

Nature-Positive Solutions



The Nature-Positive Solutions Initiative aims to re-imagine, co-create and implement nature-positive agrifood systems that equitably support livelihoods and production while ensuring that agriculture is a net positive contributor to biodiversity and nature. NATURE+ forms part of CGIAR's new research portfolio, which delivers science and innovation to transform food, land, and water systems in a climate crisis.

Objective

The Initiative works to reshape food production systems in five target countries, meeting the food demands of growing populations by placing biodiversity, soil health and water management at the core of nature-positive solutions. Working with stakeholders across agricultural, economic, environmental, and natural resource management sectors, the Initiative aims to:

- Boost critical ecosystem services and enhance social and economic benefits including equality.

- Tackle the root economic and political causes of environmental degradation from agricultural production.
- Create evidence and harness the power of nature-based solutions and ecosystem services. This will happen alongside advances in – and increased democratization of – digital agriculture and agronomy to reverse negative trends related to climate, biodiversity, land, and water.
- Provide guidance on best practices related to water, soil and natural resource management in specific environmental contexts to help farmers plan for and mitigate climate extremes that are detrimental to food production and nature.
- Involve communities in novel practices to recycle agricultural and rural waste to improve soil quality, provide energy sources, reduce contamination, and create opportunities for investment and employment.
- Conduct research across the agrobiodiversity spectrum to address inequalities related to gender; fill information gaps for farmers, policymakers, and investors; and establish baselines on nature-positive solutions to better understand the pathways to scaling up agricultural practices that align with the conservation of nature.

AT A GLANCE

Primary CGIAR impact area: Environmental Health & Biodiversity

CGIAR science group: Resilient Agrifood Systems

Focus countries: Burkina Faso, Colombia, India, Kenya, and Vietnam

Works towards sustainable development goals:

Zero hunger; Gender equality; Clean water and sanitation; Responsible consumption and production; Climate action; and Life on land



The Challenge

In prioritizing mass production of cheap and plentiful food, industrial agriculture takes a massive toll on the environment and humans. Agriculture drives 80 percent of deforestation and threatens 86 percent of species currently at risk of extinction. It is responsible for significant crop and genetic diversity losses and 22-37 percent of global greenhouse gas emissions. Today's conventional agriculture accelerates land degradation and land-use change and uses 70 percent of global freshwater resources.

The impacts go well beyond the environment. The homogenization of our food sources and diets has reduced nutrition quality for families and resulted in declines in farming incomes, crop resistance to pests and diseases, and the resilience of smallholder farming systems and wider society. All these problems have compounding impacts, exacerbated by misaligned public policies and economic incentives. Crises such as the COVID-19 pandemic and the conflict in Ukraine underscore the fragility of our food systems and their reliance on a small number of crops produced in a few countries.

Nature-positive solutions embrace methods and strategies at farm and community level to adapt to and mitigate climate change and reverse natural resources depletion while ensuring the availability of and access to food. The approach is based around five pillars: conserving biodiversity; managing biodiversity and natural resources to provide ecosystem services; restoring natural capital; incentivizing circular economic activity in rural landscapes; and breaking degradation cycles tied to business-as-usual agriculture.

“ Agrobiodiversity loss – also called genetic erosion – threatens our agrifood systems and vital soil and freshwater resources in key ecosystems such as wetlands and peatlands.

Activities

Drawing on CGIAR's 50 years of research and the experiences and perspectives of a wide network of partners who understand local needs and contexts, the NATURE+ focuses activities on the following work packages:

Conserve

Agrobiodiversity loss – also called genetic erosion – threatens our agrifood systems and vital soil and freshwater resources in key ecosystems such as wetlands and peatlands. This aspect of the Initiative's work tackles this challenge by creating links between communities working on agrobiodiversity, water, and soils with conservation partners working in on-farm conservation. The Conserve research area also tests ways to more effectively measure the effect of nature-positive solutions.

Manage

This work area collaborates with smallholder farmers to improve production systems by introducing nature-positive innovations, learning, and technologies for the management of biodiversity, water, and soil. Researchers work with communities to design conservation-oriented and regenerative practices and approaches to promote beneficial species (pollinators are not just insects - also bats, etc.) and associated ecosystem services through adequate levels of biodiversity (soil biodiversity, wild biodiversity and crop and genetic diversity) and to integrate these with existing practices. Participatory breeding is used to improve selected priority crops and seeds that are available through strong farmer-led seed systems. Value chains and other income-generating opportunities such as school feeding programs focus on equitable incomes, job creation, and diversification of livelihood opportunities.

Restore

Building on research carried out by CGIAR over the past decade in areas including seed systems and nutritionally sensitive and gender-responsive restoration, researchers, and stakeholders are developing context-specific cost-efficiency models for community land restoration that demonstrate the benefits of nature-positive solutions. This includes developing a scientific evidence base, building capacity to monitor and quantify ecosystem service delivery, and maximizing the efficiency of interventions for resilient restoration so local restoration stakeholders can establish innovative nature-positive solutions for sustainable landscapes, attract investment, and break the degradation cycle of conventional agriculture.

Recycle

Linear economic models and consumption patterns generate millions of tons of liquid and solid waste in rural areas, most of it directly linked to agricultural production. This negatively impacts nature through greenhouse gas emissions, contamination of water resources and soil, degradation of human and environmental health. Uniquely in the One CGIAR Initiative Portfolio, this area of work focuses on rural waste, working with communities, universities, training centers, the private sector, and government bodies to ensure that nature-positive recycling solutions are used to generate increased resources (both natural and financial) that benefit poor farming households in rural areas and reduce greenhouse gas emissions.

Engage

For nature-positive solutions to be taken up and sustained, there must be a positive enabling environment that includes policies, advocacy and the creation of economic incentives. This is especially true for women and youth who can face disadvantages (such as lack of access to credit) in trying to innovate. This work area establishes a firm foundation for this enabling environment by researching the true cost of food, including the hidden costs of women's labor; valuing and shaping different types of incentives to encourage greater ecosystem services and biodiversity conservation; and building implementation and scaling capacity for mainstreaming nature-positive solutions.

“ This work area collaborates with smallholder farmers to improve production systems by introducing nature-positive innovations, learning and technologies around the management of biodiversity, water and soil.



Outcomes

Proposed three-year outcomes include:

- Smallholder farmers, local communities, and national agricultural research and extension systems (NARES) can access nature-positive solutions stress-tested and validated by the Initiative
- As a result, people (including smallholder farmers) will use Initiative innovations and pathways to engage more directly in, and benefit more equitably from, value chains based on the results of biodiversity conservation, innovative rural waste management technologies, and circular economy principles
- NARES and other development actors systematically adopt participatory, multi-disciplinary approaches that make research more impactful, relevant, and sustainable
- National and sub-national policymakers acknowledge that true cost accounting should and will be applied to agrifood systems policies



INITIATIVE ON
Nature-Positive
Solutions

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CGIAR is a global research partnership for a food-secure future. CGIAR science is dedicated to transforming food, land, and water systems in a climate crisis. Its research is carried out by 13 CGIAR Centers/Alliances in close collaboration with hundreds of partners, including national and regional research institutes, civil society organizations, academia, development and the private sector. www.cgiar.org

We would like to thank all funders who support this research through their contributions to the CGIAR Trust Fund: www.cgiar.org/funders.

To learn more about this Initiative, please visit on.cgiar.org/Nature-Positive-Solutions.

To learn more about this and other Initiatives in the CGIAR Research Portfolio, please visit www.cgiar.org/cgiar-portfolio

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