

NATURE-POSITIVE SOLUTIONS: COLOMBIA



INITIATIVE ON
Nature-Positive
Solutions

CGIAR's Nature-Positive Solutions Initiative took significant strides in Colombia. Identification of neglected and underutilized crops (NUS), the groundwork for a community seed bank and helping farmers move away from extractive farming and toward nature-positive practices were highlights. Strong collaborations fostered growth for bioeconomy startups. This report covers NATURE+ in Colombia and its continued work in the CGIAR Research Portfolio 2025-2030.

This stunning artwork below by The Lexicon captures community agrobiodiversity work in the Cumbal Indigenous territory who were critical partners for NATURE+. Credit: Douglas Gayeton, The Lexicon. Non-commercial use allowed with attribution.



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What is Nature-Positive Solutions' vision?

The CGIAR Nature-Positive Solutions Initiative (NATURE+) was established to reimagine and implement innovative, scalable, and locally relevant solutions that enhance biodiversity, regenerate landscapes, and ensure sustainable food production. Through five work packages – **CONSERVE, MANAGE, RESTORE, RECYCLE** and **ENGAGE**, uniquely designed to be simultaneously deployed at research sites – the Initiative aims to help shift agriculture from being a driver of environmental degradation to becoming a net-positive contributor to nature. Through cross-sectoral collaboration, research, and community-driven interventions, NATURE+ integrates conservation, restoration, circular bioeconomy practices and policy science to create resilient agri-food systems.

Across all five countries, the NATURE+ Initiative is transforming food systems by promoting biodiversity, regenerative agriculture, and circular economy solutions. Each country's activities are tailored to its specific environmental, economic, and social challenges, but together, they create a global model for nature-positive agricultural transitions. The initiative demonstrates that agriculture does not have to come at the expense of nature, but instead, can be a force for ecosystem restoration, climate resilience, and sustainable livelihoods.

At the heart of NATURE+ is a commitment to fostering equity and inclusivity by empowering local communities, Indigenous peoples, women, and youth to lead sustainable food system transformations. By leveraging both traditional knowledge and scientific advancements, NATURE+ is creating pathways for regenerative agriculture, soil health improvement, agrobiodiversity conservation, and sustainable livelihoods across diverse landscapes. NATURE+ had almost 300 partners and stellar collaboration between CGIAR centers – Alliance of Bioversity International and CIAT, International Water Management Institute, International Potato Center, International Center for Agricultural Research in the Dry Areas, and the International Food Policy Research Institute.

What issues does NATURE+ address?

The global food system faces pressing challenges that threaten ecosystems, food security, and human well-being. NATURE+ worked to address the following key challenges:

- **Biodiversity Loss:** Agricultural expansion and monocultures have led to the loss of native species, reduced ecosystem resilience, and decreased agricultural productivity. The initiative promotes tree-based restoration and conservation of native crops to counteract this trend.
- **Land Degradation:** Unsustainable farming practices and climate change exacerbate soil erosion, loss of fertility, and desertification. NATURE+ focuses on soil health restoration and nature-positive farming methods to reverse degradation.
- **Food and Nutrition Insecurity:** While food production has increased, nutritional diversity has declined, leading to malnutrition and diet-related health issues. NATURE+ integrates neglected and underutilized species (NUS) into food systems to improve dietary diversity and resilience.
- **Climate Change:** Unpredictable weather patterns, prolonged droughts, and floods are affecting agricultural productivity. The initiative supports climate-resilient farming techniques, water management, and tree planting for carbon sequestration.

- **Circular Bioeconomy Gaps:** Agricultural waste is often underutilized, leading to environmental pollution. NATURE+ promotes bio-based solutions such as composting, biochar production, and biogas generation to close resource loops and enhance sustainability.
- **Lack of Inclusive Policy Support:** Many countries lack enabling policies for sustainable agriculture and nature-positive solutions. The initiative works with governments and stakeholders to integrate nature-positive strategies into national policies and action plans.

Colombia: specific challenges

Colombia's high biodiversity is threatened by **deforestation, land-use change, and unsustainable agriculture**. NATURE+ was designed to address these issues to support the protection and sustainable use of **agrobiodiversity**, collaborate with **Indigenous farming communities**, and **promote nature-positive agroforestry systems**. The Initiative also supported a strong push for **circular economy innovations**, especially in waste valorization and sustainable **bioeconomy entrepreneurship**. Research work also focused on **value chain development** related to NUS, and collaboration across Andean countries for NUS protection and management.

Key work package highlights

CONSERVE: Established a community seed bank in an Indigenous Andean community for NUS access; transitioned from extractive dairy production to nature-based agriculture; collaborated with Agrosavia, Colombia's national agricultural research agency.

MANAGE: Developed agro-ecotourism and value chain enhancement; transitioned to nature-positive livestock systems in biodiversity hotspots.

RESTORE: Developed native tree restoration strategies and incorporated knowledge into the Diversity for Restoration (D4R) tool.

RECYCLE: Accelerated circular innovations by creating networks of bioeconomy entrepreneurs.

ENGAGE: Policy development for circular bioeconomy.

In Colombia, NATURE+ led diverse efforts for conservation, sustainability, and agro-eco-tourism.

CONSERVE helped establish a community seed bank in an Indigenous Andean community, enhancing access to NUS and promoting sustainable agriculture. **MANAGE** promoted agro-ecotourism, connecting traditional crop diversity with tourism in biodiversity-rich regions. It also supported a transition from extractive dairy production to nature-based agricultural systems and worked closely with Agrosavia, Colombia's national agricultural research agency. **RESTORE** focused on native tree restoration, integrating data into the Diversity for Restoration (D4R) tool to guide ecosystem rehabilitation. **RECYCLE** accelerated circular economy innovations, supporting entrepreneurs and waste-to-energy solutions. **ENGAGE** developed policies to support a circular bioeconomy, focusing on waste reduction and sustainable value chains. Together, these efforts supported biodiversity conservation, sustainable farming, and economic resilience, helping position Colombia as a leader in nature-positive agriculture and rural development.

Colombia: Agrobiodiversity Protection and Sustainable Livelihoods

NATURE+ and its Colombian partners' activities are significant for biodiversity conservation and the development of sustainable food systems. The country's diverse highland and lowland ecosystems are under threat from deforestation, intensive monocultures, and land conversion. By integrating agroforestry, Indigenous knowledge, and circular bioeconomy entrepreneurship, the initiative is helping smallholder farmers transition to nature-positive agriculture. The work with community seed banks, agroforestry systems, and ecosystem-based restoration is also vital for enhancing climate resilience while protecting native species. Additionally, by incubating circular bioeconomy businesses, Colombia can emerge as a model for waste valorization and sustainable market systems. More than **200 community members** participated in activities, some **40 bioeconomy startups** participated in circular economy workshops, and dozens of officials and partners made strong commitments to nature-positive continuity.

Key significance of results

Strengthens **Indigenous** and **smallholder resilience** by **diversifying income sources** and promoting **circular economy innovations**.

Reduces **deforestation** and **enhances agroforestry practices**, benefiting **ecosystem services** and **carbon sequestration**.

Improves **market access and economic opportunities** for smallholders through **sustainable bioeconomy enterprises**.

Decreases **pressure on fragile ecosystems** through the promotion of **sustainable, nature-based farming**.

Inspires community members, particularly women and youth, to take **leadership roles** in the **conservation and sustainable use of agrobiodiversity**.

Colombia: nature positivity to increase

Colombia is set to expand its leadership in nature-positive agricultural innovations, with a strong emphasis on agrobiodiversity conservation, circular economy strategies, and continued support for nature-positive research and implementation. Scientists from **CONSERVE** will continue collaborating with Agrosavia to integrate traditional seed banks into national research and conservation strategies. **MANAGE**'s team will further support the transition from extractive dairy farming to nature-positive livestock systems and expand agro-ecotourism efforts in Indigenous communities. **RESTORE** has ambitions to scale up reforestation efforts using native tree species, integrating the Diversity for Restoration (D4R) tool to guide land rehabilitation. Additionally, the work package team will pursue digital incentivization schemes for native-tree landscape restoration, critically to increase restoration success. **RECYCLE**'s team plans to scale up research to support entrepreneurs in sustainable bioeconomy and to continue collaborating

with CGIAR accelerator programs. Researchers will continue policymaker and community engagement work, and will refine circular bioeconomy policies to align with national sustainability goals, particularly in waste management and sustainable value chains. These initiatives will enhance Colombia's food security, strengthen biodiversity conservation, and create sustainable economic opportunities, helping position the country as a regional leader in nature-positive development.

Publications and further reading

The following is a brief list of key published highlights from NATURE+. For comprehensive lists, please view the work package reports [CONSERVE](#), [MANAGE](#), [RESTORE](#), [RECYCLE](#) and [ENGAGE](#).

Additionally, readers can review the majority of NATURE+'s 370 outputs, outcomes and other advances between 2022-2024 on the [CGIAR Results Dashboard](#).

Also, the [NATURE+ repository on CGSpace](#) contains more than 300 items.

Publications

Promotion of Circular Economy Entrepreneurship in Colombia - [Read here](#)

Nature-Positive Post-Harvest Seed Practices for Sustainable Agriculture - [Read here](#)

Gender-Responsive Nature-Positive Solutions for Resilient Agri-Food Systems - [Read here](#)

Public-Private Partnership Building Along the Seed Value Chain to Strengthen Nature-Positive Solutions - [Read here](#)

Investment Climate Assessment for Circular Bioeconomy Sector in Colombia - [Read here](#)

Fostering gender equity in Nature-Positive Solutions - Strategies for inclusive and sustainable transformation - [Read here](#)

News & Blogs

News: IUCN and Alliance of Bioversity International & CIAT showcase new tools and supports for restoration at CBD COP16 - [Read here](#)

Telling the NATURE+ stories, hundreds of photographs at a time - [Read here](#)

Promotion of Circular Economy Entrepreneurship in Colombia - [Read here](#)

CGIAR Initiative NATURE+ unites circular economy entrepreneurs in Colombia - [Read here](#)

Co-Creation and Sustainability: Waste Transformation and Traditional Maize Recovery in Colombia - [Read here](#)

NATURE+'s biodiversity action showcased at COP16 - [Read here](#)

NATURE+ mobilizes new value chains for neglected crops in 5 countries - Report - [Read here](#)

Preservation of agrobiodiversity in Colombia: CGIAR's Nature-Positive Solutions Initiative trains smallholder farmers in the conservation of Colombian native maize seeds - [Read here](#)

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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 organizations 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 [this webpage](#).

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

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