

initiative on Agroecology



# CGIAR Research Initiative on **Agroecology**

Annual Technical Report 2024

Author: CGIAR Research Initiative on Agroecology

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The Artificial Intelligence (AI) software ChatGPT was used to support the editing of parts of this report, specifically to improve clarity, grammar, and style. ChatGPT was not used to generate the content of the report. All edits made with AI assistance were reviewed and validated by the authors to ensure accuracy, coherence, and alignment with the original intent.

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CGIAR Technical Reporting has been developed in alignment with <u>CGIAR's Technical Reporting Arrangement</u>. This annual report ("Type 1" Report) constitutes part of the broader CGIAR Technical Report. Each CGIAR Research Initiative/Impact Platform/Science Group Project (SGP) submits an annual "Type 1" Report, which provides assurance on progress towards end of Initiative/Impact Platform/SGP outcomes.

As 2024 marks the final year of this CGIAR Portfolio and the 2022-24 business cycle, this Type 1 Report takes a dual approach to its analysis and reporting. Alongside highlighting key achievements for 2024, the report also provides a cumulative overview of the 2022-24 business cycle, where relevant. This perspective captures the evolution of efforts over the three-year period. By presenting both annual and multi-year insights, the report underscores the cumulative impact of CGIAR's work and sets the stage for the transition to the 2025-30 Portfolio.

The 2024 CGIAR Technical Report comprises:

- Type 1 Initiative, Impact Platform, and SGP Reports: These annual reports present progress towards end of Initiative/Impact Platform/SGP outcomes and provide quality-assured results accessible via the <u>CGIAR Results Dashboard</u>.
- **Type 3 CGIAR Portfolio Practice Change Report:** This report provides insights into CGIAR's progress in Performance Management and Project Coordination.
- **Portfolio Narrative:** Drawing on the Type 1 and Type 3 reports, as well as data from the CGIAR Results Dashboard, the Portfolio Narrative synthesizes insights to provide an overall view of Portfolio coherence. It highlights synergies, partnerships, country and regional engagement, and collective progress.
- Type 2 CGIAR Contributions to Impact in Agrifood Systems: evidence and learnings from 2022 to 2024: This report offers a high-level summary of CGIAR's contributions to its impact targets and Science Group outcomes, aligned with the Sustainable Development Goals (SDGs), for the three-year business cycle.

The Portfolio Narrative informs the 2024 CGIAR Annual Report – a comprehensive summary of the organization's collective achievements, impacts, and strategic outlook.

Elements of the Type 2 report are integrated into the <u>CGIAR Flagship Report</u>, released in April 2025 at <u>CGIAR Science Week</u>. The Flagship Report synthesizes CGIAR research in an accessible format designed specifically to provide policy- and decision-makers at national, regional, and global levels with the evidence they require to formulate, develop, and negotiate evidence-based policies and investments.

The diagram below illustrates these relationships.



# Section 1: Fact sheet, executive summary and budget

Initiative name	Transformational Agroecology across Food, Land, and Water Systems
Initiative short name	Agroecology
Initiative Lead	Marcela Quintero ( <u>m.quintero@cgiar.org</u> )
Initiative Co-lead	Chris Dickens ( <u>c.dickens@cgiar.org</u> )
Science Group	Systems Transformation
Start – end date	01 January 2022 – 31 December 2024
Geographic scope	<b>Regions</b> Central and West Asia and North Africa · East and Southern Africa · Latin America and the Caribbean · South Asia · Southeast Asia and the Pacific · and West and Central Africa
	<b>Countries</b> Burkina Faso · India · Kenya · Lao People's Democratic Republic · Peru · Senegal · Tunisia · Zimbabwe
OECD DAC Climate marker adaptation score <sup>1</sup>	Score 2: Principal The activity is principally about meeting any of the three CGIAR climate-related strategy objectives – namely, climate mitigation, climate adaptation and climate policy, and would not have been undertaken without this objective.
OECD DAC Climate marker mitigation score <sup>1</sup>	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 score <sup>2</sup>	Score 1A: Gender accommodative/aware Gender equity 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. The Initiative has had a strong focus on social inclusion. Fairness is one of the agroecology principles and inclusion has been central in the co-creation processes undertaken by the Initiative.
Website link	https://www.cgiar.org/initiative/agroecology/

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

If current unsustainable production and consumption persist, global food production must increase by 70 percent to feed 9.8 billion people by 2050, with the risk of extensively damaging ecosystems and biodiversity. In 2022, CGIAR established this Initiative to support farmers and whole communities with the support of other food system actors to make food systems sustainable by applying agroecology principles. The Initiative first demonstrated the value of its foundational work to develop and evaluate agroecology innovations under diverse conditions. In 11 distinct Agroecology Living Landscapes (ALLs) across eight countries, the Initiative characterized local conditions. Around 100 CGIAR researchers and local partners from multiple disciplines engaged with more than 11,400 food system actors in participatory identification and selection of entry points for agroecology transitions.

Next, the Initiative co-created solutions with rural communities and local organizations and wider societies through an **integrated research approach** that moved well beyond individual technological innovations applied in a piecemeal fashion. Co-design figured importantly in the Initiative's work, encompassing structured and iterative engagement, a vision-to-action process to co-develop context-specific transition pathways towards a desired future, development and testing of innovations, and performance assessments.

Each country carried out **science-based assessments** of the agroecological context of the ALLs, highlighting their remarkable biophysical and socio-cultural diversity. A Holistic Localized Performance Assessment (HOLPA) framework generated evidence on the performance of food systems across various dimensions and scales of agroecological transition. HOLPA includes localized indicators that were validated with stakeholders. The assessment results shared with stakeholders led to the identification of priorities for agroecology transitions.

Three other assessments included: (1) a consolidated cross-country analysis of the agronomic performance of agroecological innovations and trials; (2) outcome identification workshops, through which food system actors engaged in the ALLs identified the behavioral changes they observed in the ALLs, and (3) a qualitative evaluation to provide evidence of these outcomes in three countries.

Over three years, the Initiative reported 729 results. Through 147 capacity-sharing activities, 12,500 people were trained and shared knowledge, and 25 scientific journal articles were published, with more to come in 2025. The Initiative reported 47 innovations and 86 outcomes, including 55 uses of innovation and eight policy changes. Of the nine outcome targets, four were surpassed and three achieved.

These results were generated through holistic **co-design approaches** at the micro (farm/ALL), meso (organizational) and macro (national) levels, including work on markets, policies and behavioral change:

- Context-specific **agroecological practices** were co-designed, tested and evaluated, including crop-livestock integration, bioinputs, diversification and crop associations, and soil-water conservation. The International Network of Agroecological Living Landscapes (INALL), through exchange visits, provided opportunities for cross-border knowledge sharing and expanded the impact of agroecology principles and practices.
- Through value chain analysis, business models were created with partners, and financial mechanisms were
  assessed for their potential to contribute to agroecological transitions. An incubator/accelerator scheme was
  developed to provide enterprises and producer organizations with financial and technical assistance. Investment
  cases and cost-benefit analyses helped create the necessary conditions for pursuing profitable, innovative
  business models with private and public investors.
- Opportunities have been identified to make **policy** recommendations, while strengthening local institutions and governance mechanisms, pursuing these opportunities through policy formulation and institutional strengthening. Among the most noticeable results are the Initiative's participation in Kenya's recently approved National Agroecology Strategy and its contributions to Peru's Regional Strategic Plan for BioTrade.
- The Initiative gained a better understanding of how individuals and groups can shift their **agency and behavior** towards agroecology transitions. On this basis, a framework was developed and used successfully with 11 strategies or action plans adjusted. Rural youth were engaged in a participatory study on fostering opportunities for agroecology transitions in low- and middle-income countries.

Conditions have been created for systemic change by building strong local and national **partnerships**. Partners played key roles in the co-design, technical development, implementation and scaling of activities. Some 316 organizations collaborated with the Initiative during its three years, with a total of 67 organizations formally considered as partners, including farmers associations, multistakeholder platforms, national and local governments, NGOs, research organizations and universities.

The Agroecology Initiative fostered linkages across the **CGIAR Portfolio**, collaborating with various Initiatives and projects to exchange knowledge, conduct joint research, and address socio-political dimensions of food systems. Cross-cutting collaboration covered such topics as institutional pathways for agricultural diversification, impact evaluations and agroecological incentives. The strongest linkages were created with six Initiatives – Livestock and Climate; Nature Positive Solutions; Nexus Gains; Low Emission Food Systems; Fragility, Conflict and Migration; and Diversification in East and Southern Africa – which lead to numerous results.

The Initiative's findings should help guide future investments in agroecology transitions that pursue the Initiative's holistic strategy on a larger scale, and apply its systems approach to multifunctional landscapes, with the aim of fostering a transition to sustainable food systems. CGIAR's Multifunctional Landscapes Program should continue supporting the desired agroecological transitions identified and initiated in each of the ALLs, as the vision of these transitions were set over a nine-year horizon – the initial lifespan of this Initiative.

	2022	2023 マ	2024
PROPOSAL BUDGET D	\$9.00M	\$11.70M	\$12.30M
APPROVED BUDGET <sup>1</sup> »	\$6.60M	\$10.20M <sup>2</sup>	\$10.70M <sup>2</sup>

<sup>1</sup> The approved budget amounts correspond to the figures available for public access through the <u>Financing Plan dashboard</u>.

<sup>2</sup> These amounts include carry-over and commitments.

### 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.

### CHALLENGE STATEMENT

- Despite notable technological advances in recent decades, today's agriculture and food systems leave more than 700 million people undernourished globally. At the same time, these systems aggravate social inequity while also driving biodiversity loss, land degradation, water pollution, and natural resource depletion and contributing to about one-third of global greenhouse gas emissions. Two-thirds of hungry people live and work in rural areas, and 475 million of the world's 570 million farms are small-scale operations, yet 95 percent of research on agricultural and food systems is irrelevant to small-scale farmers.
- A redesign of food systems is urgently needed to simultaneously achieve ecological, economic, and social sustainability. In recent years, agroecology has rapidly gained support as a promising approach for addressing global agrifood system challenges. A growing body of evidence demonstrates how agroecological innovations can enhance ecological, economic, and social sustainability of food production, as well as its resilience in the face of climate change.
- Despite on-farm success with such solutions in many countries, major barriers stand in the way of
  scaling them and in applying agroecological principles across food systems, from production to
  consumption. Not enough evidence is available on which innovations—technological and
  institutional—will work, as well as where, when, and why, to inform widespread adoption of
  agroecological principles in agroecosystems and food systems. Moreover, the necessary policies,
  institutions, and financial mechanisms are still lacking or failing to support these innovations at the
  scale required to drive equity, resilience, and sustainability in food systems.
- Overcoming those and other shortcomings requires a different approach. There is growing recognition that an integrated systems approach to transition pathways is needed in action research to contribute to agrifood systems with greater sustainability, equity, and resilience.

### SPHERE OF CONTROL

Work Packages

### /ork Package 1

Transdisciplinary co-creation of innovations in Agroecological Living Landscapes (ALLs).

### WORK PACKAGE 2

Evidence-based agroecology assessments.

### Work Package 3

Inclusive business models and financing strategies.

### Vork Package 4

Strengthening the policy and institutional enabling environment.

### WORK PACKAGE 5

Understanding and influencing agency and behaviour change.

Aromatic cocoa drying process at the Colpa de Loros Agrarian Cooperative, Neshuya, Ucayali, Peru. Credit: E. Ramirez / Alliance Bioversity-CIAT

010	End of Initiative outcome
A	Action Area
Δ	Impact Area

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

### SPHERE OF **INFLUENCE**

### END-OF-INITIATIVE OUTCOMES

### **END-OF-INITIATIVE OUTCOME 1**

Contextually- relevant agroecological principles applied by farmers and communities across a wide range of contexts and supported by other food system actors by 2024.

### ACTION AREA OUTCOMES

- · National and local multi-stakeholder platforms are 1 strengthened to become more effective and sustainable, addressing development trade-offs and generating strategies for effective food, land, and water systems transformation.
- 1 Due to CGIAR involvement, private sector actors invest in business practices or models that have the potential to improve livelihoods, climate resilience, promote sustainable and inclusive food systems, and boost consumption of healthy diets, especially among nutritionally vulnerable population groups.
- 1 · National and sub-national government agencies use CGIAR research results to design or implement strategies, policies and programs which have the potential to transform food, land and water systems contributing to livelihood, inclusion, nutrition, environmental and climate resilience objectives.
- Research institutions, government analytical units, and scaling partners in the Global South have improved 1 knowledge, skills, access to data, capacity to develop tools, innovations, and undertake research to support transformation of food, land and water systems contributing to livelihood, inclusion, nutrition, environmental and climate objectives.
- · Implementation partners (e.g. NARES, NGOs, private 1 🕨 companies) actively support dissemination, uptake, and implementation of CGIAR innovations.

### SPHERE OF INTEREST

### IMPACT AREAS

### NUTRITION, HEALTH & FOOD SECURITY

- End hunger for all and enable affordable
- health diets for the three billion people who
- do not currently have access to safe and
- 1 2 3 4 5 nutritious food

### **POVERTY REDUCTION, LIVELIHOODS & JOBS**

- · Lift at least 500 million people living in
- 1 2 3 rural areas above the extreme poverty line
- of US \$1.90 per day (2011 PPP). 45

### GENDER EQUALITY, YOUTH & SOCIAL INCLUSION

- Offer rewardable opportunities to 267 1 2 3 4 5
- million young people who are not in employment, education, or training.
- Close the gender gap in rights to economic resources on, access to ownership of, and control over land and natural resources, for more than 500 million women who work in food, land, and water systems.

### **CLIMATE ADAPTATION & MITIGATION**

 Equip 500 million small-scale producers to be more resilient to climate shocks, with

63

- 12345 climate adaptation solutions available
- through national innovation systems.

• Turn agriculture and forest systems into a net sink for carbon by 2050, with emissions from agriculture decreasing by 1 Gt per year by 2030 and reaching a floor of 5 Gt per year by 2050.

1 2 3

5

· Stay within planetary and regional environmental boundaries: consumptive water use in food production of less than 2500 km<sup>3</sup> per year (with a focus on the most stressed basins), zero net deforestation, nitrogen application of 90 Tg per year (with redistribution towards low-input farming systems) and increased use efficiency, and phosphorus application of 10 Tg per year.



### Summary of progress against the theory of change

If current unsustainable production and consumption persist, global food production must increase by 70 percent to feed 9.8 billion people by 2050, with the risk of extensively damaging ecosystems and biodiversity. CGIAR acknowledges that **a redesign of agrifood systems is urgently needed** to achieve ecological, economic and social sustainability. Agroecology is gaining prominence as a key requirement for this radical shift. With its 13 principles, agroecology involves science but is also a set of practices and a social movement. Agroecology has evolved over recent decades, expanding from a focus on fields and farms to represent a transdisciplinary field that includes the ecological, technological, economic, political and sociocultural dimensions of food systems, from production to consumption (GIZ, 2024).

The Agroecology Initiative aimed to provide evidence on what innovations work, where, when and to support widespread implementation; develop solutions for further integration of capacities and resources across disciplines; and formulate recommendations for better aligned policies, institutions and governance.

The Initiative's five Work Packages (WPs) addressed those aims:

- WP1: Transdisciplinary co-creation of innovations in ALLs
- WP2: Evidence-based agroecology assessments
- WP3: Inclusive business models and financing strategies
- WP4: Strengthening the policy and institutional environment
- WP5: Understanding and influencing agency and behavior change

Over the past three years, the Agroecology Initiative has worked on **solutions** for the co-design of agrifood systems, creating the necessary conditions for systemic change. To operationalize this approach, it worked on the assumption that it can make food and agroecosystems truly holistic by bringing together researchers, farmers and their communities, as well as business and government in specific territories to support desired agroecological transitions. The Initiative delineated a wide array of environmental and institutional settings (referred to as Agroecological Living Landscapes or ALLs), in which food system actors (FSAs) collectively chose pathways to agroecology transitions and then co-created corresponding technological and institutional innovations suited to the local context and based on agroecology principles. This cocreation process involved a total of about 11,400 FSAs (more than 8,000 farmers, 690 government representatives, 600 researchers, 200 private companies and 110 policymakers). By integrating ecological and social concepts into agrifood systems, the Initiative enabled agroecological innovations to succeed and expand.

The Initiative contributed to its **five Science Group outcomes**. With partners, it strengthened national and local multistakeholder platforms (in Burkina Faso, Kenya, Lao PDR and Peru); fostered private sector engagement and multisectoral business partnerships (in Kenya, Peru, Senegal and Tunisia); engaged with policy actors at national and sub-national levels, and achieved implementation of strategies and action plans (in Kenya, Peru and Tunisia); and improved knowledge, skills, data access and capacity to develop tools for National Agricultural Research Systems (NARS), governmental agencies, non-governmental organizations (NGOs) and extension services (in all eight focal countries). The Initiative worked with 67 implementation partners, who participated in the co-design, implementation and dissemination of innovations. The Initiative gained visibility and stakeholder support by participating in different working groups and collaborative projects as a member of the Agroecology Coalition and Transformative Partnership Platform on Agroecology.

The results achieved and assessed in four different science-based assessments (see the key result story in section 7) across the eight target countries and 11 ALLs reflect the ecological, social, and economic dimensions of agroecology principles.

In **Burkina Faso**, FSAs in the ALL at Bobo-Dioulasso enhanced dairy farming by integrating agroecology principles and improving croplivestock interactions. Farmers adopting fodder crops saw increased livestock productivity. A business model was co-designed, using the agency and behavioral change framework developed by the Initiative, to strengthen dairy value chains via milk collection centers. In 2024, 15 dairy processing units began using fresh milk and natural yogurt flavorings. The Initiative also expanded an existing dairy innovation platform, involving new actors and dairy products.

In **India**, the Initiative worked in two regions, Andhra Pradesh and Madhya Pradesh. In both ALLs, value chain innovations are already increasing fairness, economic diversification and sustainability. This work also enhanced the role of women and youth by strengthening the market links of women's groups for groundnut sales and by engaging with local governments that view youth inclusion as crucial for agroecology transitions. In both ALLs, 80 farmers adopted agroecological practices, leading to increased incomes and crop diversification as well as greater resilience. Farmers trialing crop associations have seen higher productivity and greater sustainability, while those adopting the Agroecological Homestead Farming model have reported more diverse income sources with tangible economic benefits.

In Kenya, Initiative partners in the ALLs have made farming more sustainable, while creating inclusive business models for mangoes in Makueni and leafy green vegetables in Kiambu – improvements that FSAs identified as key to achieving their transition pathways. Under the leadership of the Drylands Natural Resources Centre (DNRC) and Community Sustainable Agriculture Healthy Environmental Program (CSHEP), together with their local partners, farmers have adopted a variety of agroecological practices, such as improved land use planning, vermicomposting, biopesticides, soil-water conservation and local organic inputs - leading to increased productivity, reduced costs and improved soil health. Water recycling and mulching have boosted vegetable yields and incomes. In addition, DNRC and CSHEP have gained visibility nationally and internationally as key players in agroecology and have expanded their capacity-building efforts. Work of the Initiative also informed policy recommendations aimed at fostering investment in market linkages, advisory services and youth engagement, contributing to Kenya's National Agroecology Strategy, approved in 2024.

In **Lao PDR**, ALL stakeholders in Attapeu Province aim to promote climate-resilient farming through solar-powered groundwater irrigation and rice field fisheries. Through a trial with solar-powered irrigation, farmers can now access groundwater reliably for domestic use, while boosting productivity, resilience and incomes through crop associations. At the same time, more diverse paddy rice crops have enhanced sustainability. In addition, scientists have refined research methods through gender-transformative training. In Nong Lom Wetlands, a 2024-2029 management plan has been co-developed to sustain fishing and farming. Local fishers, farmers and NGOs are collaborating with government agencies to improve wetland management, based on better knowledge and skills for sustainable agriculture and fishing. In the **Peruvian** Amazon, cacao producers of the ALL situated in the Ucayali region have opted for a transition pathway that combines agroforestry with cocoa, BioTrade and carbon markets. Farmers are managing cacao diseases with low-cost traditional methods and agroecological practices. Cooperatives have introduced organic inputs and home garden models through experiments in farmers' fields. With Initiative support, a Regional Technical Commission on BioTrade has developed a strategic plan for promoting agroecology, and the Participatory Guarantee System Regional Council has been created to support organic certification and commercialization. The Initiative and regional government are implementing an agroecology corridor under a 2-year agreement. These outcomes are making farmers' practices more sustainable, strengthening their organizations, promoting native biodiversity, supporting local businesses, making cacao production more sustainable, and boosting regional economic growth.

In **Tunisia's** El Kef-Siliana transect, the agroecology transition aims to boost climate resilience and benefit rural communities through two entry points: crop-livestock integration and organic olive oil production, supported by stronger farmers organizations and links with multiple actors. The Initiative's co-design approach has significantly increased trust between farmers and researchers. As a result, nearly 300 small-scale farmers now use composted crop residues for fertilization, while over 100 grow fodder crops with olive trees. With Initiative support, farmers are also revitalizing soils by means of bioinputs such as rhizobium and biochar, while producing their own forage seeds. New technologies, such as seed-cleaning machinery, have been piloted, and innovative business models have been developed to promote the export of organic olive oil. This work has prompted the Livestock and Pasture Department of the country's Ministry of Agriculture to incorporate biofertilization into its strategy.

**Senegal**, after joining the Initiative in late 2022, established an ALL in Fatick with regional and national agroecology associations. Collaborative efforts focused on integrating agroecology into crop-livestock systems, developing inclusive business models and establishing new governance structures. Farmers have improved productivity and sustainability through crop associations and enhanced soil health with manure application. Through an innovative agroecology business model, millet is now processed locally, contributing to wealth creation and job generation in local communities.

In **Zimbabwe's** Central and Mashonaland East Province, FSAs in the ALLs have introduced agroecological practices such as soil-water conservation, biopesticides and natural fertilizers. Stakeholders have engaged elders, women and youth to drive change, including a shift in gender norms for mechanization. Mechanisms such as microfinance and digital financing are supporting agroecological innovation. Focusing on the poultry value chain, stakeholders have fostered partnerships among investors, NGOs and farmers. CGIAR has provided chickens, training and feed alternatives, enabling 100 farmers in Murehwa to adopt Sasso poultry production, which has boosted incomes and dietary diversity, while reducing labor costs through mechanization and contract farming solutions.

About 25,000 FSAs used the co-created innovations, among them 23,000 farmers, 1,254 researchers and 270 policy actors. The Initiative in each ALL has created a solid foundation though business models, financial mechanisms and policy integration, to scale agroecological innovations from farms to landscapes with regional and national policy support.



The five levels of agroecology transitions, adapted from Gliessman levels (in Wezel et. Al., 2020) in relation to the 13 principles of agroecology (HLPE, 2019).

Smitha Krishnan (Alliance of Bioversity International and CIAT) during a study in the Mandla ALL in Madhya Pradesh, India, on the status of farm biodiversity and biotic interactions in agro-ecosystems, particularly on the impact of landscape variables on parasitoids and pollinators. Smitha is playing bird calls to a farmer. Photo Credit: Prasanna NS, ATREE

### Progress against End of Initiative Outcomes

This infographic provides a concise summary of the Initiative's progress toward achieving its Theory of Change Endof-Initiative outcomes for the 2022-24 period. By drawing on reported results, it offers a comprehensive synthesis of progress made against the established outcome targets, highlighting the Initiative's overall impact and key achievements at the conclusion of this three-year cycle.



### EOIO 1

FSAs – the private sector, policymakers, and women and men small-scale farmers – collaborate with researchers in an international network of Agroecological Living Landscapes (ALLs) that promote integration of research and innovation processes to facilitate co-design and testing of context-specific agroecological innovations and broader learning of the biophysical and socioeconomic conditions required for agroecology transitions.

Eleven ALLs were established through an engagement and vision-to-action process in eight countries with 25 partners, involving 11,400 individuals (42 percent female and 58 percent male). Targets were surpassed, enabling 594 researchers (50 percent from NARs) to collaborate with 8,149 farmers, 112 policymakers and 202 private companies. The vision-to-action process enabled identification of the most suitable agroecology transition pathways, providing a basis for technology testing. Thirty agroecological production practices were co-designed for priority farming systems and assessed with ALL stakeholders according to productivity, environmental, social and economic factors. Training in agroecological technologies was provided in 2024 to 596 males and 392 females. The International Network of ALLs (INALL) facilitated six national and international exchange visits with over 100 stakeholders, thus enabling knowledge sharing and generation on agroecology both within and across ALLs and countries.

- In Burkina Faso and Tunisia, farmers growing fodder crops have boosted livestock productivity.
- In Burkina Faso, Kenya and Senegal, animal manure offers crucial benefits, serving as an organic fertilizer, soil conditioner and bioinput.
- In India, Kenya and Zimbabwe, farmers applying biopesticides are keeping pests in check.
- In Peru, cacao farmers applying low-cost traditional practices to manage cacao fruit diseases are reducing disease pressure in their orchards.
- In Kenya and Zimbabwe, soil-water conservation practices have increased cereal productivity and reduced fall armyworm damage.
- In India, Lao PDR, Senegal and Tunisia, crop associations have increased crop productivity, resilience and sustainability. In India and Lao PDR, farmers have increased their income by diversifying traditional paddy rice crops.



# EOIO 2

Food system actors in ALLs use the knowledge gained from sciencebased assessments to identify and prioritize agroecological innovations that are sustainable and enhance resilience.

The Initiative completed and published context assessments for eight countries, covering the current conditions of small-scale farming in distinct agroecologies. Researchers validated with stakeholders a Holistic Localized Performance Assessment (HOLPA) framework, which includes localized options for each country, and applied this tool in eight ALLs, using a published set of guidelines. Data from 1,979 farm household surveys was collected and analyzed. An interactive data management platform for HOLPA was developed to facilitate future use of the tool and to give diverse stakeholders real-time access to initial results. In the eight target countries, multistakeholder workshops were held to discuss results of the HOLPA application in each ALL; participants reflected on their respective landscape action plans and revised these based on evidence from the assessments. A framework was produced for involving citizen science in the assessment of agroecology performance, with a view to possible future development.



# EOIO 3.1

Investors, the private sector, NGOs, and farmers participate equitably in partnerships to co-develop business models, linking agroecological innovations to markets and investment.

# EOIO 3.2

Investors, the public sector, and farmer organizations co-design or adapt financial mechanisms that support agroecological innovations.

Eleven value chain analyses were carried out, leading to the identification of constraints and leverage points for technology adoption and the development of business models with potential to achieve the proposed agroecology transitions. Twelve business models, one feasibility assessment of carbon markets (as a financial mechanism for cocoa agroforestry), and one incubator/accelerator were co-developed to provide 10 enterprises and producer organizations with the finance and technical assistance needed to upscale innovations. Nine investment cases were developed to inform dialogues with private and public investors. Twelve cost-benefit analyses determined the profitability of innovative business models. The Initiative helped upgrade the business models of 10 local enterprises and farmer organizations, with over USD 200,000 in capital, and capacity building.

Agroecological innovations within ALLs are strengthening local economies and food systems:

- Burkina Faso: The dairy sector has expanded to include new actors, farms and products.
- Kenya: The vermicompost business has grown in Kiambu, and a mango value chain model was adopted in Makueni.
- **Peru**: Cacao cooperatives are enhancing agroecological services.
- **Senegal**: Local millet processing has boosted employment and wealth.
- **Tunisia**: Olive oil production has begun integrating agroecology principles, aiming for controlled designation of origin in collaboration with financial institutions.
- Zimbabwe: Collaborative poultry and sorghum models are attracting investment, and financial mechanisms are in place to support agroecological innovations.



# EOIO 4.1

National and regional policymakers and sectoral organization representatives codevelop and promote recommendations to effectuate the horizontal (across-sector) and vertical (across scale) policy integration required to mainstream agroecology principles.

# EOIO 4.2

Local organizations and authorities co-develop, strengthen, or adjust local institutions and governance mechanisms to better support agroecology transitions in each ALL.

In eight countries, the Initiative analyzed how policies, institutions and stakeholders favor or limit agroecology transitions. A policy framework and tracking tool were developed and applied in three countries. A collaborative effort to address political economy issues in agroecology transitions produced 15 articles covering 10 countries. In five countries, the Initiative participated in formulating national or subnational agroecology policies and institutional changes. Mechanisms were identified in six countries for better coordination of local institutions in support of agroecology transitions.

CGIAR supported the development of various national and regional agroecology strategies:

- **Kenya** approved a National Agroecology Strategy and Peru a Regional Strategic Plan for BioTrade.
- In Lao PDR, local communities codeveloped a wetland management plan, while in Burkina Faso, a dairy innovation platform expanded its network.
- In Kenya's Kiambu and Makueni counties, local agroecology dynamics and institutional visibility have been strengthened.
- **Peru's Ucayali** region has established a Participatory Guarantee System to certify organic products alongside a multi-actor alliance for agroecology promotion.
- **Senegal's** DyTAEL and DYTAES initiative gained political support.
- In Tunisia, olive farmers have enhanced their cooperative structures. Tunisia also supported the development of the new national agroecological platform RTTA (Le Réseau Tunisien pour la Transition Agroécologique).



# EOIO 5

Scientists, funders, policymakers, business partners, and civil society re-orient or adjust their strategies and action plans based on knowledge gained from scientific studies underpinning behavioral change mechanisms and capacities of farmers, business partners, and consumers to implement agroecological transformation.

In five countries, the Initiative reviewed and created a timeline of experience with agroecology transitions, identifying opportunities for individuals and groups to shift their agency and behavior towards agroecology. On this basis, a framework was developed to identify entry points for agency and behavior change in agrifood system transformation. In addition, rural youth in five countries were engaged in a participatory study on fostering opportunities for youth in agroecology transitions in low- and middle-income countries.

The following examples highlight strategies and action plans driven by behavioral change and youth engagement in agroecology:

- Burkina Faso: A business model was codesigned for the dairy value chain, using behavioral change frameworks.
- India (Mandla, Madhya Pradesh): Youth were trained in media production and shared their experiences and aspirations in local and national workshops, where stakeholders made commitments to engage youth further in agroecology transitions.
- Kenya (Makueni and Kiambu): Host centers DNRC and CSHEP expanded their agroecology capacity-building efforts, incorporating agroecology into their training curricula.
- **Lao PDR**: Scientists refined their research methodologies on the basis of gender-transformative training.
- **Tunisia**: Researchers at the Olive Tree Institute in Tunisia adopted the Initiative's co-design approach, establishing experimental trials and demonstration plots in farmers' fields.
- Zimbabwe: Based on research insights, gender norms were shifted in postharvest mechanization to enhance women and youth's participation and leadership in ALL activities, and to engage elders as sources of knowledge for agroecological innovations.

WP1: Transdisciplinary co-creation of innovations in Agroecology Living Landscapes (ALLs)

### **RESEARCH QUESTIONS**

- How can diverse stakeholders (farmers, scientists, policymakers, and other food systems actors [FSAs]) be mobilized and strengthened to shape agroecological transition pathways sustainably, ensuring their active participation and collaboration?
- What governance mechanisms within Agroecological Living Landscapes (ALL) can facilitate the codesign, monitoring, and assessment of innovations and their associated processes?
- How can FSAs effectively engage in agroecological transitions, and what additional innovations, such as business models and institutional arrangements, should be developed collaboratively with WP3, WP4, and WP5?
- What modifications in current agricultural practices are needed for successful agroecological transitions, and how do codesigned technical innovations perform and embody agroecological principles?
- Functional multiple stakeholder partnerships in at least 8 ALLs or similar set up, established or identified, with an agreed upon metrics and Engagement and cocreation. 1 2 3 4 5 6 procedures for monitoring and assessing collectively co-design and related innovation processes 1 The most suitable agroecological transition pathway(s) to achieve a shared desirable future identified and agreed among actors in each ALL. · Key agricultural practices that require adaptation 2 or change with agroecological approaches identified in established ALLs. Suitable agroecological production practices for 3 🕨 priority farming systems co-designed within the framework of established ALLs, with a focus on the active participation of farmers and farmers organizations, scientists, and extension agents. Agroecological innovations at the food system level required to support the transition pathway identified within each established ALLs as a resu collaboration between all the concerned WPs. 4 Identified alternative agroecological practices in established ALLs co-assessed with ALL stakeholders according to multiple dimensions (productivity, 5 🕨 environmental, social and economic) and in terms of their potential or actual effects, adaptation and adoption by farmers.

### **END-OF-INITIATIVE OUTCOME 1**

Contextually- relevant agroecological principles applied by farmers and communities across a wide range of contexts and supported by other food system actors by 2024.

### Work Package 1 progress against the theory of change

Work Package 1 (WP1) mobilized FSAs to establish ALLs in eight countries. Over 11,400 stakeholders – including farmers, private companies, researchers, policymakers and NGOs – collaborated to identify pathways for sustainable agroecology transitions through co-designed innovations tailored to specific contexts. ALLs served as a bridge between on-farm changes and broader food system transformation.

WP1 country teams facilitated a shared vision of sustainable food systems, using a <u>vision-to-action (V2A) process</u>. This led to the identification of <u>entry points for co-creating agroecological</u> <u>innovations</u> and the development of action plans on key aspects such as soil health, input use, economic diversification, and sustainable business models. A <u>toolkit</u>, developed with Work Package 5 (WP5), enables external partners to co-create knowledge and innovations with local stakeholders. Thirty innovative practices were tested across ALLs, with WP1 agronomists conducting <u>field assessments to</u> <u>evaluate their impact</u>:

- **Biopesticides**: Reduced fall armyworm incidence by 64 percent in maize, aphids by 56 percent in legumes and 31 percent in cabbage (Kenya).
- **Crop-livestock integration**: Increased maize productivity by 17 percent (Kenya) and groundnut and cowpea (as sole crops) productivity by 23-36 percent (Senegal).
- Crop associations: Boosted farm income (India) and improved groundnut-cowpea productivity by 8-16 percent (Senegal); a

vetch-oats-triticale association yielded 3 t/ha (Tunisia); pushpull technology reduced fall armyworm damage by 22 percent (Zimbabwe).

- **Rhizobial biofertilizer**: Enhanced soil cover by 66 percent and dry matter by 37 percent in Sulla trials (Tunisia).
- **Green fertility**: Increased pregnancy rates in ewes from 68 percent to 89 percent (Tunisia).
- Olive mill wastewater: Boosted olive yield by 37 percent while improving oil quality (Tunisia).

To enhance knowledge-sharing, WP1 launched the <u>International</u> <u>Network of ALLs (INALL)</u> in 2023. Six exchange visits between ALLs and countries facilitated, among other benefits, learning on natural farming, agroforestry and crop-livestock integration, as well as stronger partnerships across countries. These visits enabled FSAs to share innovations and co-develop solutions.

Among the lessons learnt, this WP emphasizes that effective agroecological co-design needs standardized yet flexible frameworks, blending scientific and farmer-driven metrics in monitoring, evaluation and learning systems. Future approaches must integrate multiple scales and innovation types while expanding stakeholder engagement. Key improvements include robust knowledge-sharing, gender inclusion, stronger governance participation, and systematic impact assessment to track climate resilience, economic viability, and ecosystem services.

"A vision-to-action process in each ALL led to the identification of context-specific transition pathways and to the implementation of collectively agreed action plans for achieving the shared vision through collaboration among diverse ALL stakeholders."

Nadia Bergamini, Ecologist and Scientist, Alliance Bioversity-CIAT, and WP1 Lead

### WP2: Evidence-based agroecology assessments

### **RESEARCH QUESTIONS**

- How does adherence to agroecological principles correlate with smallholder household and farm performance across agronomic, economic, environmental and social dimensions of sustainability?
- How can socioeconomic household characteristics explain differing degrees of adherence to agroecology and differences in the agronomic, economic, environmental, and social performance of farming households?
- What biophysical, social, economic, institutional, and individual factors drive farmers to adopt or abandor agroecological farming practices?



### END-OF-INITIATIVE OUTCOME 1

Contextually- relevant agroecological principles applied by farmers and communities across a wide range of contexts and supported by other food system actors by 2024.

### Work Package 2 progress against the theory of change

In all countries and ALLs, Work Package 2 (WP2) assessed the current status of farms (not directly supported by the Initiative), examining their application of agroecological principles and how these related to agronomic, economic, environmental, and social sustainability. It also explored the key factors that may influence farmers' adoption of agroecology, particularly socio-economic variables.

This assessment aimed to help researchers and ALLs actors to identify areas of improvement towards agroecological transitions. For this, the Initiative developed the Holistic Localized Performance Assessment (HOLPA) framework and guidelines to evaluate agroecology across the 11 ALLs. HOLPA consists of three components: (1) a context module describing farm household and landscape conditions; (2) an agroecology principles module; and (3) a performance module using global and locally co-designed indicators to assess outcomes. HOLPA can then be applied to the same communities later to capture changes in indicators that could be associated with efforts to advance the agroecological transitions in these sites. If the work in these ALLs is continued by CGIAR's new Multifunctional Landscapes Program, then the Program can use the results of the first application of HOLPA as a baseline, against which an ex-post impact assessment can be conducted. Key findings from initial data analysis:

- Most farms across seven countries show weak to moderate adherence to agroecology, but are located in areas where its stakeholders are interested in transitioning towards agroecological systems.
- Agroecology enhances biodiversity, climate resilience, nutrition and human well-being.
- It has limited impact on certain performance areas, such as labor productivity, which remains low in all countries.

A knowledge base on impacts of agroecological interventions included the development of a framework <u>for involving citizen</u> <u>science</u> in the assessment of agroecology performance and an interactive data management platform for HOLPA.

### "HOLPA and the evidence it generates will enable communities to see the impact of agroecology on things that matter to them, while also giving investors and other decision-makers a clear picture of agroecology's performance under a wide variety of conditions."

Chris Dickens, Principal Researcher, Sustainable Water infrastructure & Ecosystems (SWIE), International Water Management Institute (IWMI), and WP2 Lead



Based on HOLPA results, FSAs in the ALLs have identified agroecological innovations that are sustainable and enhance resilience and that they consider as an achievement or as being a priority.

### WP3: Inclusive business models and financing strategies

### **RESEARCH QUESTIONS**

- Which agroecological principles are being applied (and how) in current business models and investment modalities?
- How are markets and business models contributing to local food systems through the lens of agroecological principles, including income opportunities for women, youth, and vulnerable community members, and local governance of resources2
- What are the costs and benefits of new or redesigned agroecological business models?
- What financial strategies could support agroecological business models in different contexts?
- How do new or reconfigured business models contribute to the improvement of a business' agroecological and financial performance, compared to its initial stage?



### END-OF-INITIATIVE OUTCOME 1

 Contextually- relevant agroecological principles applied by farmers and communities across a wide range of contexts and supported by other food system actors by 2024.

### Work Package 3 progress against the theory of change

Work Package 3 (WP3) examined how agroecology principles can be integrated into business models that enhance the sustainability of local food systems and create income opportunities for marginalized groups. Researchers evaluated these models on the basis of costs, benefits and financial strategies.

When rural communities transition to agroecology, they often lack market access as well as capital for farming, processing and marketing. To overcome these barriers, they need support not only in the form of capital but also technical capacity, networks and information that can unlock inclusive business models.

WP3 researchers collaborated with enterprises, government agencies, NGOs and small-scale farmers to explore improved business models and financial mechanisms that advance agroecology. For this purpose, they employed value chain analysis, a holistic business model assessment, and business incubation and acceleration programs.

One key result was the development of the <u>Rapid Agroecological</u> <u>Value Chain Analysis</u> (RAVCA) tool, which was applied in Burkina Faso, India, Kenya, Peru, Tunisia and Zimbabwe to assess potential business models for agroecology transitions. In addition, Biovision's Business Agroecology Criteria Tool (<u>B-ACT</u>) was used in Burkina Faso, Kenya, Peru, Tunisia, and Zimbabwe to evaluate agroecological performance and define actions to improve economic and ecological outcomes.

The RAVCA tool revealed opportunities to integrate agroecology into eight value chains across six countries. On this basis, the WP3 teams produced country-specific reports and a <u>global report</u>, highlighting opportunities for service and input provision, market development, and strategies for mitigating trade-offs.

By 2024, WP3 had engaged 202 private companies and various public organizations to improve 12 business models across seven countries and nine ALLs. Successful partnerships include work with NGO Terra Nuova in Peru on BioTrade; partnerships with COTUGRAIN, IO, and INRAT in Tunisia on forage seeds and the olive oil value chain; and sorghum contract farming in Zimbabwe.

Key challenges included high input costs, lack of information, economic and technical constraints, and an absence of standardized agroecology products, among others. Such barriers, while also present in conventional food systems, are even more pronounced in agroecology.

"Following up on the value chain and business model assessments, the Initiative ... support[ed] the implementation of actions aimed at materializing the upgraded business models of 10 local enterprises and farmer organizations, with over USD 200,000 in capital and capacity building."

Carolina González, Thematic Leader, Performance, Innovation and Strategic Analysis for Impact, Alliance Bioversity-CIAT, and WP3 Lead

# WP4: Strengthening the policy and institutional enabling environment

### **RESEARCH QUESTIONS**

- How do current cross-sectoral and multiscale public policies, strategies and programs constrain or enable agroecological transitions or specific principles in targeted contexts and for different types of actors?
- What local institutions and governance structures favor, limit, or impede the application of agroecological principles in agroecosystems and food systems?
- What changes or adjustments to local institutional and governance arrangements are needed to support agroecological transitions?
- What specific changes are needed in public policies or their implementation to overcome bottlenecks to scaling agroecological transitions?
- Who are key policy stakeholders at different administrative levels?
- What political economy factors inhibit agroecological transitions?



### **END-OF-INITIATIVE OUTCOME 1**

 Contextually-relevant agroecological principles applied by farmers and communities across a wide range of contexts and supported by other food system actors by 2024.

### Work Package 4 progress against the theory of change

Work Package 4 (WP4) explored the extent to which current policies and programs support or hinder agroecology transitions. This WP also examined local institutions and governance structures to determine their role in advancing agroecology transitions. Researchers further considered the extent to which political economy factors, such as power dynamics and resource allocation, can inhibit these transitions.

Engaging over 418 policymakers, WP4 supported action through engagement with local institutions and governance actors. National and regional authorities played a crucial role in this process, resulting in recommendations and action plans to support policy and institutional changes.

In 2022, WP4 developed the agroecology <u>policy tracker tool</u> to assess progress towards policy milestones in target countries and ALLs. Initial assessments in India, Peru, Tunisia and Zimbabwe revealed imbalances and inadequate policy coordination in support of agroecology. Further analysis in 2023 identified barriers to agroecology-friendly policies and highlighted contradictions in current policies. Notable exceptions include India and Senegal, which actively promote organic inputs.

Kenya's National Agroecology Strategy was formulated through wide consultation with stakeholders, spearheaded by the Inter-Sectoral Forum on Agroecology and Agrobiodiversity (ISFAA), an agroecologyfocused national multi-stakeholder platform hosted at the Ministry of Agriculture, with whom the Initiative partnered. This Strategy paves the way for its implementation at national and county levels. In Tunisia, WP4 participated in policy dialogues on soil conservation, incorporating innovations into the National Plan for Feed and Forage Investment. Peru's Ucayali region offers a case study on policy initiatives aimed at fostering agroecology, including the development of a Regional Strategy for the Promotion of BioTrade and an action plan.

The Initiative identified political economy as a key research area to foster agroecology transitions, with recommendations and publications planned for 2025.

A global review addressed how the ALLs contribute to the governance of agroecology transitions and facilitate collective action to address challenges in territorial food systems. Preliminary findings indicate that ALLs build on various alliances and on multiple types of innovations connecting multistakeholder processes at the local, municipal and regional levels, each of which has its own governance framework and division of responsibilities among stakeholders under common goals. In addition, the ALLs provide an intermediary level between the farm and farming system, referred to as the landscape, which enhances collective action to achieve both local and systemic changes.

"Not only are enabling policies and institutions vital for agroecology transitions, but it is now commonly understood that the use and impact of technological innovations also depend greatly on a conducive policy environment and ... the right approaches for tackling barriers to policy reform and implementation."

Frank Place, Senior Advisor, International Policy Research Institute (IFPRI), and WP4 Lead

# WP5: Understanding and influencing agency and behavior change

### **RESEARCH QUESTIONS**

- How have past initiatives approached agency and behavior of food system actors? Which approaches supported initiative aims? What improvements could be made to ensure factors shaping agency and behavior are effectively accounted for and addressed in future initiatives?
- What are the different experiences of diverse ALL participants in their local agroecological transition? How have their agency and behaviors changed as a result?
- Do the roles of agroecological science, practice, and social movements differ across the ALLs?
- Can agroecology align with and support the aspirations of rural youth? What (gendered) challenges and opportunities do youth perceive for developing their rural-agroecological livelihoods?

### DUTPUTS

- Key lessons on change processes identified Review agroecological research (science), practice, and social movements in each ALL country to identify: 1) successes and failures in shifting agency and behaviors towards agroecological transitions; 2) key lessons on change processes to drive agroecological transitions.
   Lessons on agency and behavior change of individuals identified – Working across various actor groups within
- Key interface and institutional reconfigurations that support local agroecological innovation identified and disseminated to agricultural innovation researchers, practitioners, and producer organizations (through WP4).
- 26 Innovation opportunities for cooperative decision-making and widespread behavior change identified.
  - Lessons drawn from analysis of the relations between rural youth in low and middle income countries (LMICs) and agroecological transitions.
- 27 All theories of change knowledge incorporated in ALL theories of change based on an iterative reflection process. Periodic review and update of the ALL ToC to account for new knowledge gained through ALL activities on collective decision-making, power asymmetries, and key drivers and determinants of individuals' agency and behavior change.
- 28 · Key roles of agroecological science, practices, and social 29 movements in enabling agency and behavior change to support agroecological transitions identified, synthesized across ALLs, and incorporated into strategies and investment plans (developed in WP3 and WP4).

# Scientists, funders, policymakers, business partners, adjust their strategies and action padies based on knowledge gained from scientific studies underpinning behavioral change mechanisms and capacities of farmers, business partners, and consumers to implement agroecological transformation.

### **END-OF-INITIATIVE OUTCOME 1**

7 Contextually- relevant agroecological principles applied by farmers and communities across a wide range of contexts and supported by other food system actors by 2024.

### Work Package 5 progress against the theory of change

Work Package 5 (WP5) examined how past projects and experiences have affected FSAs and what can be done to improve future approaches. Its research focused particularly on how the agency and behavior of ALL participants evolves in agroecology transitions; on differences between ALLs in terms of science, practice and social movements; and on agroecology's response to the aspirations of rural youth and to the gendered challenges they face.

The Initiative pursued a systems transformation approach, emphasizing the behavior and agency of diverse FSAs and the conditions that enable or impede change. WP5 researchers developed the <u>ACT framework</u>, which integrates insights from multiple disciplines to examine the roles and experiences of various actors, including women and youth, in transforming agrifood systems. This framework highlights the importance of understanding diverse actors, issues of inequality and marginalization, and actors' opportunities for change and the effects of their actions on food systems.

Findings from a <u>review of agroecology initiatives in five countries</u> revealed that these initiatives often target individual factors shaping producers' behaviors, such as knowledge, while paying less attention to elements such as infrastructure and social norms. This research underscores the need for more critical design, implementation and assessment of factors shaping behavior change in agroecology initiatives – particularly those involving a wide range of actors to develop a shared vision and strengthen agency and innovation capacity.

In 2024, WP5 completed an additional study in five countries on the agency and experiences of ALL farmers and other actors in agricultural transitions. In Zimbabwe, government and international NGOs have led decision-making, with traditional leaders losing power and farmers having limited agency. In Peru, social movements have supported agroecology transitions, leading to legislative changes promoting organic production and family farming. In Tunisia, the behavior of farmers and the designers of initiatives has shifted from technology adoption models to the co-creation of knowledge on sustainable practices. In total, 11 strategies or actions plans have been adjusted at the ALL level using the framework.

"The ACT framework we developed can help initiatives shift from linear approaches to behavior change to a systems perspective. By recognizing and addressing the diversity of food system actors and their opportunities for innovation and change, initiatives can more effectively contribute to agroecology transitions."

Sarah Freed, Applied Scientist, Human and Ecosystem Well-being, Alliance Bioversity-CIAT, and WP5 Lead.

# The Agroecology Transition: Outcomes of colla

In each country, the Agroecology Initiative concentrated on one or two distinct territories referred to as "agroecological living landscapes" (ALLs), where it engaged with food system actors and partners in a visionto-action process. The results achieved in the eight target countries and 11 ALLs reflect the ecological, social



- Farmers manage cacao diseases using low-cost traditional methods and agroecological practices.
- Cooperatives apply insights from experimental plots to refine their technology packages.
- Cacao farmers gain hands-on experience with bioinput efficiency in experimental plots and explore food production diversification through home garden models.
- With Initiative support, a Regional Technical Commission on Biotrade has developed a strategic plan to promote Amazon biodiversity-based products aligned with agroecological principles. Additionally, the Participatory Guarantee System Regional Council has been established to support organic certification and commercialization.
- Farmers adopting fodder crops saw increased livestock productivity.
- A business model was co-designed, using an agency and behavioral change framework developed by the Initiative, to strengthen dairy value chains via milk collection centers.
- Dairy processing units began using fresh milk and natural yogurt flavorings.
- The initiative expanded an existing dairy innovation platform, involving new actors and dairy products.

# porative research in eight countries



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and economic dimensions of the agroecological principles. While not yet delivering results at scale, each ALL has created a solid foundation for scaling agroecological innovations from farms to landscapes with regional and national policy support.

# India Andhra Pradesh & Madhya Pradesh

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### Outcomes

- The market links of women's groups for groundnut sales have been strengthened.
- Local stakeholders, recognizing the role of youth in driving change, are committed to their inclusion in agroecological transitions.
- Farmers adopted agroecological practices, leading to increased incomes and crop diversification as well as greater resilience.
- Farmers testing crop associations have seen higher productivity and greater sustainability.
- Farmers adopting the Agroecological Homestead Farming model have reported more diverse income sources with tangible economic benefits.

### Lao PDR Attapeu Province

### Outcomes

- Farmers using solar-powered groundwater irrigation can now access groundwater reliably for domestic use and climate-resilient farming.
- Farmers are boosting productivity, resilience and incomes through rice field fisheries.
- More diverse paddy rice crops have enhanced sustainability
- In Nong Lom Wetlands, a 2024-2029 management plan has been co-developed to sustain fishing and farming. Local fishers, farmers and NGOs are collaborating with government agencies to improve wetland management, based on better knowledge and skills for sustainable agriculture and fishing.

Zimbabwe Murehwa & Mbire

### Исіммут 🕫 生 🐞 🗛 РТ

### Outcomes

- Farmers have adopted agroecological practices such as soil-water conservation, biopesticides and natural fertilizers.
- The introduction of mechanization and contract farming reduced labor costs.
  Stakeholders have engaged elders, women and youth to drive change,
- including a shift in gender norms for mechanization.
- Mechanisms such as microfinance and digital financing have supported agroecological innovation.
- Focusing on the poultry value chain, stakeholders have fostered partnerships among investors, NGOs and farmers. Farmers in Murehwa adopted Sasso poultry production, which has boosted incomes and dietary diversity.

### Kenya Kiambu & Makueni

# Suitcomes

- Under the leadership of the ALL host centers DNRC and CSHEP and with local
  partners, farmers adopted a variety of agroecological practices: improved land
  use planning, vermicomposting, biopesticides, soil-water conservation and
  local organic inputs, leading to improved soil health, increased productivity
  and income.
- DNRC and CSHEP have gained visibility nationally and internationally as key
  players in agroecology and have expanded their knowledge capacity-building
  efforts to several hundreds of farmers in each ALL.
- Actors in both ALLs describe strengthened interactions and dynamics between actors at the local level: farmers, input providers, local government, and the host centers.
- Companies participating in the Ukama Ustawi Accelerator trained farmers for vermicompost production and commercialization in Kiambu, and enhanced frass fertilizer recycling in Makueni.
- The Initiative has informed policy recommendations aimed at fostering investment in market linkages, advisory services and youth engagement, and contributed to the formulation and launch of Kenya's National Agroecology Strategy.

level using the framework.

WORK PACKAGE	PROGRESS RATING & RATIONALE
1	On track The Initiative engaged more than 11,400 FSAs in 11 ALLs and eight countries, identifying the best entry points for desired agroecology transition pathways. Thirty context-specific agroecological innovations were co-designed, tested and evaluated. The International Network of Agroecological Living Landscapes (INALL) was launched to promote cross-border knowledge sharing, aimed at expanding the impact of agroecology principles and practices.
2	<b>Contrack</b> Each country produced science-based assessments of the agroecological context of the ALLs, highlighting their remarkable biophysical and socio-cultural diversity. A HOLPA framework, including localized indicators, was validated with stakeholders and applied in eight ALLs. HOLPA data was collected from 1,979 farm households in eight countries. The assessment results were shared with stakeholders, leading to the initial identification of priorities for agroecology transitions in eight ALLs.
3	Contract Value chain analyses were conducted to identify constraints and leverage points for the adoption of practices and business models that show potential to achieve agroecology transitions. Twelve business models were created with partners, and financial mechanisms were assessed that can facilitate the transition towards agroecology. The Initiative developed an incubator/accelerator scheme that provides financial and technical assistance to 10 enterprises and producer organizations. Nine investment cases were developed and 12 cost-benefit analyses conducted, creating the necessary conditions to pursue profitable innovative business models with private and public investors.
4	On track The Initiative identified opportunities to make policy recommendations, while strengthening local institutions and governance mechanisms, and pursued these opportunities in seven countries. Advances in policy formulation and adoption are evident in Kenya, Lao PDR and Peru, and institutional strengthening is advancing in Kenya, Tunisia, Peru, Burkina Faso and Senegal.
5	On track Country teams reviewed previous initiatives in five countries to gain a better understanding of how best to foster opportunities for individuals and groups to shift their agency and behavior towards agroecology transitions. On this basis, a framework was developed to identify entry points for agency and behavior change in agrifood system transformation. In addition, rural youth in five countries were engaged in a participatory study of fostering opportunities for youth in agroecology transitions in low- and middle-income countries. In total, 11 strategies or actions plans were adjusted at the ALL



# Section 4: Quantitative overview of key results

This section provides an overview of results reported and contributed to, by the CGIAR Initiative on Agroecology from 2022 to 2024. These results align with the <u>CGIAR Results Framework</u> and Agroecology's theory of change. Further information on these results is available through the <u>CGIAR Results Dashboard</u>.

The data used to create the graphics in this section were sourced from the CGIAR Results Dashboard on April 4, 2025. These results are accurate as of this date and may differ from information in previous Technical Reports. Such differences may be due to data updates throughout the reporting year, revisions to previously reported results, or updates to the theory of change.

### OVERVIEW OF RESULTS BY CATEGORY



Over three years, the Initiative reported 731 results, of which 78 were contributions to other Initiatives. Through 175 capacity-sharing activities, 12,623 individuals received training and participated in knowledge exchange. Knowledge products comprise mainly country and synthesis reports. Twenty-five journal articles were published with many more to come in 2025. The Burkina Faso country team produced 82 results, India 96, Kenya 129, Lao PDR 64, Peru 101, Senegal 73, Tunisia 184 and Zimbabwe 117.



### NUMBER OF RESULTS BY IMPACT AREA CONTRIBUTION

• **2 = Principal:** Contributing to one or more aspects of the Impact Area is the principal objective of the result. The Impact Area is fundamental to the design of the activity leading to the result; the activity would not have been undertaken without this objective.

• 1 = Significant: The result directly contributes to one or more aspects of the Impact Area. However, contributing to the Impact Area is not the principal objective of the result.

• **0 = Not targeted:** The result has been screened against the Impact Area, but it has not been found to directly contribute to any aspect of the Impact Area as it is outlined in the <u>CGIAR 2030 Research and Innovation</u> strategy.

• Not applicable: Pertains to 2022 reported results when only information on Gender and Climate impact area tagging was available.

### **INNOVATIONS BY TYPOLOGY**



The Initiative reported 47 innovation development results; 28 for WP1 – development of transition pathways with stakeholders and agrobiodiversity innovations; four for WP2 – assessment frameworks; eight for WP3 – business models and financial mechanism developments; three for WP4 – policy and institutional innovations; and three for WP5 – behavioral change and social inclusion innovations.

WP	INDICATOR	TARGET	ACHIEVED
WP1	Number of FSAs engaged in the co-creation of agroecological innovations (farmers, private companies, researchers and policymakers)	5,800	11,405
WP2	Number of uptakes of science-based assessments by farmer communities to implement AE innovations	14	10
	Number of uptakes of science-based assessments by stakeholders for institutional priority setting	20	10
WP3	Number of strategic business partnerships linking agroecological innovations to markets established and functioning	7	8
	Business models and financial mechanisms that support agroecological innovations co-designed with or adapted by investors, the public sector and farmer organizations	2	2
WP4	Number of recommendations co-developed to achieve horizontal (across sectors), and vertical (across scales) policy integration required to mainstream agroecology principles	4	4
	Number of local institutions and governance mechanisms to better support agroecology transitions in each ALL adjusted	4	8
WP5	Number of strategies or action plans adjusted	7	11

Building food systems that provide healthy diets, based on local resources, food culture, gender equity: the case of fresh milk processing in Burkina Faso. Photo Credit: E. Vall, CIRAD

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### AGROECOLOGY'S NETWORK OF EXTERNAL PARTNERS BY TYPE

Network of Agroecology partners by partner type 2022-2024, including the top eight institutions by type. Data extracted from the <u>CGIAR Results Dashboard</u> on 10 March, 2025.

### Partnerships and Agroecology's impact pathways

The Initiative's partners played key roles in the co-design, technical development, implementation and scaling of activities. A variety of organizations figured among the Initiative's partners, including farmers associations, multistakeholder platforms, national and local governments, research organizations and universities.

Researchers, farmers and other stakeholders from more than 362 organizations collaborated with the Initiative during its three years, with a total of 70 organizations formally considered as partners. Formal partners included eight CGIAR Centers, two international research centers (CIRAD and CIFOR-ICRAF), 24 local or national implementing partners, and 18 scaling partners in the target countries. Those partnerships involved 13 national agricultural research and extension systems (NARES), 14 NGOs, 13 government bodies, five platforms or agricultural networks, four farmer associations, and seven private companies.

To start the transition towards CGIAR's Multifunctional Landscapes Science Program, which will begin in 2025, the Initiative held a partner forum, in which participants shared their perspectives on collaborative achievements. All agreed on the need to adopt a scaling approach that involves more stakeholders and users at the subnational and national levels.

PARTNERS	COUNTRY	FOCUS OF THE PARTNERSHP	ACHIEVEMENTS PERCEIVED BY PARTNERS
Centre International de Recherche-	Burkina Faso	Enhancing the dairy sector in Bobo-Dioulasso	<ul> <li>Farmers: Increased fodder production, cost savings on feed and production of quality organic manure.</li> </ul>
Développement sur l'Elevage en zone Subhumide ( <u>CIRDES</u> )			<ul> <li>Collectors: Improved collaboration across the milk value chain and increased milk collection.</li> </ul>
			<ul> <li>Processors: Diversified dairy products with natural flavors and new packaging.</li> </ul>
Professional Assistance for Development Action	India	Agroecology prototypes and irrigation systems	<ul> <li>Crop diversity increased by 350 percent and income per unit of land by 500 percent.</li> </ul>
( <u>PRADAN</u> )			<ul> <li>Consumption of diversified crops, particularly green leafy vegetables, increased by 150 percent.</li> </ul>
			<ul> <li>Women were empowered through water user groups and sustainable aquatic production systems.</li> </ul>
			• Government support increased for agroecological practices.
Dynamique pour une Transition Agroécologique au Sénégal ( <u>DyTAES</u> )	Senegal	Agroecology prototypes and irrigation systems	Agroecology was integrated into municipal development plans.
			<ul> <li>Agroecological intensification in the dairy and millet sectors was strengthened.</li> </ul>
Institut National de la Recherche Agronomique	Tunisia	Advanced agroecology transitions in the semi-arid zone of Northwest Tunisia	<ul> <li>About 120 farm trials and demonstration plots were established on 125 ha of rainfed farming systems.</li> </ul>
de Tunisie ( <u>INRAT</u> )			• About 105 people saw direct benefits, with women representing 40 percent of the 1,200 actors engaged.
			• About 109 knowledge products were generated, providing actionable, evidence-based solutions for end-users, including scientists, rural practitioners and policymakers.
Agricultural Partnership Trust ( <u>ATP</u> )	Zimbabwe	Sorghum and chicken value chains	<ul> <li>Murehwa: Sustainable Sasso chicken business models were adopted, with potential for scaling via mobile apps.</li> </ul>
			<ul> <li>Mbire: Red sorghum production expanded to meet high demand, with plans for post-drought recovery.</li> </ul>
			<ul> <li>Financing models were identified for farmers and private-sector partnerships to enhance scalability</li> </ul>

An online survey of implementing partners in November 2024 revealed that most are satisfied with the roles they play. A total of 33 respondents from seven countries participated, with the majority representing NGOs, NARES and international research organizations.

Partners expressed satisfaction with the strengthened capacity they gained from all Work Packages, particularly through their participation in the vision-to-action process, in the co-design and testing of innovations, in knowledge exchange between ALLs, in the development of agroecological business plans, and in the development of agroecological strategies and policies. Partners also responded positively to the Initiative's emphasis on respectful interactions and relationship building, and on recognizing partners' strengths and ideas.

To further improve the collaboration, partners suggested extending the project duration for lasting impact, timely planning with partners, efficient contracting and fund disbursement, increased support for on-site activities, more training and field support, and greater focus on scaling.

Partners acknowledged the importance of incorporating agroecology principles into both technical and non-technical innovations, and they appreciated the researchers' supporting role in co-creating these innovations, with emphasis on mutual learning.

# DURING THE PARTNER FORUM, PARTNERS SHARED KEY MESSAGES

"We currently work with 960 households, impacting approximately 5,760 people in the drylands of Makueni County. Our success lies in aspects such as strong relationships and co-creation. We see room for improvement in areas like early communication for planning, providing feedback and ensuring written materials – translated into the local language – reach all farmers."



Nicholas Syano, CEO and Founder of the Drylands Natural Resources Centre (DNRC), Kenya



Lanoy Sinavong, Head of Project Management and Consolidation in the Division of Planning and Cooperation at NAFRI, Lao PDR.

"Our 15-year partnership with IWMI has been pivotal. In 2022, this collaboration opened doors to working with the Laos government and facilitated a significant interprovincial consultation process. The HOLPA tool has been especially valuable, alongside peer-to-peer learning exchanges on agroecology."



Carlos Pérez, Manager of Banaqui Curimaná, Peru

"Our cooperative, made up of 71 cocoa-producing families, is committed to sustainable, highquality cocoa production.

Since 2020, our work with the Initiative has strengthened efforts in biofertilizers, pest control and youth integration in cooperative decisionmaking."

"Collective action is essential for addressing critical questions on agroecology transitions and for developing business models that incorporate the 13 agroecology principles. TPP's commitment to collaboration with the CGIAR underscores its dedication to working together for a transformative future."



Matthias Geck, Coordinator of the Transformative Partnership Platform on Agroecology (CIFOR-ICRAF)

Partners from DNRC, NAFRI, Banaqui Curimaná and TPP shared their experience in short presentations, expressing key messages during the partner forum.

Mango harvest in Senegal Photo Credit: R. Belmin, CIRAD Constant and

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### AGROECOLOGY'S INTERNAL NETWORK OF COLLABORATIONS

The diagram presents the internal collaborations of Agroecology Initiative with other CGIAR Initiatives, Impact Area Platforms. Connections are sized according to the number of shared reported results, highlighting the depth of collaboration across the CGIAR Portfolio.

A results threshold filter is applied (set to a minimum of three results) to focus the view on the most significant collaborations. Thicker lines represent stronger collaborative links based on a higher number of shared results.

# Portfolio linkages and Agroecology's impact pathways

The Agroecology Initiative fostered Portfolio linkages with various CGIAR Research Initiatives and projects to exchange knowledge, conduct research and address socio-political issues. Cross-cutting collaboration covered such topics as institutional pathways for agricultural diversification, impact evaluations and agroecological incentives. As shown in the illustration, Agroecology had its strongest linkages with four Initiatives, leading to numerous results: Livestock and Climate (45), Nature Positive Solutions (28), Nexus Gains (23), Low-Emission Food Systems (21), Fragility, Conflict and Migration (21), and Diversification in East and Southern Africa (20).

With other Initiatives, Agroecology co-produced 88 outputs (including 11 innovations) and eight outcomes. Portfolio linkages led to successful collaboration in various countries, as demonstrated below with two examples.

# Strengthening agroecological capacities in Lao PDR with the Initiative on National Policies and Strategies

In Lao PDR, farmers and extension workers involved with the ALL in Attapeu province have significantly strengthened their capacities to drive agroecology transitions. This outcome was achieved in collaboration with the Initiative on National Policies and Strategies (NPS), which facilitated learning visits for senior officials from the Ministry of Agriculture and Forestry (MAF) and the National Policy Think Tank Network. Through research, training, workshops and visits, farmers and extension staff from the District Agriculture and Forestry Office (DAFO) and Provincial Agriculture and Forestry Office (PAFO) deepened their understanding of agroecological practices.

This was particularly relevant for innovations related to farmermanaged solar-powered irrigation that were tested in the ALL of Attapeu province. The benefits were as follows: (1) environmental – wells addressed climate variability, supporting rainfed agriculture during droughts; (2) social – reliable water access improved domestic use and irrigation, reducing the burden on women and strengthening community governance; and (3) economic – solar-powered systems eliminated electricity costs, providing a cost-effective solution. Year-round vegetable farming enhanced food security and economic stability.

At the annual stakeholder forum of the Sub-sector Working Group on Irrigation (SSWG-IR), the results of this innovation were presented and discussed. The event is organized by the Department of Irrigation (DOI) under MAF, with financial support from the Asian Development Bank (ADB) through the International Water Management Institute (IWMI). The intervention showcased the co-design of small-scale solar-powered irrigation, with communities and authorities participating fully to ensure effective water use. The initiative gained significant attention from forum participants, including international organizations and the Lao Government.

# Driving forage crop adoption and public-private partnerships in Tunisia with the Initiative on Livestock and Climate

The ALL in the Kef-Siliana region of northern Tunisia has emerged as a driving force for sustainable agricultural transformation. The cultivation, valorization and use of forage crops and mixtures has significantly improved livestock feeding, while restoring soil health. Co-testing and demonstration of innovative practices has boosted demand for forage crops, leading to increased engagement with private seed companies eager to scale these solutions.

A key achievement of the Agroecology Initiative was the formation of dynamic public-private partnerships. Notably, collaboration between COTUGRAIN, a private seed society, and INRAT created new economic opportunities for farmers. Under a contract with the private sector, they can now produce high-quality forage seeds, with technical support from agencies such as the Tunisian Bureau of Livestock and Pastures (OEP). This partnership not only ensures forage sustainability but also enhances resilience in farming systems. ICARDA's efforts in Tunisia and other regions have strengthened connections between the Agroecology and Livestock and Climate Initiatives. Concepts and innovations from each Initiative supported the work of the other (the two operate at different sites in Tunisia), and both addressed such topics as living landscapes, feed value chains and forage seeds systems. This collaboration resulted in a national roadmap for OEP to enhance livestock feed resources, with the promotion of forage seeds and mixtures serving as a pivotal component. The ALL concept has been replicated in pastoral areas of southern Tunisia, where the Livestock and Climate Initiative operates. Furthermore, the joint efforts of both Initiatives with OEP and the Forestry Department (DGF) have prompted OEP to invest in a rhizobium unit to promote Sulla and other legume forages and crops. Some of the forages tested are also tested at the pastoral site of the Livestock and Climate Initiative.

Supported by bilateral funders, such as the Gates Foundation, and the International Fund for Agricultural Development, this outcome aligns with broader efforts to enhance livestock, climate adaptation and system resilience. By fostering innovation and strengthening partnerships, Kef-Siliana is setting a precedent for sustainable agricultural practices in Tunisia and beyond.



Solar-powered irrigation field in the ALL of Attapeu Province, Lao PDR. Photo Credit: IWMI

# The power of co-design for agroecological innovation

Using a systems approach, the Agroecology Initiative and its partners empowered farmers, researchers and policymakers in eight countries to lead their agroecology transitions.



Primary Impact Area



**Other relevant Impact Areas targeted** 



Contributing Initiative

### Agroecology

Contributing Centers

ICRAF  $\cdot$  Alliance of Bioversity and CIAT- Headquarter and Regional Hub  $\cdot$  CIFOR  $\cdot$  CIMMYT  $\cdot$  CIP  $\cdot$  ICARDA  $\cdot$  IFPRI  $\cdot$  IITA  $\cdot$  IWMI  $\cdot$  WorldFish

**Contributing external partners** 

APT · BHT · CIRAD · Partner N · CIRDES · CSHEP · DNRC · GRU Peru · INERA Burkina Faso · INRAT · ISRA · IRESA · NAFRI · PELUM Kenya

Geographic scope



**Countries:** Burkina Faso · India · Kenya · Lao People's Democratic Republic · Peru · Senegal · Tunisia · Zimbabwe In a concerted effort to remove barriers preventing a more environmentally friendly agriculture, focused on sustainability and inclusiveness, the Agroecology Initiative successfully pursued an integrated systems approach based on the co-design of agroecological innovations on a large scale in agrifood systems. A key lesson learned from this work with 11,400 food system actors in eight countries is that co-designing innovations offers a powerful means to drive agroecology transitions that benefit value chain actors, researchers, policymakers and other stakeholders.

If current patterns of unsustainable production and consumption persist, global food production will have to increase by as much as 70 percent to feed a global population of 9.8 billion people by 2050, extensively damaging ecosystems and biodiversity. The Initiative co-created solutions with rural communities and wider societies by adopting an integrated research approach that went far beyond individual innovations applied in a piecemeal fashion. Co-design figured importantly in all of the Initiative's work, encompassing engagement, the vision-to-action process, development and testing of innovations, and performance assessment.

### Vision to action: Designing a better future

Co-design brought together stakeholders to examine current practices and jointly test selected innovations. The starting point was a vision-to-action process implemented in the 11 Agroecology Living Landscapes (ALLs) that the Initiative delineated in eight countries. Stakeholders created a shared vision of a desirable future and collectively developed, monitored and evaluated an action plan for pursuing pathways to an agroecology transition.

### **Evidence of change**

Evidence for the effectiveness of co-design comes from various performance assessments: (1) an initial application of the Initiative's Holistic Performance Assessment (HOLPA) framework; (2) an analysis of the agronomic performance of agroecological innovations; (3) participatory and qualitative outcome identification workshops with stakeholders in five countries; and (4) a qualitative outcome evidencing process in three countries.

These assessments documented positive changes in the behavior of farmers, researchers and policymakers, leading to stronger collaboration and higher adoption of innovations, with positive results in crop yield, input reduction, soil health and income. These changes attest to a genuine though incipient shift towards a more environmentally friendly agriculture that is sustainable and inclusive, and was evident in all aspects of the Initiative's integrated systems approach, as described below.

### Co-creating innovative practices

Between 2022 and 2024, more than 11,400 food system actors engaged in co-creating agroecological innovations in eight countries. In Kenya's Makueni County, farmers participating in the co-design of agroecological practices reduced their production costs by using locally available inputs; they also increased crop yields and adopted more sustainable pest management practices. In Mandla, India, an integrated farming model rooted in agroecology principles and nature-based management improved agrobiodiversity, dietary diversity and income among tribal communities, particularly women, with training in bio-inputs, residue recycling and diversified cropping playing a crucial role.

### Assessing the performance of agroecology

The Initiative's HOLPA framework generated evidence on the performance of agroecological innovations on farms and in agricultural landscapes. Like the Initiative's work as a whole, its assessment efforts were participatory, including the selection of indicators that reflect local interests and aspirations. Initial HOLPA results were widely discussed with food system actors in the ALLs. In Burkina Faso, for example, farmers gradually decreased the use of livestock feed concentrates and mineral fertilizers in favor of environmentally friendly methods (fodders and manure), while Senegal has prioritized the use of participatory methods and agroecology policy integration.

### Linking agroecological innovations to markets

Food system actors co-designed business models and financial mechanisms that support agroecological innovations. In Zimbabwe, for example, these include partnerships of investors, private companies, NGOs and farmers to co-create poultry and sorghum business models that link agroecological innovations to markets and investment. In the Peruvian Amazon, co-creation of the Participatory Guarantee System Regional Council of Ucayali has paved the way for certification of regional organic products and their commercialization in national markets.

### **Policy integration**

The co-design approach also influenced policy and institutional change. In Peru, a coalition of stakeholders, including government agencies, NGOs and producer groups, formed an advocacy group to promote agroecology in Ucayali region, which has strengthened members' capacity to better coordinate with key national actors in the agroecology transition. Local communities in Lao PDR's Nong Lom Wetlands have co-developed a wetland management plan to make fishing and cash cropping more sustainable.

### A prominent role for women and youth

Women and youth figured importantly in the changes associated with co-creation. In Zimbabwe, national researchers have taken up results on farmer agency and are now increasing women and youth's participation and leadership in ALL activities. The Initiative's efforts to promote knowledge exchange with youth in India's Madhya Pradesh state prompted local stakeholders to include youth in agroecology transitions, recognizing their role in driving change.

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The Initiative was a new experience for us. Before, when I found a good practice or innovation, I'd pass it on to the farmer but with little success. With AEI, we started with the farmer, holding co-design meetings that brought everyone together – researchers, farmers, development organizations, etc. Now, it's the farmer who looks for innovation.

Tunisian INRAT researcher



2022 key result story

Strength from diversity in agroecological transitions



2023 key result story

What's behind Tunisia's rapid agroecology transition?





Photo Credit: E. Ramirez, CIAT