

# NATURE+ ENGAGE

## Accomplishments through 2024 and CGIAR Science Programs outlook



INITIATIVE ON  
Nature-Positive  
Solutions

NATURE+ ENGAGE focuses on policies that benefit people and their environment and facilitate community engagement around agrobiodiversity. The International Food Policy Research Institute (IFPRI) led the research in tandem with the Initiative's work packages and research sites. This report covers ENGAGE's accomplishments through 2024, and ongoing and future work in the CGIAR Portfolio 2025-2030.



NATURE+'s country representative for India, Jai Rana (R) visits the community seed bank in Agoro East, in the Kenyan municipality of Kisumu with community leader Evelyn Okoth (L) and Pheobe Adhiambo Abor. The region's CGIAR-supported seed banks are pillars for researchers and communities to engage in nature-positive solutions including the conservation and sustainable use of agrobiodiversity. (Photo: S. Mattson/NATURE+)

# Contents

**NATURE+ ENGAGE ..... 2**

**Country highlights ..... 2**

**NATURE+ ENGAGE key accomplishments..... 2**

    The true costs of food..... 2

    Gender-specific uptake of nature-positive solutions ..... 2

    Games-based research with NATURE+ aggregated farms..... 3

    Circular bioeconomy policy development..... 4

    Communities and agrobiodiversity ..... 4

**ENGAGE in the CGIAR Portfolio 2025-2030 ..... 5**

    News, blogs and videos ..... 5

    Publication highlights..... 6

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# NATURE+ ENGAGE

## Country highlights

NATURE+ works in five countries: **Burkina Faso, Colombia, India, Kenya** and **Vietnam**. ENGAGE's accomplishments in these countries include:

**Kenya and Vietnam:** the hidden social & environmental costs of food

**Colombia, India, Kenya, Vietnam:** research on gender-specific uptake of nature-positive solutions

**Kenya:** innovative games-based community research and learning

**Colombia, India, Vietnam:** policy development for circular bioeconomy

**Burkina Faso:** policy development for tree-based land restoration

## NATURE+ ENGAGE key accomplishments

### The true costs of food

The price of food rarely reflects its cost to society and the environment. NATURE+ [research](#) found that externalities in **Kenya** equal 35% of output value, 84% of which are social (underpayment, child and forced labor; harassment). In **Vietnam**, externalities equaled 15% of output value and 75% were environmental (climate change, land degradation, pollution). This true cost accounting provides policymakers with information on the real costs of food to create targeted policies for more sustainable, equitable and healthier food systems.

### Gender-specific uptake of nature-positive solutions

Farmers in **Colombia, India, Kenya** and **Vietnam** use nature-positive practices including manure, soil conservation, intercropping, crop rotation and native trees. Adoption levels are relatively high in Colombia and Vietnam, while relatively low in India and Kenya. Despite the differences, in [Kenya](#) and [Vietnam](#), manure and soil conservation activities are popular. However, many Vietnamese farmers appear to use an environmentally risky agricultural system, requiring corrective measures such as selective pesticide application.



Women manage, conserve and restore natural resources, but gender issues can prevent the uptake of nature-positive solutions. In **Kenya**, NATURE+ [found](#) that rural women tend to do harder farmwork (planting, weeding, tending to livestock) but reaped disproportionately lower benefits than men. In **India**, men disproportionately dominate decision-making on crops, livestock and nature-positive practices. Gender inequality can be addressed by investment in nature-positive solutions but concerted policy and community engagement needs to make gender equality central to interventions.

NATURE+ found that nature-positive solutions do not necessarily compromise productivity. High adoption of nature-positive practices is associated with enhanced environmental health and better nutrition, higher calorie intake and more diverse diets.

## Games-based research with NATURE+ aggregated farms

NATURE+ uses experiential learning through interactive games to research issues of trust, community coordination, and governance of natural resources to support farmers aggregating land for [nature-positive production in western Kenya](#). In one game, farmers made individual decisions on their virtual shared farm about land preparation, growing, harvesting and grazing. Players could set up rules such as how to share profits or protect soil fertility.



*NATURE+ games-based research allows communities and scientists to better understand the dynamics related to trust, coordination, and rules needed to cooperate on aggregated farms. (Photo couKristin Davis/ IFPRI)*

The advantage of games is that they allow farmers to experiment in a safe, virtual space with different nature-positive strategies and institutional setups. The data collected gave insights into potential bottlenecks related to coordination and trust, cultural considerations such as gender norms and where to strengthen institutional capacity for nature-positive farms.

The games and separate interviews showed farmers had strong collective beliefs before and after the gameplay, and some “hardening” of stated beliefs occurred after the game. As farmers “experienced” downside losses in the game, they valued the effort invested in communal agriculture more.

Initiative findings point toward the value of coordination and institutional rules for collective farming, trust, and differences in different social groups for aggregated farming. The insights will be critical in the CGIAR Portfolio 2025-2030 for coordinated management of natural resources.

## Circular bioeconomy policy development

In collaboration with NATURE+’s RECYCLE team, ENGAGE is developing policy proposals to incentivize circular bioeconomic activity in **Colombia, India** and **Vietnam**. These policy proposals will be drawn from direct experiences with startups in each country and aligned with government policies to support more sustainable economic activity, which NATURE+ research shows has great potential to generate employment, respond to consumer demand, and make food systems more sustainable. Researching and supporting the growth of circular economic activity will be one key component of the CGIAR Portfolio 2025-2030. (Learn more in the Work Package 4 report.)

## Communities and agrobiodiversity

In **Burkina Faso**, NATURE+ and partners [gathered extensive data on 600 small-scale tree nurseries](#). The research has several policy implications that support targets set out by the National Tree Seed Center of Burkina Faso, and to backstop the country’s reforestation goals. The center uses the data to assess current standards in nursery operations, including knowledge gaps (seed collection, use of seed diversity, best practices for propagation), to increase the overall quality of the tree seed system. Because most nurseries are informal, the center also aims to use the data for a certification system so end-users of tree planting material have quality assurance. Questions remain, however, about covering the costs involved in upgrading nurseries to meet higher standards, and whether nurseries would benefit from the investments. Therefore, future policy work would include the economics of tree-nursery improvement.

# ENGAGE in the CGIAR Portfolio 2025-2030

In response to global challenges like land degradation, climate change, biodiversity loss, water scarcity and food insecurity, the Multifunctional Landscapes Science Program envisions vibrant, diverse, and healthy landscapes that are managed holistically to support sustainable and diverse eco-agrifood systems, resilient livelihoods and healthy diets while remaining within planetary boundaries.

In this vision, landscapes are co-created and managed by diverse stakeholders who co-generate technological, socio-ecological, policy and institutional innovations, underpinned by inclusive governance and effective planning. Approaches like those applied in NATURE+'s ENGAGE work package will be critical for collective management and a supportive policy environment for landscapes that provide livelihoods while conserving agrobiodiversity.

## News, blogs and videos

News summary: [NATURE+ media strategy in Kenya delivers widespread news coverage, influences narrative on nature-positive agriculture, and increases Initiative visibility](#)

Blog (from True Price): [Global leaders in true cost accounting for food share research at COP16 event hosted by CGIAR's NATURE+](#)

Blog: [Kenyan farmers in Kisumu and Vihiga are embracing nature-positive agri-food systems](#)

Video: [The high, hidden social and environmental costs of food in Kenya](#)

Blog: [The high social and environmental costs of food in Kenya detailed in new research](#)

Blog: [Gendered perspectives on nature-positive solutions: insights from small-scale farmers in Kenya](#)

Blog: [Ecosystem services may provide large economic values in forests in Kenya and Vietnam](#)

Blog: [Can sustainable management of land commons offer a nature-positive solution? Initial insights from land use-based above-ground carbon stock modeling in the Thoria Watershed, India](#)

Webinar: [How much does food really cost? NATURE+ seminar delves into the question](#)

Blog: [What is the real cost of food? NATURE+, IFPRI aim to add up a reality-based food bill](#)

Blog: [NATURE+ Initiative to provide policymakers with tools needed to incentivize nature-positive agriculture](#)

Blog: [What are the "sticky" factors preventing systems transformation?](#)

Webinar: [What are the "sticky" factors preventing food systems transformation?](#)



## Publication highlights

[The true costs of food production in Kenya and Viet Nam](#)

Newsletter: [True costs of food production in Kenya and Vietnam](#)

Brief: [The true costs of food production in Kenya](#)

Brief: [The true costs of food production in Viet Nam](#)

[Changing the equation: Leveraging true cost accounting to accelerate agri-food systems transformation](#)

[How policies influence smallholder farmers' access to and use of genetic resources in three East African countries](#)

[Valuing ecosystem services provided by land commons in India: Implications for research and policy](#)

[Small-scale farming, gender relations and resource allocation: Barriers to adoption of nature-positive solutions in Western Kenya](#)

[Ecosystem services may provide large economic values in Kenya and Vietnam: A value transfer application based on results from a systematic literature review](#)

[Nature+ Quantitative Baseline Household and Worker Survey, Viet Nam](#)

[Nature+ Quantitative Baseline Household & Worker Survey, Kenya](#)

[Kenya and Vietnam Ecosystem Services Database: Per Hectare Values](#)

[Healthy planet, healthy people: Nature-positive contributions to food and nutrition security in Viet Nam](#)

[Nature-Positive Solutions initiative baseline evaluation survey report: Kenya](#)

[How Do Game Design, Gender, and Players' Backgrounds Affect Behavior in Framed Field Experiments? Evidence from Community Forestry in India](#)

[Uptake of price platform in Niger - beyond the countries of implementation of Nature Positive Solutions](#)

Policy integration of NATURE+: [Nature+ initiative embedded in the county's development plan through Kenya Inception meeting](#)

Policy integration of NATURE+: [Acknowledgement of NATURE+ Initiative in County Integrated Development Plan](#)

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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](http://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](http://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](http://www.cgiar.org/cgiar-portfolio)

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