs dedicated to aquaculture.	10

Recommendations for strengthening nature-positive food production:

Policy measures for nature-positive and agroecological (see Box 1) food production help maintain and restore ecosystems health and functions. These practices use natural resources in a regenerative, ecological, and non-depleting way.⁴⁷

Policy measures for nature-positive food production include the following, among others:

- Reducing the use of harmful agricultural inputs such as synthetic or inorganic agrochemicals to reduce soil, water, and air pollution as well as waste.⁴⁸
- Agroecological practices and organic farming that use natural sources of nutrients and natural methods of crop and weed control while reducing the use of harmful inputs and pollutants.
- Protecting and supporting the recovery of agrobiodiversity, pollinators, and organisms critical for soil fertility and soil health.⁴⁹
- Investing in large scale soil restoration and rehabilitation.⁵⁰ Practices to enhance soil health are vital for biodiversity because they support complex below-ground ecosystems and enhance soil fertility, thereby boosting productivity and resilience across food landscapes.⁵¹
- Integrated production systems such as agroforestry and silvo-pasture to significantly enhance biodiversity in agricultural landscapes.⁵² For instance, silvo-pastoral landscapes where woody perennials, grasses, and animals interact biologically in the same land unit create habitats for wildlife and promote biodiversity conservation through landscape connectivity.⁵³
- Sustainable livestock management practices to mitigate climate change, enhance resilience to climate change impacts, and contribute to food security and health, economic, and environmental well-being.⁵⁴
- Sustainable fishing to maintain aquatic and marine ecosystems, protecting aquatic and marine biodiversity, and ensuring the resilience of coastal, marine, and aquatic environments.⁵⁵
- Sustainable aquaculture, which has a relatively smaller environmental footprint, to expand sustainable production of aquatic foods while minimizing further pressure on natural ecosystems.⁵⁶

Box 1. Boosting Biodiversity Action Through Agroecology: Guidance for integrating agroecology in NBSAPs

The handbook developed by Global Alliance for the Future of Food, Biovision Foundation, WWF International, Alliance of Biodiversity International and CIAT, and Agroecology Coalition provides guidance for integrating agroecology and food systems into the development and implementation of NBSAPs. The goal of this guidance is to support implementation of the GBF at the national level while strengthening policy coherence between the GBF and international goals and targets on food systems, including Sustainable Development Goal (SDG) 2 (End hunger, achieve food security and improved nutrition and promote sustainable agriculture), and United Nations Food Systems Summit (UNFSS) national pathways to sustainable food systems. In addition, this handbook sheds light on the opportunities and challenges of coordinated national-level policy planning and implementation. Integrating agroecology into NBSAPs is an opportunity to address biodiversity while simultaneously advancing other international targets, including those related to climate change, desertification, disaster risk reduction, combating hunger, reducing poverty, health, and nutrition.





2. REDUCING FOOD LOSS AND WASTE

Food loss and waste that occurs at scale along supply chains creates pollution resulting in the degradation of land, water, and soil – all of which are critical to food production.⁵⁷ Hence, managing food supply chains to reduce food loss and waste have significant impact on biodiversity and climate. Food supply chains can be improved to reduce food loss and waste reducing pressure on resources by reducing demand.⁵⁸

While about 40% of the 64 assessed NBSAPs include plans to reduce food waste, only 14 NBSAPs integrate measures to address food loss in supply chains including by enhancing food storage and 9 NBSAPs plan introducing circularity in food systems. See Figure 3.

Policy measures for addressing food waste are most common among developed countries NBSAPs which is a positive trend as 56% of global food loss and waste happens - mostly at the consumption stage - in these countries.⁵⁹ Developing countries account for 44% of global food loss and waste typically occurring at post-harvest stages of food supply chain mainly due to lack of proper infrastructure for storage and transportation.⁶⁰ However, it is important to note that food waste can still be significant in developing countries and food loss on farms and in the supply chain can be significant in developed countries.⁶¹ Table 5 shows which food loss and waste reduction measures appear in which NBSAPs. Table 6 provides examples of food loss and waste reduction measures.

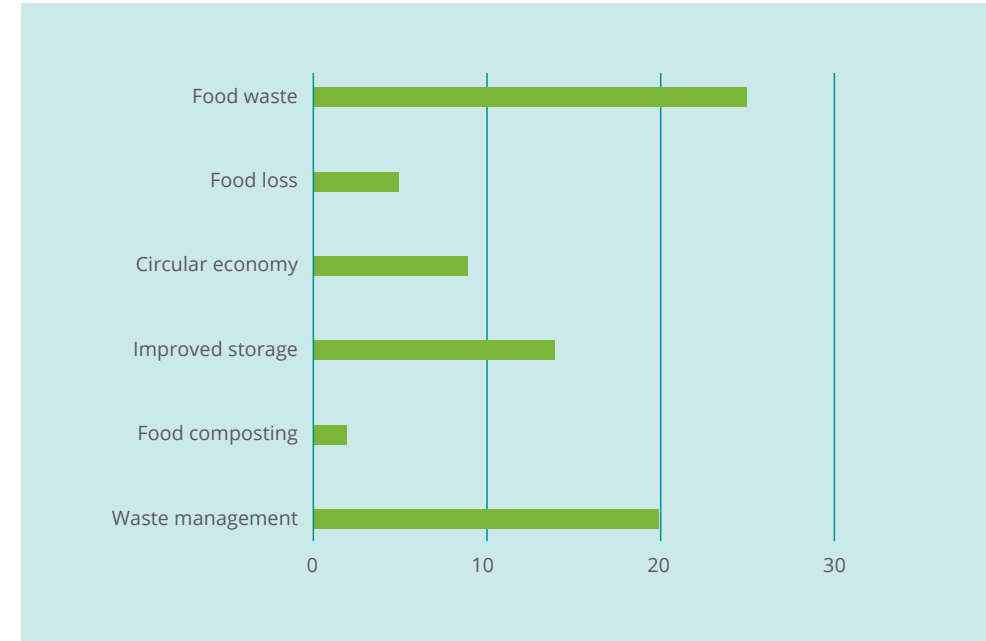




Figure 3. Number of NBSAPs mentioning measures related to reducing food loss and waste



Table 5. Presence of food loss and waste reduction measures in NBSAPs and National Targets

Countries	Food waste	Food loss	Improved storage or supply chains	Food composting	Circular economy	Waste management
 CAMEROON	✓					
 CANADA	✓	✓	✓		✓	✓
 CHINA	✓					
 THE EU	✓		✓		✓	
 FRANCE						✓
 HUNGARY			✓			
 IRELAND	✓		✓		✓	
 ITALY	✓				✓	
 JAPAN	✓	✓		✓		
 JORDAN	✓					
 MEXICO	✓					
 SPAIN	✓	✓			✓	
 SURINAME						✓
 THE REPUBLIC OF KOREA	✓					
 UGANDA	✓					
 BENIN					✓	

Countries	Food waste	Food loss	Improved storage or supply chains	Food composting	Circular economy	Waste management
 BANGLADESH	✓					
 EQUATORIAL GUINEA	✓					✓
 INDONESIA	✓	✓				
 GABON						✓
 INDIA			✓			✓
 AFGHANISTAN	✓					
 MALTA			✓		✓	✓
 TONGA						✓
 SOMALIA						✓
 FINLAND			✓		✓	
 MONGOLIA			✓			✓
 UZBEKISTAN						✓
 CROATIA	✓					✓
 UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND	✓		✓		✓	✓
 VANUATU	✓					
 LEBANON	✓					







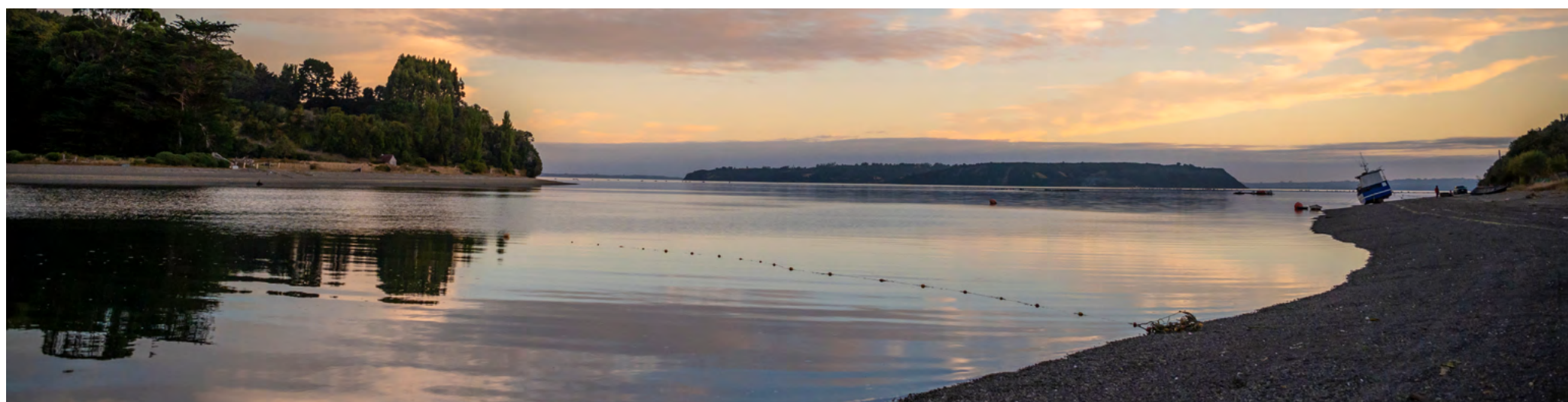
Countries	Food waste	Food loss	Improved storage or supply chains	Food composting	Circular economy	Waste management
 YEMEN			✓			✓
 RWANDA						✓
 GHANA	✓					
 NIGERIA	✓		✓			
 MOZAMBIQUE	✓					
 KENYA	✓		✓	✓		✓
 REPUBLIC OF MOLDOVA						✓
 SUDAN			✓			✓
 SWEDEN	✓	✓	✓			✓
 BHUTAN						✓



Table 6. Examples of policy measures identified in the NBSAPs and National Targets

Measures	NBSAP examples	GBF Targets under which policy measure is included in the NBSAPs
Waste management	 France In France, the definition of a trajectory for the reduction of harmful public spending will be based on the environmental impact assessment of the State budget (or „green budget“), carried out every year since 2020. As part of this exercise, public spending is rated according to six environmental objectives: one being transition to a circular economy, waste management and technological risk prevention.	18, 19
Food loss	 Canada The \$20M Food Waste Reduction Challenge offered prize funding for delivering novel solutions to reduce food loss and waste across the supply chain.	16, 15B
Improved storage and supply chains	 Ireland The draft National Food Waste Prevention Roadmap sets out information on the context of food waste and the components of the food supply chain that are included in the roadmap (primary production, manufacturing and processing, retail and distribution, restaurants and food services and households).	16
Food waste	 Cameroon Promote sustainable consumption, through awareness-raising, education, and the proposal of relevant alternatives to food waste and excessive waste production.	16
	 Canada Ensure that people are encouraged and enabled to make sustainable consumption choices including by establishing supportive policy, legislative or regulatory frameworks, improving education and access to relevant and accurate information and alternatives, and by 2030 reduce the global footprint of consumption in an equitable manner, including through halving global food waste, significantly reducing overconsumption and substantially reducing waste generation, in order for all people to live well in harmony with Mother Earth.	



Recommendations for reducing food loss and waste:

Policy measures that reduce food loss and waste support a transition to nature-positive agriculture and food systems by improving efficiency and building circularity in food supply chains. Reducing food loss and waste can positively impact biodiversity by saving natural resources embodied in food which decreases pressures on natural resources⁶² and helps protect biodiversity by lowering the environmental footprint of food systems.⁶³ They can decrease greenhouse gas emissions, save resources like water and energy, reduce pressure on natural ecosystems, and prevent pollution from the inefficient disposal of food.⁶⁴ Examples of measures to reduce food loss and waste include:

- Improving storage, transportation, and processing measures—such as investing in cold storage facilities, advanced packaging technologies, and food processing methods—can reduce food loss and waste and contribute to easing the pressure on natural resources.⁶⁵
- Proper management of municipal solid waste is crucial to avoid adverse environmental impacts from pollution and biological processes during waste disposal.⁶⁶ For example, composting, anaerobic digestion or dumping food in a landfill or incineration may have detrimental environmental impacts.⁶⁷
- Circular food supply chains contribute to regenerating natural areas and ecosystems by reducing exploitation of natural resources, pollution, and waste while promoting agro-ecological and regenerative farming practices such as using biological, organic alternatives to synthetic fertilizers and pest control.⁶⁸





3. SUSTAINABLE AND HEALTHY DIETS

Sustainable and healthy diets are protective and respectful of biodiversity and ecosystems; culturally acceptable, accessible, economically fair, and affordable; nutritionally adequate, safe, and healthy; and optimally using natural and human resources.⁶⁹ A successful transformation of agriculture and food systems for nature and climate is underpinned by a transition to healthy diets produced within planetary boundaries – while respecting local food contexts – to protect and restore wildlife, reduce exploitation of natural ecosystems, and reduce emissions and pollution.

Sustainable and healthy diets depend on the food environment including the availability, affordability, convenience, and desirability of foods that shape people’s dietary preferences.⁷⁰ Healthy and sustainable food environments enable consumers to make sustainable food choices with the potential to improve diets and reduce environmental impacts.⁷¹ Policy measures that promote healthy dietary choices for consumers through marketing and advertising, healthy and sustainable food product placements, and pricing enable a physical, economic, political, or socio-cultural change in how stakeholders engage with food systems.

Across 64 NBSAPs, less than half of them mention measures related to sustainable consumption or healthy diets and just over 20% include measures for increasing access to sustainable and healthy foods. Other measures mentioned include marketing sustainable foods and sustainable certification, while measures relevant to urban food systems and public procurement are less frequently included. **See Figure 4.**

Policy measures for sustainable and healthy diets are most common among NBSAPs of developed countries which is a positive trend as unsustainable and healthy diets in these countries key drivers of global environmental degradation and climate change.⁷² However, improving public access to sustainable and healthy food choices through public procurement, sustainable certification schemes, and promoting urban farming is largely absent from most of the assessed NBSAPs. Table 7 shows which sustainable and healthy diet measures appear in which NBSAPs. Table 8 provides examples of sustainable and healthy diet measures.

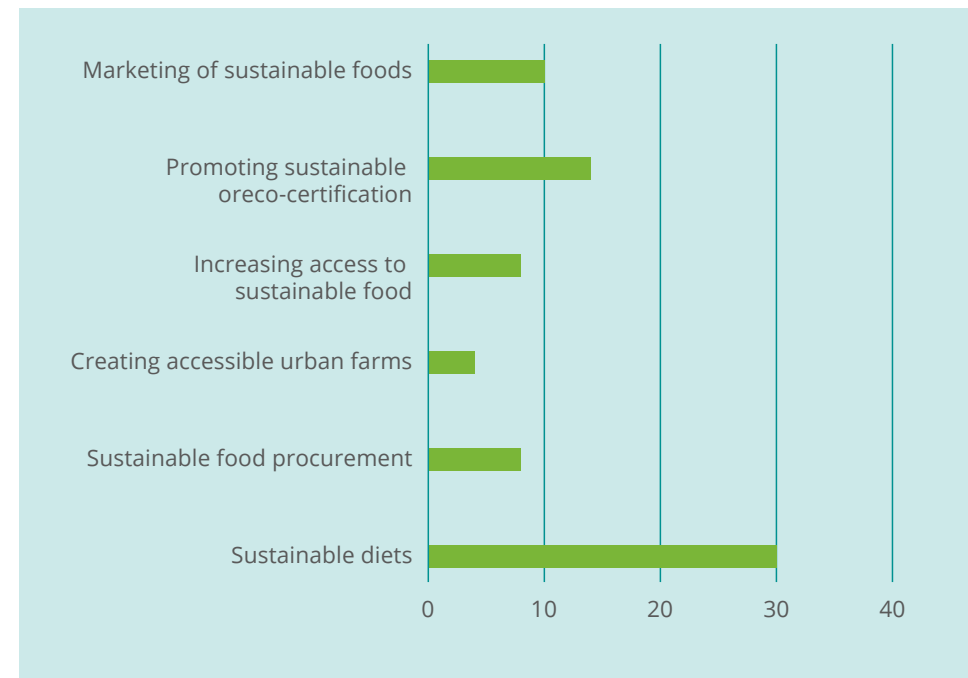


















Figure 4. Number of NBSAPs mentioning measures related to sustainable and healthy diet

Table 7. Presence of sustainable and healthy diet measures in NBSAPs and National Targets

Countries	Sustainable and healthy diets	Sustainable procurement	Increasing access to sustainable food	Creating accessible urban farms	Marketing sustainable food	Promoting sustainable certification
 AUSTRIA	✓	✓			✓	
 BURKINA FASO					✓	
 CAMEROON	✓		✓			
 CANADA	✓	✓	✓		✓	
 CHINA	✓				✓	✓
 THE EU	✓	✓		✓		
 FRANCE					✓	✓
 HUNGARY	✓		✓			
 IRELAND	✓				✓	✓
 ITALY	✓		✓		✓	✓
 JAPAN	✓	✓	✓		✓	✓
 LUXEMBURG			✓			
 MALAYSIA						✓
 MEXICO	✓					
 SPAIN	✓	✓				✓
 THE REPUBLIC OF KOREA	✓		✓		✓	✓

Countries	Sustainable and healthy diets	Sustainable procurement	Increasing access to sustainable food	Creating accessible urban farms	Marketing sustainable food	Promoting sustainable certification
 BENIN						✓
 EQUATORIAL GUINEA	✓			✓		
 GABON	✓					
 INDIA	✓		✓	✓		
 AFGHANISTAN	✓					
 MALTA		✓				✓
 TONGA	✓				✓	✓
 FINLAND		✓				
 UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND	✓	✓				✓
 VANUATU	✓					
 LEBANON	✓					
 RWANDA	✓					
 NEPAL	✓					
 GHANA	✓					
 NIGERIA	✓			✓		
 MOZAMBIQUE	✓					









Countries	Sustainable and healthy diets	Sustainable procurement	Increasing access to sustainable food	Creating accessible urban farms	Marketing sustainable food	Promoting sustainable certification
 KENYA	✓					✓
 REPUBLIC OF MOLDOVA	✓					
 SUDAN	✓					✓
 SWEDEN	✓					



Table 8. Examples of diet related policy measures identified in the NBSAPs and National Targets

Measures identified in NBSAPs	NBSAP examples		GBF Targets under which policy measure is included in the NBSAPs
Sustainable diets and consumption	 China	Cultivate biodiversity-friendly consumption and lifestyles, refuse to consume wild animals and their products, reduce consumption footprints in a fair manner, and minimize food waste and overconsumption.	22, 16, 23, 21
	 Mexico	By 2030, Mexico will promote sustainable food consumption through the implementation of the General Law on Adequate and Sustainable Food (LGAAS), through a regional diet based on the Healthy and Sustainable Dietary Guidelines for the Mexican Population	
Food procurement	 Spain	In accordance with the provisions of the Spain Circular 2030 Strategy and its successive action plans, work will continue on the implementation of ambitious legal measures to reduce food waste, in accordance with Law 7/2022, of April 8, and with the provisions of the future Law on the Prevention of Food Losses and Food Waste. Before 2024, the number of products and services included in the Green Public Procurement Plan of the General State Administration, its autonomous bodies and Social Security managing entities (2018-2025) will be reviewed and increased.	14, 15, 9, 10, 16, 18, 21, 23
	 European Union	The European Commission will put forward an Action Plan on organic farming, helping Member States stimulate both supply and demand of organic products. It will also ensure consumer's trust through promotion campaigns and green public procurement.	
Marketing of sustainable food	 Burkina Faso	Improving market access for agroforestry and fisheries products by: (i) setting up marketing infrastructures, (ii) promoting product standardization, and (iii) promoting ecosystem goods and services.	5, 9, 11, 13, 19, 23
Sustainable eco-certification	 France	Biodiversity protection will be considered in agricultural labels to encourage agroecological practices, in particular organic farming, which will reach 21% of the utilized agricultural area by 2030, or high environmental value certification, which will be reinforced, and the low-carbon label.	7, 10
Access to sustainable food	 Hungary	Encourage and promote the use of organic products in public catering, including by increasing the share of locally produced organic products in the school milk, school vegetables, and school fruit schemes.	n/a
Urban food systems	 European Union	To bring nature back to cities and reward community action, the Commission calls on European cities of at least 20,000 inhabitants to develop ambitious Urban Greening Plans by the end of 2021. These should include measures to create biodiverse and accessible urban forests, parks, and gardens; urban farms; green roofs and walls; tree lined streets; urban meadows; and urban hedges.	n/a

Recommendations for a shift to sustainable and healthy diets:

Policy measures related to food consumption promote all dimensions of individuals' health and well-being; have low environmental pressure and impact; are accessible, affordable, safe, and equitable; and are culturally acceptable.⁷³ Such policy measures positively impact biodiversity and climate change mitigation as well as public health by influencing consumption behaviour such as food choices, diet composition, and food waste.

Examples of measures to shift to sustainable and healthy diets include:

- Regulating consumption: While choice of policies depends on national and local contexts, a combination of measures including setting nature-positive dietary guidelines, designing incentives like subsidies and disincentives through taxation, and the regulating food retail and food services sectors can advance a transition to healthy and sustainable diets.⁷⁴
- Sustainable food procurement plays an important role in enhancing environmental sustainability by prioritizing organic and plant-based foods and supporting local and small-scale producers. Sustainable food procurement can reduce the ecological footprint associated with the food being purchased for and consumed in organizations such as schools, hospitals, or companies.⁷⁵



Policy measures to build food environments that enable sustainable and healthy food consumption by increasing food availability, affordability, and access to diverse and nutritious food at local levels, including in public institutions such as schools and hospitals can significantly impact biodiversity in multiple ways. Examples of such measures include:

- Effective marketing of sustainable food to help consumers make informed choices about the nutritional value, origins, and sustainability impacts of their food.⁷⁶ This can drive consumer demand for healthier, environmentally friendly options while reducing demand for unhealthy, unsustainable foods.
- Sustainable or eco-certifications to positively impact biodiversity by promoting farming practices that limit agrochemical use and encourage biodiversity conservation.⁷⁷
- Improving urban food systems through local production and markets to support sustainable development, human well-being, and climate action by fostering access to local food, shortening supply chains, and encouraging sustainable resource management.⁷⁸ Urban agricultural systems also support a wide range of ecological services, such as enhancing biodiversity and improving air and water quality.⁷⁹
- Regulations to limit marketing, advertising, and other promotional strategies of foods linked to negative environmental impacts including biodiversity and climate change to enable sustainable food choices. Such regulations may be similar to those that have been effective in reducing advertisement of unhealthy food.⁸⁰



4. INCLUSIVE FOOD GOVERNANCE

Food governance refers to the institutions, actors, rules, and norms that shape how food is produced, distributed, and accessed within and across borders as well as processes by which diverse actors within food systems are incorporated into decision and policymaking at different levels. A food systems governance approach to biodiversity and climate change needs to be inclusive and collaborative, where all stakeholders are involved in designing and implementing relevant interventions. This can encourage a more holistic understanding of agriculture, not only as a system for producing healthy food but also for ensuring healthy soil, biodiversity, clean water, landscape management, and livelihoods for communities. Policy measures for inclusive food governance facilitate equitable, coherent, coordinated, and transparent design, implementation and monitoring of food system measures.⁸¹

Among the 64 analysed NBSAPs, land-use and sea-use planning and considerations for local communities are the most frequently mentioned food governance measures — included in 66% of NBSAPs. Policy measures such as conserving food genetic diversity and food security are also commonly included. However, strengthening land tenure and farmer organizations are less frequently mentioned policy measures, suggesting these may be underrepresented in current biodiversity strategies and could benefit from greater attention. See Figure 5.

Policy measures for strengthening governance in food systems are most common among developed countries with the exception of reforming subsidies which is mostly absent from NBSAPs of developed countries. Agricultural subsidies in these countries, for example in the EU region, have enabled intensive practices that are detrimental to nature and climate.⁸² The role of smallholder farmers is dispersedly included in the NBSAPs despite producing one-third of the world's food and being the backbone of rural economies where over 2.5 billion people globally depend on these farmers for their livelihoods.⁸³ Table 9 shows which inclusive food governance measures appear in which NBSAPs. Table 10 provides examples of inclusive food governance measures.

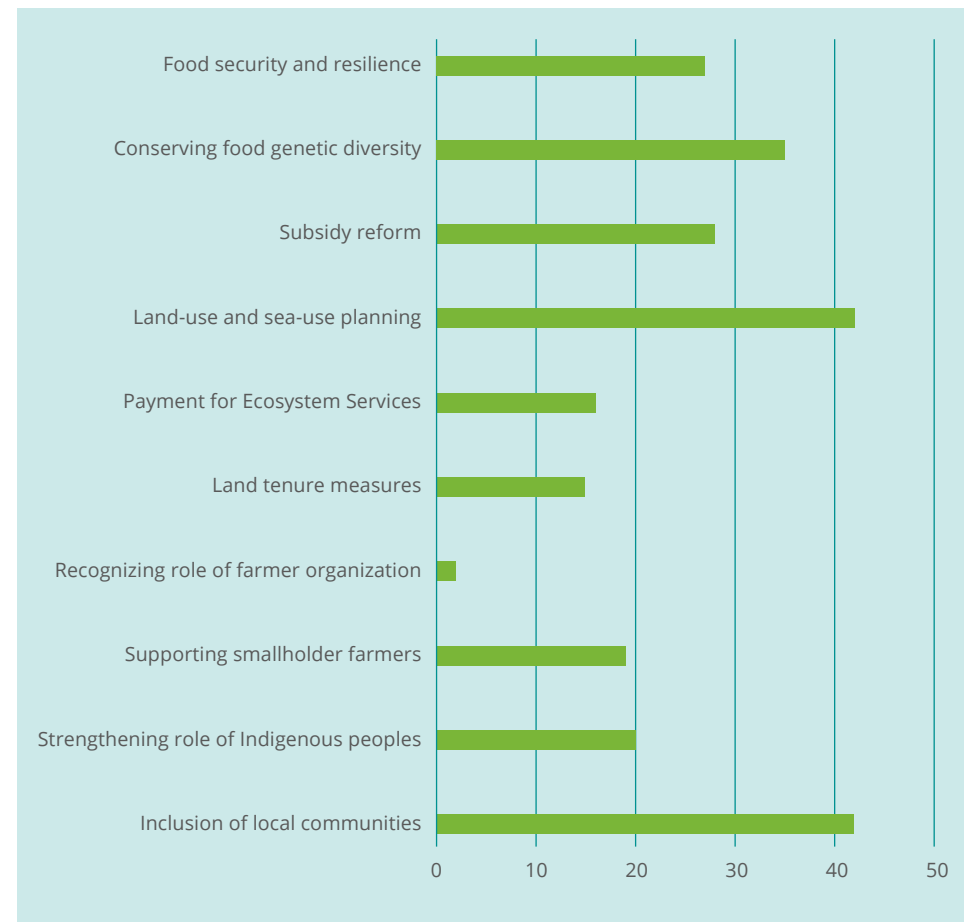







Figure 5. Number of NBSAPs mentioning measures related to food governance

Table 9. Presence of inclusive food governance measures in NBSAPs and National Targets

Countries	Inclusion of local communities	Strengthening role of Indigenous peoples	Supporting smallholder farmers	Recognizing role of farmer organizations	Land tenure issues	Payment for ecosystem services	Land-use and sea-use planning	Reforming subsidies	Conserving food genetic diversity	Food security and resilience
 AUSTRIA									✓	
 BURKINA FASO									✓	
 CAMEROON	✓	✓				✓	✓			✓
 CANADA	✓	✓	✓			✓	✓		✓	✓
 CHINA	✓						✓			
 CUBA							✓			
 THE EU		✓							✓	✓
 FRANCE						✓	✓		✓	
 HUNGARY	✓		✓	✓			✓		✓	
 IRELAND	✓	✓	✓				✓		✓	✓
 ITALY			✓				✓			
 JAPAN	✓		✓	✓			✓		✓	
 JORDAN	✓				✓	✓	✓	✓	✓	✓
 LUXEMBURG			✓				✓			✓
 MALAYSIA	✓	✓	✓				✓	✓	✓	✓
 MEXICO	✓	✓				✓	✓	✓	✓	

Countries	Inclusion of local communities	Strengthening role of Indigenous peoples	Supporting smallholder farmers	Recognizing role of farmer organizations	Land tenure issues	Payment for ecosystem services	Land-use and sea-use planning	Reforming subsidies	Conserving food genetic diversity	Food security and resilience
 SPAIN								✓	✓	
 SURINAME	✓	✓	✓				✓		✓	✓
 THE REPUBLIC OF KOREA	✓				✓	✓	✓	✓		
 UGANDA	✓		✓			✓	✓	✓	✓	
 BENIN			✓					✓		
 BANGLADESH								✓		
 LESOTHO								✓		
 DOMINICAN REPUBLIC								✓		
 COLOMBIA	✓	✓	✓		✓					
 EQUATORIAL GUINEA	✓	✓				✓	✓		✓	✓
 INDONESIA									✓	
 CHAD									✓	
 GABON	✓				✓	✓	✓	✓	✓	✓
 INDIA	✓	✓			✓		✓	✓	✓	✓
 AFGHANISTAN	✓		✓		✓		✓		✓	✓
 MALTA							✓	✓	✓	✓

Countries	Inclusion of local communities	Strengthening role of Indigenous peoples	Supporting smallholder farmers	Recognizing role of farmer organizations	Land tenure issues	Payment for ecosystem services	Land-use and sea-use planning	Reforming subsidies	Conserving food genetic diversity	Food security and resilience
 TONGA	✓		✓				✓		✓	✓
 PAKISTAN	✓	✓						✓	✓	
 SOMALIA	✓							✓	✓	
 FINLAND	✓	✓					✓		✓	
 LIBERIA	✓					✓	✓	✓		✓
 MONGOLIA	✓						✓			
 ETHIOPIA	✓						✓		✓	
 UZBEKISTAN	✓				✓	✓	✓	✓		✓
 ISRAEL							✓		✓	
 CROATIA							✓			
 UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND	✓	✓	✓		✓	✓	✓	✓	✓	✓
 VANUATU	✓	✓				✓	✓	✓		
 LEBANON	✓				✓		✓	✓		✓
 COMOROS	✓		✓		✓				✓	
 YEMEN	✓		✓				✓	✓		
 RWANDA	✓						✓	✓		✓

Countries	Inclusion of local communities	Strengthening role of Indigenous peoples	Supporting smallholder farmers	Recognizing role of farmer organizations	Land tenure issues	Payment for ecosystem services	Land-use and sea-use planning	Reforming subsidies	Conserving food genetic diversity	Food security and resilience
 NEPAL	✓	✓			✓		✓	✓		
 GHANA	✓					✓	✓	✓		✓
 MALAWI	✓				✓		✓		✓	
 NIGERIA	✓	✓	✓		✓	✓	✓	✓	✓	✓
 MOZAMBIQUE	✓				✓		✓			✓
 KENYA	✓	✓	✓		✓		✓	✓		✓
 REPUBLIC OF MOLDOVA	✓							✓	✓	
 SUDAN	✓	✓	✓		✓		✓		✓	✓
 CAMBODIA	✓	✓				✓			✓	
 SWEDEN									✓	✓
 AZERBAIJAN	✓									
 BHUTAN							✓			✓

Table 10. Examples of food governance measures identified in the reviewed NBSAPs and National Targets

Measures identified in NBSAPs	NBSAP text examples		GBF Targets under which policy measure is included in the NBSAPs
Land tenure	 Jordan	The NBSAP underlines that policies and regulatory instruments that recognize that tenure may be the most critical factor affecting their sustainability when biodiversity resources are utilized.	Not explicit in the NBSAP
Farmer organizations	 Hungary	Increase farmers' knowledge of agroecology through national and small-scale awareness-raising campaigns and the agroecological advisor/village farmer network.	Not explicit in the NBSAP
Subsidy reform	 The Republic of Korea	Conduct a study on criteria adopted by international organizations such as the FAO, the World Trade Organization, the Organisation for Economic Co-operation and Development and major developed countries such as the EU member states to identify subsidies harmful to biodiversity for each sector, including agriculture, fisheries.	18
Indigenous Peoples	 Cameroon	Strengthen the legal and regulatory framework for the use, harvesting and trade of wild species, while minimizing the risk of spreading pathogens and promoting the traditional sustainable use practices of indigenous peoples and local communities.	9
Payment for Ecosystem Services	 France	Establish the legal conditions and means for making the experimental system of payments for environmental services (PES) sustainable and develop it to encourage remuneration for services rendered by biodiversity.	7, 10
Food security and resilience	 Jordan	By 2030, the agriculture sector of Jordan is transforming into a model that prioritizes sustainable practices, contributing to food security, enhancing local economic development, whilst maintaining the natural ecosystems' functions and services and reducing the downstream negative impacts of intensive agriculture with particular focus (to 2030) on vulnerable landscapes, protected areas, vulnerable wetlands, etc.	10
Smallholder farmers	 Malaysia	Shifting our agri-food, agri-commodities, and fisheries sectors towards sustainability will require changes to management practices and standards. Awareness raising and capacity building will be required, specifically for smallholders and workers.	4, 8, 9, 10, 18
Conserving food genetic diversity	 Spain	Establishment of a network of genetic reserves of wild relatives of priority food crops and wild plants for in situ conservation and support through ex situ conservation in germplasm banks.	4, 10
Land-use and sea-use planning	 Canada	Establishing a national inventory of spatial plans for land and sea to identify additional planning actions required to meet the target and track progress.	1
Local communities	 Japan	Appropriate and continuous local activities, including agriculture, forestry, and fisheries, have helped create environments rich in biodiversity. For those reasons, the government will enhance understanding and considerations toward nature in the local community, such as the passing on of traditional and local knowledge and promote sustainable use of nature.	3, 19, 21, 22

Key recommendations for strengthening inclusive food governance:

The way food systems are governed has significant impacts on biodiversity. A food systems approach to biodiversity needs to be inclusive and collaborative, where all stakeholders are involved in designing and implementing relevant interventions, including through:

- Policy measures to ensure local communities, smallholder farmers, and Indigenous peoples are able to continue protecting and sustainably managed biodiversity, as the traditional practices and intimate knowledge of ecosystems of these groups contribute to environmental services, the preservation of diverse ecosystems, and landscape conservation.^{84 85}
- Land tenure reforms that promote sustainable management of ecosystems as well as local territorial or catchment planning help safeguard natural ecosystems and reduce harmful land-use changes.⁸⁶
- Policy measures that create incentives through mechanisms like payment for ecosystem services (PES) and implementing legal frameworks for integrated land-use planning are vital for mainstreaming sustainable practices.⁸⁷
- Legal frameworks necessary for integrated land use planning such as land use planning laws, zoning laws, and planning provisions within sectoral legislation. Implementing such frameworks is vital to mainstream sustainable management of ecosystems across various governance levels.⁸⁸
- Redirecting or removing harmful subsidies to promote more sustainable land-use practices, ensuring the conservation of ecosystems alongside food production.⁸⁹
- Conserving genetic diversity to sustain broader biodiversity, as it supports ecosystem services and resilience crucial for adapting to climate change.⁹⁰
- Improving food security through sustainable agricultural practices to improve biodiversity by reducing habitat destruction, promoting crop diversification, and preserving natural ecosystems.⁹¹





4. CONCLUSION



As current unsustainable food systems continue to destroy natural ecosystems and deplete biodiversity, there is a growing recognition that countries must make concrete policy targets and take transformative actions to change this trajectory. NBSAPs are important platform for establishing ambitious targets and guiding national-level action. All 23 targets of the GBF are linked to food systems and can be achieved through food systems measures. This provides a critical entry point to integrate food systems and biodiversity policy measures in NBSAPs with positive outcomes for both people and the planet.

While most of the 64 submitted NBSAPs and national targets do consider agriculture and food systems, there is significant room for improvement. Only a few food production measures such as enhancing soil health and sustainable fishing appeared in the majority of NBSAPs, demonstrating that all NBSAPs could do more to integrate food systems in their planning. Particularly, NBSAPs should consider measures for building inclusive food governance and for creating food environments that enable sustainable and healthy diets.

Food forward NBSAPs are those that take a holistic approach to food systems and biodiversity. Such an approach recognizes the many interconnections between aspects of food systems and ecosystems and aim to influence a wide range of changes. Holistic measures are most likely to bring about the transformative changes that are urgently needed and use financial and human resources by addressing multiple challenges simultaneously.

How humans produce and consume food is inherently linked to biodiversity. Humans have healthier, more diverse diets when wild and domesticated biodiversity can flourish. Yet, food systems are threatening the very biodiversity on which they rely. There is no way to feed the world without solving the biodiversity crises, and the solutions therefore begin with transforming food systems.

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