



INITIATIVE ON
Agroecology



BOOSTING BIODIVERSITY ACTION THROUGH AGROECOLOGY

Guidance for Developing and Updating
National Biodiversity Strategies
and Action Plans

DISCLAIMER

The Global Alliance for the Future of Food, Biovision Foundation, WWF International, the Alliance of Bioversity International and the International Center for Tropical Agriculture, and the Agroecology Coalition led the co-design and engagement process to develop this document. It is intended for use by authors and partners to stimulate discussion about critical issues related to food systems transformation through agroecology and biodiversity, and to help guide collective action. Authors have chosen to make it available to the broader community to contribute to the discussion about sustainable food systems reform, and for use by governments looking to incorporate sustainable food system practices into their national biodiversity strategies. It constitutes the work of independent authors; any views expressed in this document do not necessarily represent the views of the Global Alliance for the Future of Food members.

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ABOUT THIS GUIDANCE

“This is the most comprehensive and complete effort I have seen to integrate agroecology (and the food systems perspective) into NBSAPs and biodiversity conservation. It will be an extremely useful document for various global stakeholders, international organizations, and national stakeholders designing the new generation of NBSAPs. Additionally, it creates a very important document for CBD COP16 and to guide the development of NBSAPs in the coming years.”

— José Luis Chicoma, Senior Advisor on Food Systems, United Nations Development Programme

This document provides guidance for integrating agroecology and food systems into the development and implementation of National Biodiversity Strategies and Actions Plans (NBSAPs) in alignment with the Kunming-Montreal Global Biodiversity Framework (GBF). 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 Guidance 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, health, nutrition, combating hunger, and reducing poverty.

AUDIENCES AND OBJECTIVES

This Guidance document has two primary audiences: 1) NBSAP national focal points and related teams responsible for drafting and updating NBSAPs; and 2) food system and other relevant actors working toward food system transformation using agroecological principles. Thus, the Guidance has two main objectives:

- 1. Provide elements to NBSAP national focal points** for incorporating a food systems perspective to address the drivers of biodiversity loss while meeting people’s needs. This Guidance recognizes that food systems are one of many aspects that NBSAPs must address, and that governments must also include issues that might not be directly connected to food systems.
- 2. Empower food system, especially agroecological, and other relevant actors** to participate actively in their countries’ NBSAP processes. These actors can provide informed and concrete feedback through consultations, workshops, validation processes, monitoring, and update activities, ensuring that agroecology is comprehensively integrated into NBSAPs so that food systems work for biodiversity and for people.

DEVELOPMENT OF THIS GUIDANCE

The Global Alliance for the Future of Food, Biovision Foundation, WWF International, Alliance of Bioversity International and CIAT, and the Agroecology Coalition are leading institutions addressing food systems transformation nationally and internationally. The guidance presented here is based on the perspectives and insights shared by 75 policymakers and shapers from Eastern Africa, Latin America, South-East Asia, and

Europe during two peer-to-peer dialogues held online on 12 March 2024, and in person on 9–10 May 2024 in Nairobi, Kenya; as well as discussions held in two side events at the 25th (15 October 2023) and 26th (14 May 2024) meetings of the Convention on Biological Diversity (CBD) Subsidiary Body on Scientific, Technical and Technological Advice (SBSTTA). The dialogues were attended by governments (NBSAP focal points, food system and agroecology focal points), civil society organizations, farmer organizations, and multilateral agencies and research institutes from 22 countries,* including observers and parties to the CBD. In addition, the authors conducted interviews with selected experts from leading institutions outside of the author group as well as delegates and observers to the CBD who shared case studies of model policies, practices, and insights on integrating agroecology across national plans, which were validated in this Guidance with the support of expert reviewers.

This Guidance is meant to complement the CBD Secretariat guidance on NBSAP drafting and updating, as well as NBSAP guidance from other relevant actors. It also builds on recommendations provided by existing guidance tools on food system approaches (see the [Appendix](#)).

NAVIGATING THIS GUIDANCE

- **Chapter 1** is the **starting point for those new to agroecology**. It provides an essential introduction to agroecological principles and their relevance to biodiversity conservation, setting the stage for more in-depth discussions. If the reader is well versed in the concept and its background, we suggest moving to subsequent chapters.
- **Chapter 2** builds on the understanding of agroecology and elaborates on the **connections of agroecological approaches and the GBF**. It bridges the gap between agroecology and GBF targets, demonstrating the advantages of using this approach within NBSAPs.
- **Chapter 3** offers a detailed guide for **mainstreaming agroecological thinking into the NBSAP** mission, vision, biodiversity assessment, and formulation process.
- **Chapter 4** introduces **intervention areas to support a food system transition** through the mainstreaming of agroecology in NBSAP actions.
- **Chapter 5** highlights the **enabling processes that facilitate implementation** of the agroecological transitions to achieve NBSAP national targets.

* Namely: Belgium, Bolivia, Brazil, Canada, Cambodia, Colombia, Costa Rica, France, Germany, Italy, Kenya, Malaysia, Mexico, Netherlands, South Africa, Switzerland, Tanzania, Uganda, United Kingdom, United States, Vietnam, Zimbabwe.



EXECUTIVE SUMMARY

Food systems are closely connected to biodiversity, and the realization of many of the Global Biodiversity Framework (GBF) targets depends on transforming food systems. When designed well, food systems can simultaneously contribute to halting and reversing biodiversity loss, accelerating conservation and restoration of degraded land and water ecosystems, ensuring diversity of genetic resources, and maintaining and enhancing agrobiodiversity to bolster climate change adaptation and resilience.

There is increasing recognition that agroecology offers a promising integrated and holistic approach to designing and implementing food systems that work for biodiversity. Indeed, parties to the Convention on Biological Diversity (CBD) COP15 directly recognized the importance of agroecological food systems by including it in GBF Target 10: *Enhance biodiversity and sustainability in agriculture, aquaculture, fisheries, and forestry*. This has also been reflected in the political and technical prioritization of parties in the update of their National Biodiversity Strategies and Action Plans (NBSAPs); as of August 2024, 9 out of 13 post-COP15 NBSAPs submitted to the CBD explicitly include agroecology within their national objectives.

These developments reflect how addressing food systems has emerged as a frontier for policy action over the past decade to overcome siloed, sector-specific approaches. Yet, the integration of agroecology in NBSAPs is not straightforward, and the following questions arise:

- How do the linkages between agroecology and the GBF go beyond Target 10?
- How can countries systematically integrate agroecology within their NBSAPs?
- Which intervention areas and concrete measures can be leveraged to reinforce national biodiversity action through an agroecological transformation of our food systems?
- Which means of implementation need to be considered to successfully deliver results across these intervention areas?

This Guidance aims to provide policymakers and food systems advocates with answers to these questions.

AGROECOLOGY: A TRANSFORMATIVE APPROACH ALIGNED WITH ALL GBF TARGETS

Agroecology, as an approach based on the agreed *13 Principles of Agroecology and 10 Elements of Agroecology*,¹ offers a comprehensive pathway for countries to fulfill their commitments under the GBF and to realize the CBD's vision of living in harmony with nature by 2050. Agroecology's emphasis on the whole food system (rather than solely production) and on social values (including farmer agency, rights, and livelihoods equity) arguably makes it the most transformative food system approach. The GBF and agroecology also share foundational principles, as both frameworks underscore the importance of participation, governance, fairness, and transparency. Targets within the GBF, including Target 13 (*Fair and equitable sharing of benefits from genetic resources*) and Target 18 (*Reduce harmful incentives*), resonate with agroecology's call for more sustainable and equitable food systems.

This Guidance outlines three critical opportunities for policymakers developing NBSAPs:

1. Embrace a food system approach and mainstream agroecology across the entire NBSAPs

The full benefits of agroecology can only materialize if countries mainstream it as a food system approach throughout the formulation of their NBSAPs. More concretely, this means formulating mission and vision statements that articulate a future where food systems are major contributors to the conservation, restoration, and enhancement of biodiversity. These statements also are an opportunity to recognize the importance of agroecology in delivering on multiple GBF targets and co-benefits on nutrition, health, economic stability, climate mitigation and adaptation, and environmental sustainability. NBSAP assessments of the current state of food systems and biodiversity action must be holistic, recognizing both direct and indirect drivers of biodiversity loss, namely industrial food systems that heavily rely on synthetic inputs, monocropping, excessive tillage, and have limited connection to local food practices. In addition, the active participation of various food system stakeholders — including agroecology actors, rights holders, suppliers, producers, consumers, financial institutions, and other relevant parties — is essential to ensure NBSAPs are the fruit of co-creation and transdisciplinarity.

2. Include agroecological interventions, from production to consumption, to address all three GBF target clusters

Agroecological interventions cover various aspects of food system transformation, from production to consumption, including supply chains, processing, and market incentives. These interventions not only support countries delivering on Target 10 but also help address all three official target clusters of the GBF:

- **Target cluster 1: Reducing threats to biodiversity** — Agroecological measures can maintain, conserve, restore, and enhance the ecological and social processes that underpin ecosystem integrity, for example by transitioning from agrochemical to biological inputs and natural cycles-based farming.
- **Target cluster 2: Meeting people's needs through sustainable use and benefit-sharing** — Agroecological interventions empower farmers and food providers to protect, nurture, and enhance biodiversity and be rewarded fairly, while also promoting circular economy principles and strengthening regional food systems.

- **Target cluster 3: Tools and solutions for implementation and mainstreaming** — These efforts prioritize marginalized groups — such as smallholder farmers, women, youth, Indigenous Peoples, and local communities — who are pivotal in biodiversity conservation. Additionally, agroecological approaches promote sustainable, healthy diets and consumption, and foster knowledge co-creation and exchange.

3. Build the foundations for agroecological interventions through strong policies, financing mechanisms, monitoring schemes, governance rules, and institutional capacity

To support agroecological interventions, policies should establish incentives for profound and systemic changes, as well as redirect food system actors away from harmful practices. Policies can also facilitate knowledge exchanges and transfers, support market development, and balance equity and efficiency outcomes, among other important enabling factors. However, for these policies to truly drive impact, strengthened financing models are essential. Transformative financing for biodiversity and agroecology must not only increase funding flows but also address issues of justice, historical legacies and ecological debt that shape financing institutions, flows, and arrangements. Institutional capacity for designing, implementing, and monitoring NBSAPs is another key lever for success. In practice this means strong institutions, skilled personnel, and the right tools and methodologies to plan and execute comprehensive biodiversity strategies. Inclusive processes are equally important, ensuring vital food system actors are actively involved throughout the NBSAP journey. Last but not least, to track progress effectively, NBSAPs' national indicators should be adapted to reflect the elements and principles of agroecology and show how they contribute to the GBF headline and component indicators.

As countries update their NBSAPs, this Guidance is a call to action for Parties to the CBD to develop sound and comprehensive plans that leverage agroecology's ability to address the biodiversity crisis. An agroecological approach enables synergies across a range of national commitments, including to the Rio Conventions (CBD, UN Framework Convention on Climate Change – UNFCCC, UN Convention to Combat Desertification – UNCCD), the SDGs, and national pathways to sustainable food systems. By embracing agroecology, countries can align their food systems to yield co-benefits for climate adaptation and mitigation, food security, health and nutrition, ecosystem resilience, sustainable livelihoods, social cohesion, preserving cultural heritage, and protecting human rights.

Tackling biodiversity, climate, and ecological collapse requires a laser focus on transforming food systems — from production to consumption — and now is the moment to do so. We hope this Guidance helps to do just that.



PART I: AGROECOLOGY: A TRANSFORMATIVE OPPORTUNITY FOR NATIONAL BIODIVERSITY ACTION

Development of a National Biodiversity Strategy and Action Plan (NBSAPs) that integrates an agroecological food systems lens begins with understanding agroecology, the principles of agroecology and how these relate to food systems, biodiversity, NBSAPs, and the Global Biodiversity Framework (GBF) targets. Part I of this Guidance introduces agroecology, its main benefits for biodiversity (Chapter 1), as well as the many synergies that can be leveraged by Convention on Biological Diversity (CBD) parties when updating and implementing their NBSAP to align with the GBF (Chapter 2).



CHAPTER 1: AGROECOLOGY CONTRIBUTES TO SOLVING THE BIODIVERSITY CRISIS

“By 2050, biodiversity is valued, conserved, restored and wisely used, maintaining ecosystem services, sustaining a healthy planet and delivering benefits essential for all people.”

— Vision of the [Kunming-Montreal Global Biodiversity Framework](#)

The 15th meeting of the Conference of the Parties (COP15), held in December 2022, signified concerted action to address the ongoing biodiversity crisis and its significant consequences for the planet. Parties adopted the Kunming-Montreal Global Biodiversity Framework (GBF), a comprehensive package of goals and targets aimed at reducing biodiversity loss, transforming societal relationships with nature, and supporting the 2050 vision of living in harmony with nature. To meet the objectives of the GBF, parties committed to revising their NBSAPs to align with the 23 targets of the GBF. As such, NBSAPs serve as the principal strategic planning document for outlining national biodiversity conservation objectives and the actions necessary to achieve them (see [Box 1.1](#)).

BOX 1.1 — WHAT IS AN NBSAP?

An NBSAP is the primary instrument for achieving implementation of the CBD. Parties to the CBD are obliged to develop an NBSAP to reflect a country's ambition and related plans to achieve the objectives of the CBD at the national level. The primary objective of an NBSAP is to integrate consideration of the conservation and sustainable use of biological resources into national decision-making, and mainstream issues across all sectors of the national economy and policy-making framework.

In 2022, Parties to the CBD committed to revise their NBSAPs to align with the GBF. For more information on NBSAPs, see [CDB's website](#) and [Article 6 of the Convention](#).

Food systems are closely connected to biodiversity, and achievement of many of the GBF's targets depend on their transformation (see [Box 1.2](#)). Existing food system models that take an industrial approach (monoculture crops, reliance on chemical and other inputs for maintenance, limited connection to local food practices and/or food culture, etc.) are a primary driver of ecosystem collapse, biodiversity loss, soil pollution

and freshwater withdrawals (see [Box 1.3](#)). Innovative approaches that work with nature, such as agroecology, and that break away from industrial food systems are among the most critical pathways to addressing this crisis.²

BOX 1.2 — WHAT DO WE MEAN BY TRANSFORMING FOOD SYSTEMS?

Chatham House defines “food systems transformation” as fundamental changes to: *food production* (in terms of what is produced, where it is produced, and how it is produced); *food consumption* (both in terms of changing how much is consumed and what is consumed); *food loss and waste* (in terms of substantial reductions at all stages of the food system); market incentives (to align with fundamental shifts in production and consumption); and *food trade stipulations* (to align with fundamental shifts in production).³ In addition, food processing, manufacturing, distribution, marketing, and retail are all important components of food systems transformation.

Agroecology offers the innovative and synergistic approach needed to effectively implement the GBF. Among many benefits, it supports ecosystem resilience,⁹ protects and enhances ecosystem function and services,¹⁰ supports climate change adaptation and mitigation efforts,¹¹ maintains and enhances agrobiodiversity,¹² and protects and restores soils. In addition to conserving and maintaining biodiversity, evidence from around the world has shown that agroecological transitions yield many social, environmental, and economic co-benefits for sustainable development. They result in a cascade of positive impacts to food systems for producers and consumers that range from stabilizing yields, improving crop resilience, generating higher incomes and improving livelihoods to promoting equality and social cohesion, the inclusion of traditional food practices, and improving nutrition and food security.¹³ Agroecology directly supports the right to adequate food and the right to a clean, healthy, and sustainable environment.

An agroecological policy approach enables synergies across a range of national commitments, including to the Rio Conventions (CBD, UNFCCC, UNCCD), the SDGs, and national pathways to sustainable food systems.¹⁴

BOX 1.3 — INDUSTRIAL AGRICULTURE AS THE MAJOR DRIVER OF BIODIVERSITY LOSS

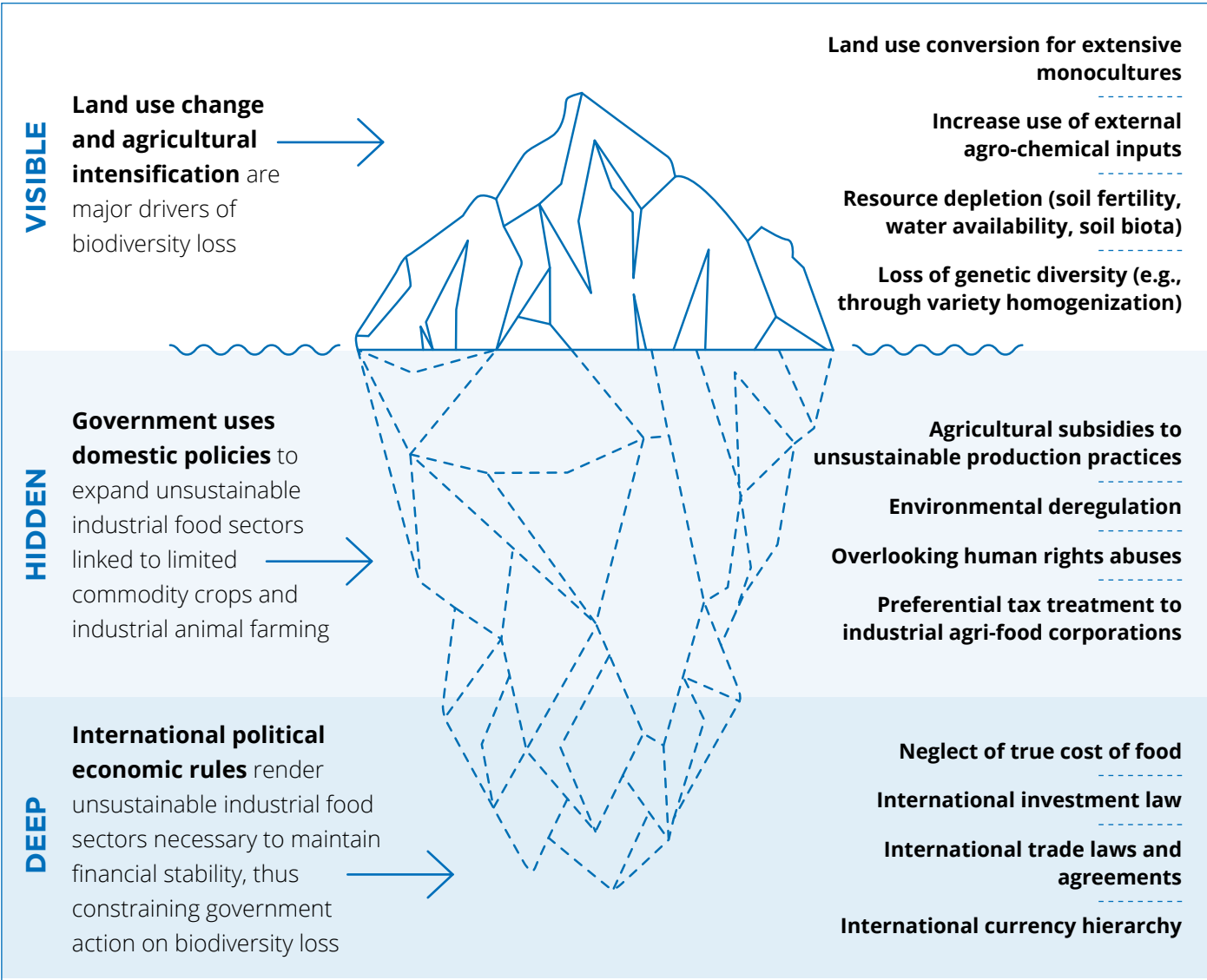
Industrial agriculture is a major driver of biodiversity loss through land conversion and harmful intensification processes (e.g., heavy reliance on synthetic inputs, monocropping, excessive tillage, etc.), but also indirectly through increased climate vulnerability and land degradation.⁴ According to IPBES, 75% of the planet’s land surface is significantly altered; 66% of the ocean has experienced serious negative impacts; and more than 85% of wetlands have been lost. Furthermore, the global industrial food system is responsible for one-third of all greenhouse gas emissions and uses 70% of fresh water.⁵

At the species level, current agricultural systems are a threat to 86% of the 28,000 threatened wildlife species worldwide,⁶ whereas agricultural biodiversity is also in decline. In the last century, we have lost most of the world’s crop and animal genetic diversity. Currently, only 12 plants and 5 animals make up 75% of the world’s consumption, with just 3 crops (wheat, rice, and corn) accounting for more than half of the world’s staple foods.⁷

The expansion of industrial agricultural systems has been driven for more than 50 years in the Global North, and in past years increasingly in the Global South, through “visible,” “hidden,” and “deep” systemic drivers. For example,

through policies and economic structures aiming at producing more food at ever-lower costs. This has created so-called “lock-ins” (e.g., land tenure models, heavy investments in mechanical infrastructure, dominance of powerful actors along the food value chain), making a transition to sustainable approaches, such as agroecology, increasingly difficult.⁸

FIGURE 1.1 — STRUCTURAL DRIVERS OF BIODIVERSITY LOSS LINKED TO UNSUSTAINABLE FOOD SYSTEMS



Source: Adapted from Third World Network (2024), [Exporting Extinction](#).

1.1 Understanding Agroecology

“Agroecology is the answer to how to transform and repair our material reality in a food system and rural world that has been devastated by industrial food production.”

— [Declaration of the International Forum for Agroecology](#)

According to the Food and Agriculture Organization (FAO) of the United Nations Agroecology Knowledge Hub, the agroecological approach encompasses “a science, a set of practices, and a social movement and has evolved as a concept over recent decades to expand in scope from a focus on fields and farms to encompass the entirety of agriculture and food systems. It now represents a transdisciplinary field that includes the ecological, socio-cultural, technological, economic and political dimensions of food systems, from production to consumption.”¹⁸

BOX 1.4 — THE DEFINITION OF AGROECOLOGY

The FAO defines *agroecology* as “an integrated approach that simultaneously applies ecological and social concepts and principles to the design and management of food and agricultural systems. It seeks to optimize the interactions between plants, animals, humans, and the environment while taking into consideration the social aspects that need to be addressed for a sustainable and fair food system.”¹⁵

Agroecology is “integral to FAO’s Common Vision for Sustainable Food and Agriculture” and “is a key part of the global response to this climate of instability, offering a unique approach to meeting significant increases in our food needs of the future while ensuring no one is left behind.”¹⁶ It addresses the need for socially equitable food systems within which people can exercise choice over what they eat and how and where it is produced.¹⁷

There are many converging points between agroecology and other concepts/approaches, such as regenerative and organic agriculture, permaculture, biodiversity-friendly practices, natural farming, nature-positive and climate-smart agriculture, nature-based solutions, and conservation agriculture. However, agroecology emphasizes the whole food system (rather than solely production) and social values (including farmer agency, rights, and livelihoods), which makes agroecology widely recognized as a truly transformative food system approach.¹⁹

The FAO Council, reflecting approval from 197 member states, recognized the importance of agroecology in 2019 at its 163rd session, where it approved the [10 Elements of Agroecology](#) as a living document.* In the same year, the UN Committee on World Food Security (CFS) High Level Panel of Experts (HLPE) elaborated a consolidated list of 13 Principles of Agroecology,²⁰ which complement and are highly aligned with the 10 Elements of Agroecology (see [Table 1.1](#)). Both frameworks are widely used to guide agroecological actions and transitions.

* See 163rd session of the [FAO Council document](#) and its official [approval](#).

TABLE 1.1 — LINKING THE FAO COUNCIL 10 ELEMENTS AND HLPE 13 PRINCIPLES OF AGROECOLOGY

















PRINCIPLE	FAO'S 10 ELEMENTS	SCALE APPLICATION
Improve Resource Efficiency		
 1. Recycling. Preferentially use local renewable resources and close as far as possible resource cycles of nutrients and biomass.	Recycling	 Field  Farm, agroecosystem
 2. Input reduction. Reduce or eliminate dependency on purchased inputs and increase self-sufficiency.	Efficiency	 Farm, agroecosystem  Food system
Strengthen Resilience		
 3. Soil health. Secure and enhance soil health and functioning for improved plant growth, particularly by managing organic matter and enhancing soil biological activity.	Part of diversity	 Field
 4. Animal health. Ensure animal health and welfare.	Synergy	 Field  Farm, agroecosystem
 5. Biodiversity. Maintain and enhance diversity of species, functional diversity, and genetic resources and thereby maintain overall agroecosystem biodiversity in time and space at field, farm, and landscape scales.	Part of diversity	 Field  Farm, agroecosystem
 6. Synergy. Enhance positive ecological interaction, synergy, integration, and complementarity among the elements of agroecosystems (animals, crops, trees, soil, and water).	Co-creation and sharing of knowledge	 Field  Farm, agroecosystem
 7. Economic diversification. Diversify on-farm incomes by ensuring that small-scale farmers have greater financial independence and value addition opportunities while enabling them to respond to demand from consumers.	Parts of human and social values and culture and food traditions	 Farm, agroecosystem  Food system
Secure Social Equity/Responsibility		
 8. Co-creation of knowledge. Enhance co-creation and horizontal sharing of knowledge including local and scientific innovation, especially through farmer-to-farmer exchange.		 Farm, agroecosystem  Food system

TABLE 1.1 — LINKING THE FAO COUNCIL 10 ELEMENTS AND HLPE 13 PRINCIPLES ON AGROECOLOGY *CONTINUED*

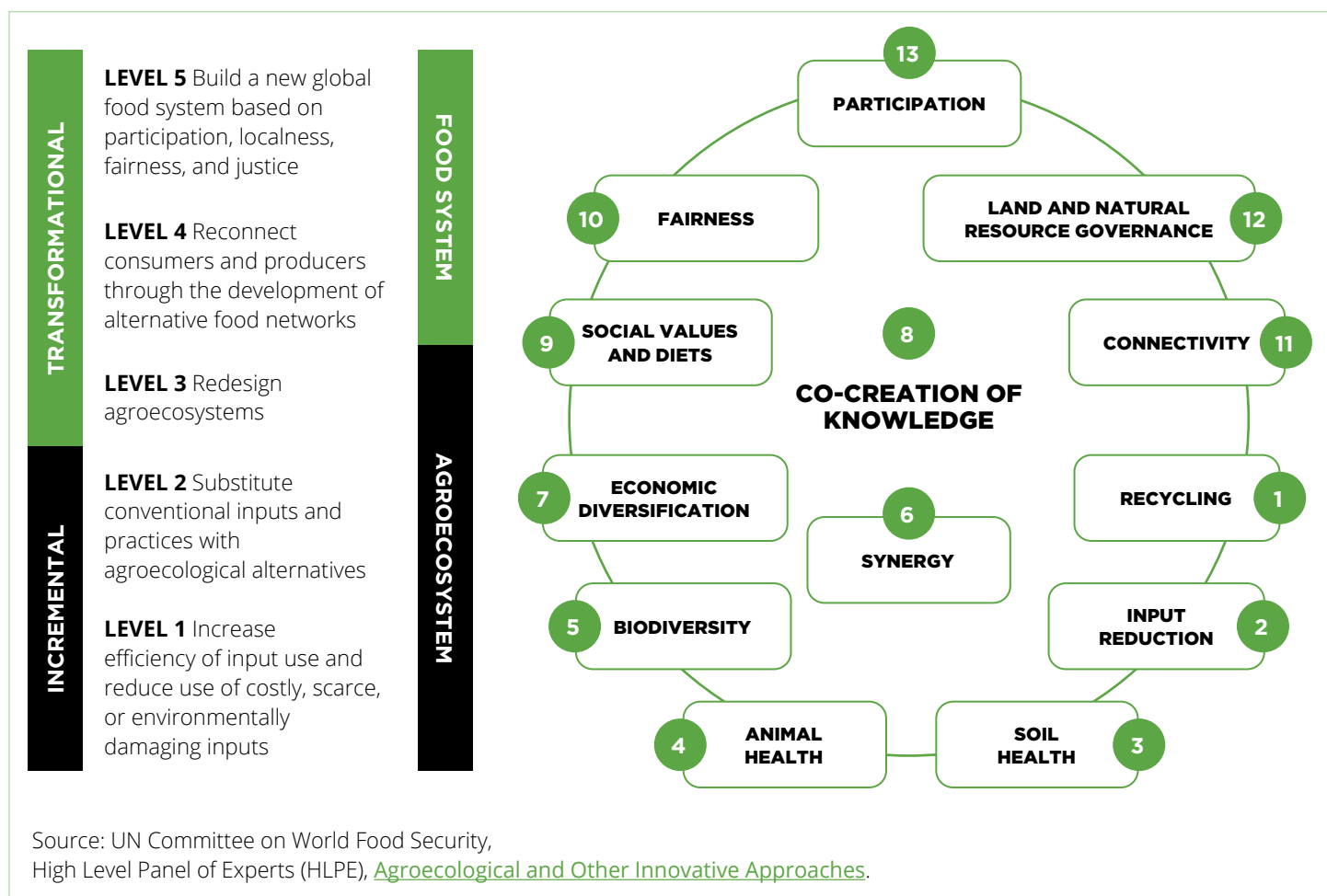
PRINCIPLE	FAO'S 10 ELEMENTS	SCALE APPLICATION
Secure Social Equity/Responsibility Continued		
 9. Social values and diets. Build food systems based on the culture, identity, tradition, social, and gender equity of local communities that provide healthy, diversified, seasonally and culturally appropriate diets.		 Farm, agroecosystem  Food system
 10. Fairness. Support dignified and robust livelihoods for all actors engaged in food systems, especially small-scale food producers, based on fair trade, fair employment, and fair treatment of intellectual property rights.		 Farm, agroecosystem  Food system
 11. Connectivity. Ensure proximity and confidence between producers and consumers through promotion of fair and short distribution networks and by re-embedding food systems into local economies.	Circular and solidarity economy	 Farm, agroecosystem
 12. Land and natural resource governance. Strengthen institutional arrangements to improve, including the recognition and support of family farmers, smallholders, and peasant food producers as sustainable managers of natural and genetic resources.	Responsible governance	 Farm, agroecosystem  Food system
 13. Participation. Encourage social organization and greater participation in decision-making by food producers and consumers to support decentralized governance and local adaptive management of agricultural and food systems.		 Food system

Source: UN Committee on World Food Security, High Level Panel of Experts (HLPE), [Agroecological and Other Innovative Approaches](#).

The 13 Principles of Agroecology can be organized into different incremental or transformational levels (see [Figure 1.2](#)), can be applied at different scales from the farm to the field (see [Table 1.1](#), right column), and can be clustered around three overarching values of sustainable food systems:

- 1. Improving resource efficiency:** Principles *Recycling* (1) and *Input reduction* (2).
- 2. Strengthening resilience:** Principles *Soil health* (3), *Animal health* (4), *Biodiversity* (5), *Synergy* (6), and *Economic diversification* (7).
- 3. Securing social equity:** Principles *Co-Creation of knowledge* (8), *Social values and diets* (9), *Fairness* (10), *Connectivity* (11), *Land and natural resource governance* (12), and *Participation* (13).

FIGURE 1.2 — AGROECOLOGY: AN APPROACH FOR SUSTAINABLE AND EQUITABLE AGRICULTURE AND FOOD SYSTEMS THAT ENHANCE FOOD SECURITY AND NUTRITION



Source: UN Committee on World Food Security, High Level Panel of Experts (HLPE), [Agroecological and Other Innovative Approaches](#).

The Elements and Principles are meant to be a comprehensive guide for policies and practices, rather than applied individually or selectively. For example, an exclusive focus on the principle of *Input reduction* without equal consideration of the principles of *Co-creation of knowledge* or *Fairness* may lead to inequalities in supply chains.

There is an increasing cognition of the need to transform our food systems and that agroecology holds so much promise and potential to do so. The United Nations Summit on Food Systems (UNFSS), held in September 2021, focused attention on the need for concerted action to rethink food systems. This resulted in the creation of the Agroecology Coalition. Building on the ever-growing agroecology movement, the Coalition was set up with the objective of accelerating the transformation of food systems through agroecology while addressing multiple challenges simultaneously, including biodiversity loss. The Coalition currently includes more than 50 national governments, 2 sub-national governments, 3 regional commissions, and more than 250 organizations from different stakeholder categories (e.g., NGOs, farmers organizations, research centres, philanthropy, donors, international and UN agencies, SMEs, etc.).²¹

1.2 Agroecology and Food Systems

“Global food systems are broken — and billions of people are paying the price.”

— UN Secretary General, António Guterres
[UN Food Systems Summit +2 Stocktaking Moment](#)

Across the supply chain, from production to consumption, food systems generate enormous impact on our natural environments and on planetary health.* The evidence has clearly established that agriculture and land-use changes are main drivers of biodiversity loss²² and climate change.²³ Furthermore, it is well known that the current global food production model shapes access to food, the quality of nutrition, and food behaviours in ways that contribute to unhealthy diets and malnutrition in all its forms.²⁴ Public health challenges from food systems are astounding — billions of people suffer from a form of malnutrition, lack access to a healthy diet, and suffer from overnutrition.²⁵

The FAO estimates the annual hidden costs of the global agrifood system — in terms of emissions, water use and pollution, land-use change, unhealthy dietary patterns, undernourishment, and poverty — are a staggering USD 12 trillion (or USD 35 billion per day).²⁶ While industrial food systems are driving biodiversity loss, biodiverse small-scale farms and landscapes managed by Indigenous Peoples, smallholders, and traditional communities are at the forefront of conserving and sustainably using agroecological principles in practice.²⁷ At the same time, they produce the majority of the world’s edible food working with nature rather than against it (see [Case 1.1](#)). Diversity of plants, animals, and other living organisms is the lifeline of our food system and key to resilience in climate change adaptation. It is these local communities who safeguard sophisticated knowledge and practices of agricultural biodiversity in situ — that is, in their fields, landscapes, pastures, seeds, forests, and waters. They play significant roles particularly in protecting the heterogeneity and variety within species (also known as “intra-specific biodiversity”). This intra-specific diversity is crucial because it provides the genetic resources needed to adapt crops and livestock to changing environmental conditions, pests, and diseases.²⁸

Biodiversity thrives when it is sustainably used. Through their practices, experience, and innovation, these local actors nurture and sustainably use, produce, and support food systems containing biodiverse resources that provide energy, fodder, medicine, shelter, and livelihoods for their communities while supporting food security and climate adaptation efforts.²⁹

Innovative approaches that synergistically support climate change adaptation, food system resilience, biodiversity conservation and sustainable use, and health and nutrition are essential. Climate change exacerbates existing challenges with food systems and nutrition-related disease. The Intergovernmental Panel on Climate Change (IPCC) warns that climate impacts on food “will affect everyone” and projects more than seven distinct nutrition and food safety risks resulting from changes to agricultural productivity and

* “Planetary health” refers to the state of natural systems upon which health depends, including the climate system, the biosphere, and freshwater systems. For more information, see the [World Health Organization](#) (WHO).

compromised food safety.³⁰ According to the WHO, the “role of food systems in driving climate change — and in increasing vulnerability of other ecosystems to climate change — needs to be addressed as a public health concern.”³¹ In 2022, the WHO identified agroecology as one of the important principles for future workstreams on food and agriculture under the UNFCCC. NBSAPs are an important vehicle for aligning food system objectives and targets across environmental agreements and global health plans.

CASE 1.1 — THE SOCIAL DIMENSIONS OF AGROECOLOGY: CSHEP KENYA

Agroecology goes beyond principles related to the biophysical aspects of food production and is practised through social initiatives such as the Community Sustainable Agriculture and Healthy Environment (CSHEP). CSHEP is a community-based organization (CBO) that focuses primarily on training and capacity-building for smallholder farmers, especially women, in Kaijado and Kiambu counties in Kenya. CSHEP’s main goal is to educate, train, and support farmers to use sustainable, organic, and bio-intensive* gardening and farming techniques to improve production and earnings, to become food secure, and to safeguard the environment. CSHEP’s long-term goal is to encourage smallholder farmers, especially women and youth, to take decisions and actions based on a full understanding of the synergies between livelihoods and the environment. The aim is to foster holistic community development and well-being. Ultimately, CSHEP envisions a farming society able to control, use, and manage local resources prudently for their environmental well-being.

CSHEP has the following objectives:

- To ensure food sufficiency and security at household level with balanced gender participation;
- To protect the environment by promoting ecologically sound farming practice;
- To boost income for the rural smallholder farmers through small projects and sale of surplus produce; and
- To promote healthy, home-grown diets for the farmers’ households and high-quality nutrition for all, including sick and vulnerable children.

Local solutions such as the community-based approach implemented by CSHEP is at the core of the social dimension of agroecology, and is crucial in the maintenance of agrobiodiversity.

* Biointensive agriculture is [defined by the FAO](#) as “a sustainable organic farming system based on working with the basic elements needed for life — soil, water, air, and sun — to achieve maximum yields while increasing biodiversity and soil fertility.”

Source: [CSHEP](#).

1.3 Agroecology and Biodiversity: Making the Connections

“If we are going to be successful in implementing the GBF, then above all, we need to engage with agriculture. For biodiversity, it is the food and agriculture sector — and this affects all aspects of the GBF.”

— David Cooper, Acting Executive Secretary, Convention on Biological Diversity
(SBSTTA 26 side event, Nairobi, May 2024)

Agricultural biodiversity is a centrepiece of agroecology and has been a focal area of the CBD since 1996 (see Box 1.5). Agricultural biodiversity encompasses all biodiversity for food and agriculture, including terrestrial and wild species and relatives, and the associated knowledge that comes with conserving and nurturing them. The agricultural knowledge we possess today has been acquired through centuries of sustainable use, and the application of traditional knowledge, which has continuously enhanced all three types of diversity: genetic (or intraspecific) diversity, species diversity, and ecosystems diversity. Agrobiodiversity is also a critical element of food system resilience. Both the World Health Organization, in *Guidance on Mainstreaming Biodiversity for Nutrition and Health*,³² and the FAO, in *Biodiversity and Nutrition: A Common Path*,³³ have recognized the important connections between biodiversity, food, and health.

BOX 1.5 — AGROBIODIVERSITY UNDER THE CBD

The CBD Programme of Work on Agricultural Biodiversity was established in 1996, and has evolved to include assessments, adaptive management, capacity-building, and mainstreaming. It addresses several cross-cutting initiatives on pollinators, soil biodiversity, food and nutrition, and genetic use restriction technologies, among other themes.

A brief summary of progressive CBD COP decisions on agrobiodiversity follows:

<p>Decision III/11 Conservation and sustainable use of agricultural biological diversity</p> <p>Decision IV/6 (see also SBSTTA recommendation III/4) Agricultural biological diversity</p> <p>Decision V/5 Agricultural biological diversity: Review of phase I of the program of work and adoption of a multi-year work program</p> <p>Decision VI/5 Agricultural biological diversity</p>	<p>Decision VII/3 Agricultural biological diversity</p> <p>Decision VIII/23 Agricultural biodiversity</p> <p>Decision IX/1 In-depth review of the program of work on agricultural biodiversity</p> <p>Decision X/34 Agricultural biodiversity</p> <p>Decision 15/8 Biodiversity and agriculture</p>
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For more information, see the [CBD webpage](#) on agrobiodiversity.

Agroecology recognizes food systems not only as sources of calories and livelihoods, but as important sources of culture and biocultural heritage, driving an appreciation of biodiversity that is not a priority of

industrial, monoculture models. Smallholder and family farmers, animal keepers, pastoralists, forest and coastal dwellers, Indigenous Peoples and local communities (IPLC), have bred an estimated 7,000 species of domesticated plant species (with 2.1 million varieties) while maintaining 50,000 to 60,000 crop wild relatives — with an estimated economic value of USD 196 billion.³⁴ At the same time, livestock keepers, pastoralists, and family farmers have bred 8,800 different varieties of animals and birds used in food and agriculture.³⁵ In contrast, 60% of dietary calories produced by our industrial dominant food system are derived from genetically uniform varieties of rice, maize, and wheat, resulting in nearly 1 in 3 people suffering from some form of malnutrition.³⁶

Through agroecology, farmers tailor farm practices — such as diversifying field sizes and integrating trees — to enhance overall plant and animal diversity, continuously optimizing biodiversity impacts and outcomes (see [Figure 1.3](#)). Agroecology also contributes significantly to biodiversity conservation and ecosystem health beyond individual farms by enhancing ecosystem functions within agricultural landscapes. The agroecological approach integrates natural habitats, reduces habitat fragmentation (e.g., edge effects*), and minimizes leakages and runoffs to sensitive areas like aquatic ecosystems. It also preserves essential ecosystem processes such as pollination and nutrient and water cycling. Agroecology bridges and integrates landscapes across spatial scales, by enabling ecological fluxes of nutrients, water, seeds, and animals. In this way, it promotes wildlife corridors and effectively supports human–wildlife coexistence (see [Case 4.1](#)). [Figure 1.4](#) summarizes some of the benefits to biodiversity that agroecology provides across diverse landscapes.

FIGURE 1.3 — HOW AGROECOLOGY CONTRIBUTES TO (AGRO-)BIODIVERSITY CONSERVATION ACROSS DIFFERENT COMPONENTS OF FARMING SYSTEM

GENETIC LEVEL		<ul style="list-style-type: none"> • Conservation of wild relatives • In-situ conservation of intra- and inter-variety/breed diversity of domesticated and semi-domesticated species • Preservation of farmer-led selection practices maintaining locally adapted landraces
SPECIES LEVEL		<ul style="list-style-type: none"> • Maintenance of managed diversity of crops/managed plants/fish/livestock species and non-food species (shade trees, companion plants) • In-situ conservation of Indigenous, underutilized, and native crops • Protection of rare and endangered species, and characteristic cultural landscapes (e.g., skylark or lapwing)
AGROECOSYSTEM LEVEL		<ul style="list-style-type: none"> • Maintenance of diverse and biologically active soil ecosystems (e.g., by reducing soil disturbance, increasing organic matter and high-quality organic input) • Increase micro-climatic niches at the plot level by increasing habitat structure (e.g., through intercropping, establishment of canopy, understory, and ground cover) • Promotion of functional groups (pollinators, beneficial insects, detritivores, and producers)

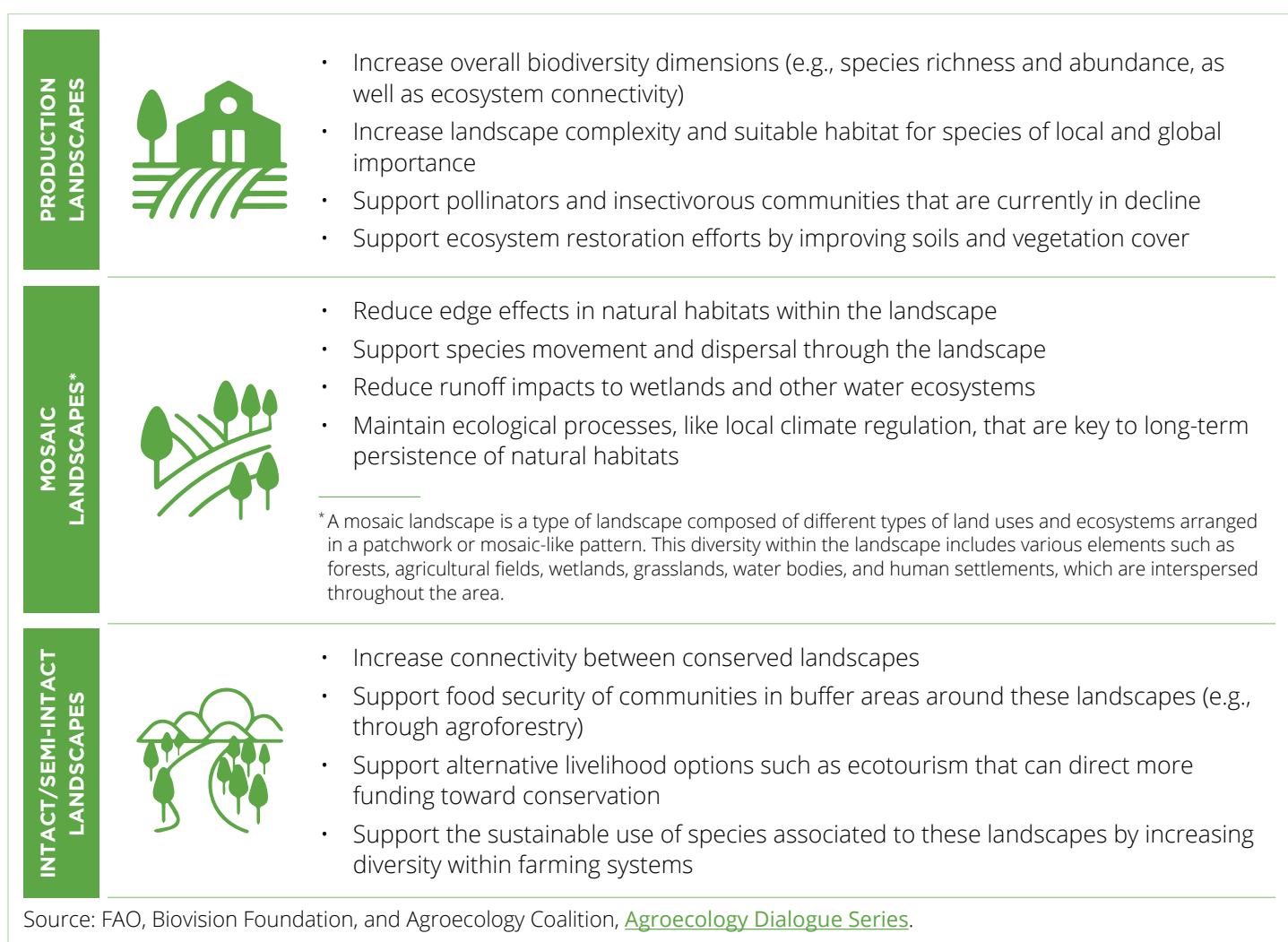
Source: Authors.

* A form of habitat fragmentation that may involve increased light levels, daytime temperatures, wind speeds, and lower humidity with an overall negative effect on species well-being and composition.

Importantly, agroecology promotes food sovereignty** as a way to build resilience and social cohesion by supporting the rights of family farmers as custodians of the world's agricultural biodiversity, grounded in Indigenous and traditional knowledge (see [Case 1.2](#)). Agroecology also incorporates socio-cultural values and political factors into planning, such as the biocultural norms of Indigenous communities, which are critical to strong and sound biodiversity conservation efforts.

Numbering over 476 million worldwide, Indigenous Peoples living across over 90 countries and 7 socio-cultural regions often reside in sites of impressive biodiversity and possess rich biocultural diversity and knowledge that has been preserved for generations. Biodiversity conservation is an inseparable element of Indigenous cultural diversity, language diversity, spirituality, and cosmogony, and thus their food systems are embedded in a biocentric approach that is intimately tied to nature.³⁷

FIGURE 1.4 — HOW AGROECOLOGY CONTRIBUTES TO BIODIVERSITY CONSERVATION ACROSS DIVERSE LANDSCAPES



** [The Alliance for Food Sovereignty in Africa](#) defines “food sovereignty” as the right of peoples to healthy and culturally appropriate food produced through ecologically sound and sustainable methods, and their right to define their own food and agriculture systems.

CASE 1.2 — PERU'S POTATO PARK: SUSTAINABLE USE OF BIODIVERSITY IN LANDSCAPES

Peru's Potato Park (*Parque de la papa*), situated in the Cusco region, exemplifies a unique approach to sustainable land-use and biodiversity conservation. Managed by six Quechua communities, this 10,000-hectare biocultural conservation initiative is a living laboratory for agroecological practices and traditional knowledge. The park is dedicated to the cultivation and conservation of native potato varieties, with over 1,300 distinct types of potatoes grown in the region. This practice not only preserves genetic diversity but also sustains local agricultural traditions and livelihoods. This is in contrast to the enormous genetic erosion led by industrial agriculture, which specialized in a dozen varieties only. By utilizing traditional farming techniques and crop rotation, the communities maintain soil fertility and ecosystem health, ensuring long-term sustainability.

Traditional and in-situ conservation of biodiversity in the Potato Park demonstrate that sustainable use areas can effectively contribute to biodiversity preservation. The holistic management of the landscape, integrating agricultural use with biodiversity conservation and traditional knowledge, offers a viable alternative to conventional conservation strategies. This approach ensures that biodiversity conservation is not only about protecting species and habitats in isolation but also about maintaining the cultural and ecological fabric of the landscape.

Source: A. Argumendo, [The Potato Park, Peru](#).

1.4 The Growing Interest in Agroecological Approaches

"We stress that any path to fully achieving the long-term goals of the Paris Agreement must include agriculture and food systems. We affirm that agriculture and food systems must urgently adapt and transform in order to respond to the imperatives of climate change."

— COP28 UAE [Declaration on Sustainable Agriculture, Resilient Food Systems, and Climate Action](#)

Support for agroecology through policy, funding, research, and capacity-building has expanded over the last decade. International organizations have increasingly advocated for agroecological approaches,³⁸ while a wide variety of countries, including Brazil, Colombia, Denmark, Ecuador, France, Mexico, Senegal, and Vietnam, among others, have launched or renewed agroecology-related policies and strategies. At the same time, countries in East Africa, Uganda, Kenya, and Tanzania have launched or are working on their national and sub-national strategies.³⁹ State-level programs are also taking off around the world. In India's southern state of Andhra Pradesh, the state government has been supporting the transition of hundreds of thousands of farmers to more agroecological approaches through a program known as Community Managed Natural Farming. Officially launched in 2016, the program now works with more than 600,000 farmers across the state.⁴⁰

Funding and international cooperation has improved, including through support from the International Fund for Agricultural Development (IFAD), the Global Environmental Facility, the European Commission, and private philanthropic institutions such as the Agroecology Fund, which pools funding from more than two dozen donors and many other foundations around the world. In 2023, 25 philanthropies aligned with the

Global Alliance for the Future of Food to announce a shared goal of catalyzing a transition to 50% regenerative and agroecological systems by 2040, and to ensure that all agriculture and food systems are transitioning by 2050.⁴¹ This builds on a prolific network of research centres and projects, and a web of thousands of civil society organizations dedicated to promoting agroecology. The Agroecology Coalition, created in 2021, now comprises almost 50 national governments, 2 sub-national governments, 3 regional commissions, and approximately 250 organizations from different stakeholder categories (e.g., NGOs, farmers organizations, research centres, philanthropy, donor, international and UN agencies, SMEs, etc.).⁴²

Despite significant systemic barriers to mainstreaming and scaling up agroecology (e.g., vested interests that influence policy-making and regulatory environments), momentum continues to build for agroecology in local, national, and international policy-making.

The Global Biodiversity Framework offers a significant opportunity to synergize policy efforts across the conservation and agroecology communities at global and national levels through NBSAPs.





CHAPTER 2: AGROECOLOGY AND THE GLOBAL BIODIVERSITY FRAMEWORK

The Global Biodiversity Framework (GBF) takes a systems and whole-of-government approach that emphasizes the societal dimensions of biodiversity action and human rights, and is highly synergistic with agroecology. This chapter provides pathways for governments to achieve GBF targets using a comprehensive agroecology approach within a food systems perspective.

Section 2.1 maps agroecology to the GBF, and Section 2.2 expands on the linkages between agroecology and GBF Target 10 (*Enhance biodiversity and sustainability in agriculture, aquaculture, fisheries, and forestry*).

2.1 Agroecology Principles and the Global Biodiversity Framework

Food systems are broadly related to the GBF as well as its component targets. When designed well, food systems can simultaneously contribute to halting and reversing biodiversity loss, accelerating conservation and restoration of degraded land and water ecosystems, ensuring diversity of genetic resources, and increasing agrobiodiversity to bolster climate change adaptation and resilience.

Food systems play a direct role in *GBF Section I: Reducing threats to biodiversity* (Targets 1 to 8). The design of food systems influences spatial planning, conservation, restoration and management of species, chemical inputs and outflows, and the potential to buffer the impacts of climate change.

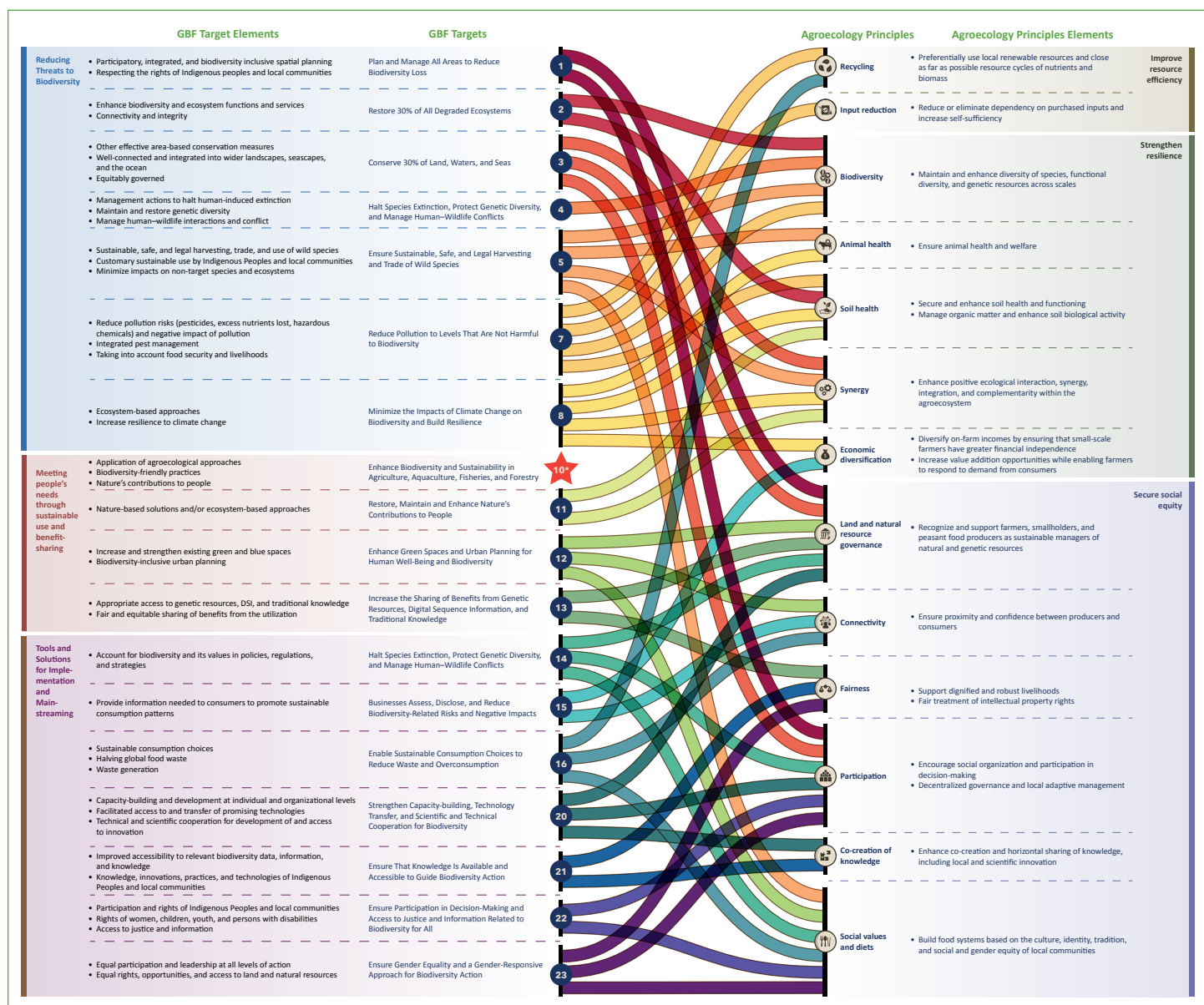
Food systems also play an explicit role in *GBF Section II: Meeting people's needs through sustainable use and benefit-sharing* (Targets 9 to 13). Food systems impact the management of wild species, agriculture, aquaculture, fisheries, and forestry, and overall nature's contributions to people (NCP),* which includes ecosystem services from air, water, soil, and natural products. Further, food systems have a direct role in the use of genetic resources, digital sequence information, and traditional knowledge.

* According to the [Intergovernmental Science-Policy Platform for Biodiversity and Ecosystem Services](#), "nature's contributions to people" refers to all the contributions, both positive and negative, of living nature (i.e., all organisms, ecosystems, and their associated ecological and evolutionary processes) to people's quality of life. IPBES organizes NCPs into 18 categories.

Food systems play an important role in *GBF Section III: Tools and solutions for implementation and mainstreaming* (Targets 14 to 22), including for: decision-making, business, consumption and waste (including food loss), biosafety and biotechnology, harmful incentives and financing, capacity-building, access to knowledge, fair participation, and gender equity.

Moreover, the GBF aligns closely with the 13 Agroecological Principles identified by the HLPE.⁴³ **Figure 2.1** presents selected elements within each GBF target, as identified by the parties and guidance from the CBD secretariat, and highlights direct linkages to relevant elements of agroecological principles. This correspondence underscores the potential of agroecology to contribute to a majority of GBF targets if integrated by countries within their NBSAPs. Please note that the displayed connections are non-exhaustive. Connections of Target 10 (★) are not displayed for simplicity, as this target is interlinked to all agroecological principles.

FIGURE 2.1 — HOW AGROECOLOGY INTERSECTS WITH THE GBF TARGETS



Source: Biovision Foundation, et al., [Boost NBSAPs through Agroecology](#).

Agroecology can directly and simultaneously contribute to multiple targets. For example, the agroecology principle on land and natural resource governance aims to strengthen institutional arrangements, including the recognition and support of smallholders', family farmers', and food producers' rights as sustainable managers of natural and genetic resources. This principle supports the implementation of GBF Target 1 (*Plan and manage all areas to reduce biodiversity loss*) and GBF Target 22 (*Ensure participation in decision-making and access to justice and information related to biodiversity for all*). [Case 2.1](#) demonstrates how agroecology can be used to achieve several GBF targets at the same time.

CASE 2.1 — CAMBODIA: A LANDSCAPE SYSTEM TO ENSURE LOCAL FOOD SECURITY, LIVELIHOODS, AND BIODIVERSITY

The vast rice-growing areas of the Lower Mekong region harbour aquatic biodiversity that use water bodies and shallow flooded areas embedded in the landscape for shelter, breeding, and food. Through agroecological approaches, rice cultivation and wild fisheries are combined to a “rice field fisheries” food systems approach that uses the diverse wild fish, aquatic animals, and plants as a food source. This combined rice-growing and aquatic food harvesting system is prevalent in the rice-growing areas around the Tonle Sap Lake in Cambodia.

Rice field fisheries are particularly important for food security and income of impoverished and landless households, as they are a common-pool resource available to any fisher during the flood season. This has been recognized and included in Cambodia's National Strategy for Food Security and Nutrition.⁴⁴ Policies such as Cambodia's that support the presence of wild aquatic species in agroecosystems can benefit local food systems, economies, and environments. The sustainability of rice field fisheries in Cambodia requires ongoing engagement between policymakers, investors, and practitioners. To enhance productivity of these rice field fisheries, Cambodia's Fisheries Administration began establishing community fish refuges (CFRs), a year-round aquatic habitat protected from fishing and connected to adjacent rice fields, in 1995.

From 2012 through 2016, the international organization WorldFish conducted interventions to strengthen management capacity and practices at 40 of the Community Fish Refuges in Cambodia, and conducted biological, catch, and consumption surveys to study the contributions of rice field fisheries and CFR management to aquatic species diversity, fisheries production, and local food security. The results revealed that at least 150 wild aquatic species live in the rice field landscape of Cambodia's Tonle Sap Region, including finfish, snakes, frogs, bivalves, prawn, crab, turtle, waterbirds, insects, and aquatic plants.⁴⁵ Most of these species are used for food, and harvests can provide more than 60% of the fish and other aquatic animals consumed in local farming-fishing households, and one-third of total inland fish catch nationwide. Wild aquatic plants also contribute indirectly to livelihood and food and nutrition security through their use as feed for livestock. The harvests are processed into food products that can be stored for the future.

The Cambodia Fisheries Administration has now established 1200 CFR, and the impacts of continued interventions made from December 2020 to March 2024 measured by WorldFish showed a 14% improvement in fish biodiversity and a 30% increase in fish species, as well as a 20% jump in fish harvested,⁴⁶ leading to improved food security and well-being, and demonstrating the strong links between biodiversity and social, human, and economic outcomes.

Source: WorldFish, [Cambodian Rice Field Fisheries Project](#).

There is a high level of alignment between agroecology and the GBF targets. For example, agroecology principles specifically support 13 nature's contributions to people (NCP 1, 2, 4, 6, 7, 8, 11, 12, 13, 14, 15, 17, and 18) identified by IPBES,⁴⁷ in alignment with GBF Target 11 (*Restore, maintain and enhance nature's contributions to people*). See [Table 2.1](#).

TABLE 2.1 — LIST AND DEFINITION OF 18 NATURE'S CONTRIBUTIONS TO PEOPLE (NCP)

Note: NCP highlighted in yellow are supported by agroecological systems.

	NCP Name	Brief explanation
1	Habitat creation and maintenance	The formation and continued production, by ecosystems, of ecological conditions necessary or favourable for living beings important to humans
2	Pollination and dispersal of seeds	Facilitation by animals of movement of pollen among flowers, and dispersal of seeds, larvae, or spores of organisms beneficial or harmful to humans
3	Regulation of air quality	Regulation (by impediment or facilitation) by ecosystems of atmospheric gases; filtration, fixation, degradation, or storage of pollutant
4	Regulation of climate	Climate regulation by ecosystems (including regulation of global warming) through effects on emissions of greenhouse gases, biophysical feedbacks, biogenic volatile organic compounds, and aerosols
5	Regulation of ocean acidification	Regulation, by photosynthetic organisms, of atmospheric CO ₂ concentrations and so seawater pH
6	Regulation of freshwater quantity, location, and timing	Regulation, by ecosystems, of the quantity, location, and timing of the flow of surface and groundwater
7	Regulation of freshwater and coastal water quality	Regulation, through filtration of particles, pathogens, excess nutrients, and other chemicals, by ecosystems of water quality
8	Formation, protection, and decontamination of soils	Formation and long-term maintenance of soils including sediment retention and erosion prevention, maintenance of soil fertility, and degradation or storage of pollutants
9	Regulation of hazards and extreme events	Amelioration, by ecosystems, of the impacts of hazards; reduction of hazards; change in hazard frequency

TABLE 2.1 — LIST AND DEFINITION OF 18 NATURE’S CONTRIBUTIONS TO PEOPLE (NCP) *CONTINUED*

	NCP Name	Brief explanation
10	Regulation of organisms detrimental to humans	Regulation, by ecosystems or organisms, of pests, pathogens, predators, competitors, parasites, and potentially harmful organisms
11	Energy	Production of biomass-based fuels, such as biofuel crops, animal waste, fuelwood, and agricultural residue
12	Food and feed	Production of food from wild, managed, or domesticated organisms on land and in the ocean; production of feed
13	Materials and assistance	Production of materials derived from organisms in cultivated or wild ecosystems and direct use of living organisms for decoration, company, transport, and labour
14	Medicinal, biochemical, and genetic resources	Production of materials derived from organisms for medicinal purposes; production of genes and genetic information
15	Learning and inspiration	Opportunities for developing capabilities to prosper through education, knowledge acquisition, and inspiration for art and technological design (e.g., biomimicry)
16	Physical and psychological experiences	Opportunities for physically and psychologically beneficial activities, healing, relaxation, recreation, leisure, and aesthetic enjoyment based on close contact with nature
17	Supporting identities	The basis for religious, spiritual, and social-cohesion experiences; sense of place, purpose, belonging, rootedness or connectedness, associated with different entities of the living world; narratives and myths, rituals and celebrations; satisfaction derived from knowing that a particular landscape, seascape, habitat, or species exist
18	Maintenance of options	Capacity of ecosystems, habitats, species, or genotypes to keep human options open in order to support a later good quality of life

Source: Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services. (SN). Nature’s contribution to people; and Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services. (2020). Chapter 2.3. [Status and Trends: Nature’s Contribution to People \(NCP\)](#).

2.2 Global Biodiversity Framework Target 10 and Agroecology

Parties to CBD COP15 directly recognized the importance of food systems in standalone GBF Target 10:

Ensure that areas under agriculture, aquaculture, fisheries and forestry are managed sustainably, in particular 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 contributing to the resilience and long-term efficiency and productivity of these production systems and to food security, conserving and restoring biodiversity and maintaining nature's contributions to people, including ecosystem functions and services.

Agriculture, aquaculture, forests, and fisheries are the heart of food production systems. This target contains wording that is directly connected to agroecology, and is supported by its principles and practices, namely:

- *Managed sustainably, in particular through the sustainable use of biodiversity.* See [Section 1.3](#) and [Figure 1.3](#) for concrete examples.
- *Biodiversity-friendly practices* (to increase the positive impacts and decrease the negative impacts of food production on biodiversity). See [Figures 1.3](#) and [1.4](#) for concrete examples.
- *Nature's contribution to people* (which includes sustaining agricultural biodiversity and ecosystem functions and services for long-term sustained productivity, improved nutrition, and climate resilience). See [Table 2.1](#) for concrete examples.

Agroecology as an approach, based on the 13 Principles of Agroecology and 10 Elements of Agroecology, leads to more sustainable food systems and benefits for biodiversity, as shown in Chapter 1 and Section 2.1 of this document. As such, agroecology connects directly to Target 10 of the GBF and provides an enabling framework for the target's implementation.

Achieving GBF Target 10 will contribute to the resilience and long-term efficiency and productivity of food production systems, and to food security, as well as conserving and restoring biodiversity and maintaining nature's contributions to people, including ecosystem functions and services. At the same time, applying agroecology and using a food systems framing when developing NBSAPs will have impacts beyond Target 10, extending also to support most other GBF targets. Moreover, NBSAPs reinforced with agroecology approaches support implementation of national commitments across the Rio Conventions, especially objectives of the UNFCCC Global Goal on Adaptation.⁴⁸



PART II: DEVELOPING AND IMPLEMENTING AN AGROECOLOGICAL NBSAP

“National policies must give greater attention to leveraging food systems, to contribute to the well-being of all people and of the planet, both in the immediate future and the long term.”

— [Report](#) of the Secretary General, UN Food Systems Summit +2

Part II of this Guidance aims to assist National Biodiversity Strategies and Action Plans (NBSAPs) focal points and food systems and agroecology actors to develop and implement NBSAPs from a food systems perspective that centres on agroecology. The information provided in the following chapters is derived from peer-to-peer dialogues, discussions at SBSTTA events, and expert interviews (see “[About this Guidance](#)”). This Guidance outlines how to integrate the 13 Principles of Agroecology into an NBSAP.

Part II has three main components: 1) key components of NBSAP development (Chapter 3); 2) intervention areas to achieve GBF national targets (Chapter 4); and 3) cross-cutting levers for implementation (Chapter 5).

General information to guide NBSAP development has been compiled in the [Appendix](#).



CHAPTER 3: KEY COMPONENTS OF NBSAP DEVELOPMENT

This chapter focuses on incorporating agroecology during NBSAP development in three instances:

1. When defining the mission and vision;
2. When assessing biodiversity status, trends, threats, and contributions; and
3. When designing the process and methodology for formulating and updating.

These activities, which can be approached iteratively, are important for identifying specific actions, defining stakeholder roles, and fostering cross-sectoral collaborations necessary for effective target-setting and implementation that can ultimately make our food systems work for biodiversity and people.

In national contexts and circumstances where political will is high, the explicit inclusion of agroecology as an approach in an NBSAP is advisable, striving for the highest adherence to each of the 13 Principles of Agroecology (as opposed to only selected individual principles). In some national contexts and circumstances the agroecology concept may not be a good entry point, in which case it is advisable for governments to focus on mainstreaming the 13 Principles of Agroecology within actions and GBF targets related to food systems. For example, support for the development of an organic sector to reduce dependencies on external chemical inputs and increase self-sufficiency could be included in GBF Target 10 as well as under Target 7 (*Reduce pollution to levels that are not harmful to biodiversity*). Recognition of specific agroecological practices and measures in an NBSAP can enable agroecology actors to receive support for their programs and activities.

BOX 3.1 — THE EVOLUTION OF AGROECOLOGY WITHIN NBSAPS

A quick scan of 43 post-COP10 NBSAPs available online reveals that only 10 countries explicitly mentioned agroecology as a key approach for their biodiversity goals.* These NBSAPs generally focused solely on food production aspects, and on promoting isolated agroecological practices rather than taking a systemic approach. For example, Brazil's 2017 NBSAP revision included agroecology in key actions on various national targets, such as "expanding the state agriculture-prone area under agroecological practices" and "providing incentives for the implementation of projects that apply agroecological practices in Indigenous lands."⁴⁹

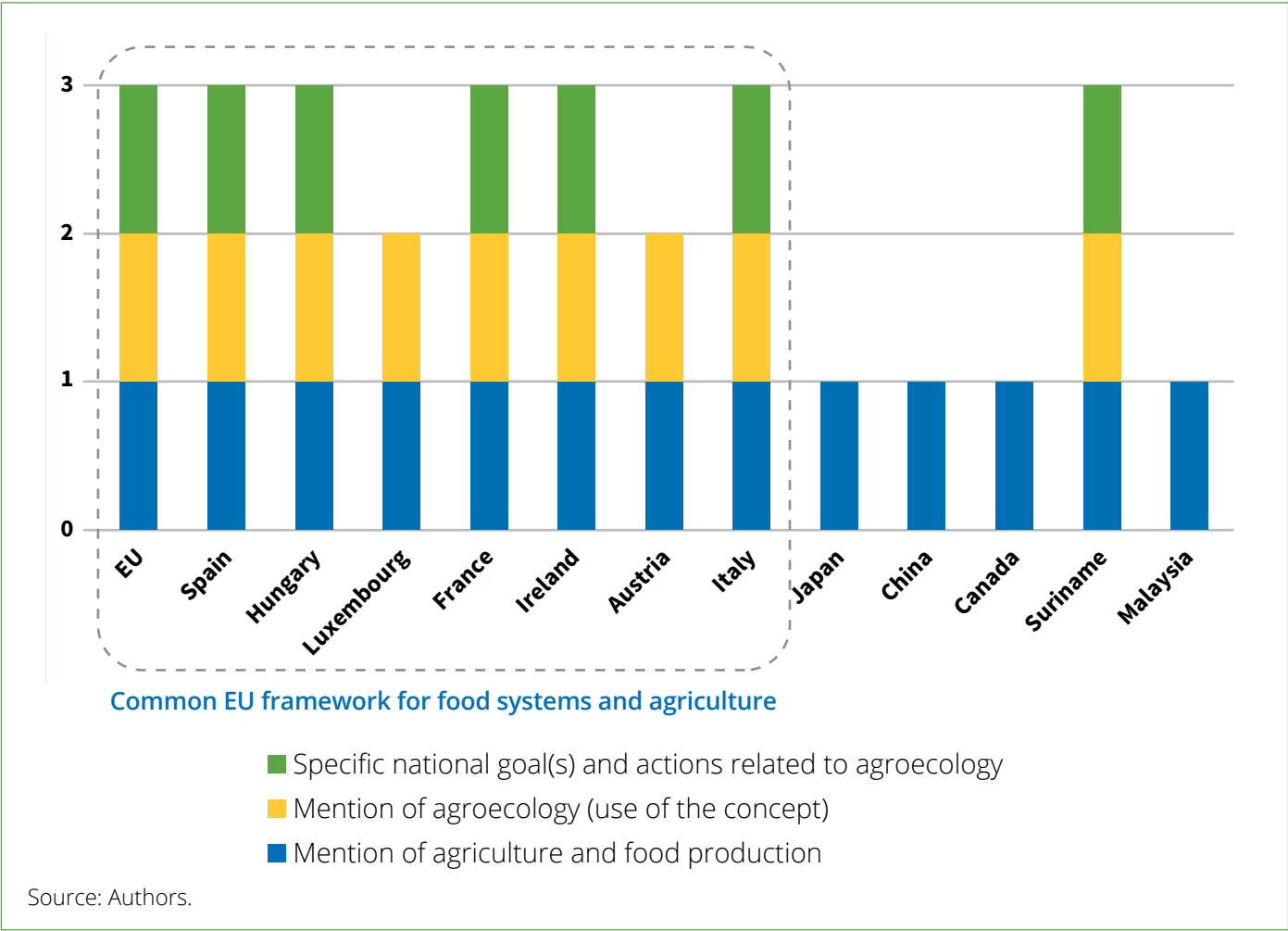
* Based on an online scan conducted by the Agroecology Coalition Secretariat in November 2023.

In post-COP10 NBSAPs, many more countries (52) mention practices that align with agroecological principles, such as promoting agroforestry, integrated pest management, diversification and agrobiodiversity, organic farming, and permaculture. For example, Burundi’s 2013–2020 NBSAP includes an action for the “establishment of systems for safeguarding traditional knowledge of agro-pastoralists to support biodiversity and ensure food security,”⁵⁰ which supports a national target on the preservation of genetic diversity of crops, livestock, and wild relatives.

As of August 2024, 9 out of 13 post-COP15 NBSAPs submitted to the CBD explicitly include agroecology as an approach, with some incorporating it into specific goals (see [Figure 3.1](#)). Each of those 9 newly include agroecology for the first time. Still, 8 of those are NBSAPs from EU countries that have aligned their measures related to food and agriculture to the EU common policies on agriculture and food, which set explicit targets on agroecology. This is a promising sign, and perhaps reflects how food systems thinking has emerged as a frontier for policy action over the past decade to address the shortcomings of siloed, sector-specific approaches.

[Figure 3.1](#) provides an analysis of how post-COP15 NBSAPs have: 1) mentioned agriculture and food systems, 2) utilized the concept of agroecology, and 3) set specific national goals and actions related to agroecology.

FIGURE 3.1 — POST-GBF NBSAPs (JANUARY 2023 TO JULY 2024)



3.1 Defining the Mission and Vision of an NBSAP

To incorporate agroecology, the mission and vision statements of an NBSAP should:

- Articulate *a future* where food systems are major contributors to/enablers of the conservation, restoration, and enhancement of biodiversity;
- Champion *a transition* to sustainable, resilient, healthy, and equitable food systems as the basis for these contributions;
- Identify biodiversity actions that *deliver on multiple targets* of the GBF, and aim to improve the livelihoods and well-being of actors involved in food systems (from producers and suppliers to consumers and waste managers); and
- Recognize *the importance of agroecology in delivering on multiple GBF targets and addressing current and future challenges* in nutrition, health, economic stability, climate mitigation and adaptation, and environmental sustainability.

GUIDANCE

Articulate a long-term and holistic vision

- **Long-term vision:** Outline a long-term vision for the relationship between biodiversity and food systems in the country.
- **Strategic coherence:** Align this vision with other national development plans and international commitments that focus on nutrition, health, economic development, financial investment, climate change, food security, food sovereignty, and human rights.
- **Food system resilience:** Emphasize the need to increase resilience of food systems — by diversifying food production and supporting knowledge holders — to counter growing societal, economic, ecological, and political challenges (e.g., recent disruptions in international supply chains, and extreme weather events such as prolonged droughts and flash floods).

Create a comprehensive and transformational mission statement

- **Comprehensive and transformational mission statement:** Develop a mission statement that envisions biodiversity flourishing across all regions and ecosystems in the country; that emphasizes the urgent need for transformative approaches like agroecology to accelerate strategies for sustainable use, protection of biodiversity, and food system resilience; and that are fostered by local communities.

Outline pathways for an agroecological transition

- **Integration of agroecology:** Integrate the 13 Principles of Agroecology and 10 Elements of Agroecology, and consider the 5 Levels of Transition (see [Figure 1.2](#)) to craft a comprehensive vision

that considers the multiple and holistic aspects for achieving sustainable, biodiverse food systems.

- **Multisectoral and multidimensional frameworks:** Move away from sectoral frameworks to multisectoral and multidimensional ones, recognizing the role of all food systems actors, including consumers. Recognize that systems' shifts, structural changes, and connections across different sectoral frameworks are needed for a true transition.

Define multidimensional approaches

- **Multidimensional approaches:** Steer implementation of multidimensional approaches that deliver on multiple objectives and commitments at the national level, including Nationally Determined Contributions, National Adaptation Plans, and National Development Plans, and foster collaboration across agriculture, environment, health, finance, planning sectors, etc. Agroecology is a multidimensional approach to food systems transformation.

Local and community-based processes and solutions

- **Locally contextualized solutions:** Encourage actions and solutions that are adapted to local landscapes and seascapes, including their ecological, cultural, social, and economic characteristics, and that promote local adaptive management of agriculture and food systems.
- **Social processes and resilience:** Elevate and champion social processes that enhance sustainability and resilience in food systems, such as co-creation and community-based resource management.
- **Indigenous knowledge and traditional practices:** Recognize, value, and support the fundamental contributions that Indigenous communities make to the sustainable use and protection of biodiversity. These contributions can be promoted through agroecological practices.

Livelihoods and diets

- **Support for dignified livelihoods:** Advocate for dignified and resilient livelihoods for all actors in the food system, ensuring fair trade, fair employment, fair treatment of intellectual property rights, and gender equality. Recognize and support the needs and interests of the most vulnerable and marginalized food actors who play a key role in the sustainable use and protection of biodiversity, such as family farmers, smallholders, traditional food producers, Indigenous Peoples, and traditional food market traders.
- **Access to diverse, healthy, and sustainable diets:** Strengthen the sustainable use of diverse and local products through agroecology to improve the quality and access to healthy diets, especially for those who are more food insecure. An NBSAP should link nutrition, food security, and biodiversity.

3.2 Assessing Biodiversity Status, Trends, Threats, and Contributions for an NBSAP

Assessments of the current state of food systems and biodiversity action must be holistic, recognizing both direct and indirect drivers of biodiversity loss and the interrelationships of food systems with these drivers. The assessment should identify root causes, pressures, and threats while also highlighting multifunctional co-benefits of agroecology.

GUIDANCE

Identify root causes and structural drivers

- **Connections between biodiversity loss and food systems:** Identify the root causes, structural drivers, pressures, and threats perpetuating ecosystem destruction and degradation, and map their relationship to the food system. Understanding how food systems and biodiversity loss are related helps identify when agroecology could provide solutions and when it might not. See [Figure 1.1](#) to understand how agroecological interventions can address root causes and where the limits are. For example, agroecological systems cannot address drivers of deforestation caused by non-food systems, such as logging for valuable hardwoods, pulp, and paper, even if the land is later repurposed for agriculture.
- **Impact of food systems on biodiversity:** Provide information on how the food system impacts biodiversity at the national level, such as effects on genetic diversity, the status of wild relatives, rights and access to Indigenous seed varieties, ecosystems from hazardous agrochemicals, and nutrition. For example, policies focused on economic growth through agricultural commodities for domestic or export markets may lead to habitat destruction, pollution, and overexploitation of resources.
- **Agricultural landscapes as ecosystems:** Include agroecosystems, and not just natural ecosystems, in assessments related to GBF targets on spatial planning, restoration, and conservation. This includes threatened biodiversity-rich agroecosystems, or agriculture landscapes providing critical habitats, including for specific wild species or acting as corridors.
- **Map Indigenous and traditional food systems and agrobiodiversity (where relevant),** including existing knowledge and holistic governance structures, current practices, seed and crop diversity, livestock diversity, nutritional potential, etc. Use tools such as an agrobiodiversity index in these assessments.⁵¹
- **Consumption patterns and diets:** Evaluate how food culture patterns and trends (e.g., consumption of high ultra-processed foods and industrially produced meat) drive deforestation and habitat loss due to intensive or monoculture crop farming and agro-chemical use. Identify how these same trends impact public health (e.g., exposure to chemicals, imbalanced nutrition). Consider how diets and local foodways, in the context of national circumstances and culture, can reduce pressure on land and water resources, supporting biodiversity's sustainable use and protection, and create actions that support an increase of dietary diversity, nutrition, and food security.

Understand governance, public policies, responsibilities, and opportunities

- **Role and contribution of different sectors:** Map and coordinate the responsibilities of ministries and sectors to identify areas for collaboration and joint input. For example, if wetland pollution in a particular context is caused mainly by both agriculture and urban waste, actions are then required from both food systems actors and urban waste management sectors. This will be important to set realistic targets and expectations about food system transitions.
- **Evolution of an NBSAP:** Reflect on the evolution of the approach to food systems in previous NBSAPs, including challenges, and shifting or emerging priorities. For example, the inclusion of measures leading to changes in consumption and nutrition aspects, and how agroecology or individual agroecology principles have been incorporated.
- **Food systems policy and legislative frameworks:** Summarize current policies, legislations, measures, and actions at national and subnational levels, as well as institutional barriers related to implementing the GBF with an agroecological approach. For countries with specific agroecology policies, referencing these policies and highlighting their connections to NBSAPs is vital.
- **Food system actors:** Evaluate the level of inclusivity, participation, and protection of the rights of food system actors in relation to biodiversity governance, in particular those actors in vulnerable conditions such as Indigenous Peoples and women in rural communities. Ensure diverse participation from food and health knowledge holders, including those in public health nutrition and health professions.
- **Scaling up:** Assess priority areas for scaling up agroecology within a national context, for example, the organic input sector, agroecological markets, financial investment in agroecology, and institutional and research structures and funding, or gaps in curriculum and training. Summarize reference documents or frameworks that review agroecology in a national context.

3.3 Designing the Process and Methodology for Formulating and Updating an NBSAP

The participation of various stakeholders — including agroecology actors, rights holders, suppliers, producers, consumers, financial institutions, and other relevant parties — is essential to developing an NBSAP, and a comprehensive agroecological approach at the national level. This process follows the principle of co-creation and the transdisciplinary approach of agroecology.

GUIDANCE

Build up awareness, engagement, and inclusive collaboration

- **Understanding agroecology:** Raise awareness of agroecology, the 13 Principles of Agroecology, 10 Elements of Agroecology, and their contributions and potential to address biodiversity loss. Share resources across government sectors, including high-level decision makers, and include them in capacity-building activities.

- **Stakeholder engagement:** Engage key agroecology actors across all relevant sectors in consultations, dialogues, and drafting and identification of priorities; in particular, enable the participation of groups with high vulnerability or that have been historically marginalized but often hold vital knowledge of biodiversity, such as smallholder organizations and knowledge holders, including women, youth, and Indigenous Peoples and local communities. Use structured engagement approaches and methods that foster actual and inclusive participation rather than mere consultation. Prioritize holistic co-production and co-design, where possible.
- **Entry points for participation:** Identify appropriate entry points for food system actors who have yet to engage in biodiversity action. These entry points may include innovation, youth entrepreneurship, gender equality and responsiveness, and rights to food and to a clean, healthy, and sustainable environment.
- **Inclusive participatory platforms:** Consult national and/or subnational participatory platforms such as multistakeholder platforms or communities of practice that can provide key policy insights in relation to the scaling of agroecology. These platforms can facilitate the active participation of agroecology actors in NBSAP formulation and implementation.
- **Co-creation principle:** Emphasize co-creation, a core principle of agroecology, throughout the NBSAP development process. Apply this principle to co-design NBSAP development processes, such as identifying national targets for food systems that deliver on biodiversity outcomes. There is often low integration and participation of agroecology and agrobiodiversity actors in NBSAP processes. Ensure that the NBSAP process includes participation mechanisms that are inclusive of all food system actors, from suppliers and producers to consumers and waste managers, as well as health knowledge holders such as those in public health nutrition.

Multisectoral governance and policy coherence

- **Interministerial collaborations:** Connect and exchange with relevant focal points in other ministries to foster inter-ministerial collaboration, specifically those leading agroecological policy efforts in ministries of agriculture, livestock, and/or fisheries, or those key to enabling the implementation of agroecological strategies such as ministries of local governments, finances, or central development agencies. Inter-ministerial and inter-sectoral collaboration is not only important in the integration during drafting of NBSAPs or agroecological policies, but also pivotal in the effective scaling of holistic, transformative approaches such as agroecology.
- **Policy coherence:** Identify existing frameworks such as national agroecology strategies and food systems pathways (or equivalent), and co-design a process to integrate them with NBSAP actions. Identify policies or other incentives that may be incoherent or that undermine each other. Establish dialogues with other ministries and sectors to increase coherence across different policy packages (this can be an area of action or a national target itself).
- **Implementation planning:** Discuss not only the drafting of actions to be included in an NBSAP but also the means of implementation. Consider institutional arrangements, responsible sectors, concrete milestones and timelines with corresponding budgets, and spatial scales for implementation, ensuring they align with agroecological principles and prioritize local and community-based processes and solutions.



CHAPTER 4: INTERVENTION AREAS TO ACHIEVE GBF NATIONAL TARGETS

The primary objective of this chapter is to support the mainstreaming of agroecology in National Biodiversity Strategies and Action Plans (NBSAP) by highlighting agroecological intervention areas relevant to the Global Biodiversity Framework (GBF) (see [Figure 4.1](#)). The intervention areas cover various aspects of food systems transformation (see [Box 1.2](#)), from production to consumption, as well as market incentives and are organized around the three official target clusters of the Kunming-Montreal GBF:

1. Reducing threats to biodiversity

Here the Guidance focuses on agroecological intervention areas that contribute to maintaining ecosystem integrity across various scales and landscapes.

2. Meeting people's needs through sustainable use and benefit-sharing

The Guidance explores agroecological interventions that enable sustainable use, access, and equitable sharing of biodiversity benefits, and can support viable agroecological systems through fair supply chains, vibrant territorial markets, and thriving local economies.

3. Tools and solutions for implementation and mainstreaming

The Guidance addresses opportunities to strengthen equity, rights, governance, changes in consumption, knowledge-sharing, and raising awareness to support agroecology in enhancing biodiversity conservation.

For each of these clusters, we provide examples of interventions that can help countries achieve their NBSAP national targets. Additionally, we indicate the relevant GBF targets these interventions contribute to, equipping users with essential information to facilitate alignment with the GBF. In addition, please note that these policy options address and support mainstreaming many elements of GBF Section C: *"Considerations for the implementation of the Kunming-Montreal Global Biodiversity Framework."* See the [Appendix](#).

The intervention areas and policy options presented in this chapter are the result of an inductive process that incorporated insights from peer-to-peer dialogues and expert inputs, and that drew on alignment with existing agroecology strategies, such as Tanzania's National Ecological Organic Agriculture Strategy⁵² or the strategy of the Agroecology Coalition.⁵³ While we have focused on presenting the most relevant interventions to the GBF, it is important to note that this chapter does not provide an exhaustive list of policy options within each area. See the [Appendix](#) for broader resources on food system policy options.

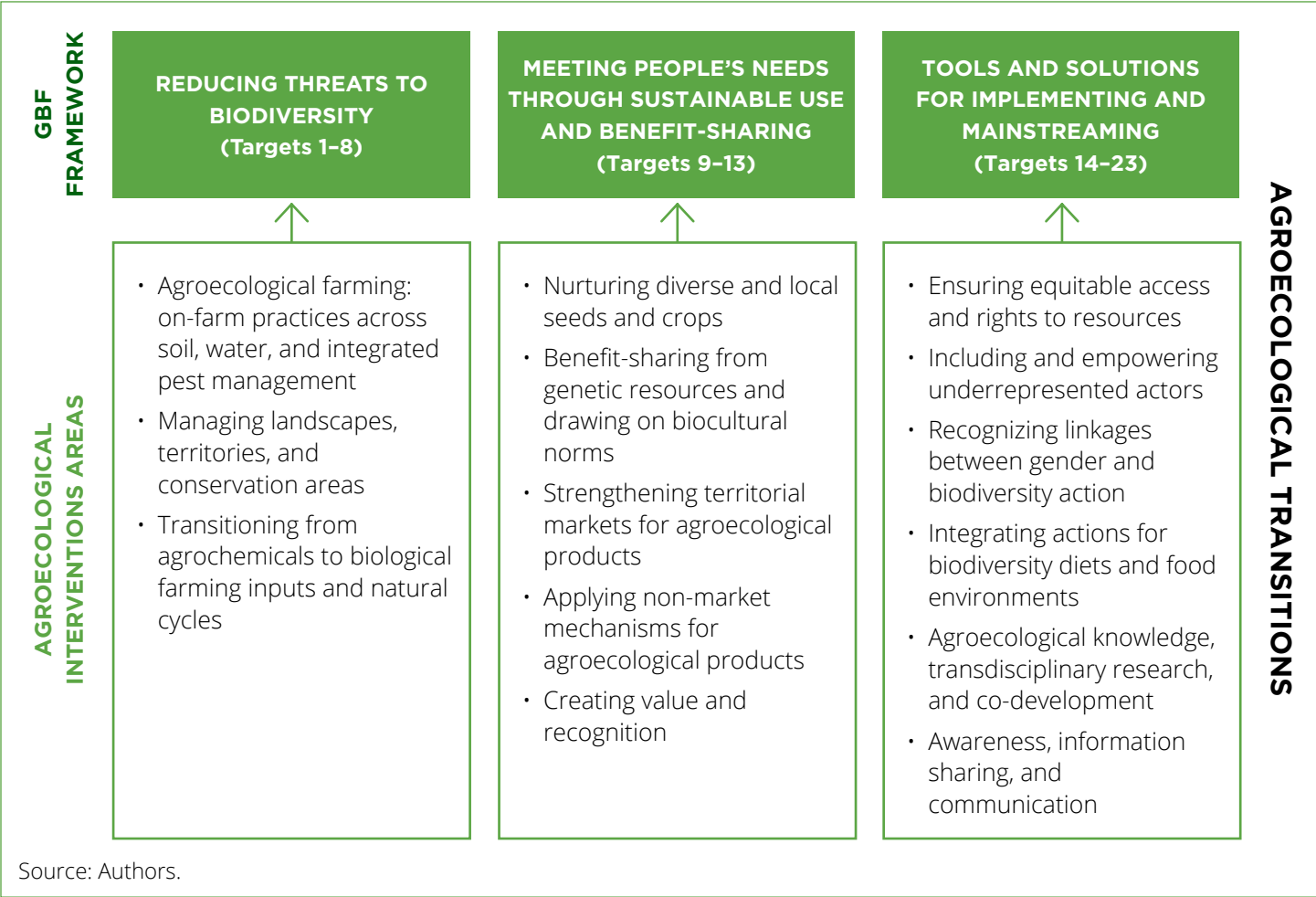
INTEGRATING AGROECOLOGY INTO NBSAP NATIONAL TARGETS

There are two primary ways to integrate agroecology into your NBSAP:

- 1. Develop a specific national target for bringing agroecology to scale.**
For example, direct support to agroecological farmers should be complemented by efforts across a range of interventions (as comprehensible as possible) to ensure systemic change, such as strengthening markets for agroecological products as well as local supply chains.
- 2. Integrate agroecological perspectives within other NBSAP national targets.**
For example, for a national target aimed at securing ecological corridors that connect forest ecosystems, the area under agroforestry systems within and around such corridors could be expanded and the number of contextually suitable tree species with high-quality germplasm and appropriate management systems could be increased.

Both scenarios for alignment should include multiple intervention areas to ensure a holistic and impactful integration of agroecology within NBSAPs.

FIGURE 4.1 — AGROECOLOGY INTERVENTION AREAS TO ACHIEVE GBF NATIONAL TARGETS



4.1. Reducing Threats to Biodiversity

Interventions in this cluster aim to use agroecology to maintain, conserve, restore, and enhance the ecological and social processes that underpin ecosystem integrity. In this way, agroecology can be applied to reduce threats to biodiversity across ecological scales and for different landscapes (see [Figure 1.4](#)).

We propose interventions that:

- 1. Integrate agroecological approaches into conservation and restoration.** For example, agroecological principles applied in synergy with ecological infrastructure (hedgerows, semi-natural patches, etc.) can enhance ecological connectivity while reducing the negative impacts of conventional agriculture on species mobility and potential human–wildlife interaction and conflict (see [Case 4.1](#)). This section also includes options to recognize agroecological areas as a conservation management category with value for biodiversity conservation.
- 2. Mainstream biodiversity in food system practices.** This includes biodiversity from intra-varietal genetic diversity, agro-biodiversity, habitat diversity through small-scale structures, and ecosystems diversity.

CASE 4.1 — AGROECOLOGY AND WILDLIFE COEXISTENCE IN THE KAVANGO-ZAMBEZI LANDSCAPE

In the Kavango-Zambezi landscape of Southern Africa, WWF works with local partners and communities on agroecology in three countries, Namibia, Zambia, and Zimbabwe, to increase the resilience of communities and ecosystems, and to improve connectivity of wildlife habitats through food security, income diversification, and habitat conservation.

The project is based on collaborations with local communities, organizing farmers into seed cooperatives that specialize in locally adapted seeds. These seeds mature earlier and exhibit greater resistance to drought, diseases, and pests than genetically modified seeds from commercial breeders, which often result in sterile harvests. This sterility forces farmers to purchase new seeds each season, leading to dependency. By participating in these cooperatives, farmers reduce their reliance on intermediaries, thereby breaking a cycle of debt associated with buying seeds on credit.

In addition to using locally adapted seeds, the farmers implement sustainable agricultural practices, such as minimum tillage. This involves creating small planting basins filled with animal manure and crop residues, which enhance soil fertility and promote the formation of rich topsoil. A few grains of crops like corn, sorghum, or peanuts are then added to the planting basins, which have improved germination rates with the enriched top soil. The open basins also collect water, boosting the soil's water retention before being covered.

The farmers now employ intercropping, a method that optimizes nutrient capture and benefits from nitrogen-fixing crops, thereby reducing the need for synthetic fertilizers. They also practice crop rotation to avoid the accumulation of pests and diseases that occur with the repeated planting of the same crop. This, combined with intercropping, helps minimize pest and disease attraction and spread. Additionally, using plant waste as mulch helps control weeds and retain soil moisture.

In addition, in communities that live close to wildlife like herds of wild elephants and lions, the project promotes human–wildlife coexistence through agroecological methods. Alongside improved farming techniques, farmers use *bomas* or *kraals* — locally constructed enclosures made from canvas material and steel poles. These structures last longer and thus reduce tree cutting for poles while protecting livestock from predators. The use of mobile bomas, which can be moved across the fields, spreads nutrient-rich manure over a larger area, naturally enriching the soil and enhancing its fertility. These mobile *bomas* also prevent cattle from grazing on young shrubs and trees, allowing the vegetation to mature. The protection provided by the *bomas* has led to a reduction in predation and, as a result, fewer retaliatory killings of predators like lions, thus supporting biodiversity and maintaining a natural ecological balance.

Source: WWF, KAZA ARISE project: Food Security and Habitat Protection in KAZA (unpublished).

KEY INTERVENTION AREAS WITH EXAMPLES

The following interventions can be selectively or comprehensively added into an NBSAP based on national circumstances and capacities.

Agroecological intervention areas	Contribution to GBF targets on reducing threats to biodiversity	Relevant agroecological principles
Agroecological farming: On-farm practices for soil, water, and integrated pest management	T1. Plan and manage all areas to reduce biodiversity loss T2. Restore 30% of all degraded ecosystems T4. Halt species extinction, protect genetic diversity, and manage human–wildlife conflicts T7. Reduce pollution to levels that are not harmful to biodiversity T8. Minimize the impacts of climate change on biodiversity and build resilience <i>Contributions to targets in other clusters:</i> T10. Enhance biodiversity and sustainability in agriculture, aquaculture, fisheries, and forestry T11. Restore, maintain, and enhance nature's contributions to people	1. Recycling 2. Input reduction 3. Soil health 4. Animal health 5. Biodiversity 6. Synergy
Managing landscapes, territories, and conservation areas	T1. Plan and manage all areas to reduce biodiversity loss T2. Restore 30% of all degraded ecosystems T3. Conserve 30% of land, waters, and seas T4. Halt species extinction, protect genetic diversity, and manage human–wildlife conflicts T8. Minimize the impacts of climate change on biodiversity and build resilience <i>Contributions to targets in other clusters:</i> T10. Enhance biodiversity and sustainability in agriculture, aquaculture, fisheries, and forestry T11. Restore, maintain, and enhance nature's contributions to people	1. Recycling 5. Biodiversity 6. Synergy 8. Co-creation of knowledge 9. Social value and diets 12. Land and natural resource governance 13. Participation

KEY INTERVENTION AREAS WITH EXAMPLES *CONTINUED*

Agroecological intervention areas	Contribution to GBF targets on reducing threats to biodiversity	Relevant agroecological principles
Transitioning from agrochemicals to biological farming inputs and natural cycles	<p>T7. Reduce pollution to levels that are not harmful to biodiversity</p> <p><i>Contributions to targets in other clusters:</i></p> <p>T10. Enhance biodiversity and sustainability in agriculture, aquaculture, fisheries, and forestry</p> <p>T11. Restore, maintain and enhance nature's contributions to people</p>	<ol style="list-style-type: none"> 1. Recycling 2. Input reduction 3. Soil health 4. Animal health 5. Biodiversity 6. Synergy

Agroecological farming: On-farm practices across soil, water, and integrated pest management

- Identify and apply agroecological and biodiversity-friendly agricultural practices in soil, water, and integrated pest management to enhance ecological functions (e.g., composting, farmyard manure application, agroforestry, biopesticides, multi-cropping, crop rotation, cover crops, terraces, multi-storey gardens, mulching). See the report written by Kuria et al.⁵⁴ for an assessment of some of those practices.
- Include agroecological practices in restoration and climate change adaptation plan.
- Promote soil health management (e.g., through cover cropping, crop rotation, composting, and reduced tillage) to improve soil organic matter, enhance soil biodiversity, and increase water infiltration and retention.
- Utilize agroecological practices to control the spread of invasive alien species (e.g., by using native tree species in agroforestry systems), contribute to the conservation of rare and endangered species on agricultural land (e.g., endangered birds in organically managed farms), and conserve genetic resources (e.g., through the protection of local crop and animal varieties and wild relatives).
- Incorporate agroecological principles into watershed-management plans to protect water quality, reduce runoff and erosion, and enhance groundwater recharge.

Managing landscapes, territories, and conservation areas

- Develop and/or strengthen policies to increase conservation of biodiverse, sensitive, and threatened agroecosystems at landscape level, through community-based actions and appropriate governance modalities.
- Designate other effective area-based conservation measures (OECMs) outside protected areas that involve agroecological food production, ensuring collaborative co-design with local communities.
- Recognize Indigenous and local food systems in the territories and areas traditionally governed by Indigenous Peoples and local communities,⁵⁵ such as Indigenous and Community Conserved Areas (ICCAs),⁵⁶ and in biocultural protocols that utilize traditional and customary knowledge and use.

- Integrate agroecological areas into spatial planning and recognize their contribution to ecosystem functions and services (e.g., zoning of agroecological areas to reduce pollution or erosion).

Transitioning from agrochemicals to biological farming inputs* and natural cycles

- Develop and/or strengthen measures to phase out export, import, and use of hazardous and highly hazardous chemicals and pesticides in agriculture.⁵⁷
- Develop a high-quality biological input market for agroecology, ensuring its safety and efficacy.
- Develop fertilizing strategies based on biological alternatives that support soil fertility, biological activity, and plant growth by stimulating natural nutrient cycles to avoid dependence on chemical fertilizers.

FURTHER GUIDANCE FOR DEVELOPING INTERVENTIONS

- **Models of conservation:** Promote community-based conservation that aligns with agroecological principles in food-producing landscapes. Community-based conservation allows Indigenous Peoples and local communities to protect their lands, exercising their knowledge and power. This “conservation through use” approach, also known as inclusive or convivial conservation, emphasizes community rights and resources, fostering harmony with nature and supporting direct access and shared benefits, closely adhering to agroecological principles.^{**}
- **Integration of scales:** In line with agroecology, think along wider spatial and temporal scales in planning and implementation. The territorial^{***} scale is particularly suited to understanding the synergies and trade-offs between various land uses and to design coordinated actions by policymakers and other actors.
- **Equity:** Recognize that both agroecological principles and the CBD emphasize the importance of equity. Link area-based conservation to distributional equity (equitably distributed benefits and costs to key actors); procedural equity (decision-making is fair, transparent, and accountable); and recognitive equity (respect for rights, knowledge, identities and values).⁵⁸
- **Agricultural productivity:** Apply agroecology to improve productivity while reducing pressure on land, ecosystems, and ecosystem services. Agroecology has the potential to enhance productivity in many areas of the world⁵⁹ as well as to produce numerous co-benefits for people and nature (such

* A biological input is a living organism or element of biological origin (e.g., nettle manure), as opposed to elements of synthetic or mineral chemical origin, introduced to an agricultural plot in order to participate in the optimization of the production (as defined by the [Dictionary of Agroecology](#)).

** For a comparative analysis of conservation models, see Table 2 in [L. Fuchs](#). For a description of inclusive or convivial conservation, see [Perfecto et al.](#)

*** Territories can refer to sub-national territories, such as local administrative units, but also to spaces organized around environmental and/or biodiversity hotspots where local interventions can be coordinated. For example, the concept of “living labs” or “learning landscapes” promoted by various agroecology actors and projects are territorial approaches where various interested food system actors are brought together around an agroecological vision.

as enhancing crop and animal diversity and soil health), and to support ecological and social (livelihood) resilience to natural hazards and climate changes.

- **Scaling up and expansion:** Promote a widespread adoption of agroecological practices by providing support for small-scale producers to transition from conventional farming methods, including support for research, extension, and subsidies. This leverages synergies across UN frameworks and commitments, such as Nationally Determined Contributions (NDCs), National Adaptation Plans (NAPs), Land Degradation Neutrality (LDN) targets, and Global Framework on Chemicals (GFC) targets (see [Box 4.1](#)), among others, and can serve to optimize resources for this transition.

BOX 4.1 — USING AGROECOLOGY TO LEVERAGE SYNERGIES BETWEEN THE GBF AND OTHER UN FRAMEWORKS

“Integrating the adoption of agroecology at scale and the phase-out of highly hazardous pesticides (HHPs) into NBSAPs are arguably the most efficient means of delivering on key agriculture and food systems commitments across the KMGBF, the Paris Agreement, and the GFC.”

— [Pesticide Action Network, UK](#)

The recently established Global Framework on Chemicals (GFC) complements CBD Target 7 (*Reduce pollution to levels that are not harmful to biodiversity*) and Target 10 (*Enhance biodiversity and sustainability in agriculture, aquaculture, fisheries, and forestry*), as well as several agroecology principles (particularly input reduction, soil health, and animal health). These synergies can be utilized and amplified to improve and strengthen implementation and the application of agroecology in environmental management.

GBF Target 7 aims to reduce risks from pesticides together with phasing out highly hazardous pesticides (HHPs), which dovetails with GFC Target A7 on phasing out HHPs, and GFC Target D5, which commits countries to shift from supporting hazardous chemical inputs to supporting agroecological alternatives to pesticides.

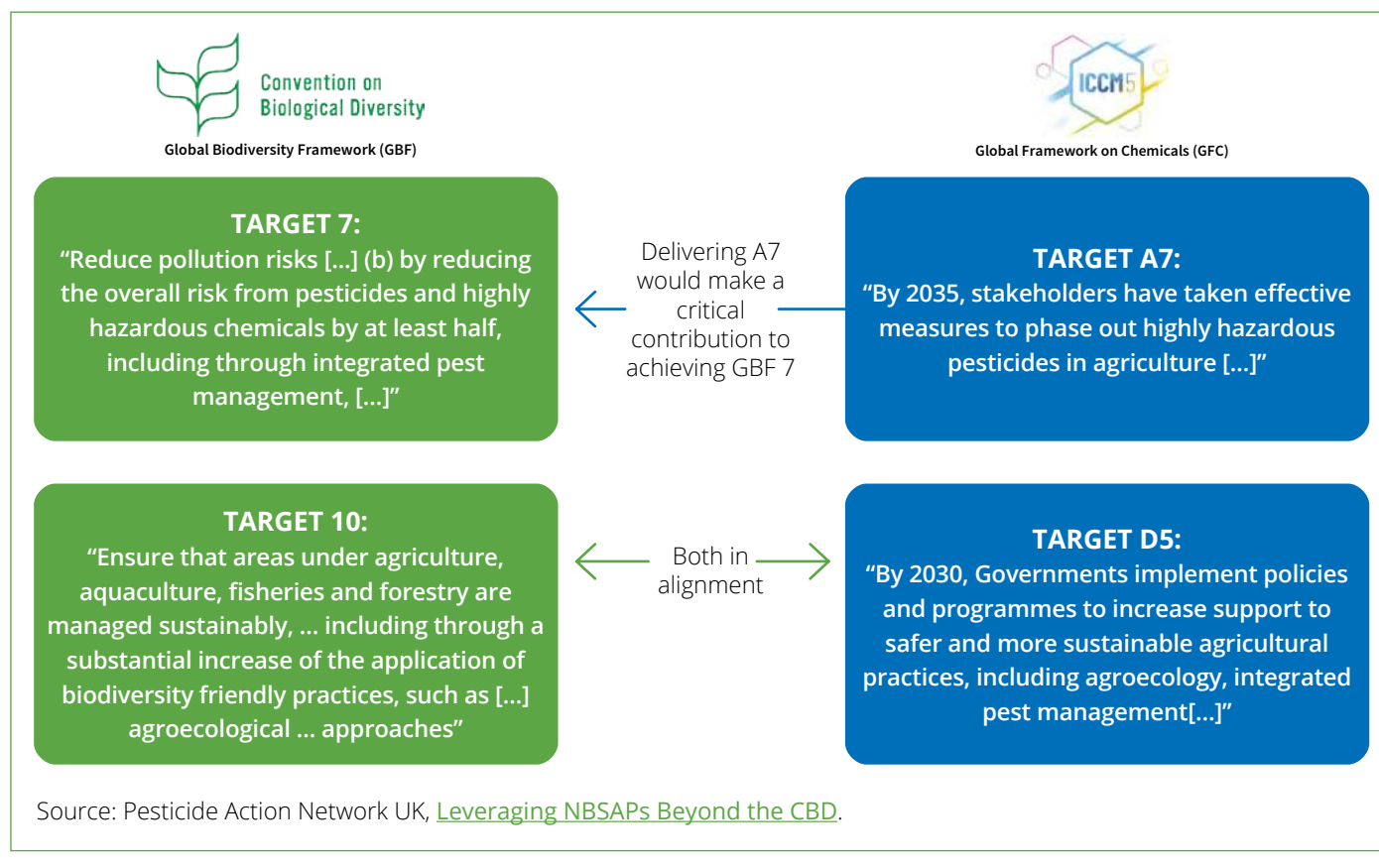
Hence targeted actions on HHPs will be key to deliver on GBF Targets 7 and 10, as well as to mainstreaming agroecological practices and integrated pest management. Policies and plans to implement GFC Target A7 and D5 should be explicitly integrated into NBSAPs and national reporting under the CBD.

Moreover, beyond GBF Target 7 additional links to the GBF can be leveraged to reduce the use of pesticides. These include Target 15 on curbing harmful corporate practices; Target 18 on reorienting subsidies and tax breaks that harm biodiversity; Target 16 on promoting sustainable consumption; and Target 14 on a whole-of-government approach.

According to the GBF Target 7 indicators methodology on aggregate total applied toxicity, actions with the most significant results in the short term should focus on phasing out of HHP (in accordance with GFC Target D7) while planning for an agroecological transition (GFC Target D5) over the mid to long term.

The GBF and GFC targets on pesticides also coincide with the efforts of the World Health Organization to address impacts of chemicals, including HHPs and endocrine-disrupting chemicals.⁶⁰

FIGURE 4.2 — ALIGNING TARGETS RELATED TO AGROECOLOGY AND PESTICIDES IN THE CBD AND GFC



4.2. Meeting People's Needs Through Sustainable Use and Benefit-sharing

Agroecological interventions in this cluster aim to support farmers and food provisioners to conserve, nurture, and enhance biodiversity through utilization and ensuring fair and equitable sharing of benefits ensuing from their use.

Sustainable use of biodiversity and circular economy principles are central to agroecology and supporting long-term viability and resilience of food systems while contributing to food security, livelihood, and local economies. These positive impacts depend on the existence of vibrant markets for agroecological products and fair supply chains, including with diversity of seeds and crops, benefit-sharing, territorial markets, non-market mechanisms, and value additions.

At the territorial scale, agroecological markets and supply chains can strengthen regional food systems and support the transition to agroecology in all its aspects — ecological, economic, political, social, and cultural (see [Case 4.2](#)). For example, territorial markets provide farmers with opportunities for direct sales, higher profits, and closer connections with consumers.⁶¹ They also focus on using agroecological approaches to foster collaboration among various stakeholders, linking urban and rural areas into a cohesive food system and developing specific value chains that are crucial for financing sustainable food systems (GBF Target 19).

Note that agroecological interventions for reducing threats to biodiversity (see [Section 4.1](#)) are also key to supporting agroecological transition at the farm level and realizing the positive contributions of agroecological systems to meeting people's needs.

KEY INTERVENTION AREAS WITH EXAMPLES

Agroecological intervention areas	Contribution to GBF targets on meeting people's needs through sustainable use and benefit-sharing	Relevant agroecological principles
Nurturing diverse and local seeds and crops	<p>T10. Enhance biodiversity and sustainability in agriculture, aquaculture, fisheries, and forestry</p> <p>T11. Restore, maintain, and enhance nature's contributions to people</p> <p>T13. Increase the sharing of benefits from genetic resources, digital sequence information, and traditional knowledge</p> <p><i>Contributions to targets in other clusters:</i></p> <p>T4. Halt species extinction, protect genetic diversity, and manage human–wildlife conflicts</p>	<p>5. Biodiversity</p> <p>6. Synergy</p> <p>8. Co-creation of knowledge</p> <p>9. Social values and diets</p>
Benefit-sharing from genetic resources and drawing on biocultural norms	<p>T13. Increase the sharing of benefits from genetic resources, digital sequence information, and traditional knowledge</p>	<p>9. Social values and diets</p> <p>10. Fairness</p> <p>12. Land and natural resource governance</p> <p>13. Participation</p>
Strengthening territorial markets for agroecological products	<p>T10. Enhance biodiversity and sustainability in agriculture, aquaculture, fisheries, and forestry</p> <p>T12: Enhance green spaces and urban planning for human well-being and biodiversity</p> <p><i>Contributions to targets in other clusters:</i></p> <p>T16. Enable sustainable consumption choices to reduce waste and overconsumption</p> <p>T18. Reduce harmful incentives by at least USD 500 billion per year, and scale up positive incentives for biodiversity</p> <p>T19. Mobilize USD 200 billion per year for biodiversity from all sources, including USD 30 billion through international finance</p> <p>T21. Ensure that knowledge is available and accessible to guide biodiversity action</p>	<p>7. Economic diversification</p> <p>8. Co-creation of knowledge</p> <p>9. Social values and diets</p> <p>10. Fairness</p> <p>11. Connectivity</p>

KEY INTERVENTION AREAS WITH EXAMPLES *CONTINUED*

Agroecological intervention areas	Contribution to GBF targets on meeting people's needs through sustainable use and benefit-sharing	Relevant agroecological principles
Creating value and recognition	<p>T10. Enhance biodiversity and sustainability in agriculture, aquaculture, fisheries, and forestry</p> <p><i>Contributions to targets in other clusters:</i></p> <p>T15. Businesses assess, disclose, and reduce biodiversity-related risks and negative impacts</p> <p>T16. Enable sustainable consumption choices to reduce waste and overconsumption</p> <p>T21. Ensure that knowledge is available and accessible to guide biodiversity action</p>	<p>7. Economic diversification</p> <p>9. Social values and diets</p> <p>10. Fairness</p> <p>11. Connectivity</p>

Nurturing diverse and local seeds and crops

- Promote locally adapted diversity within crop species (i.e., intra-varietal and intraspecific diversity) through in-situ conservation, community seed banks, farmer-led participatory research and recognition, and protection of local knowledge (including Indigenous and traditional knowledge).*
- Support and strengthen farmer-managed seed systems (FMSS) to ensure seeds stay under the control of farmers. For example, remove barriers and legislation prohibiting the saving, exchange, and re-use of farmer-managed seeds.
- Support the production and consumption of Indigenous, under-utilized, and native crops through policy incentives. For example, support areas and territories governed by Indigenous Peoples and local communities and their food cultures and foodways; promote local procurement, local food assistance, and local nutritional guidelines; and incorporate agroecology into consumer education and participatory guarantee systems.
- Ensure agriculture policies reflect farmers' rights related to seeds (as enshrined in the FAO Plant Treaty) and recognition of traditional knowledge of IPLCs (as enshrined in CBD Article 8j on traditional knowledge, in the Nagoya Protocol on Access and Benefit-Sharing, and in the FAO Plant Treaty).

Benefit-sharing from genetic resources and drawing on biocultural norms**

- Ensure full rights, access, and fair sharing of benefits of the utilization of genetic resources for agriculture to the communities who utilize and conserve agrobiodiversity, including policy and legal measures for the equitable sharing of benefits from commercialization or other applications.***

* CBD Article 8j places particular emphasis on the critical role of traditional knowledge, together with the CBD Plan of Action on Customary Sustainable Use of Biological Diversity.

** Biocultural norms, such as Biocultural Community Protocols (BCPs), are instruments that set out clear terms and conditions to governments and the private, research, and non-profit sectors for engaging with Indigenous Peoples and local communities and accessing their local resources and knowledge.

*** As outlined in the Nagoya Protocol on Access and Benefit Sharing.

- Utilize biocultural community protocols and customary use practices to uphold and recognize the traditional knowledge of Indigenous Peoples and local communities, and their conservation and use of wild and uncultivated foods.

Strengthening territorial markets for agroecological products

- Strengthen the connections between wholesale markets and traditional food markets (including public, municipal, open-air, wet, street, temporary, mobile, and farmer's markets⁶²) and agroecological producers. This implies incentivizing investment in their infrastructure, operations, and logistics to better gather, store, and trade agroecological products.
- Promote farmer-to-consumer practices such as Participatory Guarantee Systems (PGS) and Community Supported Agriculture (CSA) using agroecology to strengthen local food systems, including urban food systems and short value chains.
- Capitalize on new (low cost) technologies for innovative marketing, which can promote youth engagement and employment in the agricultural sector. For example, the use of apps on mobile phones for local digital marketplace platforms or better access to market information for farmers.
- Develop procurement programs using locally produced food for public institutions such as schools, hospitals, and other educational institutions, as well as for other food assistance programs.
- Support and subsidize agroecological sourcing for food banks, community kitchens, and other food distribution programs.

Creating value and recognition

- Support innovations that optimize local value-addition processes and entrepreneurship and are adapted to the local context (e.g., locally produced biological farming inputs and organic processing, transformation, and packaging).
- Promote impact investment in agroecology social enterprises by incentivizing the application of agroecological principles among private sector actors.⁶³
- Create bioregional designations that connect producers and consumers in a region or territory to safeguard and strengthen local food cultures, regional food systems, and circular economies. These also build community, trust, and producer–consumer relationships.⁶⁴
- Develop biotrade initiatives in agroecologically produced high-value foods, both nationally and internationally, to increase farmer incomes and livelihoods.

FURTHER GUIDANCE FOR DEVELOPING INTERVENTIONS

- **In-situ conservation:** Emphasize “conservation through use” as crucial for agroecological transition. Agroecological practices sustain a type of in-situ (on site) conservation that occurs in farmers' fields or in Indigenous territories and waters. When biodiversity is sustainably utilized, it can grow.

- **Managing the tensions of use:** Sustainable use can be a point of contention between communities, such as between livestock keepers, hunter-gatherers, fishing communities, farmers, and other actors who have conflicting needs. Navigating such conflicts requires creating inclusive spaces for dialogue, as well as capacity-building for the actors and institutions involved. In addition, taking a landscape approach that respects biocultural norms and a rights-based approach can help governments and community leaders co-construct arrangements and governance mechanisms for sustainably using and equitably sharing the benefits from common agricultural resources.
- **Sub-national level:** Collaborate with government administration at sub-national levels where possible, leveraging their resources, capacities, and networks, to strengthen joint actions on agroecology and biodiversity conservation at territorial scale.
- **Re-balance markets:** A focus on territorial development can open up questions about the model of economic development most suited to a country, and at times position agro-commodities for export against local crops for local needs. However, blended approaches exist, and policies can encourage a more diverse mix of agricultural production that entails strong actions to strengthen local food production and territorial food system resilience while supplementing with high-value crops for export, as in the case of Peru (see [Case 1.2](#)).⁶⁵

CASE 4.2 — BRAZIL'S STRATEGIES IN SUPPORT OF SOCIO-BIODIVERSITY PRODUCTS

"Socio-biodiversity products" in the context of Brazil refers to goods and services derived from the country's rich biological diversity that are produced in a manner that promotes social inclusion, cultural preservation, and sustainable development. These products often come from traditional communities, such as Indigenous Peoples, quilombolas (descendants of African slaves), and small family farmers. The concept emphasizes the interconnectedness of social and environmental dimensions, recognizing the value of traditional knowledge and practices in conserving biodiversity and promoting sustainable livelihoods.

Even though socio-biodiversity products have been extensively used by traditional communities and Indigenous populations in Brazil, and many projects have experimented with local biodiversity value chains, comprehensive policies to support them only began to take shape at the federal level in the 2000s. Before this period, efforts were fragmented and lacked a cohesive framework. The 2000s marked a shift as the government recognized the importance of these products, leading to structured policies that enhanced market access, fair trade opportunities, and institutional support while also benefiting traditional communities and promoting biodiversity conservation.

The main institutional framework that supported these was the National Plan for Promoting the Chains of Products from Socio-biodiversity (PNPSB), established in 2009. PNPSB "has the objective of developing integrated actions for promoting and strengthening the economic chains of products from socio-biodiversity, aggregating value, and consolidating sustainable markets, in addition to promoting and accelerating actions to reduce poverty and social inequalities in rural areas (including gender, race, and ethnic inequality), through a strategy of sustainable territorial development."⁶⁶

Supporting the PNPSB, a Minimum Price Guarantee Policy for Socio-Biodiversity Products (PGPMBIO) also launched in 2009, ensuring price supports to stabilize farmers' incomes and to promote market access. This is supplemented by institutional procurement of socio-biodiversity products through other policies such as the Food Acquisition

Program (Programa de Aquisição de Alimentos/PAA) and the National School Feeding Program (Programa Nacional de Alimentação Escolar/PNAE), which also involved market development.⁶⁷

Following government changes a revival of policies supporting socio-biodiversity products has taken place, driven by a renewed interest in integrating these products into a broader bioeconomy strategy. This approach emphasizes the sustainable use of biological resources, biotechnology innovations, and the development of eco-friendly products and services. The renewed focus aims to explore new market opportunities, foster technological innovations, and create value-added products, aligning socio-biodiversity initiatives with economic and environmental goals.

Sources: Brazil's [National Biodiversity Action Plan](#) and C. Oliveira, et al., [Biodiversity for Food and Nutrition Project](#).

4.3. Tools and Solutions for Implementation and Mainstreaming

Agroecological interventions in this cluster focus on tools and solutions for implementation and mainstreaming that reduce inequities in the food system, promote sustainable, healthy diets and consumption, and foster knowledge co-creation and exchange.

Agroecology is grounded in principles of social justice, with a focus on supporting groups disproportionately affected by inequalities, such as smallholder farmers, women, youth, and Indigenous Peoples and local communities. Key interventions include ensuring fair access and control over land, water, trees, productive resources (such as seeds and farming inputs), as well as financial resources and services. Additionally, these interventions emphasize including underrepresented actors in decision-making processes to strengthen their role in managing territories beyond individual farms.

Other interventions of this cluster focus on creating a consumer environment that supports agroecological products, leading to benefits beyond biodiversity, such as improved human health. Lastly, both co-creating and sharing knowledge are critical for raising awareness about biodiversity and environmental issues. Interventions in this area involve transforming how knowledge is developed and shared, including through research, education, communication, and public awareness efforts.

KEY INTERVENTION AREAS WITH EXAMPLES

Agroecological intervention areas	Contribution to GBF targets on tools and solutions for implementation and mainstreaming	Relevant agroecological principles
Ensuring equitable access and rights to resources	T22. Ensure participation in decision-making and access to justice and information related to biodiversity for all	10. Fairness 12. Land and natural resource governance 13. Participation
Including and empowering underrepresented actors	T22. Ensure participation in decision-making and access to justice and information related to biodiversity for all T21. Ensure that knowledge is available and accessible to guide biodiversity action	8. Co-creation of knowledge 10. Fairness 13. Participation

KEY INTERVENTION AREAS WITH EXAMPLES *CONTINUED*

Agroecological intervention areas	Contribution to GBF targets on tools and solutions for implementation and mainstreaming	Relevant agroecological principles
Recognizing linkages between gender and biodiversity action	T22. Ensure participation in decision-making and access to justice and information related to biodiversity for all T23. Ensure gender equality and a gender-responsive approach for biodiversity action	9. Social value and diets 13. Participation
Integrating actions for biodiversity, diets, and food environments	T15. Businesses assess, disclose, and reduce biodiversity-related risks and negative impacts T16. Enable sustainable consumption choices to reduce waste and overconsumption <i>Contributions to targets in other clusters:</i> T10. Enhance biodiversity and sustainability in agriculture, aquaculture, fisheries, and forestry	5. Biodiversity 9. Social value and diets 11. Connectivity
Supporting agroecological knowledge, transdisciplinary research, and co-development	T21. Ensure that knowledge is available and accessible to guide biodiversity action T20. Strengthen capacity-building, technology transfer, and scientific and technical cooperation for biodiversity <i>Contributions to targets in other clusters:</i> T13. Increase the sharing of benefits from genetic resources, digital sequence information, and traditional knowledge	8. Co-creation of knowledge 13. Participation
Raising awareness, information sharing, and communication	T21. Ensure that knowledge is available and accessible to guide biodiversity action	8. Co-creation of knowledge 13. Participation

Ensuring equitable access and rights to resources

- Strengthen fair access and local control over food production resources, such as water, soil, and land, and identify and address other power imbalances within the food system.
- Recognize land tenure and rights to territories, waters, genetic resources, and other productive resources, drawing on collective rights instruments, including the UN Declaration on the Rights of Indigenous Peoples (UNDRIP), the UN Declaration on the Rights of Peasants and Other People Living and Working in Rural Areas (UNDROP), the Right to Adequate Food, and the UN Convention on the Elimination of All Forms of Discrimination Against Women (CEDAW).⁶⁸
- Design and apply market and non-market incentives that work for all to accelerate transition to agroecological practices (e.g., ensure that credit and insurance schemes are accessible to smallholders or support transition periods when agroecological farmers are more vulnerable to reduced income).

- Recognize and promote strong local governance of food systems to strengthen community food sovereignty and harness co-benefits for biodiversity and for people.

Including and empowering underrepresented actors

- Enshrine the principle of free prior and informed consent (FPIC) in all engagement with Indigenous Peoples and local communities.
- Establish safeguards and legal recourse mechanisms to ensure the safety and protection of biodiversity defenders and local communities seeking to protect their land rights and personal safety from environmental degradation.
- Recognize intergenerationality and include youth in the agrifood sector (e.g., implementing programs that employ youth in agroecology, improving attractiveness of the sector for young farmers (access to capital, training), dedicating funding for inclusive innovations along the value chain, and providing support for intergenerational knowledge exchange on biodiversity and agroecology, such as mentorships).
- Host national and sub-national stakeholder platforms that bring together key actors from government, civil society, research, and donor agencies for coordinated multisector input into policies at all stages (development, implementation, monitoring, and evaluation). In addition, support peoples' platforms and processes to strengthen policies, and the capacity of civil society organizations to effectively engage in their implementation and monitoring. See for example, Senegal's DyTAES platform (Dynamique pour une transition agroécologique au Sénégal; see Case 4.3) and Kenya's ISFAA (Intersectoral Forum on Agrobiodiversity and Agroecology).
- Strengthen labour regulations to better protect agricultural workers rights and safety.

Recognizing linkages between gender and biodiversity action*

- Recognize the role and rights of women in food systems (e.g., in organizing markets) and their extensive knowledge of seed and animal varieties as well as wild and uncultivated foods. Supporting agroecologically produced foods in markets can strengthen the agency of women, whose vital role in biodiversity is often overlooked. Women's knowledge of food diversity and nutrition is also critical in ensuring dietary diversity and health.
- Foster women's collective action, supporting and strengthening association and cooperatives for agroecological production, as well as stronger inclusion and participation of women in food systems governance platforms.
- Promote women's empowerment and entrepreneurial opportunities in biodiversity-based value chains.

* Women4Biodiversity presents a [series of resources](#) on gender dimensions of each GBF Target, and women's importance in NBSAPs.

Integrating actions for biodiversity, diets, and food environments

- Raise attention of the importance of quality food environments** for consumers that support local biodiversity and food systems (e.g., infrastructure for farmer's markets, integrated nutritional and environmental information education, taxes, and other regulatory measures to disincentivize highly processed food).
- Promote consumption of native, under-utilized, and Indigenous crops and other diverse agroecological products with subsidies, labelling, and public education campaigns.
- Ensure that the most food insecure have access to these diverse agroecological products.
- Implement strict regulations to control business practices that harm biodiversity, such as the use of pesticides and monocultures, while encouraging practices that promote biodiversity, such as sourcing local and diverse food ingredients.
- Harness existing and mobilize new public support and consumer demand for local, biodiverse foods that are rich in nutrients, especially if the products are agroecologically grown without chemical inputs. Health benefits and "buying local" are strong motivators for consumers to reconnect with producers, invest in biodiversity, and contribute to local economic development.

Supporting agroecological knowledge, transdisciplinary research, and co-development

- Support participatory research and peer-to-peer knowledge co-creation and sharing to improve the availability and uptake of agroecological and biodiversity-friendly practices.
- Invest in research and development of transdisciplinary, intercultural agroecology in higher education and national research institutions (e.g., new curricula and pedagogy methodologies; promoting holistic perspective in science and research; following international protocols for ethical transdisciplinary research; transferring investment in research and development from staple crops to other under-utilized, native, or local crops that have been marginalized or neglected in academic and scientific agendas; and supporting curriculum on biodiversity within nutrition programming).
- Reform agricultural extension facilities and advisory service systems, promoting and enabling farmer-to-farmer sharing of agroecological practices and knowledge through established co-learning methods (e.g., farmer field schools, farmer-to-farmer extension, exposure visits, demo farms, living labs/learning landscapes).
- Improve recognition and application of biocultural and customary knowledge in biodiversity conservation initiatives related to food systems.

** [Turner et al.](#) describe food environments as "the spaces within which food acquisition occurs, and the series of market-based opportunities and constraints that influence people's food acquisition and consumption," representing a "range of foods that can be accessed in the context where people live and can enable or restrict healthy dietary choices" (as per the [FAO](#)). According to the [Committee on World Food Security's High Level Panel of Experts](#) (HLPE), food environments are considered healthy when they "enable consumers to make nutritious food choices with the potential to improve diets and reduce the burden of malnutrition."

Raising awareness, information sharing, and communication

- Raise awareness of the benefits of biodiverse agroecology to human and planetary health, including through enhancing communication and education campaigns.
- Include information on biodiversity in consumer labels, nutritional guidelines, and through food assistance programs, food procurement, and food educational programs, to empower consumers to make more informed decisions on agroecologically produced foods, their connection to healthy diets, biodiverse and sustainable food systems, and local economic development.
- Recognize diverse forms of evidence that value Indigenous knowledge systems and ways of knowing, including on the environment, biodiversity, and food practices.
- Gather and disseminate evidence from a broad range of stakeholders on the transformative potential of agroecology, boosting its legitimacy to decision makers.

FURTHER GUIDANCE FOR DEVELOPING INTERVENTIONS

- **Meaningful engagement and funding:** Consider long-term funding strategies to enable meaningful participation and engagement of rights and knowledge holders in food system design and monitoring. Indigenous Peoples and local communities, women, youth, farmers, pastoralist, and fisher communities should be effectively included in the conception, development, implementation, and monitoring of NBSAPs.
- **Food sovereignty:** Develop a vision and approach for food sovereignty in territories, including by supporting local producers' rights and supporting local markets. This is also useful for strengthening the resilience of food systems to volatility and disruptions on global markets while supporting livelihood diversification and food security.

CASE 4.3 — DYTAES: MULTISECTOR COLLABORATION FOR AN AGROECOLOGICAL TRANSITION IN SENEGAL

“All the conditions are right for Senegal to show other countries the way in terms of agroecology.”

— Mariam Sow, Executive Secretary of ENDA Pronat and member of the national network
Dynamique pour une transition agroécologique au Senegal (DyTAES)

Ever since President Maky Sall declared in 2015 that Senegal would make an agroecological transition a priority for the country, there have been a number of promising multistakeholder initiatives established to realize this vision. One of them, DyTAES or “Dynamic for an Agroecological Transition in Senegal,” brings together farmers, community organizations, civil society organizations, researchers, and private companies in a network geared to accelerating the agroecological transition in Senegal. DyTAES aims, in the field of agroecology, to support the State in its sovereign mission to formulate public policies.

DyTAES organizes the Agroecology Days (Journées de l’Agroécologie) to dialogue, assess the current situation, and develop recommendations for actions to advance the transformation to agroecology. In addition, DyTAES holds numerous dialogues that create an inclusive space for the government to deliberate with key actors. For example, a 2019 consultation on national agroecology policies involved an elaborate and inclusive consultation process: DyTAES consulted more than 1000 actors involved in agriculture, livestock, rural development, and food security in 36 sites in the 6 geographic zones of the country (Casamance, Niayes, eastern Senegal, groundnut basin, Ferlo, and river valley). The consultation resulted in the formulation of a set of policy recommendations for the country’s agroecological transition.

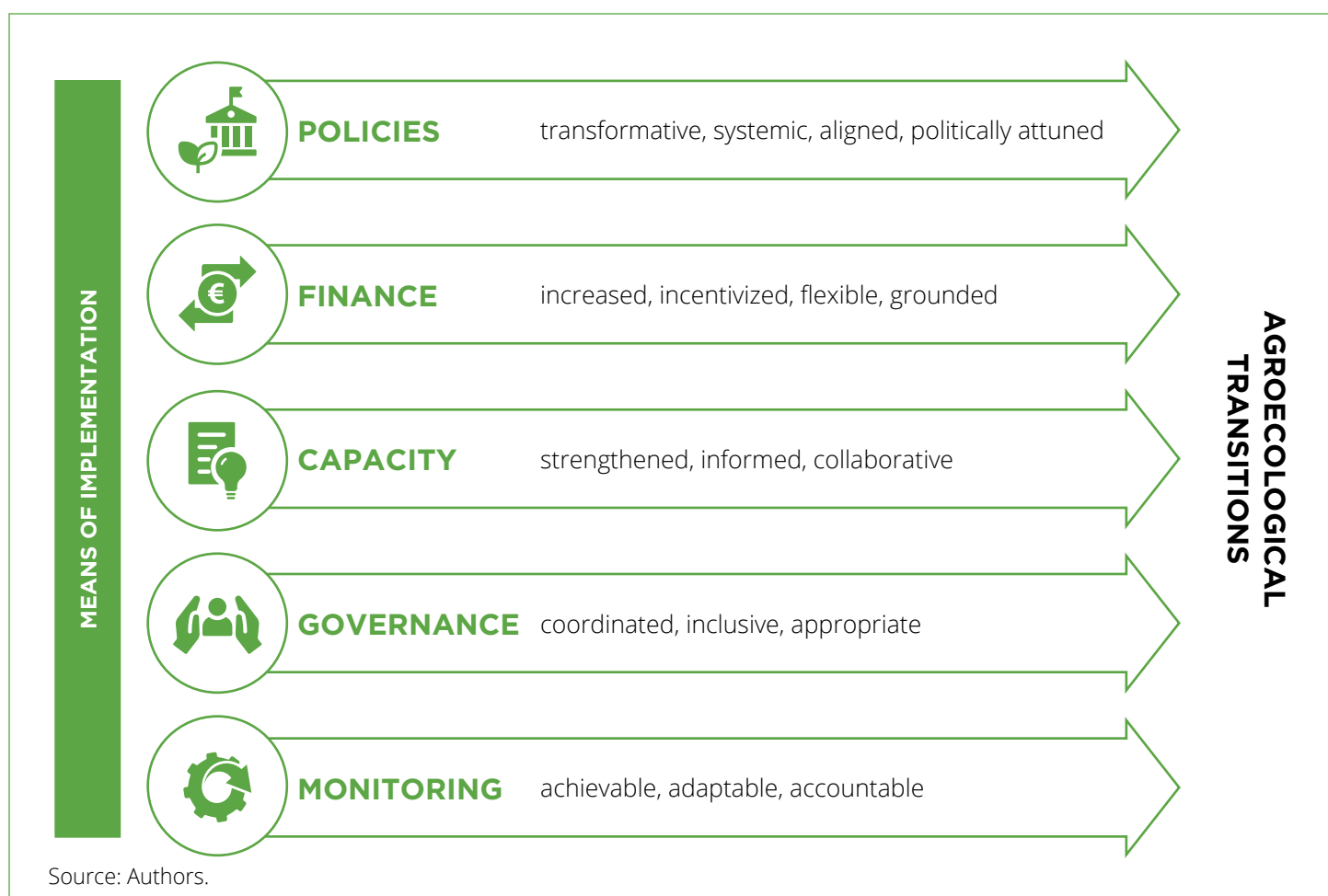
Sources: DyTAES and CIRAD.



CHAPTER 5: MEANS OF IMPLEMENTATION: FIVE CROSS-CUTTING LEVERS

While the alignment of agroecology within an NBSAP can accelerate transitions, success lies in implementation of the interventions. Chapter 5 offers key considerations on five cross-cutting levers, or means of implementation, that can support successful implementation of NBSAPs: 1) policies, 2) finance, 3) capacity, 4) governance, and 5) monitoring.

FIGURE 5.1 — MEANS OF IMPLEMENTATION: FIVE CROSS-CUTTING LEVERS



5.1 Policy: Transformative, Systemic, Aligned, Politically Attuned

“Integrating Agroecology into NBSAPs faces the common difficulty of linking different branches of government. Ensuring policy coherence between these groups is a political issue, and we need to be very attentive to the political context and political dynamics.”

— Peer-to-Peer workshop participant

Contribution to GBF targets	<p>T14. Integrate biodiversity in decision-making at every level</p> <p>T15. Businesses assess, disclose, and reduce biodiversity-related risks and negative impacts</p> <p>T18. Reduce harmful incentives by at least USD 500 billion per year, and scale up positive incentives for biodiversity</p> <p>T19. Mobilize USD 200 billion per year for biodiversity from all sources, including USD 30 billion through international finance</p> <p>T22. Ensure participation in decision-making and access to justice and information related to biodiversity for all</p>
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The first cross-cutting lever looks at policies that support implementation of NBSAPs and an enabling environment for agroecology. Policies can be catalytic for driving transformation, guiding decision-making, moving resources and institutional structures, mobilizing actors, and establishing standards and expectations. To support agroecology, policies should establish incentives for quicker transitions, as well as redirect food system actors away from harmful practices. Policies can also facilitate knowledge exchanges and transfers, support market development, and balance equity and efficiency outcomes, among other important enabling factors.

GUIDANCE

- **Transformative:** Embed agroecology and biodiversity conservation policies within the highest policy frameworks possible, such as national development plans or multisector master plans. NBSAPs should be designed to operate at multiple scales, incorporating sub-national and local levels to strengthen local biodiversity and agroecological practices. Policies must aim for profound and systemic changes rather than incremental improvements, fostering a paradigm shift in food systems that prioritize biodiversity conservation alongside other societal goals.
- **Systemic:** Focus on inter-ministerial collaboration, extending beyond traditional agricultural and environmental domains, to include sectors such as nutrition, health, climate, education, social policy, transport, industry, mining, and tourism. The finance sector should be also included to ensure the prioritization of the funding and finance for agroecological policies and biodiversity commitments (see [Section 5.2: “Finance”](#)).
- **Aligned:** Align NBSAPs with binding and non-binding international frameworks and commitments to reinforce and enhance policy coherence. This includes other national-level implementation plans of food system-related international agreements (e.g., Nationally Determined Contribution/NDCs, National Adaptation Plans/NAP, bilateral and multilateral trade agreements, Food System

Transformation Pathways, Land Degradation Neutrality targets, and national nutrition goals). See [Box 5.1](#).

- **Politically attuned:** Attend to and secure political buy-in and align with political processes. Success lies as much in policy as in politics, which requires honest conversations about entrenched blockages and the identification of allies and windows of opportunity, both nationally and internationally, to advance the agenda. Recognizing and capitalizing on synergy moments can propel policy change. Leveraging international influence can support finding these moments and advocate for change.

BOX 5.1 — INTERNATIONAL FRAMEWORKS AND INSTRUMENTS RELATED TO AGRICULTURAL BIODIVERSITY

Alignment in the implementation of international frameworks and instruments can reinforce existing policies and support policy coherence. The list that touch upon aspects of agricultural biodiversity is vast. Some of these have dedicated sections, where in others biodiversity is lightly touched. These include:

- CBD Cartagena Protocol on Biosafety (Cartagena Protocol)
- CBD Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization (Nagoya Protocol)
- Commission on Genetic Resources for Food and Agriculture (CGRFA)
- Convention Concerning the Protection of the World Cultural and Natural Heritage (World Heritage Convention)
- Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)
- Convention on the Conservation of Migratory Species of Wild Animals (CMS)
- Convention on Wetlands of International Importance, especially as Waterfowl Habitat (Ramsar Convention)
- Global Framework on Chemicals (GFC)
- International Plant Protection Convention (IPPC)
- International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA)
- Regional Agreement on Access to Information, Public Participation and Justice in Environmental Matters in Latin America and the Caribbean (Escazú Agreement)
- UN Convention to Combat Desertification (UNCCD)
- UN Declaration on the Right to Development (as mentioned in the GBF)
- UN Declaration on the Rights of Indigenous Peoples (UNDRIP)
- UN Framework Convention on Climate Change (UNFCCC)
- United Nations Declaration on the Rights of Peasants and Other People Working in Rural Areas (UNDROP)
- Universal Declaration of the Rights of Mother Earth
- Voluntary Guidelines on the Responsible Governance of Tenure of Land, Fisheries and Forests in the Context of National Food Security (VGGTs)
- Voluntary Guidelines to Support the Progressive Realization of the Right to Adequate Food in the Context of National Food Security (RtAF Guidelines)
- WHO Global Strategy on Health, Environment and Climate Change

In more detail, the following instruments (or articles within instruments) strengthen the agroecology elements of “agency” and food sovereignty, and directly support the CBD principles of equity, rights-based approaches and inclusive participation and governance.

Human Rights

1. The legal recognition and implementation of **Farmers' Rights** is in Article 9 of the International Seed Treaty, though these are subject to national laws. However, international recognition is provided through the UN Human Rights Council, the UN Declaration on the **Rights of Peasants** (UNDROP), and other people working in rural areas, adopted in 2018. Article 19 and 20 of the declaration recognize the collective rights of “peasants” (including family farmers, Indigenous Peoples, livestock keepers, fishers, forest people, and local communities) to the use of their seeds and agricultural biodiversity.
2. CBD Article 8j recognizes the **rights of Indigenous Peoples and local communities** and their innovations, skills, and practices. This is further supported by the UN's Declaration on the **Rights of Indigenous Peoples** (UNDRIP), which recognizes, in Article 31, Indigenous Peoples' right to maintain, control, protect, and develop their seeds and their right to maintain, control, protect, and develop their intellectual property over associated traditional knowledge about their seeds.
3. The **Right to Adequate Food** is a fundamental human right recognized under international law, specifically articulated in Article 25 of the Universal Declaration of Human Rights (UDHR) and further elaborated in Article 11 of the International Covenant on Economic, Social and Cultural Rights (ICESCR), which asserts that all people should have access to sufficient, safe, nutritious, and culturally appropriate food to sustain a healthy life. It is deeply intertwined with biodiversity due to its contribution to soil fertility, pollination, pest control, the genetic pool necessary for crop and livestock adaptation to changing conditions, and dietary diversity essential for balanced nutrition. Furthermore, the RtAF Guidelines (see list above) provide practical guidance to realize this right.

Property Rights

4. Article 6 of the International Seed Treaty covers the sustainable use of seeds and other planting material. This could provide for the development and use of heterogeneous peasant seeds in agroecological systems that support **food sovereignty**.
5. World Trade Organization (WTO)/The Agreement on Trade Related Aspects of **Intellectual Property Rights** (TRIPS) Article 27.3(b) has an option for a country to adopt a *sui generis* form of Plant Variety Protection that could recognize and protect peasant seeds. However, states, in implementing these articles, usually opt for measures that will favour industrial seed development and use, including the adoption of International Union for the Protection of New Varieties of Plants (UPOV) 91.

Sources: [FAO](#), [Forest Peoples Programme](#), and authors.

5.2 Finance: Increased, Incentivized, Flexible, Grounded

“Follow the money. The Ministry of Agriculture and other influential food actors should be at the centre of any funding strategy of NBSAP actions related to agroecology.”

— Peer-to-Peer workshop participant

Contribution to GBF targets

- T14. Integrate biodiversity in decision-making at every level
- T15. Businesses assess, disclose, and reduce biodiversity-related risks and negative impacts
- T18. Reduce harmful incentives by at least USD 500 billion per year, and scale up positive incentives for biodiversity
- T19. Mobilize USD 200 billion per year for biodiversity from all sources, including USD 30 billion through international finance

This second cross-cutting lever aims at strengthening sustainable financing models for agroecological investments. The costs of current industrial food systems globally represent almost 10% of global GDP, most of which is borne by the public sector and society.⁶⁹ With these numbers in perspective, investments in agroecology are cost-effective once all co-benefits are considered.

Financing biodiversity is challenging both in terms of finding the resources necessary for the magnitude of changes needed to halt and reverse biodiversity loss as well as reorienting the existing financial architecture to serve these goals. Meanwhile, an estimated USD 635 billion in annual global agricultural subsidies prop up the current industrial food, USD 385 billion of which are considered distortive and result in harmful environmental outcomes.⁷⁰ Transformative financing for biodiversity and agroecology must not only increase funding flows but also address issues of justice, historical legacies, and ecological debt that shape financing institutions, flows, and arrangements.

GUIDANCE

- **Increased:** Work across the existing finance ecosystem to catalyze new investments and shift from incremental investments to more transformative, long-term investment. This applies both to direct finance approaches that robustly and positively impact biodiversity, ecosystems, public health, and social inclusion and also to reducing opportunities for practices with minimal biodiversity gains that are often promoted for greenwashing purposes. Increasing resources requires exploring other sources of funding, such as climate and development finance, that can be aligned in conjunction with agroecology and biodiversity goals.
- **Incentivized:** Reorienting and repurposing subsidies, when combined with measures for economic justice such as tax reform and debt cancellation, represents a significant opportunity for developing countries to secure finance for biodiversity action.⁷¹ Additionally, the private sector, particularly small and medium enterprises (SMEs), can play a pivotal role in this transition if provided with the right incentives and policy support. Other sources of flexible funding, such as philanthropic investments grants, can be catalytic if aligned to unlock private investment and repurpose public funding, including public procurement programs, for example.
- **Flexible:** Remain flexible to changing conditions on the ground and the dynamic nature of agroecology. Financial institutions are more and more aware of the associated risks of biodiversity loss for their investments, which is increasing their interest in investing in agroecology. These projects often face challenges in setting baselines, measuring impact, and relying on market mechanisms, such as voluntary carbon markets. The delivery of long-term sustainability and resilience can be a critical investment edge, allowing funding to be more effectively directed. The agroecology community should view NBSAPs as an opportunity to attract funding by highlighting the unique advantages of agroecology over other biodiversity interventions.
- **Grounded:** Ensure appropriate financing means by directing funds to where they are most needed and effective, including through non-market approaches as highlighted in GBF Target 19(f). This includes grounded funding using appropriate mechanisms and modalities that support, and directly reach, women, family farmers, Indigenous Peoples and local communities, and other underfunded groups. It is crucial that funds be directly controlled or be commensurate with those groups ability to

absorb, use, and leverage the funds they receive, strengthening their collective action. Adequate funding for NBSAP development is essential for enabling inclusive and meaningful consultations, national and subnational agroecology platforms, and community-based monitoring.

“Transformative change will happen only when we reorient subsidies. And offsets and credits are also a form of perverse subsidies.”

— Civil society organization participant at SBSTTA26

CASE 5.1 — LEVERAGING FUNDING FOR MORE CLIMATE-RESILIENT AND BIODIVERSITY-RICH LANDSCAPES

Bankable Nature Solutions (BNS) are projects that reduce pressure on ecosystems and drive resilience for people and nature while generating financial returns for communities and investors. They typically involve deploying grant funding to a local company to aid its transition to more climate-resilient and biodiversity-rich practices in a given landscape. The Dutch Fund for Climate and Development (DFCD) and Mobilising More for Climate (MoMo4C) have accumulated experience in testing and scaling these sorts of financial innovations.

For example, Financoop, a central cooperative financial institution in Ecuador that acts as a common reserve for 135 other financial cooperatives, has received a grant from DFCD to expand its investments in climate adaptation with smallholder farmers. In Kenya, Cinch Markets Ltd. has developed a lease system for smallholder farmers that is expanding to integrate agroforestry and intercropping. Their model improves the productivity of degraded land, improves incomes for smallholders, and creates employment for local women and youth. Both of these projects have since secured large-scale private investment.

Elsewhere, Minh Phu Seafood Corporation in Vietnam also received a grant from DFCD to scale up sustainable rice-shrimp farming, investing in mixed ponds that replaced intensive monoculture. This bankable model supports low-income communities involved in the shrimp industry while contributing to the restoration of the long-term resilience of the Mekong Delta. Wuchi Wami, in Zambia, is receiving technical and financial assistance from MoMo4C to support local bee farmers to switch to environmentally sustainable soft wood top bar beehives instead of traditional bark hives that contribute to deforestation. By producing and distributing local raw and organic honey sourced from wild Miombo forests, this model enhances marketing and sales strategies.

Sources: WWF [Bankable Nature Solutions Case Studies](#) and [The Dutch Fund for Climate and Development](#).

5.3 Capacity: Strengthened, Informed, Collaborative

“Strengthen agricultural knowledge, information, and innovation systems by enabling that research, extension/dissemination and education/capacity-building be integrated in an inclusive, participatory, bottom-up and problem-oriented manner.”

— [Committee on World Food Security, 2021](#)

Contribution to GBF targets	<p>T10. Enhance biodiversity and sustainability in agriculture, aquaculture, fisheries, and forestry</p> <p>T13. Increase the sharing of benefits from genetic resources, digital sequence information, and traditional knowledge</p> <p>T20. Strengthen capacity-building, technology transfer, and scientific and technical cooperation for biodiversity</p> <p>T21. Ensure that knowledge is available and accessible to guide biodiversity action</p> <p>T22. Ensure participation in decision-making and access to justice and information related to biodiversity for all</p>
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Capacity for designing, implementing, and monitoring NBSAPs is the third cross-cutting lever. Capacity is linked to strong institutions, skilled personnel, and the necessary tools and methodologies to plan and execute comprehensive biodiversity strategies. The GBF proposes a long-term strategic framework for capacity-building and development⁷² to ensure interventions that are robust, coordinated, and systemic. It aligns with the Guidance below, though building capacity for engaging with agroecology entails an even more strongly considerable shift from conventional to systems thinking, and acquiring the holistic understanding that agroecology requires.

GUIDANCE

- **Strengthened:** Strengthen capacity on agroecology through the availability of financial resources and the establishment of supportive policies. Adequate funding ensures that institutions have the means to train staff, develop and deploy necessary technologies, conduct research, and engage with stakeholders on agroecology. Effective policies provide the framework and guidance needed to support capacity-building.
- **Informed:** Support data-gathering, research, and assessment on agroecology. Existing robust tools to measure agroecological progress can support this, namely the Agroecology Assessment Framework developed under the aegis of the Agroecology Coalition and anchored on the 13 HLPE principles,⁷³ aligned with the 10 FAO elements of agroecology and the Tool for Agroecology Performance Evaluation (TAPE).⁷⁴ This ensures coherence among different data and research initiatives. Additionally, assessing the risks and benefits of emerging food technologies is crucial, ensuring they address social and environmental challenges without generating negative externalities.
- **Collaborative:** Retool national agriculture extension services to facilitate horizontal knowledge-sharing and co-creation among diverse stakeholders. Foster active involvement from governments, civil society, and educational institutions and promote shared learning and co-creation.

“It’s compelling to get policymakers out of their offices and into the fields so that they see the reality of agroecology and can bring it back to their office. It also builds understanding, relationships, and trust.”

— Peer-to-Peer workshop participant

5.4 Governance: Coordinated, Inclusive, Appropriate

“At the end of the day, this is not going to be a Ministry of Agriculture document; it is a national government document.”

— Peer-to-Peer workshop participant

Contribution to GBF targets	T14. Integrate biodiversity in decision-making at every level T15. Businesses assess, disclose, and reduce biodiversity-related risks and negative impacts T16. Enable sustainable consumption choices to reduce waste and overconsumption T17. Strengthen biosafety and distribute the benefits of biotechnology T18. Reduce harmful incentives by at least USD 500 billion per year and scale up positive incentives for biodiversity T19. Mobilize USD 200 billion per year for biodiversity from all sources, including USD 30 billion through international finance T22. Ensure participation in decision-making and access to justice and information related to biodiversity for all T23. Ensure gender equality and a gender-responsive approach for biodiversity action
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Governance, the fourth cross-cutting lever, sets out the decision-making process and structures that can support agroecological transformation. It involves both the design of “who sits at the decision table,” the process by which they collaborate, as well as how to manage pressures that can undermine bold, ambitious actions. The goal is to avoid contradictory and conflicting policies, maximize resource efficiency, and strengthen policy impacts. This coordination ensures that commitments are synchronized and that policies are effectively mainstreamed across multiple sectors.

GUIDANCE

- **Coordinated:** Take a whole-of-government approach to agroecology by ensuring coherence and alignment among various branches and levels of government. Different policy areas and strategies must be jointly articulated, divergent interests and objectives need to be acknowledged and possibly balanced, and conflicts, trade-offs, and negative feedback loops should be recognized.
- **Inclusive:** Mobilize existing or newly established coordination mechanisms that comprehensively scope the themes of agroecology and include the diversity of actors needed for successful and

equitable NBSAP implementation. Recognize the diversity in production systems and address tensions to move beyond the conventional agriculture versus agroecology polarization.

- **Appropriate:** Determine the most impactful scale and timing for actioning agroecological considerations by engaging with different levels of government — including provincial, municipal, and Indigenous authorities — and aligning associated bioregions and biocultural protocols. This ensures that policies are tailored to local realities and longstanding knowledge and consider current administrative and operational capacities.

“Pay attention to dynamics, struggles, and lack of coordination between ministries/departments. Political dynamics are critical in determining outcomes. The current traction is for NDCs. NBSAPs are lower priorities.”

— Peer-to-Peer workshop participant

5.5 Monitoring: Achievable, Adaptable, Accountable

Contribution to GBF targets	T14. Integrate biodiversity in decision-making at every level T15. Businesses assess, disclose, and reduce biodiversity-related risks and negative impacts T20. Strengthen capacity-building, technology transfer, and scientific and technical cooperation for biodiversity T21. Ensure that knowledge is available and accessible to guide biodiversity action T22. Ensure participation in decision-making and access to justice and information related to biodiversity for all
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The fifth cross-cutting lever involves three components: 1) adapting NBSAP national indicators to be relevant to agroecology, ensuring they consistently reflect elements and principles of agroecology; 2) aligning these national indicators on agroecology with the GBF headline and component indicators (i.e., showing how they contribute to GBF indicators); and 3) setting up an ongoing, inclusive monitoring, evaluation, and learning process with clear modalities to ensure continuous improvement and stakeholder engagement.

In terms of indicator development, CBD Decision 15/5⁷⁵ suggests an approach that can be built into comprehensive monitoring frameworks encompassing baselines, headline indicators, complementary indicators, and sub-indicators. However, much of the interpretation and application of indicators fall under the jurisdiction of national governments and must be tailored to fit the specific national context. This is an opportunity to build indicators specifically for agroecology, involving actors who can contribute to shape those.

According to CBD Decision 15/5, Target 10 could be monitored with two headline indicators: 10.1 *Proportion of agricultural area under productive and sustainable agriculture* and 10.2 *Progress toward sustainable forest*

management. Component indicators for 10.1, nevertheless, fall short of clearly indicating how these will be measured, ultimately leaving it to national governments to address how to define and measure those. Similar adaptation will be needed for all other targets relevant to agroecology.

The following Guidance can assist both the development of achievable and adaptable indicators that reflect elements and principles of agroecology as well as a due process to ensure stakeholder accountability and continuous improvement.

GUIDANCE

- **Achievable:** Develop or adopt indicators that ensure achievable measurement and transparent reporting (e.g., from the Agroecology Coalition's Assessment Framework).⁷⁶ Consider how operationalization and data collection can be applied at scales that directly inform effective decision-making or action for landscape biodiversity and ecosystems.
- **Adaptable:** Tailor approaches and indicators to the sub-national and local level, and seek the guidance of Indigenous Peoples and local communities, which ensures that data reflects local and territorial circumstances. Consider adjustments based on feedback and emerging data, and as new methods, trends, challenges, or changes in national and international policies emerge.
- **Accountable:** Emphasize accountability in monitoring and evaluation processes that reinforces the transparency, credibility, and effectiveness of monitoring of agroecology elements and principles. Support community-based monitoring and information systems (see Box 5.2). Increase participation through stakeholder engagement in planning and monitoring. In the context of agroecology, these can build a more active and engaged set of actors better attuned to capturing the nuances of agroecological transition and preventing greenwashing claims.

BOX 5.2 — COMMUNITY-BASED MONITORING

Community-based biodiversity management is an approach that promotes the conservation and sustainable use of biodiversity at the local level, and focuses on increasing the decision-making power of local communities and organizations to secure access to and control over their natural resources.

For example, the Ogiek of Mount Elgon, Kenya, play an active role in the management of their natural resources. Numbering more than 3,000 people, they live in an ecologically diverse and rich environment that includes montane forests, bamboo belts, and high moorlands, which are home to a variety of globally threatened and endemic species. They engage in sustainable activities such as gathering honey, mushrooms, vegetables, and medicinal plants, and grazing cattle, sheep, and goats. Their livestock are grazed in the high moorlands and lower forest areas during the dry season, ensuring that the land is not overexploited. Community-based monitoring safeguards local food system sustainability and acts as a sentinel service for food system resilience.

Community monitoring is a vital tool in their environmental governance system because it increases the transparency of local management of natural resources, including biodiversity, and allows communities to demonstrate their management to the outside world. It can also inform decision-making.

Sources: J. Kenrick, T. Rowley, and P. Kitelo, [We Are Our Land](#), and Forest Peoples Programme (2024), [From Agreements to Actions: A Guide to Applying a Human Rights-based Approach to the Kunming-Montreal Global Biodiversity Framework](#).



CONCLUSION

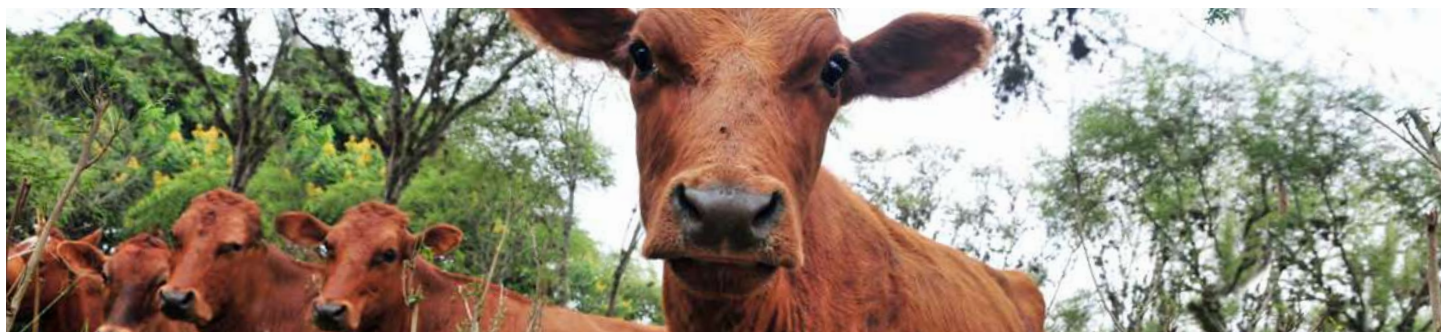
An agroecological approach to the management of biodiversity and ecosystems is critical to food systems transformation and achieving the Sustainable Development Goals (SDGs) and the Convention on Biological Diversity (CBD)'s vision of living in harmony with nature by 2050. It is also essential for strengthening resilience to climate and other global environmental changes and reducing disaster risks and associated costs.

Agroecological approaches are a tool for integrating progressive food policy and ecosystem management, and will simultaneously support achievement of multiple targets of the Kunming-Montreal Global Biodiversity Framework (GBF). National Biodiversity Strategies and Action Plans (NBSAPs) that take an agroecological approach will also advance implementation of the SDGs, the UN Framework Convention on Climate Change, and objectives of international food policies, including the UN Committee on World Food Security and the UN Food Systems Summit.

This Guidance aims to provide readers with an understanding of the advantages of agroecology, the connections between agroecological principles and the GBF targets, the processes for integrating agroecology to NBSAP development, the intervention areas for agroecological food system transitions, and the enabling processes to facilitate implementation and achieve NBSAP national targets.

We encourage Parties to the CBD to take up this Guidance to develop sound and comprehensive NBSAPs that leverage agroecology's ability to address the biodiversity crisis and provide multiple co-benefits for climate adaptation and mitigation, food security, health and nutrition, ecosystem resilience, sustainable livelihoods, social cohesion, preserving cultural heritage, and protecting human rights.

For support, additional resources, or questions, please contact any of the authors.



APPENDIX: ADDITIONAL RESOURCES

General guidance for NBSAP development and implementation

- **[CBD Clearing House Mechanism](#)**
This is an extensive searchable database containing data, documents, and reports on all CBD negotiations, protocols, parties, strategic plans, and other processes.
- **[CBD NBSAP General Guidance Note](#)**
See also Guidance for [Target 10](#).
- **[CBD NBSAP support website](#)**
This section of the CBD website provides the latest developments on NBSAP by CBD Parties, including all current NBSAP, national reports, and summaries of national dialogues related to biodiversity planning.
- **[DART \(Data Reporting Tool for MEAs\)](#)**
DaRT is a reporting tool that provides parties a framework to organize, collect, and share their information for national reporting purposes.
- **[GEF Early Action Support Facility](#)**
This project supports readiness and early actions to support NBSAP development and implementation through alignment, national monitoring systems, policy and institutional coherence, and finance.
- **[Guidance for revising or updating NBSAP to align with the Kunming-Montreal Global Biodiversity Framework](#)**
Based on CBD COP16 Decision 15/6 (Mechanisms for planning, monitoring, reporting, and review) Annex I.
- **[NBSAP Accelerator Partnership](#)**
This initiative supports accelerating the implementation of NBSAP aligned with the KMGBF.
- **[NBSAP Forum](#)**
An online platform connecting biodiversity practitioners to provide peer-to-peer learning and support.

General guidance for mainstreaming food systems and agroecology approaches in policy

- Biovision Foundation [National Agroecology Strategies in Eastern and Southern Africa: Lighthouses for Food System Transformation](#)
- [CFS Policy recommendations](#) on agroecological and other innovative approaches for sustainable agriculture and food systems that enhance food security and nutrition
- [Food Systems Dashboard](#): Policies and actions to orient food systems
- IFOAM Organics International [global policy toolkit](#) on public support for organic agriculture
- WWF's Food [Forward NDCs tool](#)
- WWF: [The NDCs We Want](#)

GBF considerations to be mainstreamed

CBD Decision 15/4, Section C states:⁷⁷

The Kunming-Montreal Global Biodiversity Framework, including its Vision, Mission, Goals and Targets, is to be understood, acted upon, implemented, reported, and evaluated, consistent with the following:

- Contribution and rights of Indigenous Peoples and local communities
- Different value systems
- Whole-of-government and whole-of-society approach
- National circumstances, priorities, and capabilities
- Collective effort toward the targets
- Right to development
- Human rights-based approach
- Fulfillment of the three objectives of the Convention and its Protocols and their balanced implementation
- Consistency with international agreements or instruments
- Principles of the Rio Declaration
- Science and innovation
- Ecosystem approach
- Intergenerational equity
- Formal and informal education
- Access to financial resources
- Cooperation and synergies
- Biodiversity and health



Picture from field visit at CSHEP (Kiambu county, Kenya) on 9 May 2024 as part of peer-to-peer exchange with NBSAP focal points, food system and agroecology focal points, and civil society representatives from Colombia, Cambodia, Kenya, Tanzania, Uganda, and Zimbabwe.

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The authors remain responsible for the content of this compendium and any errors or omissions.



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Global Alliance for the Future of Food

The Global Alliance for the Future of Food is a strategic alliance of philanthropic foundations working together and with others to transform global food systems now and for future generations. We believe in the urgency of transforming global food systems, and in the power of working together and with others to effect positive change. Food systems reform requires that we craft new and better solutions at all scales through a systems-level approach and deep collaboration among philanthropy, researchers, grassroots movements, the private sector, farmers and food systems workers, Indigenous Peoples, government, and policymakers.

www.futureoffood.org

Biovision Foundation

Biovision Foundation is a not-for-profit, non-denominational, politically independent foundation based in Zürich, Switzerland. Our goal is a food system fit for the future — enough healthy food for everyone, produced and consumed in environmentally and socially responsible ways. We follow a systemic approach and work to bridge a variety of stakeholders. In doing so, we focus on supporting agroecological innovation and its dissemination in cooperation with local research institutions and the private sector, transferring knowledge and empowering local communities and organizations, and supporting policy dialogue to connect different actors and change framework conditions. We exercise our leverage in three project regions: sub-Saharan Africa, Switzerland, and internationally.

www.biovision.ch

WWF International

WWF is an independent conservation organization, with more than 38 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.

www.panda.org

The Alliance of Bioversity International and the International Center for Tropical Agriculture

The Alliance of Bioversity International and the International Center for Tropical Agriculture (CIAT) delivers research-based solutions that harness agricultural biodiversity and sustainably transform food systems to improve people's lives. Alliance solutions address the global crises of malnutrition, climate change, biodiversity loss, and environmental degradation.

The Alliance is part of CGIAR, a global research partnership for a food-secure future.

www.alliancebioversityciat.org | www.cgiar.org

Agroecology Coalition

The Agroecology Coalition was set up in 2021 to provide a mechanism for countries and organizations to collaborate on food systems transformation through agroecology while addressing multiple crises simultaneously. Its work is guided by the Principles and Elements of Agroecology as defined by the High-Level Panel of Experts for Food Security and Nutrition (HLPE-FSN) of the Committee on World Food Security (CFS) and FAO, respectively. Building on and amplifying the work of its members, both from government and non-state actors, the Coalition facilitates co-creation and exchange of knowledge, fosters increased investments, advocates for supportive policies, and promotes market pathways for agroecology.

www.agroecology-coalition.org





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