



CGIAR Research Initiative on **Nature-Positive Solutions**

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Disclaimers

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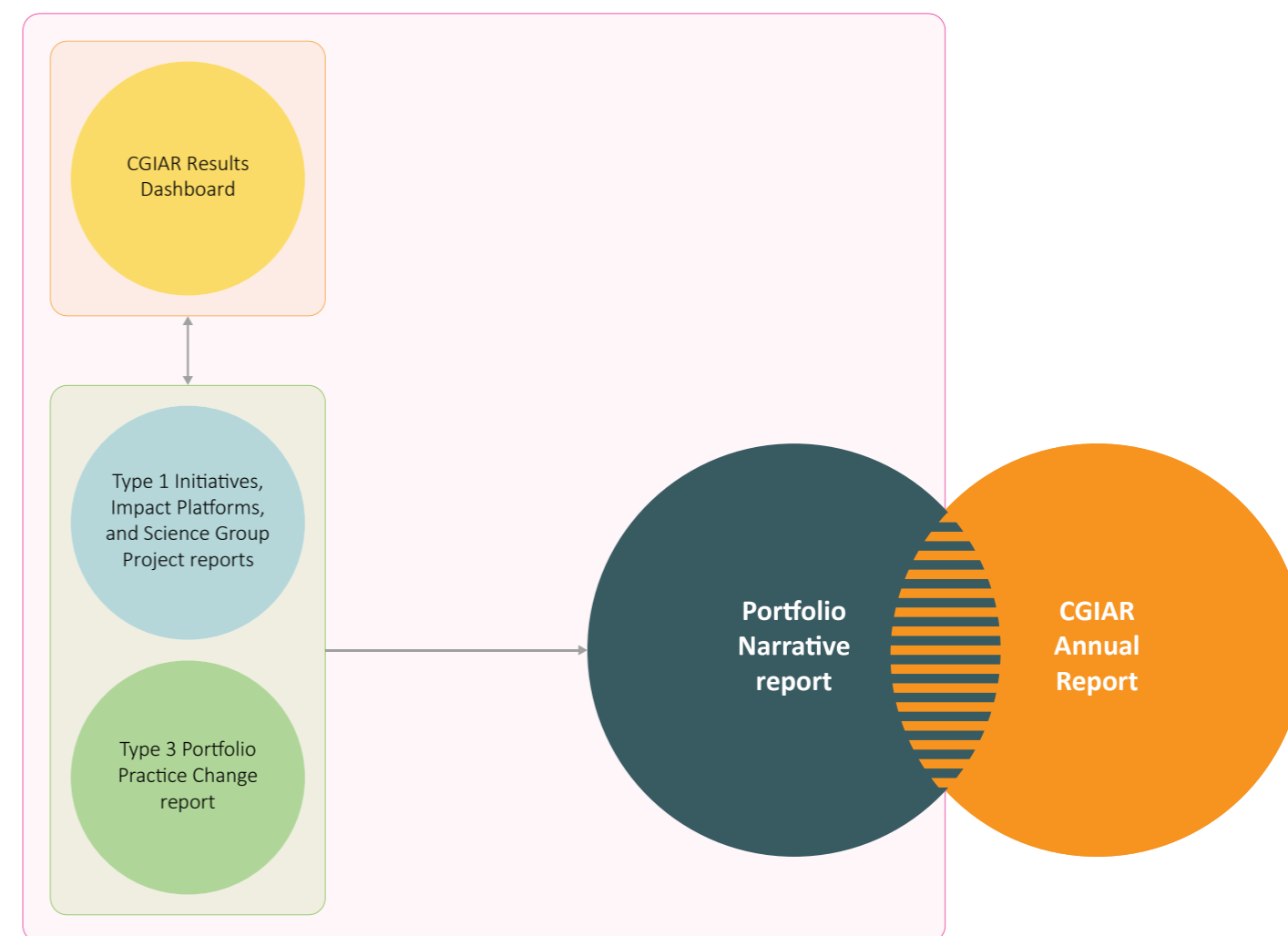
CGIAR Technical Reporting 2023

CGIAR Technical Reporting has been developed in alignment with the [CGIAR Technical Reporting Arrangement](#). This Initiative report (“Type 1” report) constitutes part of the broader [CGIAR Technical Report](#). Each CGIAR Research Initiative submits an annual “Type 1” report, which provides assurance on Initiative-level progress towards End of Initiative outcomes.

The [CGIAR Technical Report](#) comprises:

- Type 1 Initiative, Impact Platform, and Science Group Project (SGP) reports, with quality assured results reported by Initiatives, Platforms and SGPs available on the CGIAR Results Dashboard.
- The Type 3 Portfolio Performance and Project Coordination Practice Change report, which focuses on internal practice change.
- The Portfolio Narrative, which draws on the Type 1 and Type 3 reports, and the CGIAR Results Dashboard, to provide a broader view on Portfolio coherence, including results, partnerships, country and regional engagement, and synergies among the Portfolio’s constituent parts.

The CGIAR Annual Report is a comprehensive overview of CGIAR’s collective achievements, impact and strategic outlook, which draws significantly from the Technical Report products above. For 2023, the Annual Report and Technical Report will be presented online as an integrated product.



Section 1: Fact sheet and budget

Initiative name	Nature-Positive Solutions for Shifting Agrifood Systems to More Resilient and Sustainable Pathways
Initiative short name	Nature-Positive Solutions (NATURE+)
Initiative Lead	Carlo Fadda (c.fadda@cgiar.org)
Initiative Co-lead	Solomie Gebrezgabher (s.Gebrezgabher@cgiar.org)
Science Group	Resilient Agrifood Systems
Start – end date	01/04/2022 – 31/12/2024
Geographic scope	Countries targeted in the proposal Burkina Faso · Colombia · India · Kenya · Viet Nam
OECD DAC Climate marker adaptation score¹	Score 1: Significant The activity contributes in a significant way to any of the three CGIAR climate-related strategy objectives – namely, climate mitigation, climate adaptation and climate policy, even though it is not the principal focus of the activity.
OECD DAC Climate marker mitigation score¹	Score 1: Significant The activity contributes in a significant way to any of the three CGIAR climate-related strategy objectives – namely, climate mitigation, climate adaptation and climate policy, even though it is not the principal focus of the activity.
OECD DAC Gender equity marker score²	Score 1A: Gender accommodative/aware Gender equality is an objective, but not the main one. The Initiative/project includes at least two explicit gender specific outputs and (adequate) funding and resources are available. Data and indicators are disaggregated by gender and analyzed to explain potential gender variations and inequalities.
Website link	https://www.cgiar.org/initiative/12-nature-positive-solutions-enhancing-productivity-and-resilience-safeguarding-the-environment-and-promoting-inclusive-community-growth/

¹ The Organisation for Economic Co-operation and Development (OECD) Development Assistance Committee (DAC) markers refer to the OECD DAC [Rio Markers for Climate](#) and the [gender equality policy marker](#). For climate adaptation and mitigation, scores are: 0 = Not targeted; 1 = Significant; and 2 = Principal.

² The CGIAR Gender Impact Platform has adapted the OECD gender marker, splitting the 1 score into 1A and 1B. For gender equality, scores are: 0 = Not targeted; 1A = Gender accommodative/aware; 1B = Gender responsive; and 2 = Principal.

These scores are derived from [Initiative proposals](#), and refer to the score given to the Initiative overall based on their proposal.

EXECUTIVE SUMMARY

The CGIAR Research Initiative on Nature-Positive Solutions (NATURE+) reported 126 results in 2023 and made significant advances toward End of initiative outcomes against the Initiative’s theory of change across all five Work Packages. This report covers many of the Initiative’s most salient achievements by country and by Work Package. Results from 2023 ensure the Initiative is well positioned to achieve the majority of expected outcomes at the end of its initial phase.

	2022	2023	2024
PROPOSAL BUDGET ▶	\$6.62	\$8.57	\$9.92
APPROVED BUDGET ¹ ▶	\$4.43	\$6.38 ²	\$5.08 ³

¹ The approved budget amounts correspond to the figures available for public access through the [Financing dashboard](#).

² This amount includes carry-over and commitments.

³ This amount is an estimation of the 2024 annual budget allocation, as of the end of March 2024.

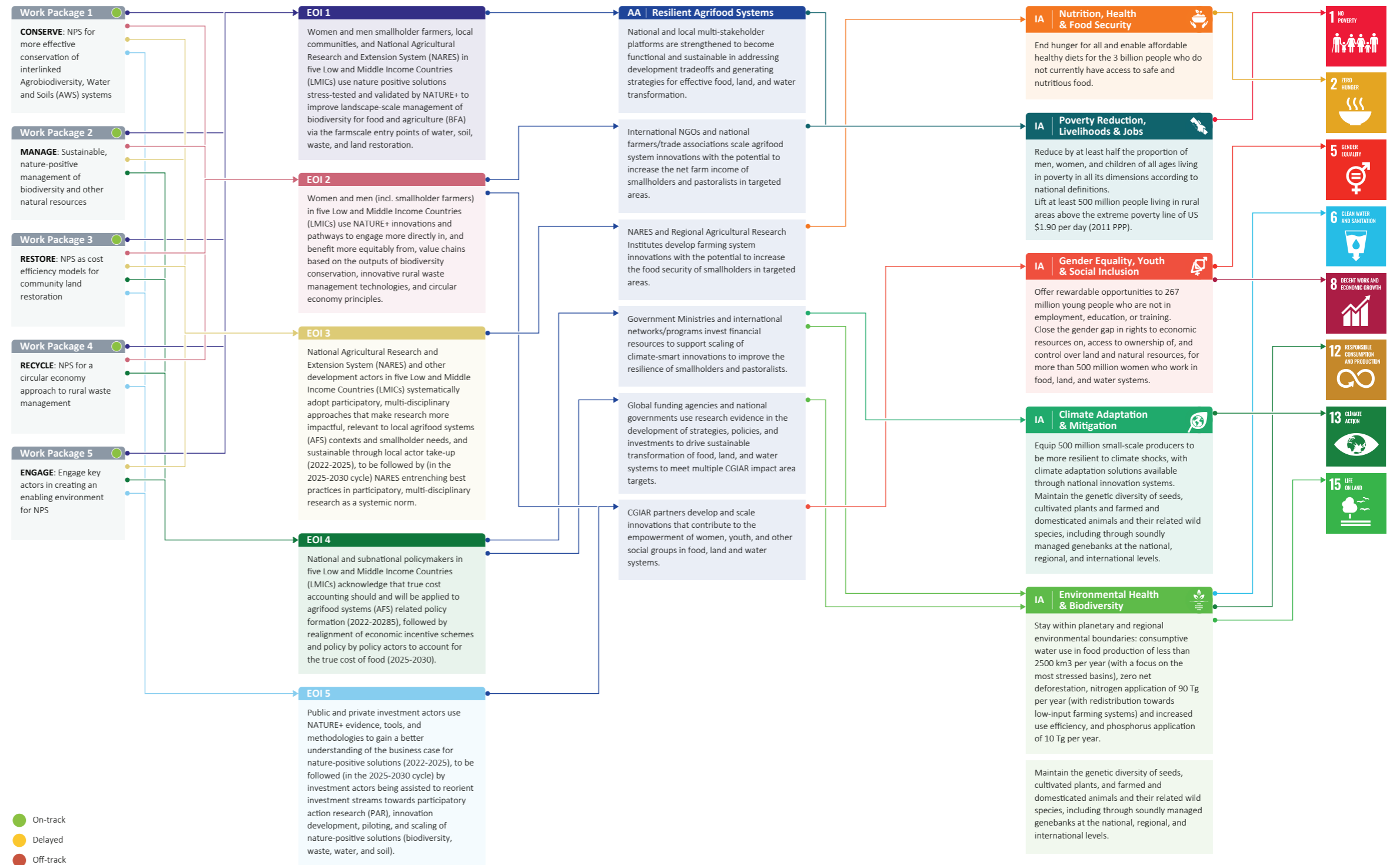


A worker at Colombian bioeconomy startup BIOSOS packages plant fertilizer made from food waste collected from restaurants and hotels in the city of Buga. BIOSOS is one of several startups that are part of a [group of circular economy entrepreneurs working with the CGIAR Research Initiative on Nature-Positive Solutions \(NATURE+\)](#) to help their startups grow amid rising demand for nature-based products in Colombia. Credit: Sean Mattson, Alliance of Bioversity International and CIAT

Section 2: Progress on science and towards End of Initiative outcomes

Initiative-level theory of change diagram

This is a simple, linear, and static representation of a complex, non-linear, and dynamic reality. Feedback loops and connections between this Initiative and other Initiatives' theories of change are excluded for clarity.



EOI End of Initiative outcome
AA Action Area
IA Impact Area
SDG Sustainable Development Goal

Note: A summary of Work Package progress ratings is provided in Section 3.



Members of the Tich En Tich Makwangla Women's Group in Kisumu, Kenya, celebrate their improved cooking briquettes that resulted from a collaboration with the CGIAR Initiative on Nature-Positive Solutions. The work united 30 individual briquette makers, improved the value of their products, and resulted from the Initiative's work on building circular bioeconomy startups. Credit: Edwin Okoth for NATURE+

Summary of progress against the theory of change

In 2023, the CGIAR Research Initiative on Nature-Positive Solutions (NATURE+) demonstrated substantial progress along its theory of change, from inception to implementation. Initial consultations and discussions in 2022 with key stakeholders in the Initiative's five target countries — Burkina Faso, Colombia, India, Kenya and Viet Nam — validated the effectiveness of the Initiative's engagement strategy, enabling the 122 results that NATURE+ reported in 2023.

The engagement strategy has two key entry points: (i) on-the-ground stakeholders — particularly smallholders, their families, communities and leaders — and (ii) institutional stakeholders, including governments, academia and NGOs. This approach allows beneficiaries to influence decision makers and increase the effectiveness of interventions and policy decisions.

The much-needed **nature-based transition** to sustainable agrobiodiversity, water, and land systems requires a paradigm shift where local stakeholders' knowledge, needs, and voices are central to the research endeavor. When backed up by cutting-edge scientific knowledge and aligned with development and government priorities, success stories happen.

NATURE+ results in 2023 underscore the effectiveness of this **inclusive approach**, as evidenced by the development of land-restoration apps and innovative farm aggregation in Kenya, building a community of circular economy entrepreneurs in Colombia and India, and strengthening relationships between community and institutional seedbanks in Viet Nam, as part of an Initiative-wide focus on improving seed systems.

The Initiative's **nature- and people-centric innovations and interventions** are taking place as humanity grapples with the challenges of three convergent crises: rapid climate change, alarming biodiversity loss, and global food and nutritional insecurity. Encouragingly, global leaders understand that nature-based solutions are critical to fixing these crises, in tandem. In 2023, a supermajority of nations signed the [COP28 Joint Statement on Climate, Nature and People](#). Colombia, the host of 2024's global biodiversity negotiations, promised [to put nature at the center of the international environment agenda](#). Moreover, [mainstream media is giving voice to advocates for nature-based solutions](#) to stave off apocalyptic scenarios like megacities running out of water.

But nature-based solutions, quite literally, need to be built from the ground (or water source) up. The CGIAR Initiative on Nature-Positive Solutions is doing just that.

Progress towards outcomes

The Initiative's work focuses on five three-year, end-of-Initiative outcomes (EOIOs), and is being implemented in five countries: Burkina Faso, Colombia, India, Kenya and Viet Nam. Researchers in the five Initiative Work Packages — Conserve, Manage, Restore, Recycle, and Engage — collaborate with the Initiative's dozens of partners to achieve the set outcomes.

Projected outcomes for smallholder farmers and their communities include Uptake of nature-positive solutions stress-tested and validated by NATURE+ (Outcome 1) and the Use of NATURE+ innovations to equitably share benefits from value chains and biodiversity conservation (Outcome 2). The aim is for National Agricultural Research Systems (NARS) and development actors to systematically make nature-positive research more impactful and participatory to entrench nature-positive practices by 2030 (Outcome 3).

Because the brunt of the hidden costs of business-as-usual food systems (biodiversity and ecosystem loss, resource depletion, environmental contamination, malnutrition and hunger, etc.) are paid by nature and people, NATURE+ research is designed for policymakers to included true-cost accounting for food in agrifood systems, followed by a realignment of economic incentives to account for these costs (Outcome 4).

Finally, the Initiative aims to incentivize public and private investors to use NATURE+ evidence, tools, and methodologies to understand the business cases for nature-positive solutions and reorient investment streams toward participatory research for innovating, piloting, and scaling solutions for biodiversity, waste, water, and soil (Outcome 5).

NATURE+ made significant advances toward these outcomes in 2023, as documented in the [CGIAR Results Dashboard](#). More summaries can be found in Section 3 of this report, and in our 2023 country reports for Burkina Faso, Colombia, India, Kenya and Viet Nam. The following are some examples of significant NATURE+ progress:

In response to land degradation, fragmentation and declining production, three farmer groups in Kenya adopted a NATURE+ innovation to unify their small farm plots to create larger aggregated farms. By applying nature-positive principles, aggregated farms will enable producers to apply and access economies of scale, diversify

production, and create new value chains. All Initiative outcomes (particularly Outcome 1) may be achieved through these community-led collaborations, which will serve as replicable models for abandoned and fragmented land in Kenya and beyond. Monitoring and research by NATURE+ are key components of the aggregated farm models.

To address haphazard rural waste management — and to tap into waste's substantial economic potential — a NATURE+ project in Colombia informally unified 16 circular-economy entrepreneurship and 30 women-led informal recycling businesses in Kenya to help build their businesses. These startups in Colombia are led by ethnically, regionally, gender- and age-diverse entrepreneurs, and convert all manner of waste into sustainable, nature-positive economic growth opportunities. The project includes close collaboration with the national extended education organization to scale circular economic activity. The project answers research questions related to what circular bioeconomic innovations respond to local needs and priorities, the barriers women and youth face in launching resource-recovery businesses, and what is required to adopt circular-economy business models at scale. This intervention encompasses all Initiative outcomes, particularly Outcomes 2 and 5.

In Viet Nam, NATURE+ researchers and collaborators work closely with two often very different repositories of agrobiodiversity — custodian communities of neglected and underutilized crops (NUS) and the national genebank. This work responds to the critical role played by conservation and sustainable utilization of agrobiodiversity in applied nature-positive solutions: NUS are often neglected by the research community but hold great potential for climate-change adaptation, crop breeding for harder crops, and as sources of nutrition for communities — and it is a central pillar for NATURE+ in all countries. Part of the Initiative's work included a baseline assessment to map local varieties of four crops (banana, taro, H'mong mustard, and pumpkin). In collaboration with 100 community residents, researchers found 133 varieties and determined their on-farm abundance. These varieties have been planted, or will be in 2024, at four local schools for scientific studies. Furthermore, NATURE+ has launched a joint initiative with United Nations Development Programme (UNDP) to assist small-scale farmers and entrepreneurs in adopting circular economy models in the coffee and rice value chains. This work contributes to Initiative Outcome 3.

In India, NATURE+ and partners are working in remote tribal regions to support multidisciplinary, multi-stakeholder efforts to conserve, manage and restore landscapes and recycle agricultural residues, and promote traditional plant and crop species. In 2023, NATURE+ highlights included establishing 14 on-farm conservation centers; two new community seed banks (and the expansion of an existing one); launching a circular bioeconomy innovation hub; and the restoration of research watersheds, including one that is 100 hectares, on which to apply nature-positive watershed management strategies. This work responds to community needs for greater food security and livelihood creation. It also aims to establish value chains for niche crops that are in high demand elsewhere in the country. The work contributes to all five outcomes and highlights the importance of strong partnerships (government, academia, and local stakeholders) to implement and entrench nature-positive action.

Despite security challenges in Burkina Faso, NATURE+ made solid progress toward expected outcomes. Jointly with our partners, NATURE+ analyzed value chains for prioritized NUS, developed an app for biodiversity cataloging and market valorization for producers, and trained 400 farmers on circular bioeconomy activities for the production and use of biochar and compost. NATURE+ expanded the Diversity for Restoration (D4R) tree catalogue to include the 100 most-used tree species in restoration and surveyed 480 small-scale tree nurseries to understand where technical backstopping is needed. The accomplishments underscore how strong partnerships, including with academia, government, and NGOs, facilitate research for development even under complex sociopolitical conditions. The work advances Outcomes 1, 2 and 3.

Women, schools and traditional knowledge

Across all NATURE+ Work Packages, countries, and outcome pathways, three themes consistently appear: the involvement of women and youth, collaboration with local schools, and the critical importance of Indigenous and traditional knowledge. Women are generally custodians of agrobiodiversity and their expertise in cultivating and conserving these little-known plants (outside their communities) greatly facilitated NATURE+ work, particularly on seed systems conservation and development at Initiative worksites.

Schools are excellent spaces providing learning opportunities, both for local schoolchildren and experts. As noted, NUS conservation research in Viet Nam is facilitated by planting NUS at local schools. D4R-informed tree restoration in Kenya includes planting on school land. NATURE+-supported school classes on healthy diets, and local crops for schoolchildren in Burkina Faso are leading to the creation of standardized manuals to mainstream biodiversity education in schools. This work creates opportunities for educators and pupils to engage in nature-positive educational activities to sow crucial knowledge for new generations about the climate and other crises they did not choose to inherit.

Traditional knowledge has long been overlooked by mainstream researchers. This is finally changing, and NATURE+ is part of this paradigm shift. In all the Initiative's target countries, indigenous and traditional knowledge contributed to research and implementation, particularly on seed systems in community seed banks. The D4R tool and selection of prioritized trees for restoration relied greatly on local knowledge.

NATURE+ collaborative work encapsulates the term "co-design", which is widely used in development terminology but rarely clearly explained. It encapsulates the understanding that by collaborating closely with local stakeholders, designing research and interventions based on their knowledge, needs and desires, and connecting them and our collaborative research with governments, the private sector and non-governmental organizations (NGOs), NATURE+ policy and intervention proposals are tailored to correctly target beneficiaries and serve their needs, and therefore hold a higher likelihood of being successful.

Seed system development and agrobiodiversity

NATURE+ focuses on biodiversity and agrobiodiversity, including NUS, annual and perennial crops and varieties, forages and trees. All dimensions of biodiversity are essential to transition toward nature-positive production systems. To implement NATURE+ innovations at scale requires different planting material — seeds, seedlings, cuttings, bulbs, tubers, etc. — to be available to farmers in the right quality, quantity, and timeframe. In 2023, NATURE+ put significant efforts into strengthening existing farmer-led seed systems to scale-up capacity to use new equipment, develop new community seed banks and expand their scope to support the complex activities needed to achieve Initiative goals and make them the central agent for change in communities. This work contributes to Outcomes 1, 2 and 3, linking selected species to value chains and ensuring that the investment in diversity contributes to improvement in livelihoods, wellbeing, and sustainable farming and nutrition. NATURE+ aims to be the Initiative championing the promotion of agrobiodiversity, including minor crops and neglected and underutilized species, through resilient seed systems. Finally, as part of agrobiodiversity, we started mapping and research on the interaction between soil biome and above ground diversity to understand how we can foster the potential of soil microbiome to reduce chemical inputs and promote improved plant health. We started in Viet Nam by sampling soils in different production systems and we continue in India and Kenya in 2024. In Kenya we started pot experiments to test use of forest soil, rich in soil biodiversity, as input compared to other inputs.

Progress by End of Initiative outcome

EOIO 1: Uptake of nature-positive solutions, stress-tested and validated by NATURE+.

On-the-ground stakeholders across target countries are beginning to uptake nature-positive solutions that have been stress-tested and validated by NATURE+, following the Initiative's systems approach. Activities include agrobiodiversity conservation, rural waste management, watershed management for ecosystem services, and landscape restoration. Additional site-specific action will be implemented based on ongoing analysis of data collected in 2023.

EOIO 2: Uptake of NATURE+ innovations and pathways to engage in and benefit from value chains.

NATURE+ innovations and pathways to engage in nature-positive value chains are being taken up by actors in target countries, particularly in rural waste management, organic farming, and planting of neglected and underutilized species. Value-chain development activities focus on NUS and follow different models: NUS in rapidly urbanizing contexts (Burkina Faso; NUS and agro-eco-tourism (Colombia-Cumbal, India-Akole, and Viet Nam); NUS and school meal programs (Burkina Faso, Viet Nam, and Colombia); NUS and permaculture (Kenya and India); NUS value-chain development as an alternative livelihood to harmful practices (deforestation and production of cocoa). Those models are context-specific and promote the restoration and valorization of local culture and knowledge as a way of empowering communities and improving livelihoods.



EOIO 3: Adoption of participatory, multi-disciplinary approaches.

Farm aggregation activities in Kenya are integrating all Work Package activities and include strong community and local government support for research. Community and local seedbank activities in Viet Nam are also building multi-disciplinary approaches to agrobiodiversity conservation, management and research. In Colombia, NATURE+ circular bioeconomic work is involving local stakeholders, government, and researchers in leading to the preparation of policy proposals and other entry points to boost circular, nature-positive economic activity in the country. In India, NATURE+ encompasses stakeholders from smallholders and communities to government and academia to advance research activities related to the entrenchment of nature-positive activities and research. In total, almost 200 partners support NATURE+ activities in all five countries.

EOIO 4: Acknowledgement of true cost accounting.

Data collection and analysis in Kenya and Viet Nam led to a blogpost and a webinar on true cost accounting (TCA). Research findings are expected to be published to develop policy proposals in 2024. The blogpost led to conversations with the [TCA Accelerator](#). Following the webinar, we were approached by other researchers interested in collaborating. We are currently setting up ground truthing workshops in preparation for policy dialogues and policy notes for Kenya and Viet Nam.

The Food and Agriculture Organization of the United Nations' (FAO) State of Food and Agriculture (SOFA) publication ran the true cost accounting theme for two consecutive years and NATURE+ is in discussions with SOFA to explore potential collaborations.

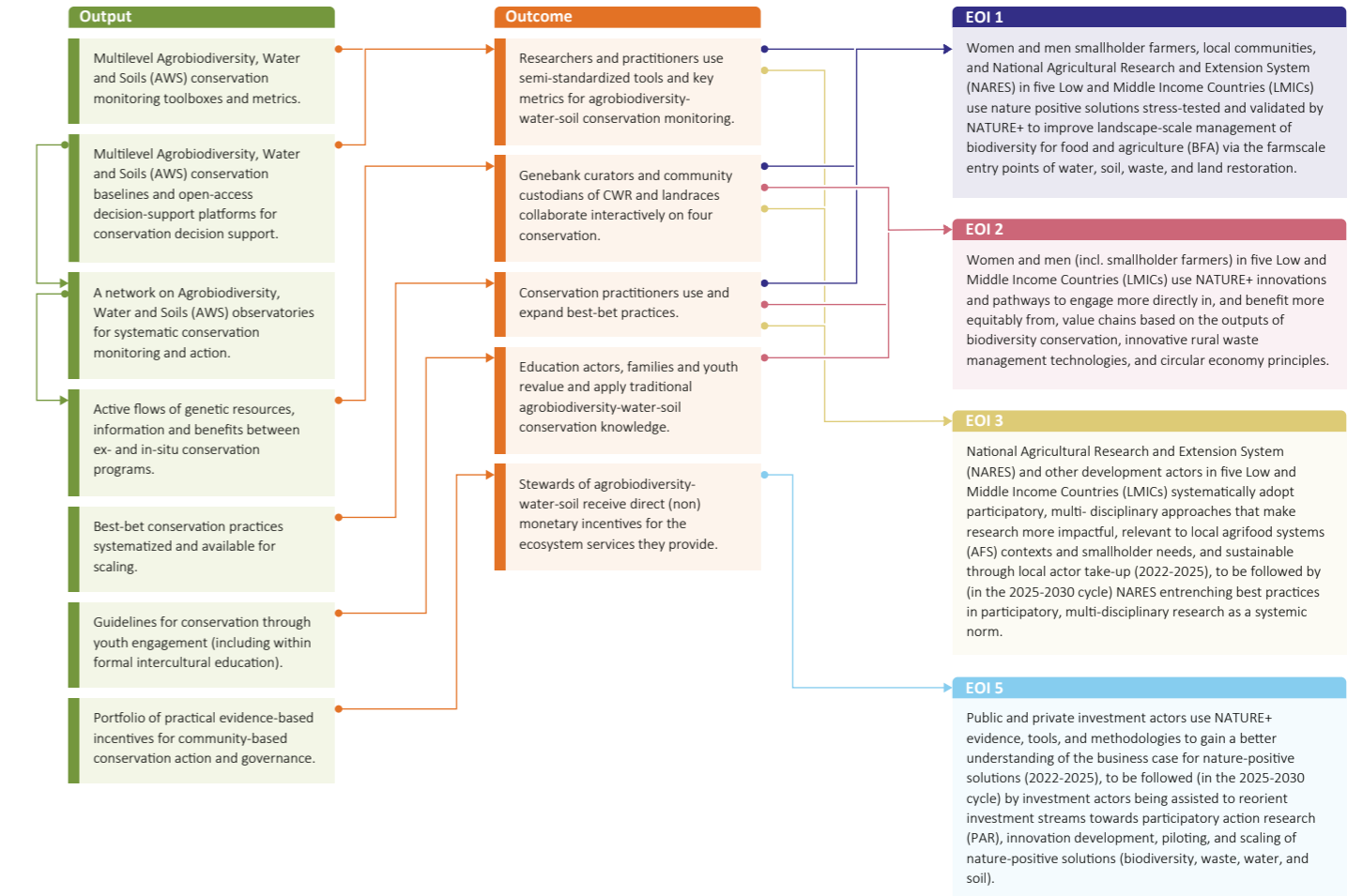
EOIO 5: Uptake of NATURE+ evidence, tools, and methodologies.

Evidence has been gathered on the successful implementation of nature-positive solutions. This evidence is currently being packaged into knowledge products and events for stakeholders in 2024. Much interest has been expressed in true cost accounting.

Section 3: Work Package progress

WP1: Conserve

On track



Work Package 1 progress against the theory of change

In 2023, Work Package 1 (WP1) made significant advances, which we present by country:

Burkina Faso: Conserve in Burkina Faso completed an analysis of value chains and markets for prioritized NUS. The work is being synthesized in three scientific articles to improve understanding of NUS resources in the country, strengthen NUS value chains, and help actors better support farming communities and traditional seed systems. The work provides critical baseline knowledge for conservation, sustainable growth, and improved nutrition through NUS.

Colombia: Conserve in Colombia gathered comprehensive baseline information in one target community including geographic information system (GIS) mapping of 200 households, building a plant species inventory, analyzing seed systems of native crops, and documenting drivers of ecosystem loss. The Initiative trained farmers in seed conservation. Colombian professionals took part in a study tour of two successful farmer compensation schemes in the Peruvian Andes to inspire the development of similar incentives in Colombia.

India: Conserve in India established 14 on-farm conservation centers for dozens of crops, including corn, rice, fruits, vegetables, and

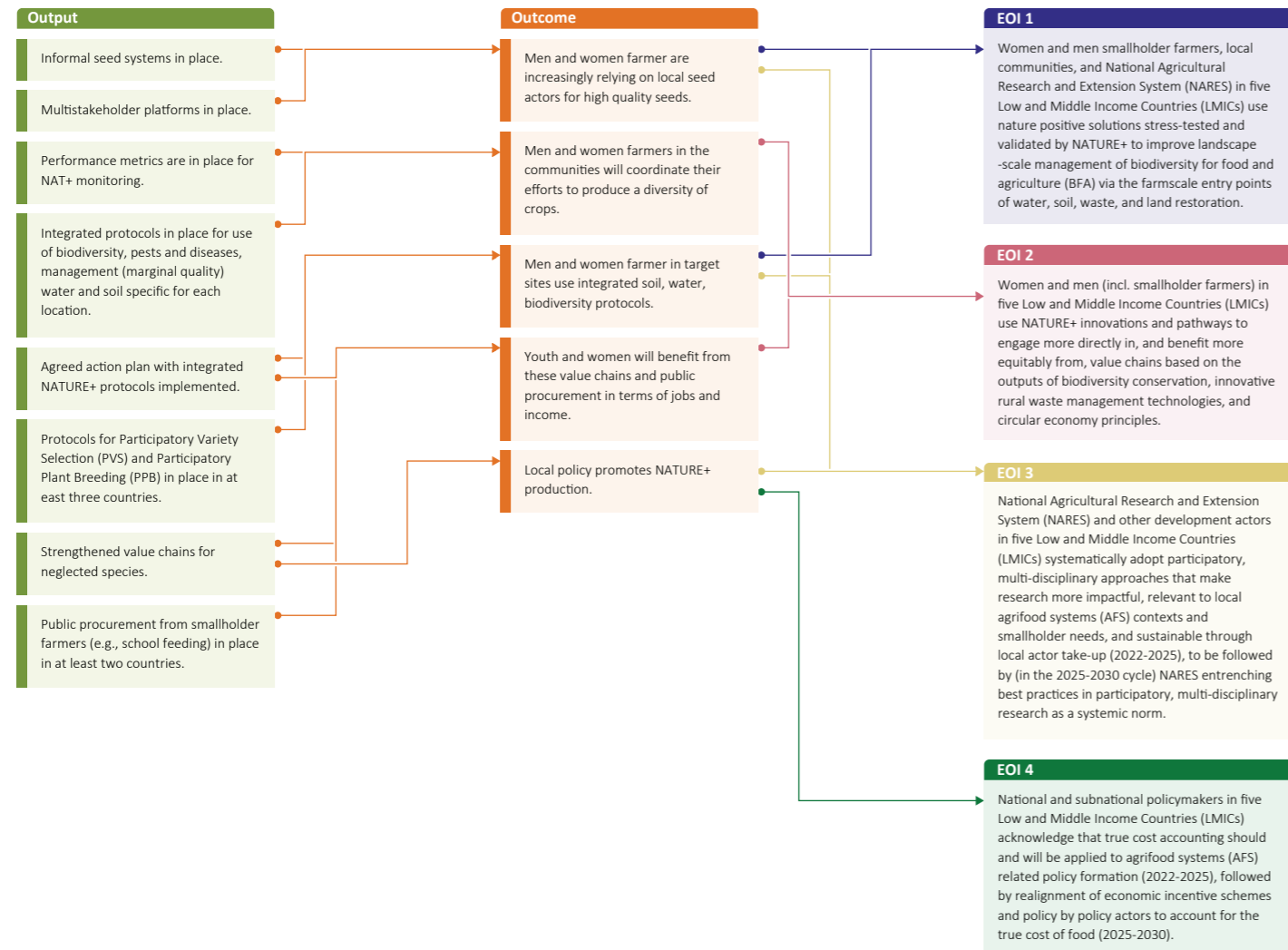
legumes. The Initiative established community seed production and seed banks to increase seed availability for increased food security. For improved water and soil conservation, the Initiative identified and studied several areas, including a 100-hectare watershed for the implementation of nature-positive management strategies.

Kenya: Conserve in Kenya conducted research at three community seed banks to help producers better manage and sustain repositories. This improved conservation and management of community seed banks allowed farmers to increase agrobiodiversity and entrepreneurs to produce new, value-added nutritious food products. Moreover, the community seed banks were upscaled with additional equipment such as solar driers, threshers, and mills to produce flour.

Viet Nam: Conserve in Viet Nam collaborated with the national genebank on research for agrobiodiversity assessment and monitoring. Researchers built baselines for four crops (banana, taro, H'mong mustard, and pumpkin), finding 133 varieties, and determining their on-farm abundance. At four schools, the Initiative planted 59 of these varieties (or will in the next appropriate season) for morphological and genotyping research. The Initiative conducted GIS mapping of 200 households to assess local landrace diversity.

WP2: Manage

On track



Work Package 2 progress against the theory of change

In 2023, WP2 made significant advances, which we report by country:

Burkina Faso: Based on NATURE+ research on value chains and markets for prioritized NUS, with farmer communities WP2 improved management of NUS for value-chain development and on-farm management of traditional seed systems. To enhance NUS valorization in local markets, NATURE+ worked to develop an app to support sustainable NUS businesses, scale-up nature-positive activities, and incentivize greater collaboration between food system actors.

Colombia: Manage provided local stakeholders and decisionmakers with recommendations for better management of livestock in biologically diverse, and highly threatened paramo ecosystems. Manage organized workshops and capacity-building activities to promote agrobiodiversity tourism drawn by local cuisine, with a focus on economic opportunities for women and youth in the hospitality industry.

India: Many WP2 activities were directly aligned with WP1 work in India (see WP1 section Conserve). NATURE+ made significant

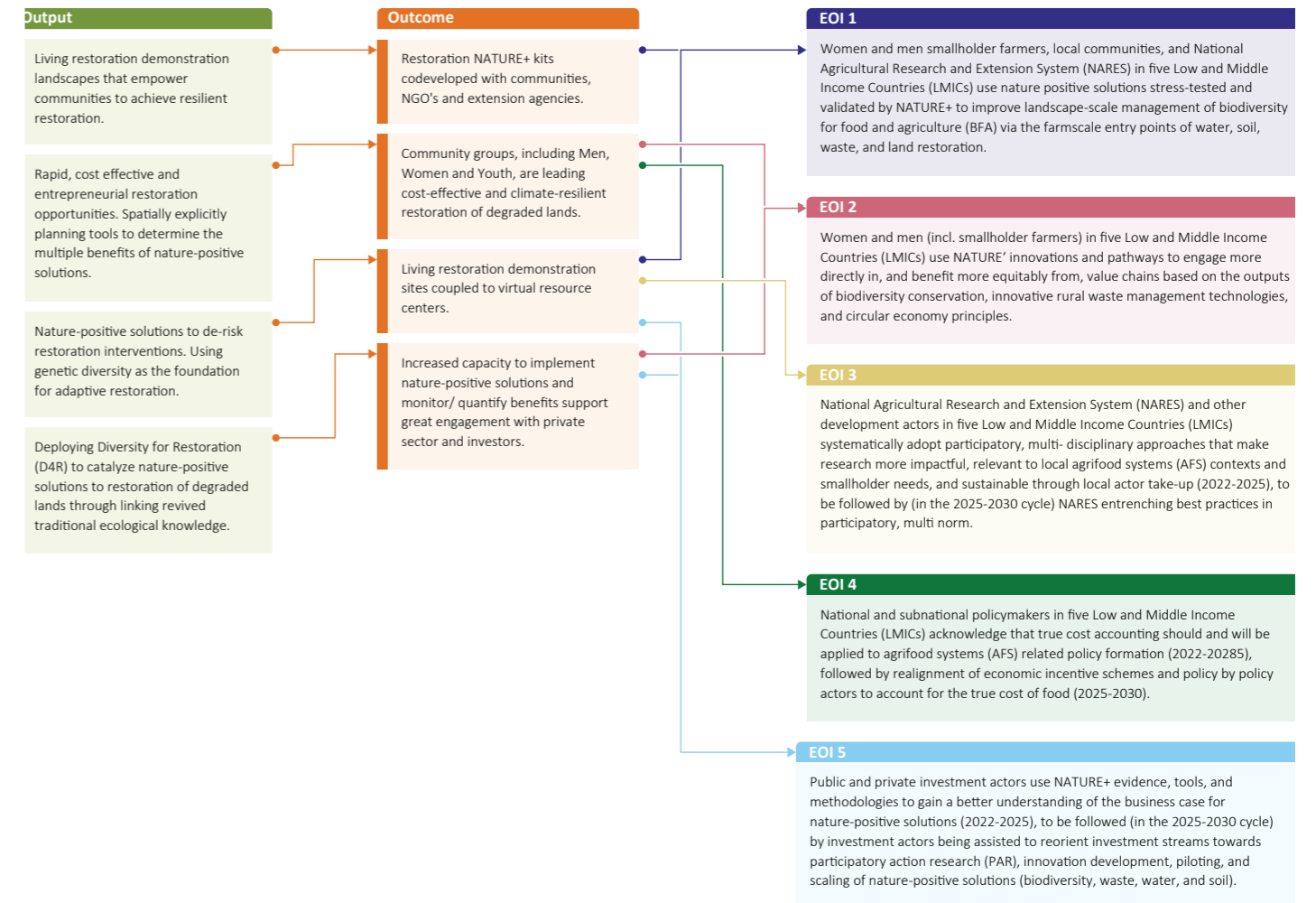
advances with our primary implementing country partner in enhancing nature-positive management practices at the Initiative's four target sites. Additionally, the Initiative further consolidated its relationship with our Indian government partner to advance the NATURE+ research agenda for nature-positive management practices.

Kenya: NATURE+ established two aggregated farms on communal land through a decision-making process led by the 200 farmers who manage the land. The nature-positive farms span the Initiative's WPs and hinge upon strong management practices that are supported by farmers and local governments. Due to strong relationships with county authorities, NATURE+ activities are now part of two counties' five-year plans to integrate the conservation of landscapes, biodiversity, traditional crops and traditional knowledge.

Viet Nam: Manage collaborated with diet health clubs and value-chain groups, which are predominantly led by women, to understand and document production practices, collaborations, incomes, and value chains. The Initiative trained 166 farmers on nature-positive solutions that develop skills for farmers to meet their nutritional needs and produce niche crop varieties with high market potential.

WP3: Restore

On track



Work Package 3 progress against the theory of change

In 2023, WP3 made significant advances, which we present by country:

Burkina Faso: NATURE+ expanded the catalog in the D4R tool to include the 100 species most-widely used in restoration in Burkina. The Initiative surveyed 480 small tree nurseries to understand their capacity needs to provide technical backstopping. Restore work focused on women's groups involved in restoration. Additional collaborations included farmer training, assessing planting material, and government restoration planning for diverse tree species.

Colombia: Restore completed a market study to identify commercially viable products derived from priority conservation tree species and characterized high-value species for clonal orchards. Some 270 species were added to the D4R and Cacao Diversity tools. The Initiative trained partners in these tools, which contain critical information for successful restoration and NATURE+ innovation implementation.

India: Through a community-led restoration drive, NATURE+ planted 4,000 saplings on 35 hectares. Most were native species selected by

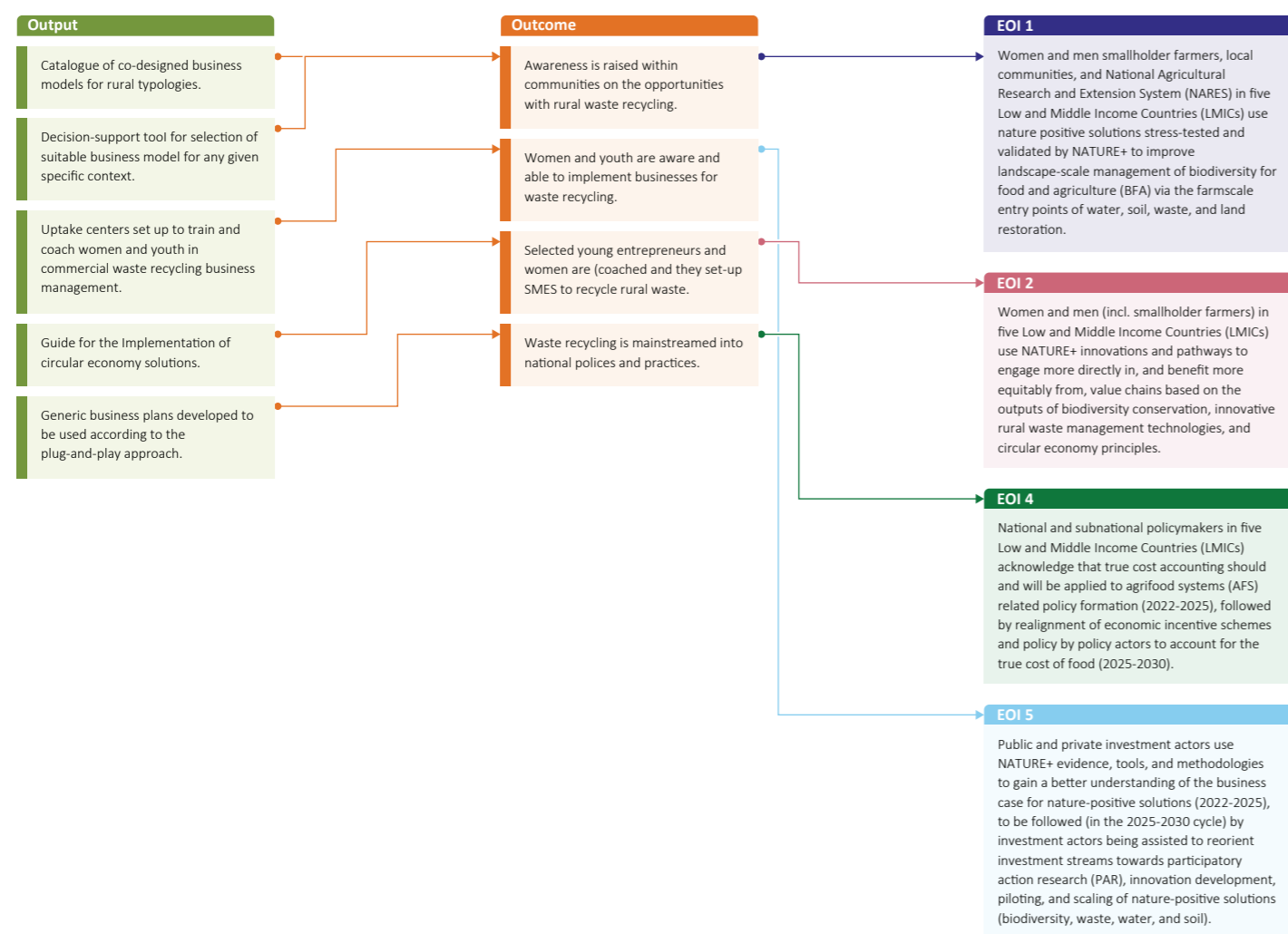
the community. The Initiative built a list of 237 priority tree species for restoration and completed trait and suitability-for-restoration modeling for 177 of these species.

Kenya: Restore is central to the aggregated farms model (see WP2), as native trees are part of the farms' ambitious plans to access and apply economies of scale, restore productive landscapes, and rejuvenate farming on degraded and abandoned farmland. More than 2,400 farmers in three counties registered with the My Farm Trees (MFT) app, which provides information and cash incentives for restoration. Using MFT, which was co-designed with the communities, 700-plus hectares were brought under restoration.

Viet Nam: WP3 completed a study on drivers of land degradation and evaluated ongoing restoration efforts. The Initiative added 100 native tree species to D4R to help incentivize greater use of native species to replace exotic species. Many native species were identified with partners with indigenous knowledge and are adapted to NATURE+ target sites, which are mountainous and in need of ecosystem-service restoration that can be provided by these trees.

WP4: Recycle

On track



Work Package 4 progress against the theory of change

In 2023, WP4 made significant advances, which we present by country:

Burkina Faso: NATURE+ identified circular bioeconomy training needs and conducted training of trainers in collaboration with government and academic partners. Subsequently, the Initiative trained 400 farmers on the production and use of compost. In addition, the Initiative developed an irrigation suitability map for target sites for the use of recycled water and rainwater harvesting.

Colombia: WP4 worked extensively with 16 circular bioeconomy entrepreneurship from several regions to strengthen business innovation, resource management, market intelligence, strategic planning, and regulation adherence. Collaboration was conducted on-site and during an invigorating 3-day workshop (blog, video). Recycle strengthened ties with SENA, Colombia's extended education organization, which can help scale circular bioeconomy training across the country. The Initiative held circular bioeconomy training workshops on farms and identified waste valorization solutions with farmers' associations.

India: The Initiative launched a circular bioeconomy innovation hub with the participation of several green-economy innovators in

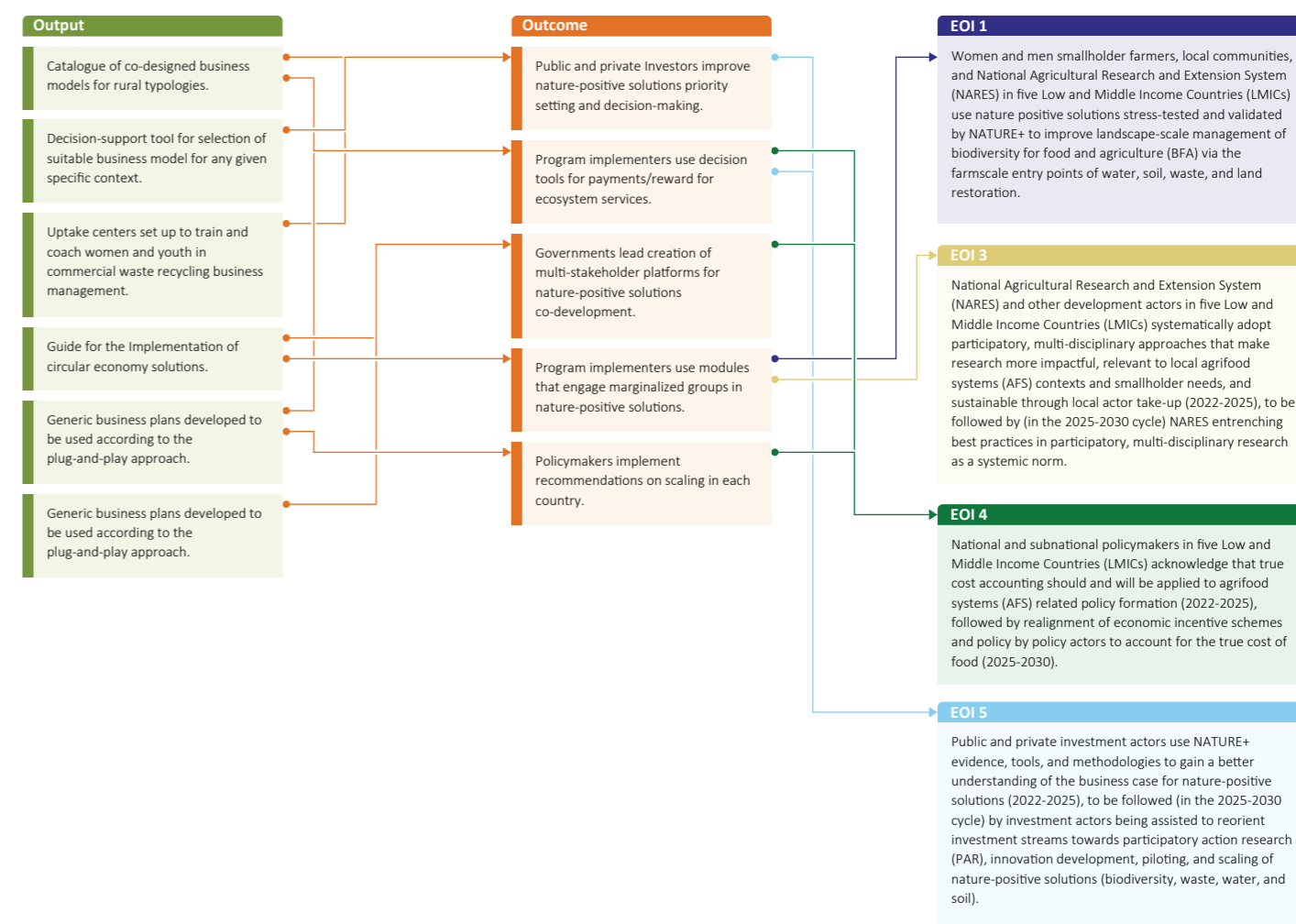
alignment with national priorities for a green economic transition. Researchers identified agricultural and livestock waste at intervention sites to develop context-specific circular-economy potential in collaboration with local stakeholders. The Initiative held capacity building sessions in local languages for agri-livestock management and trained 80 farmers on waste management strategies.

Kenya: NATURE+ completed training manuals for circular-economy activities including composting, production of biomass briquettes, and black soldier flies; 16 trainers were trained to scale-out these activities with Initiative partners and more than 300 farmers trained in various recycling solutions. Additionally, the Initiative also worked with 30 women who were informally producing fuel briquettes and helped them form a cooperative, resulting in access to economies of scale, higher-quality briquettes, and obtaining better prices for their products.

Viet Nam: WP4 identified rural waste-management practices and successful business models. To scale this work, the Initiative formalized a partnership with UNDP and Viet Nam's Ministry of Natural Resources and Environment as part of the Viet Nam Circular Economy Hub (in which NATURE+ is a partner).

WP5: Engage

On track



Work Package 5 progress against the theory of change

In 2023, WP5 made significant progress, which we present by country:

Burkina Faso: Despite research limitations due to political instability, WP5, which aims to deliver policy-relevant knowledge to decisionmakers based on outcomes from all WPs, continued to advance its work in Burkina Faso. Research on neglected crop value chains (WP1 and WP2), collaboration with government and academia on tree diversity (WP3), and the circular economy (WP4), are tools the Initiative plans to use to engage with NGOs in projects in 2024 and in continued national and international discussions to develop policy proposals.

Colombia: NATURE+ completed preparations for quantitative and qualitative surveys of nature-positive solutions in the country. The Initiative's innovative work on circular bioeconomy in collaboration with the government's extended education agency (see WP4) delivered new knowledge for the Initiative to co-design policy proposals. Additionally, engagement with the government's national agriculture institute on CGIAR innovations for compensation for agrobiodiversity conservation (WP1 and WP2) led Colombia to begin formulating a similar program.

India: Engage researchers collected cross-cutting data for all WPs and conducted 1,227 quantitative household surveys related to crop area, livestock, income sources, and the management of food, energy and waste resources. WP5 conducted 27 community surveys on land use practices and gathered qualitative data from 20 key informant interviews and 20 focus group discussions. WP5 completed natural resource mapping for nature-positive solutions in target communities.

Kenya: Engage completed baseline surveys to determine gender-related and other barriers to the uptake of nature-positive practices in Kenya. WP5 produced a technical report on the true environmental and social costs of food; results were presented to a large audience in a webinar and blog. A scoping study delineated the training and knowledge gaps that need to be covered in NATURE+'s aggregated farms (see WP2).

Viet Nam: Engage collected baseline data on nature-positive activities from 1,153 agricultural households, 334 farm workers, and almost 80 key informant and focus group discussions. The research led the Initiative to produce resource maps and clear strategies for increasing nature-positive interventions in communities. As in Kenya, WP5 collected and disseminated findings on true cost accounting of food in Viet Nam.

Work Package progress rating summary

WORK PACKAGE	PROGRESS RATING & RATIONALE
1	<p>Progress rating</p> <p>WP 1 is making steady advances towards achieving the theory of change. During this year, partnerships have been strengthened at national and local levels, and at least three NATURE+ innovations are expected to significantly contribute to planned impact.</p>
2	<p>Progress rating</p> <p>WP2 is well on track to achieve the desired impact, with all the required partnerships for implementation in place and strengthened.</p>
3	<p>Progress rating</p> <p>WP 3 is well on track to deliver on the planned theory of change, with strong implementation progress in 2023.</p>
4	<p>Progress rating</p> <p>WP4 is well on track to achieve the desired impact, with all the required partnerships for implementation in place and strengthened.</p>
5	<p>Progress rating</p> <p>Apart from Colombia, all baseline data were collected by 2023 and baseline reports were drafted. True cost accounting findings have been disseminated.</p>

Definitions

On track

- Annual progress largely aligns with Plan of Results and Budget and Work Package theory of change.
- Can include small deviations/issues/delays/risks that do not jeopardize success of Work Package.

Delayed

- Annual progress slightly falls behind Plan of Results and Budget and Work Package theory of change in key areas.
- Deviations/issues/delays/risks could jeopardize success of Work Package if not managed appropriately.

Off track

- Annual progress clearly falls behind Plan of Results and Budget and Work Package theory of change in most/all areas.
- Deviations/issues/delays/risks do jeopardize success of Work Package.

Section 4: Key results

This section provides an overview of results reported by the CGIAR Research Initiative on Nature-Positive Solutions in 2023. These results align with the CGIAR Results Framework and Nature-Positive Solutions' theory of change. Source: *Data extracted from the [CGIAR Results Dashboard](#) on 29 March 2024.*

OVERVIEW OF REPORTED RESULTS

Outputs

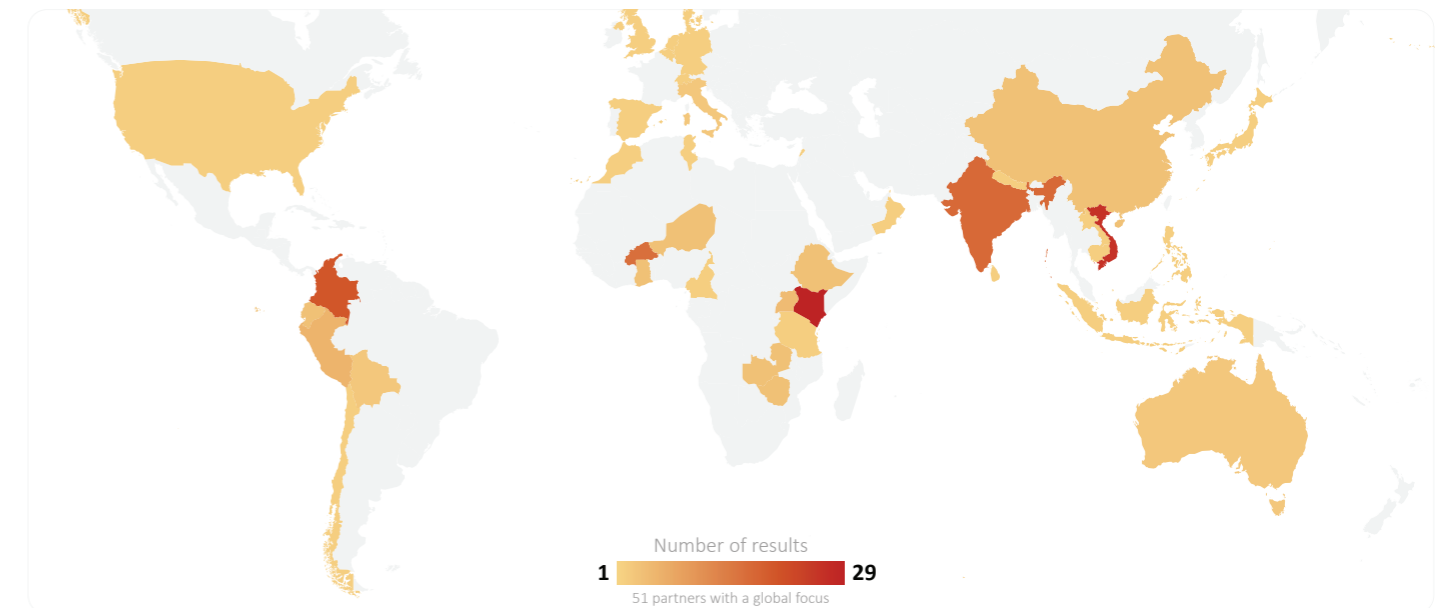


Outcomes

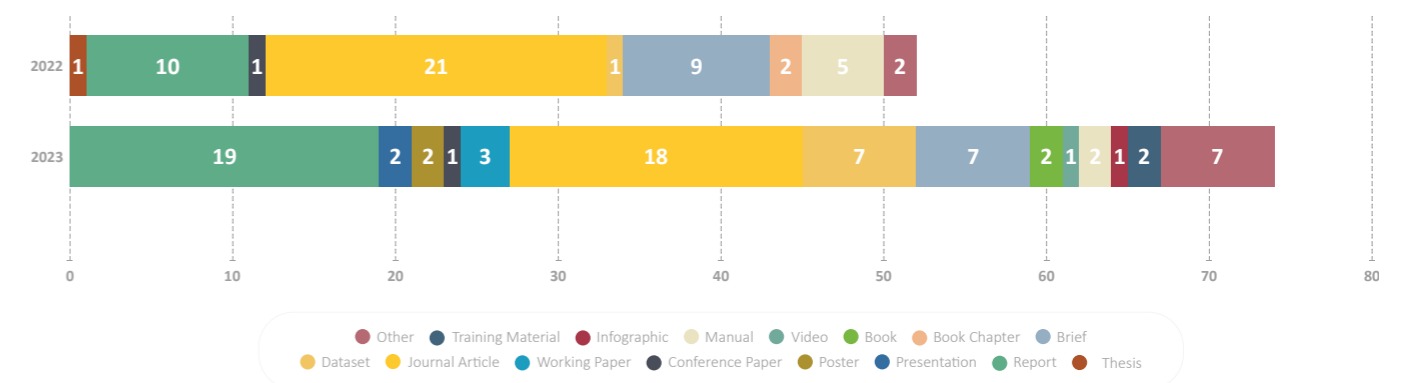


2023 RESULTS BY GEOGRAPHIC FOCUS

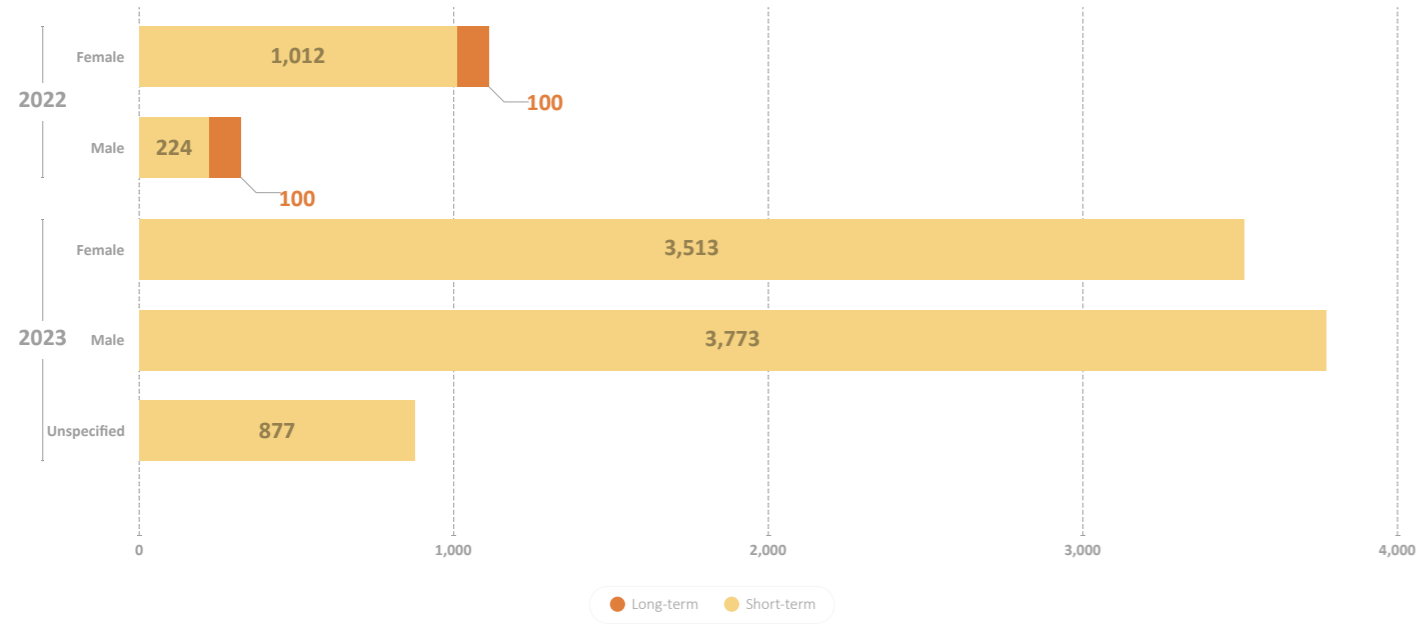
Data here represents an overview of reported results in 2022 and 2023. One result can impact multiple countries and can therefore be represented multiple times.



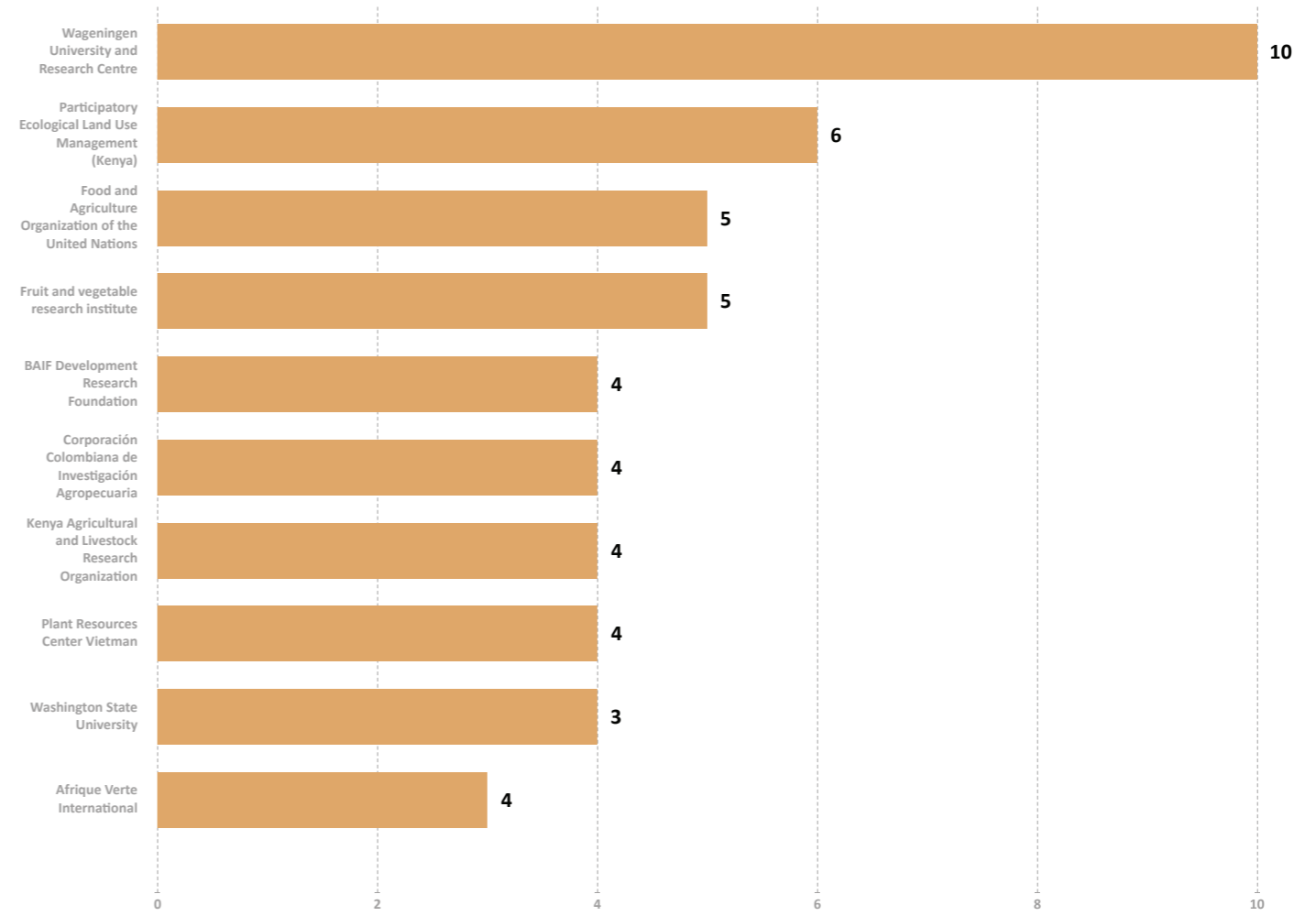
NUMBER OF KNOWLEDGE PRODUCTS BY TYPE



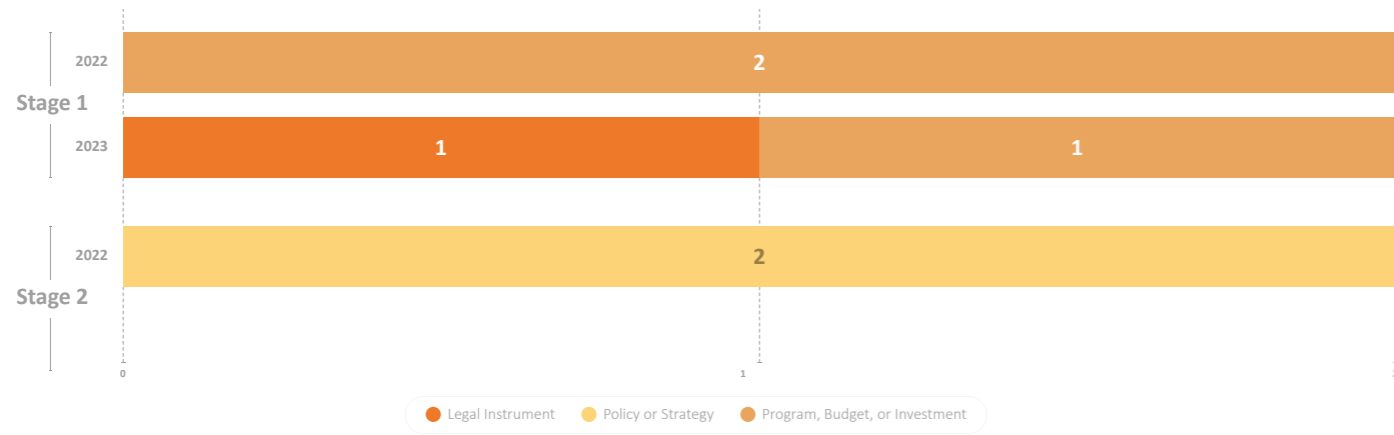
NUMBER OF INDIVIDUALS TRAINED BY THE INITIATIVE



NUMBER OF RESULTS BY CONTRIBUTING PARTNER



NUMBER OF POLICIES BY STAGE AND BY TYPE



Over 200 partners contributed to NATURE+ results in 2023. Partners are spread across the globe.

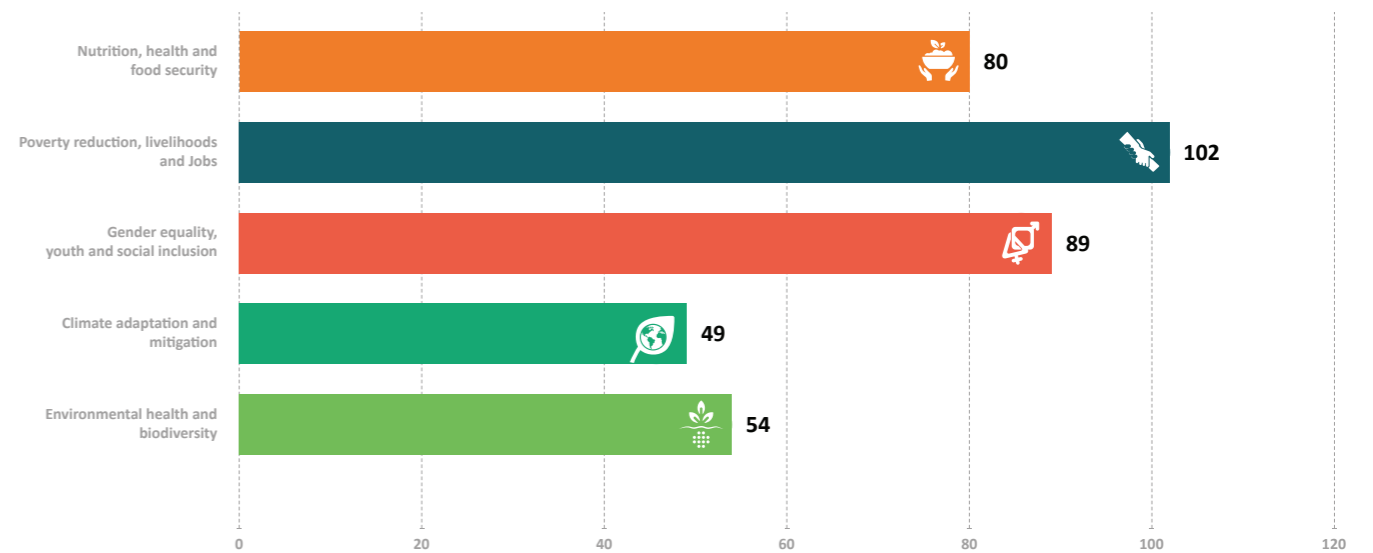
Stages

- **Stage 1:** Research taken up by next user, policy change not yet enacted.
- **Stage 2:** Policy enacted.

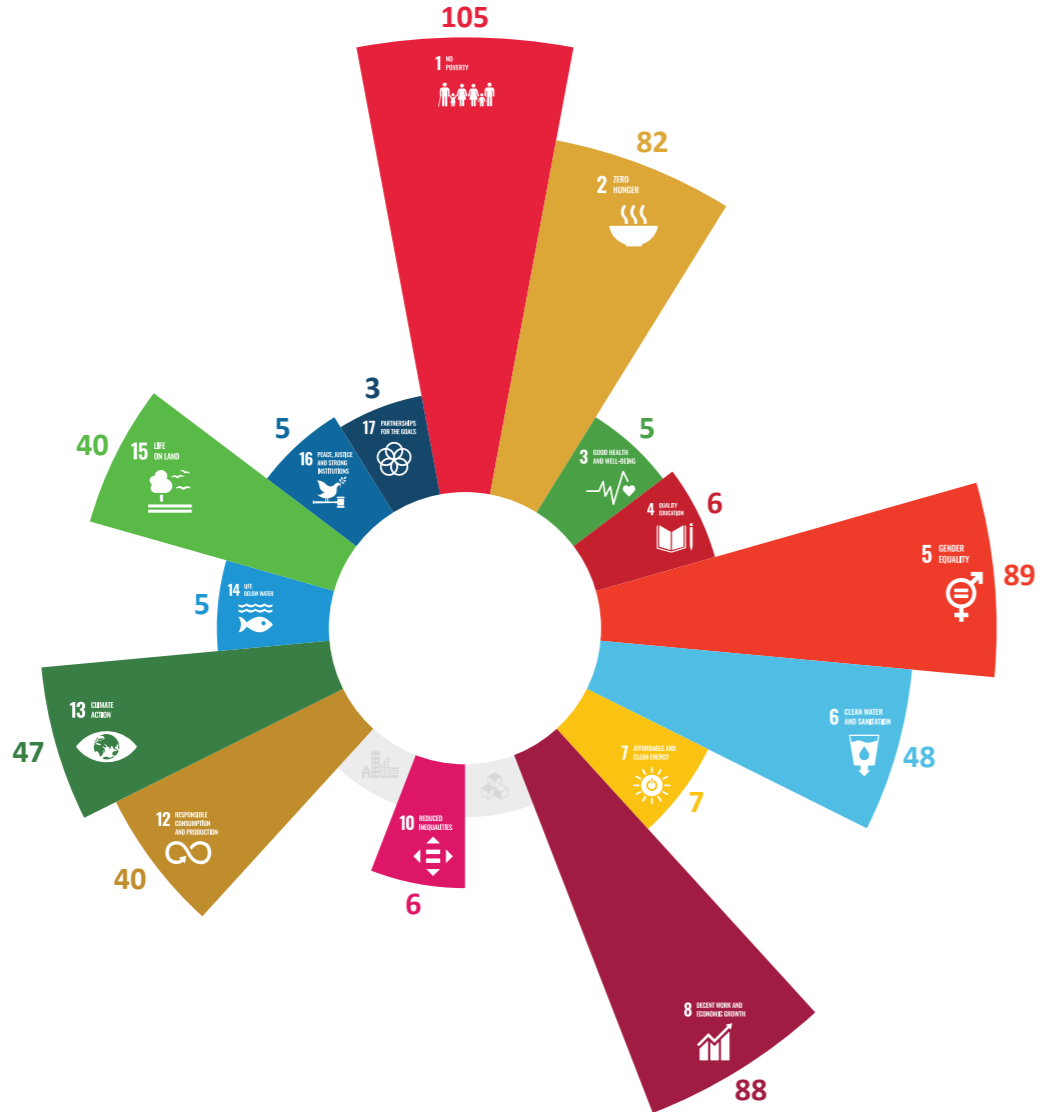
Policy types

- **Legal instrument:** Legal instruments include laws, which are defined as Bills passed into law by the highest elected body (a parliament, congress or equivalent); or regulations, which are defined as rules or norms adopted by a government.
- **Policy or strategy:** Policies or strategies include written decisions on, or commitments to, a particular course of action by an institution (policy); or a (government, NGO, private sector) high-level plan outlining how a particular course of action will be carried out (strategy). These documents show the intent of an organization or entity. Examples are country growth strategies, country agricultural policies, organization strategic plans or road maps. This could also be observed as information campaigns (e.g., for improved diets). These documents set the goalposts but then require other instruments for implementation.
- **Program, budget or investment:** These are implementing mechanisms that often follow from a strategy, policy or law. There is typically a well-defined set of actions outlined over a specific period of time and with a specific budgetary amount attached.

IMPACT AREA CONTRIBUTIONS



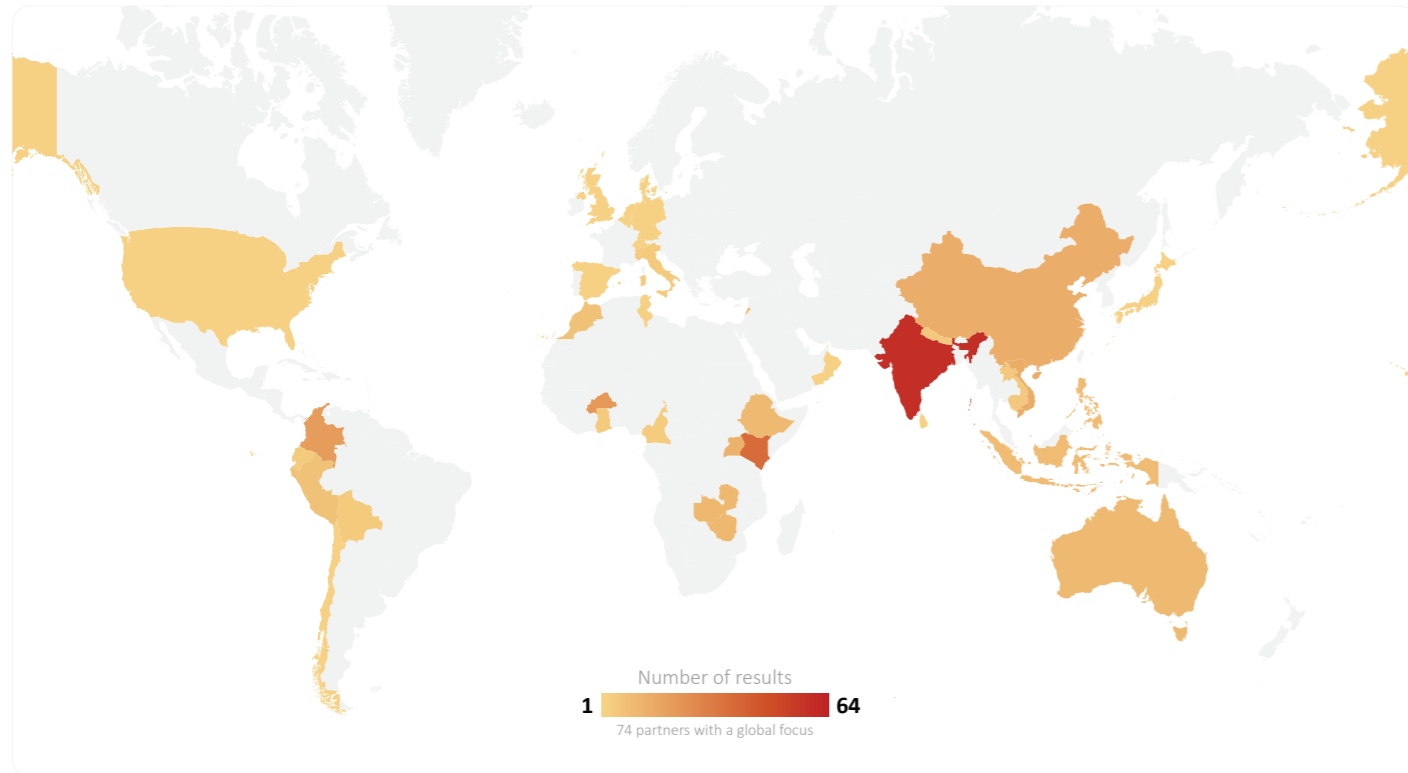
CONTRIBUTIONS TO THE UN SUSTAINABLE DEVELOPMENT GOALS



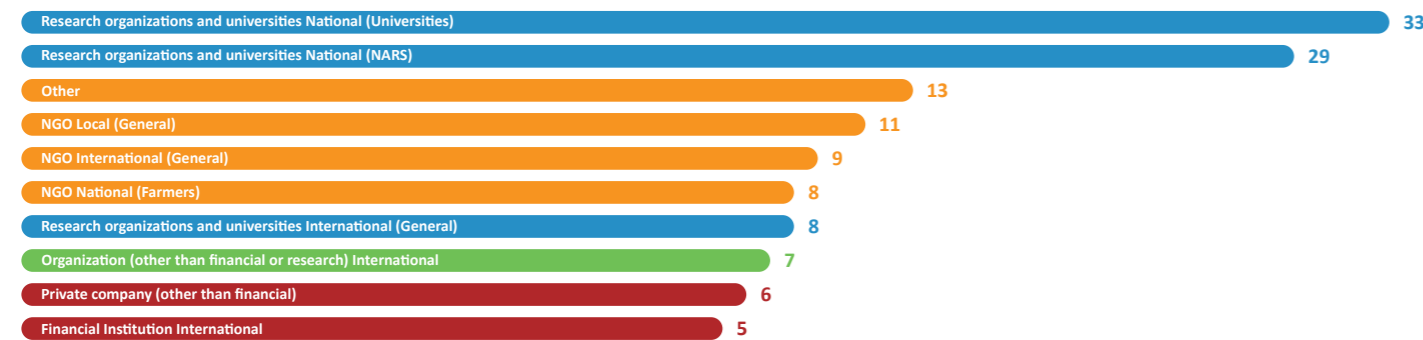
Women employed by the National Tree Seed Center of Burkina Faso extract seeds from herbaceous plants as part of a collaboration with NATURE+'s RESTORE Work Package. The tree seed center conserves and distributes seeds of trees, shrubs and herbaceous species, the latter which prepare the land for tree introduction. Credit: Courtesy of Barbara Vinceti, Alliance of Bioversity International and CIAT

Section 5: Partnerships

EXTERNAL PARTNERS CONTRIBUTING TO RESULTS, PER COUNTRY



NATURE+ successfully engaged with a variety of partners, including over 90 NARES. Colors represent the number of different partners which collaborated on results achieved in a specific country. One result can impact different countries and therefore the same partner can be associated with more than one country. Source: Data extracted from the [Results Dashboard](#) on 29 March 2024.



Results made contributions across all the CGIAR Impact Areas and SDGs.

Partnerships and Nature-Positive Solutions' impact pathways

NATURE+ has over 200 partners spread across the globe. These partners include international and national research organizations (including universities and 40 NARES), national and international NGOs, governments at the national and subnational levels, and, crucially, many local farmer organizations at intervention sites.

Partners are essential to achieving End of Initiative outcomes. Many of the Initiative's partners have had positive collaborations with CGIAR Centers and projects, which has facilitated NATURE+ engagement and implementation at work sites across the Initiative's five target countries. The Initiative has also established new partnerships and strengthened or formalized others, due, in part, to the growing awareness of nature-based solutions as critical components of addressing the concurrent crises of climate change, biodiversity loss, and food and nutritional insecurity.

Several partnerships merit highlighting in relation to End of Initiative outcome progress in 2023.

In Colombia, NATURE+'s WP4 (Recycle) worked closely with the Servicio Nacional de Aprendizaje (or SENA, the National Learning Service) to implement activities focused on strengthening circular bioeconomy startups. As Colombia's official extended education organization, SENA is present in all corners of the country and is positioned to scale WP4 activities, which rely on capacity building, training, and navigating government regulations for establishing new businesses. As a result of NATURE+ engagement with SENA, the Alliance of Bioersity International and CIAT signed a Memorandum of Understanding for further collaboration between SENA, NATURE+ and the Alliance.

India's BAIF Development Research Foundation has played a critical role in NATURE+ activities in the country. BAIF helped the Initiative with site selection, collaborated extensively in implementing Initiative activities across all WPs, and facilitated contact and collaboration with communities in target sites. BAIF also co-launched and hosted the circular bioeconomy innovation hub, in collaboration with the International Water Management Institute (IWMI). Key

Initiative research partners include the Indian Council of Agricultural Research (ICAR), and the MPKV Rahuri Agricultural University in Maharashtra, the Indian state where NATURE+ research activities are taking place.

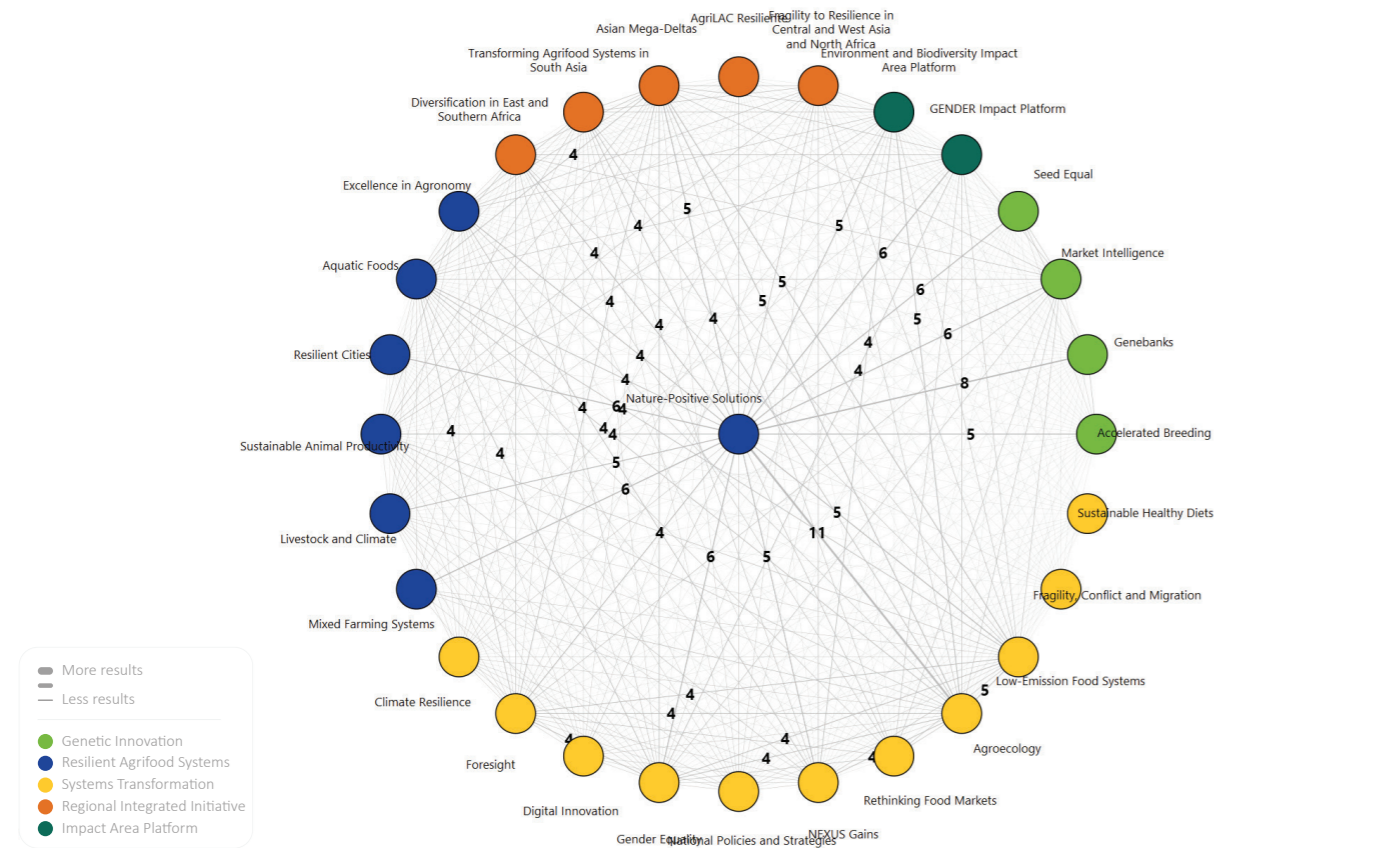
Key Initiative partners in Viet Nam include Viet Nam's Fruit and Vegetable Research Institute, the Plant Resources Center, the Vietnamese Genebank, and UNDP. These partners were critical to the initiation and the implementation of Initiative activities, including research related to neglected and underutilized species (as described in Section 3) as well as promoting circular economy solutions. In addition, through its partnership with the Ministry of Agriculture and Rural Development (MARD) and the Vietnamese Academy of Agricultural Science (VAAS), NATURE+ activities are embedded in the Food System Transformation agenda of the 2030 National Action Plan (NAP).

In Kenya, several partners, including the Intersectoral Forum on Agrobiodiversity and Agroecology (ISFAA), which brings together stakeholders ranging from governments to farmer organizations, and the Kenya Agricultural and Livestock Research Organization (KALRO), have been critical to implementation. Initiative work in Kenya can also credit its success to strong relationships with county governments and farmers' organizations in those counties which allowed for NATURE+ to be embedded in the County Integrated Development Plans.

Initiative work in Burkina Faso was enabled by close collaboration with NGOs, farmers' groups and a wide, informal network of tree nurseries, underscoring how research-for-development work can be coordinated and implemented even under complicated sociopolitical conditions when key partnerships are in place.

ISFAA is a multistakeholder and multi-sectoral platform that brings together stakeholders ranging from government, farmer organizations, civil society organizations (CSOs), the private sector, research and academia, and the donor community to dialogue on and find common sustainable solutions.

NATURE-POSITIVE SOLUTIONS' INTERNAL PORTFOLIO NETWORK



Connections are sized by the number of reported results. Collaborations where only one result was reported with a linkage between two Initiatives are excluded.

Portfolio linkages and Nature-Positive Solutions' impact pathways

The Initiative is well integrated within the CGIAR Initiative portfolio. Nature+ collaboration with the CGIAR Research Initiatives on Agroecology, Nexus Gains, Low-Emission Food Systems, and Gender Equality continued to grow, as sustainable intensification and excellence in agronomy are both critical to define pathways and a framework towards achieving more sustainable agriculture and reducing the negative impacts generated by it. NATURE+ also linked with the CGIAR Research Initiatives on Mixed Farming Systems,

Livestock and Climate, Resilient Cities, as well as the CGIAR Gender Impact Platform to best develop circular economy strategies, which form a significant part of the Initiative. Finally, NATURE+ engaged in areas of collaboration with the CGIAR Research Initiatives on Seed Equal and Genebanks on the use of genetic resources. In particular, with the Genebanks Initiative, we explore ways to link in situ and ex situ conservation and improve the use of genetic resources conserved in genebanks.

RECOMMENDATION SUPPORTING RATIONALE

Changes to internal communication. Although progress has been made in enhancing the communication between WPs and within countries, there are still gaps and more can be done to better connect the dots internally and ensure efforts are aligned, streamlined, and coordinated.

How do we work together to identify opportunities for synergies across WPs and countries?

This will be achieved by creating a master workplan for each target country integrating all WP activities into one file per country. Country focal points will oversee the activities of all WPs and ensure efforts are aligned, streamlined, and coordinated. Furthermore, country-level workshops which also include national partners, will be organized to enhance our coordination (e.g. an India pause and reflect (P&R) workshop has already been run; a Viet Nam P&R workshop is planned).

Changes to external communication. There is a need to define a stronger narrative for 2024 and taglines for communicating the Initiative's results and achievements – it is important to be able to tell the story of the Initiative's contribution to the adoption of nature-positive solutions.

The country briefs that integrate the results achieved by all WPs per country serve as a good communication product for outreach. Organizing joint sessions where all WPs are represented would also enhance our messaging of Nature+ (e.g. the session organized in the Asia and the Pacific Food Security Forum and explore other strategic conferences and forums).

Ensure prioritization towards activities that support integration between WPs and that more heavily contribute to achieving End of Initiative outcomes. A mechanism to prioritize activities that enhance integration of WPs and maximize the outcomes expected by Initiative-end is needed.

A session in our P&R workshop is dedicated to discussing which solutions would be targeted and where to achieve high impact. Our strategy is to integrate and consolidate our resources where there is high potential for achieving outcomes.

Changes required to enter into partnerships more efficiently. Entering and securing partnerships has been challenging in 2023. We need to explore more efficient ways of doing this in 2024 (grouping Centers' budgets within the Initiative to enter into partnerships as one body).

Section 8: Key result story

Kenyan farmers aggregate land for nature-positive activity

Three Kenyan farmer communities aggregated small parcels to restore degraded land, improve production and create value chains with nature-positive solutions.



Three groups of Kenyan farmers agreed to dedicate their small land parcels to create aggregated farms to implement and scale nature-positive solutions.

Many Kenyan smallholders face declining production due to land fragmentation, land degradation, and lack of investment. Three community-led groups supported by NATURE+ agreed to aggregate small parcels of land to create larger, nature-positive farms. These farms will be used to restore land, increase production, and attract investment to scale-up nature-positive interventions.

Farmers in Kenya face a myriad of challenges that limit their farm's production potential. Two of these are **land degradation** (from deforestation, subsequent erosion and overuse of chemical inputs) and **land fragmentation** (the division of landholdings into very small plots through inheritance). Farmers are often limited by lack of access to value chains and technical knowledge, access to seeds, lack of finance, low incomes and debt burdens, labor shortages, and negative impacts of climate change.

No single intervention can solve all these problems. But an innovation led by Nature+ aims to set the enabling conditions for a radical transformation of degraded and divided landscapes in Kenya through **farm aggregation**. At three nearby locations in Kenya in 2023, NATURE+ brought together farmers' groups to agree to aggregate small plots of land and pursue landscape restoration through the collective application of nature-positive solutions, particularly permaculture. Additionally, the Initiative is developing plans for several related value chains that will equitably share the benefits of aggregation.

The aggregated design will eventually allow the farms to respond to the challenges listed above, including access to planting material, and address issues related to food security, food production independence, and nutritional challenges in communities. The farms are designed to encompass several sustainable production activities, including high-value crop production, fruit trees, and circular-economy activities such as composting and use of soil microbiome, apiculture, pisciculture and the production of value-added food productions.

The farm aggregation models will be replicable across Kenya and beyond, and potentially revolutionize small-scale farming practices.

NATURE+'s two aggregated farms span 76 hectares and 55 hectares. In Vihiga, a model farm of 2 hectares, will foster adoption of the same nature positive practices at landscape level. The different models are located in three relatively different social and farming contexts. But they have several things in common: strong community support for aggregation and a history of successful collaboration with CGIAR, particularly through the establishment of community seed banks to supply the farms with agrobiodiverse planting material (trees and crops). All three farms have river access, providing a key, reliable, year-round source of water needed for production. Some 200 farmers across the three sites are involved in the first phases of the farm aggregation.

In 2023, NATURE+ collaborated with communities to establish the enabling conditions for the aggregated farms. Stakeholder consultations first focused on the need for collaboration and consensus – initially, farmers were reluctant to adopt the scheme, but eventually decided by a vast majority to relinquish control of their land for the implementation of the aggregated farms, and decided what activities would be prioritized on the shared land. Communities formed organizations to govern the arrangements, and legal teams are currently working on the contractual issues focused on profit-sharing, responsibilities, and conflict resolution.

NATURE+ researchers also completed land demarcation of plots, mapped the intervention areas and carried out community activities to gauge the key community collaboration component necessary to make the farms successful. Critically, the aggregation plans are aligned with county-level, five-year agricultural development plans.

Project beneficiaries are women, men, and youth (although participating farmers' median age trends are well above the median age of Kenyan participants). Much of the farmland dedicated to aggregation (except for the one-hectare plot) was largely abandoned due to degradation, or only used for grazing.



This initiative brings ideas on better utilization of pieces of land, which have barely been utilized. We are optimistic that the permaculture aggregated farms will revolutionize agriculture, food security, and income levels among farmers.

Evelyne Okoth, a farmer at the Agoro East aggregated farm

Primary Impact Area



Other relevant Impact Areas targeted



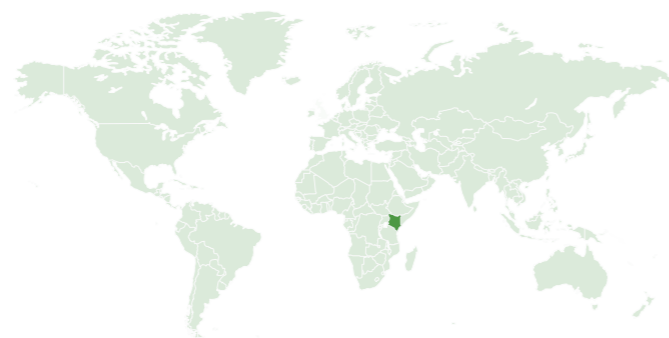
Contributing Centers

Primary: Bioversity (Alliance) – Alliance of Bioversity International and CIAT – Headquarters (Bioversity International) · International Water Management Institute (IWMI)

Contributing external partner(s)

County Government of Kisumu (Kenya) (CGKK) · County government of Vihiga (Kenya) (CVK) · Dryland Natural Resource Center (DNRC) · Intersectoral Forum on Agrobiodiversity and Agroecology (ISFAA) · Kenya Agricultural and Livestock Research Organization (KALRO) · National Museums of Kenya (NMK) · Participatory Ecological Land Use Management (Kenya) (PELUM Kenya)

Geographic scope



Kenya



Front cover photo

A small selection of the several maize landraces produced in Nariño, Colombia. Increased conservation of agrobiodiversity, including unique landraces and neglected and underutilized crop species, is one focus of the CGIAR Research Initiative on Nature-Positive Solutions.
Credit: Andrea Gomez, International Maize and Wheat Improvement Center (CIMMYT)

Back cover photo

A family at a NATURE+ intervention site in Viet Nam.
Credit: Courtesy of Diego Naziri, International Potato Center



INITIATIVE ON
Nature-Positive
Solutions