



CGIAR Research Initiative on **Agroecology**

Annual Technical Report 2023

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This publication has been prepared as an output of the CGIAR Research Initiative on Agroecology. Any views and opinions expressed in this publication are those of the author(s) and are not necessarily representative of or endorsed by the CGIAR System Organization.

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CGIAR Technical Reporting 2023

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

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



The CGIAR Technical Report comprises:

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

Section 1: Fact sheet 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	01/01/2022 - 31/12/2024	
Geographic scope	Regions Central and West Asia and North Africa \cdot East and Southern Africa \cdot Latin America and the Caribbean \cdot South Asia \cdot Southeast Asia and the Pacific \cdot West and Central Africa	
	Countries Burkina Faso · India · Kenya · Lao People's Democratic Republic · Peru · Senegal · Tunisia · Zimbabwe	
OECD DAC Climate marker adaptation score ¹	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 ¹	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.	PRO
OECD DAC Gender equity marker score ²	Score 1A: Gender accomodative/aware Gender equality is an objective, but not the main one. The Initiative/project includes at least two explicit gender specific outputs and (adequate) funding and resources are available. Data and indicators are disaggregated by gender and analyzed to explain potential gender variations and inequalities.	АРРГ
Website link	https://www.cgiar.org/initiative/agroecology/	¹ The a
¹ The Organisation for Eq for Climate and the genu	conomic Co-operation and Development (OECD) Development Assistance Committee (DAC) markers refer to the OECD DAC <u>Rio Markers</u> der equality policy marker. For climate adaptation and mitigation, scores are: 0 = Not targeted; 1 = Significant; and 2 = Principal.	³ This a
² The CGIAR Gender Imp 0 = Not targeted; 1A = G These scores are derived	bact Platform has adapted the OECD gender marker, splitting the 1 score into 1A and 1B. For gender equality, scores are: Sender accommodative/aware; 1B = Gender responsive; and 2 = Principal. d from <u>Initiative proposals</u> , and refer to the score given to the Initiative overall based on their proposal.	

EXECUTIVE SUMMARY

In 2023, the CGIAR Research Initiative on Agroecology amply demonstrated the value of the foundation it established in 2022 for developing and evaluating agroecology innovations under diverse conditions. In 11 distinct territories, referred to as Agroecology Living Landscapes (ALLs), and eight countries, the analyses of prevailing conditions and an engagement process with 6,159 food system actors informed participatory selection of entry points for agroecology transitions. These territories are now part of the International Network of ALLs (INALL), launched through an exchange visit in Andra Pradesh, India.

To evaluate the context-specific performance of agroecology, the Initiative developed a holistic framework for generating evidence across scales and at distinct stages in agroecology transitions, and comprehensive data collection and analysis are underway. Ongoing research deals additionally with on-farm practices, business models and financial mechanisms for agroecological value chains, policy and institutional innovations, and behavior change. Results from rapid value chain analyses helped identify opportunities for integrating agroecological principles into eight value chains in six countries. Partnerships to co-develop agroecological business models have been forged in Peru (cacao), Tunisia (olive oil), and Zimbabwe (sorghum and poultry). The Initiative has engaged with policy actors across sectors and significantly improved the knowledge base on policy issues. Analysis completed in five countries identified first opportunities to strengthen policies and institutions in Kenya, Tunisia, Burkina Faso, and Peru. Five countries (Burkina Faso, Peru, Kenya, Tunisia, and Zimbabwe) have undertaken substantial behavior change research on enablers and barriers, resulting in context-specific strategies and action plans.

In 2023, the Initiative reported 233 results, of which 16 related to innovation development, five to innovation use, three to policy change, and 105 were knowledge products (Source: data available in the CGIAR Results Dashboard, 6 March, 2024). In 72 capacity-sharing activities, 766 participants - the majority of whom were women (462) - mostly focused on agroecology practices selected by ALL members.

Impact assessment employs quantitative and qualitative methods to evaluate how the Initiative fosters agroecology principles through the development and adoption of innovations. Three baseline surveys (in Peru, Tunisia, and India) are providing important information on the adoption of agroecology practices.

Partnerships were forged with 67 partners – including eight CGIAR Centers, two international research centers – the French Agricultural Research Centre for International Development (CIRAD) and the Center for International Forestry Research (CIFOR)–World Forestry (ICRAF) – 24 implementing partners, and 18 scaling partners. The Initiative works closely with national agricultural research systems (NARS) in almost all countries, with innovations and outcomes in Kenya, Peru, and Tunisia.

The Initiative's CGIAR Portfolio linkages (with the CGIAR Research Initiatives on Nature-Positive Solutions, Low-Emission Food Systems, Livestock and Climate, and Diversification in East and Southern Africa, as well as bilateral programs and international platforms) demonstrate how agroecology is gaining attention among partners and donors and how the Initiative's teams go beyond the farm level to address agroecology's socio-political dimensions.

This year's key result story highlights Tunisia, which has embarked on a holistic agroecology transition aimed at enhancing climate resilience. New public-private partnerships are boosting production and sale of forage seed, enabling hundreds of farmers to increase animal productivity through better feed, while enhancing soil health. Other new technologies, like small machinery for seed cleaning, have been co-designed and are being piloted with farmers. A novel business model that shifts from traditional to organically labeled olive oil promises important environmental and economic gains.

	2022	2023	2024
PROPOSAL BUDGET 🛛 Þ	\$9.00M	\$11.70M	\$12.30M
APPROVED BUDGET ¹ >	\$6.76M	\$11.04M ²	\$9.06M ³

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

amount includes carry-over and commitments.

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



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

Initiative-level theory of change diagram

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

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

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







Summary of progress against the theory of change

In 2023, the Initiative amply demonstrated the value of the foundation it established in 2022 for developing and evaluating agroecology innovations under diverse conditions. This consists of 11 distinct territories, referred to as Agroecology Living Landscapes (ALLs), in eight countries (with the addition of Senegal) as well as analyses of prevailing conditions and promising opportunities which have informed participatory selection of entry points for the agroecology transition.

Within a remarkably short time, the Initiative's work with 67 partners – including eight CGIAR Centers; two international research centers, the French Agricultural Research Centre for International Development (CIRAD) and the Center for International Forestry Research (CIFOR)–World Forestry (ICRAF); 24 implementing partners; and 18 scaling partners plus local stakeholders in the ALLs – has played a catalytic role for systemic change through interventions that range from better on-farm practices and suitable business models for value chains, to policy and institutional innovations, all informed by insights in behavioral change.

In all eight countries, the Initiative builds on considerable prior experience with agroecology. For this reason, researchers conducted studies on how agroecology principles are already being applied across different value chains in varied contexts. The results provide insights into issues of interest to every ALL. For example, what factors drive agroecology adoption (e.g., the presence of training programs and grassroots organizations), and what factors limit adoption (e.g., farmers' lack of knowledge about agroecology practices)? The study further examined promising opportunities to promote agroecology as well as challenges and appropriate responses, such as the selection of "champions" at the outset to overcome risk aversion and prepare the way for widespread promotion.

To evaluate agroecology's performance under such diverse conditions, the Initiative has developed a holistic framework (introduced in this <u>brochure</u>, page 30) for generating evidence across scales and at distinct stages in agroecology transitions. Through a consultative process with researchers and others, global key performance indicators were selected under four performance themes. The framework also used a participatory approach with ALL stakeholders to select indicators reflecting local interests and aspirations. Together, the global and local indicators constitute the Holistic Localized Performance Assessment (HOLPA) framework. Results from ongoing data collection will be used to assess how context-specific agroecology approaches affect the performance of farming households, thus providing the evidence needed to recognize the benefits of agroecology transitions around the world.

Rsearch and support on gender, youth, and social inclusion (GEYSI) were strengthened, including contributions to the vision-to-action process for identifying agroecology transition pathways; the development of HOLPA; and the Agency and Behavior Change for Transforming Agri-food Systems (ACT) framework. The growing GEYSI team received training on the development of gender-responsive scaling strategies. A social inclusion study in five countries is identifying the underlying reasons for young women's and men's underrepresentation in farmers' collective action groups and in agriculture more broadly.

Country-specific research progress is steadily unfolding in the eight countries and their ALLs, with 16 innovation development results, five innovation use results, and three policy change results reported in 2023.

Tunisia's work exemplifies how best to tailor agroecology solutions to local conditions through an integrated approach (see section 8). In response to drought and land degradation, national partners have prioritized forage mixtures to enhance the resilience of predominant crop-livestock systems. Participatory experimental plots have fostered the creation of public-private partnerships, which have boosted the production and sale of forage seed, thus enabling hundreds of farmers to improve animal productivity, while lowering its ecological footprint. A novel business model has been developed as well for processing organically labeled olive oil, which promises to deliver major environmental and economic gains.

In <u>Burkina Faso</u>, the pathway to systemic change similarly entails better practices for improved livestock feeding and soil health, while seeking further benefits through innovation in the dairy value chain. On 50 dairy farms, stakeholders are experimenting with a package of agricultural practices that improve crop-livestock integration, contributing to sustainable increases in dairy production. At the same time, they are developing a business model that expands the portfolio of support services offered by milk collection centers to dairy farmers and processors. This will help scale agroecological intensification of the dairy value chain and make it more inclusive, involving women, young people, and isolated producers in governance.

Value chain innovations also figure importantly in the ALL established in <u>India's</u> Andhra Pradesh state. Analysis of groundnut revealed much scope for strengthening fairness and economic diversification. One option is to strengthen the market links of women's groups so they can better serve as platforms for selling naturally produced, value-added groundnut products. Another entry point centers on integrated rice and fish farming. Demonstrations in five districts are showing promise for improving farmers' incomes while contributing to soil health, biodiversity, and climate change resilience.

The ALLs in <u>Kenya</u> are strengthening farmers' market links and creating inclusive business models in selected value chains – mango in Makueni County and leafy green vegetables in Kiambu County. Increasing awareness of the importance of organic production in the mango value chain has opened the way to conduct experiments with implementing partners on poor soil structure. For both value chains, the Initiative is helping formulate policy recommendations aimed at facilitating the agroecology transition. To create more favorable conditions for systemic change, work in the ALLs relates to efforts to implement a national agroecology strategy.

In Lao PDR, the ALL focuses on integrated climate-resilient production system, involving farmer-led, solar-powered groundwater irrigation and rice field fisheries. This will improve household diets and incomes alongside environmental benefits, such as increased biodiversity. An assessment of the rice value chain with the Lao Farmers Network identified opportunities to improve the farmgate price in the organic rice market. The Initiative has joined a multi-stakeholder platform, in partnership with the CGIAR Research Initiative on National Policies and Strategies and the ASEAN-One CGIAR Innovate for Food project, to increase coherence across national food, land, and water policies.



In the <u>Peruvian Amazon</u>, cacao producers in the ALL have shown strong interest in achieving an agroecological transition. In response, the Initiative is working with the cooperative Colpa de Loros and French firm Kaoka to test sustainable practices for controlling moniliasis disease. It is also working with the cooperative Banaqui Curimaná to test biofertilizers. To promote sustainable use of native biodiversity, the local government has formed a Regional Technical Commission on Biotrade, which is developing a strategic plan following an agroecology approach. Together with the nongovernmental organization (NGO) Terra Nuova and the Paskay company, the Initiative has supported development of the strategy and its action plan, which aim to raise awareness of Amazonian native products, strengthen farmer organizations, and support local businesses.

The decision in late 2022 to include <u>Senegal</u> in the Initiative led to the establishment of an ALL with a regional association and its national branch. Work is underway to include agroecology in crop-livestock systems, develop new business models for more inclusive marketing of local food products, and create a new form of governance for the agroecology transition.

ALL members in Zimbabwe have identified various technologies that provide entry points for an agroecology transition. For example, to tackle low crop yields along with pests and diseases, farmers are testing practices such as conservation agriculture and push-pull with cowpea or beans and Brachiaria. Agroecology, with its emphasis on sustainable and environmentally friendly agricultural practices, has the potential to transform rural communities in Zimbabwe. However, traditional farming methods often rely on labor-intensive and time-consuming processes, which can hinder the widespread adoption of agroecological principles. This is where appropriate scale mechanization comes into play. By introducing small-scale machines and tools, farmers can streamline their operations without compromising the principles of sustainability.

The Initiative gains visibility and <u>stakeholder support</u> as it participates in different working groups and collaborative projects as a member of the <u>Agroecology Coalition</u> and the <u>Transformative Partnership</u> <u>Platform on Agroecology</u>. Ongoing research, such as the examples listed below are expected to result in scientific publications during 2024, contributing to awareness of how agroecological transitions occur and a strong evidence base for investment:

- Impact assessment research is evaluating how the Initiative fosters the application of agroecology principles through the development and adoption of innovations. This research employs quantitative and qualitative methods to measure the extent of the contribution and comprehend the mechanisms and reasons behind the achieved outcomes. Three baseline surveys (in Peru, Tunisia, and India) are providing important information on the adoption of agroecology practices.
- A <u>study</u> is analyzing experiences with the participatory vision-to-action process which the Initiative implemented in eight countries to advance the co-creation of agroecology transitions. Another <u>study</u> is analyzing progress in the co-design of technological innovations.
- A <u>global report</u> synthesizes findings from the rapid value chain analyses in each country to highlight important similarities and differences in how prioritized value chains may contribute to agroecological transitions.
- In addition to <u>policy analysis</u> completed in 2023, Initiative researchers have started to develop a working paper on the political economy of agroecological transitions.

Progress by End of Initiative outcome

EOIO 1: Private sector actors, policymakers, and female and male small-scale farmers collaborate with researchers in an international network of 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.

ALLs were established in eight countries, involving 6,159 individuals to date (48 percent female and 52 percent male). Almost all targets were surpassed, with 363 researchers (164 from NARs) collaborating with 3,460 farmers, 87 policymakers, and 271 private-sector companies. Comparative studies of the ALLs' <u>vision-to-action processes</u> and subsequent <u>co-design and testing of innovations</u> are informing conversations in the ALLs network on how best to advance agroecology transitions. The network organized an <u>exchange visit</u> in India with partners from eight countries.

EOIO 2: Researchers, policymakers, communities, investors, farmers, and other FSAs use knowledge gained from science-based assessments implemented in ALLs, to implement agroecological innovations that are sustainable and enhance resilience.

FSAs have participated in agroecology assessments across all countries, including farmers, extensionists, NGOs, researchers, policymakers, and the private sector. <u>Final context-assessment documents</u> have been published for all countries, and the HOLPA framework has been developed. Data collection via HOLPA continues across ALLs, with more than 800 households surveyed by end of 2023. Results will be incorporated into a knowledge base and discussed globally with stakeholders to foster evidence-based, context-specific decision-making.

EOIO 3: Investors, the private sector, NGOs, and farmers participate equitably in partnerships to co-develop business models, linking agroecological innovations to markets and investment. Investors, the public sector, and farmer organizations co-design or adapt financial mechanisms that support agroecological innovations.

Three partnerships to co-develop agroecological business models have been forged. In Peru, the NGO Terra Nuova is raising awareness of Amazonian products, strengthening farmer organizations, and helping local businesses adopt agroecology principles. In Tunisia, the private seed society COTUGRAIN and the National Agricultural Research Institute of Tunisia (INRAT) are increasing the supply of forage mixtures for small ruminants. In Zimbabwe, business models focus on sorghum contract farming and brooding the duo purpose breed Sasso chicken.

EOIO 4: National and regional policymakers and representatives of sectoral organizations co-develop and promote recommendations to effectuate horizontal (across sectors) and vertical (across scales) policy integration required to mainstream agroecological principles. Local organizations and authorities co-develop, strengthen, or adjust current local institutions and governance mechanisms to better support agroecological transitions in each ALL.

Opportunities were identified to strengthen policies and institutions. In Kenya, the Initiative is helping formulate policy recommendations for agroecology transitions at the regional level and helping draft a national agroecology strategy. In Tunisia, it participated in policy dialogues around an enhanced <u>feed and forages strategy</u>. In Burkina Faso, participatory stakeholder mapping prompted inclusion of more organizations in the dairy innovation platform. In Peru, collaboration with regional government and local partners supported a Strategic Plan for the Promotion of Biotrade.

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 about the mechanisms underpinning behavior change and the capacity of farmers, business partners and consumers to implement agroecological transformation.

The Initiative significantly improved the knowledge base on behavior change. Five countries (Burkina Faso, Peru, Kenya, Tunisia, and Zimbabwe) have undertaken substantial research to identify actor-specific changes as well as their enablers and barriers, leading to the establishment of trials for the development of strategies and action plans that can foster behavior change, using the co-designed ACT framework. Research and support on GEYSI were strengthened.



A market gardener waters her agroecological tomato plot in a lowland area of Lélouma, Guinea Conakry. Credit: R. Belmin, CIRAD

SPECIFIC TECHNOLOGIES AND EXPERIMENTS

WP1: Transdisciplinary co-creation of innovations in Agroecology Living Landscapes (ALLs)		Production of forage of several species (cowpeas, mucuna, maize, sorghum)
		Covered manure pits
Outputs WP1		Advisory tool to produce forages, manure and mulch
1.1.1 Functional multiple stakeholder partnerships in at least 8 Agroecological Living Landscapes (ALLs) or similar set up, established or identified, with an agreed upon metrics and procedures for monitoring and assessing collectively co-		Advisory tool for the diets of the dairy cows using pasture + forages + feeds
design and related innovation processes.	India	Introduction of indigenous fish and optimization of th fish component in rice-fish based natural farming
to achieve a shared desirable future identified and agreed among actors in each ALL.	Кепуа	Compost
		Mulching
3.1.1 Key agricultural practices that require adaptation or change with agroecological approaches identified in established ALLS.		Plant-based biopesticides
FOL Outcome W/P1		Animal manure (farmyard)
4.1.1 Suitable agroecological production practices for priority farming systems co-designed within the framework of established ALLs, based on meaningful interactions between		Water terraces (farm ponds)
farmers and farmers organizations, scientists, extension agents and other relevant stakeholders. Agroecological Living Landscapes (ALLS) that promote integration of research and innovation processes to fagilitate co-design and testine of context-specific	Lao PDR	Solar pumping of groundwater for farming, domestic and school consumption
5.1.1 Other agroecological innovations at the food system agroecological innovations and broader learning of the system actors (r-SAS) by 2024. level required to support the transition pathways identified biophysical and socio-economic conditions required for agroecological innovations and broader learning of the system actors (r-SAS) by 2024. within each established ALLs #8.8.rssNit_Fool agroecological transitions. agroecological transitions. agroecological transitions.		Rice-fish system
between all the concerned WPs.		Organic red rice growing
6.1.1 Early and projected holistic effects of alternative agroecological practices identified in established ALLS in various dimensions including productivity, environmental, social and economic aspects, <u>as a result of</u> collaboration	Peru	Control moniliasis in cacao: mixture of bio-inputs; comparison of various types of inputs
Detween an the concerned w/s.		Improve cacao yield: frequency of use of bio-inputs
7.1.1 Potential adaptation and adoption of alternative agroecological practices assessed in a holistic manner with all	Senegal	Conservation agriculture
relevant stakeholder groups in established ALLs.		Legume intercropping
8.1.1 Actual adaptation and adaptation	Tunisia	Forage mixture
agroecological practices assessed in a holistic manner with all relevant stakeholder groups in established ALLS.		Biofertilization with Sulla
		Valorization of olive by-products

Work Package 1 progress against the theory of change

After engaging stakeholders in the ALLs last year, the Work Package (WP) 1 team pursued two goals in 2023: (1) consolidating the ALLs through a vision-to-action process (V2A) and (2) co-designing and testing innovations. The V2A process guided participatory design of the agroecological transition for each ALL. Stakeholders formulated a vision of how they want to shift their current situation to a desirable future and what behavior changes are required to achieve this.

The V2A process differed for each country depending on the ALL's context and country team's expertise. Some common elements in the vision statements across countries are appropriate use of inputs, soil health, and economic diversification. Clear linkages between the visions and the 13 agroecological principles were identified. The vision exercise was the starting point to co-develop transition pathways with ALL stakeholders, identify behavior changes and define an action plan. The team focused on co-designing production innovations through an interactive, iterative, and context-specific

process (cross-country analysis). Farmers, researchers, and others discussed needs and identified innovations that address key challenges. Participants tested, assessed, or demonstrated these options on-farm (see table 1) using protocols that ranged from side-by-side comparisons to more complex experimental set-ups. The co-design process will conclude in 2024 with a collective assessment of results and lessons learned. Farmers will decide which innovations they want to adapt, adopt, or scale.

The team launched the International Network of ALLs (INALL) through an exchange visit organized around the natural farming approach in Andra Pradesh, India. The Initiative is evaluating the effectiveness of living landscapes as a concept to operationalize action research in agroecology, investigating through a global review how similar approaches (living labs, multi-stakeholder platforms, innovation platforms) have been used in other projects to trigger systemic change.

	pasture + forages + feeds
India	Introduction of indigenous fish and optimization of the fish component in rice-fish based natural farming
Kenya	Compost
	Mulching
	Plant-based biopesticides
	Animal manure (farmyard)
	Water terraces (farm ponds)
Lao PDR	Solar pumping of groundwater for farming, domestic and school consumption
	Rice-fish system
	Organic red rice growing
Peru	Control moniliasis in cacao: mixture of bio-inputs; comparison of various types of inputs
	Improve cacao yield: frequency of use of bio-inputs
Senegal	Conservation agriculture
	Legume intercropping
Tunisia	Forage mixture
	Biofertilization with Sulla
	Valorization of olive by-products
	Composting units
Zimbabwe	Push-Pull
	Conservation Agriculture (Biomass mulch)
	Biochar
	Conservation Agriculture (Live mulch)
	Traditional bioinsecticides as alternatives to Push-Pull, Conservation Agriculture
	Hay making, feed formulation, mechanization

Source: adapted from the Codesign report.

KEY UNDERLYING AGROECOLOGICAL PRINCIPLE(S)
Biodiversity, animal health, synergies, recycling, participation
Recycling, efficiency
Recycling, synergies, efficiency
Efficiency
Synergies, economic diversification
Recycling, input reduction
Soil health
Input reduction, soil health
Recycling, soil health
Soil health
Input reduction, economic diversification
Economic diversity, input reduction, biodiversity, diets
Economic diversity, input reduction, diets
Recycling, input reduction
Recycling, input reduction
Soil health, synergies
Biodiversity, synergies
Animal health, biodiversity
Biodiversity, economic diversity, animal health
Recycling, input reduction
Recycling, input reduction
Input reduction, biodiversity, soil health, animal health
Recycling, soil health, synergies
Input reduction, soil health
Synergies, animal health
Social values and diets
Animal feed/health, economic diversity

WP2: Evidence-based agroecology assessments



Work Package 2 progress against the theory of change

Published documents define the environmental, economic, and social context of agricultural and food systems as well as the application of the 13 agroecological principles in each ALL. Starting in 2022, an assessment of these contexts involved a review of peer reviewed and grey literature as well as stakeholder consultations in the project inception phase. In selected ALLs, key-informant interviews and focus group discussions supplemented the available information. The resulting context assessment documents represent a body of evidence-based knowledge that is highly relevant for any agroecology initiative in the eight countries and globally.

The HOLPA tool was developed as planned with three components: (1) a context module describing the socio-ecological context of farms and households; (2) a module considering integration of the 13 agroecology principles on farms; and (3) the holistic performance of farms. The performance module has two parts: (1) a set of

global performance indicators that capture agricultural, economic, environmental, and social outcomes in any food system; and (2) the local indicator selection process (LISP), in which local food system actors co-design agroecological performance metrics. Based on a review of assessment frameworks, 17 global key performance indicators under four performance themes were selected in consultation with researchers and domain experts. Indicators reflecting local interests and aspirations were selected through a three-step participatory approach. With its global and local indicators, HOLPA can be applied across diverse farming contexts and agroecological activities – from organic farming to value chain innovations. Local performance indicators have been selected in 15 communities across seven countries and incorporated into the HOLPA tool. Data collection via HOLPA continues across ALLs, with more than 800 households surveyed to date. Results from HOLPA will be analyzed in 2024, providing the key evidence needed to support agroecology transitions in different contexts around the world.

On track

THE HOLPA FRAMEWORK

Agroecology

module

(e.g. adherence to agroecological principles)



WP3: Inclusive business models and financing strategies



Work Package 3 progress against the theory of change

Results from <u>rapid value chain analyses</u> helped identify bottlenecks and opportunities for integrating agroecology principles into eight prioritized value chains in six countries (Burkina Faso, India, Kenya, Peru, Tunisia, and Zimbabwe). Opportunities and/or enterprises were identified, for which business models are being diagnosed with a holistic business model assessment suite. This integrates the agroecological performance diagnosis of Biovision's Business – Agroecology Criteria (B-ACT) tool into a conventional business model canvas (BMC). The results inform the upgrading or co-design of investment-ready business models that reflect the logic by which enterprises will create, distribute, and/or capture value by integrating agroecology principles.

The WP3 team produced a global report that synthesizes findings from rapid value chain analyses in each country to highlight important similarities and differences in how the prioritized value chains may contribute to agroecological transitions. In addition, the Initiative is partnering in Kenya and Zimbabwe with CGIAR's

Food Systems Accelerator, a WP of the CGIAR Research Initiative Diversification in East and Southern Africa, to support agribusinesses in scaling agroecological and climate-smart innovations that address food system challenges in Eastern and Southern Africa.

In Peru, for instance, substantial advances have been made since 2022 in collaboratively upgrading the business model of an organic cacao producers' cooperative. The cooperative will incentivize cacao farm diversification and increase its centralized capacity to compost organic matter by offering member producers the possibility to process rice and/or sugarcane into added-value products and leave the recyclable residues to be composted in the cooperative's facilities. The Initiative also analyzed financial instruments and mechanisms that have the potential to scale agroecology innovations in Peru and conducted a pre-feasibility study on the potential of local cacao-based agroforestry systems and avoided deforestation from cacao-associated forest-carbon stocks for participation in carbon markets.

Work Package 4 progress against the theory of change

Outputs WP4

1.1.4 Policies, institutions and key stakeholders identified at favor or limit agroecological transitions, as well abling opportunities for policy integration and change.

1.2.4 Opportunities for improving the potential of local institutions, organizational arrangements, and governan

ctures to catalyze agroecological transitions identified

issed and agreed with food system actors in each

cal Living Landscape (ALL).

2.1.4 Policy framework and tracking tool developed

3.1.4 Ex-ante assessment of the effects of scaling

tutional changes in ALL countries or regi

.2.4 Mechanisms for better coordination and adaptation

existing local institutions to enable agroecological , s agreed among actors.

ntal priorities and commitments (e.g., NDC

ns and action plans for policy and

ological transitions on gover

CBD, etc.) done

2.2.4 Re

Building on analyses conducted in 2022, outputs were completed this year in six target countries. One key finding across countries is that the implementation of conducive policies faces challenges; moreover, co-existing policies contradict agroecology principles. For example, while countries recognize the need to invest in soil health, most of the funding goes to chemical fertilizer without taking care of fertilizer use efficiency, practices to improve soil health indicators, and use of inputs that have fewer negative effects on the environment. The exceptions are India and Senegal, where programs have been established or reformed to promote organic or biological inputs. However, agroecology is not about farm inputs only. Policy fragmentation and inappropriate policy coordination to improve sustainability, resilience and equity thus hinder agroecology in most countries where the Initiative operates. Work in Kenya is paving the way for better policy harmonization in support of a National Agroecology Strategy.

The policy tracker was tested in 2023 and subsequently completed. It is designed to help country teams co-develop policy and institutional

On track

WP4: Strengthening the policy and institutional enabling environment



Outcomes WP4

each ALL

1.4 National and regional policymakers and sectoral ntatives co-develop and promote rganization renre nendations to effectuate the horizontal (ad tors) and vertical (across-scales) policy integratio agroec ological principles ually relevant agroecological principle applied by farmers and communities across a wide range of contexts and supported by other food system actors (FSAs) by 2024. 2.4 Local organizations and authorities co-develop rengthen, or adjust local institutions and governance ms to better support agroecological transitions

> ambitions as well as progress milestones with stakeholders. A policy stakeholder mapping and engagement tool was also developed, which provides insights that help identify different types of policy stakeholders for engagement in the agroecology transition.

> The WP4 team was particularly active in Tunisia, mapping policy actors with different interests and making presentations to research, development and private sector stakeholders, including one on challenges in scaling innovations (fail to scale). The Initiative also participated in policy dialogues around the problem of soil conservation through an enhanced feed and forages strategy. Innovations for managing soils were incorporated into the National Plan for Feed and Forage Investment, which is being finalized.

The 2023 Pause and Reflect meeting highlighted that all target countries share challenges of political economy in advancing agroecology transitions. In response, a draft overview paper was prepared, and a workshop held to develop a set of common political economy research areas around which recommendations for country teams, as well as publications, are planned for 2024.



ons: 2)



Outcome WP5

Scientists, funders, policymakers, business partne and civil society, re-orient or adjust their strategies and action plans based on knowledge gained from scientific studies about the mechanisms underpinning behavior shange and the capacity of farmers, business partners imers to imple ment agroecological ransformation

textually relevant agroecological principles applied by farmers and communities across a wide range of contexts and supported by other food system actors (FSAs) by 2024.

On track

Work Package 5 progress against the theory of change

Outputs WP5 1.1.5 Key lessons on change processes identified – Review agroecological research (science), practice, and social movements in each Agroecological Living Landscape (ALL)

untry to identify: 1) successes and failures in shifting ency and behaviors towards agroecological transit

2.1.5 Lessons on agency and behavior change of individuals

3.1.5 Key interface and institutional reconfigurations that

oport local agroecological innovation identified and seminated to agricultural innovation researchers, oners, and producer organizations (through WP4).

1.1.5 Innovation opportunities for cooperative decision-making and widespread behavior change identified – In ALLs, identify pathways to: 1) strengthen collective agency for Food System Actors (FSA) underrepresented in decision-making; 2) navigate conflict and power asymmetries to improve cooperative decision

making; 3) achieve widespread and cross-group behavior change. The findings will be applied in the relevant institutions within the

5.1.5 Agency and behavior change knowledge incorporated in

ALL theories of change (ToC) based on an iterative reflection ess. Periodic review and update of the ALL TOC to count for new knowledge gained through ALL activities on llective decision-making, power asymmetries, and key ivers and determinants of individuals' agency and behavior

6.1.5 Key roles of agroecological science, practices, and social novements in enabling agency and behavior change to upport agroecological transitions identified, synthesized

oss ALLs, and incorporated into strategies and investment ed in WP3 and WP4).

2.1.3 Easions on agricultury and behavior trange of mannoas (dentified – Working across various actor groups within ALLs: 1) identify key drivers and determinants of individuals' agency and behavior change: 2) share lessons to be incorporated in strategies (WP4) and investment plans (WP3)

ns on change processes to drive agroecological

The WP5 team developed an innovation to identify agency and behavior change entry points for agrifood system transformation (the agrifood system transformation or ACT framework) and applied it to synthesize key lessons on the change process that can drive agroecological transitions (see briefs for Kenya, Peru, Tunisia, and Zimbabwe), building on the findings from past initiatives in ALL countries. A report is due in 2024 and will expand on lessons to achieve change:

- All country initiatives were found to be targeting producers for behavior change, most often through technical assistance, training, demonstrations, and other approaches focused on individuals.
- However, 46 percent of initiatives were perceived to have missed key entry points, thus impeding the intended behavior changes.
- The behaviors of consumers and governance system actors were least often targeted and systemic approaches to influence agency and behavior change were least often applied, which is an avenue for future Initiative work with WP3 and WP4.

• Ensuring market and value chain linkages, quality of partner and institutional support, social learning and collaboration among food system actors, and efforts to address power and agency in multi-stakeholder engagement were perceived to be key factors in achieving change.

Agroecological innovations were prioritized in eight countries through the vision-to-action exercise in collaboration with WP1. Five countries (Burkina Faso, Peru, Kenya, Tunisia, and Zimbabwe) have undertaken substantial research to understand food system actors' agency, experiences, and behaviors in the agroecology transition, with data analysis still in progress.

The WP5 team is also focusing on understanding the different capacity and agency that actors in the ALLs possess because of their individual and collective identities and resource base, which interlink with formal and informal institutions such as land inheritance laws and gender norms. Examples include participatory research on empowerment and agency among youth in agrifood systems (in Kenya, Zimbabwe, India, Peru, and Tunisia) and a study on the role of the foodscape, with a focus on food consumers, in sustainable and nutritious diets for rural farming communities (in Tunisia).



Work Package progress rating summary



Section 4: Key results

This section provides an overview of results reported by the CGIAR Research Initiative on Agroecology in 2023. These results align with the CGIAR Results Framework and Agroecology's theory of change. Source: Data extracted from the CGIAR Results Dashboard on 15 April, 2024.



NUMBER OF REPORTED INNOVATIONS

Reported innovations in 2023 include the development of conceptual frameworks (stakeholder engagement, agroecological assessments, value chain linkages with business opportunities, behavior change), and technical innovations (feed pellet production, biological treatments to improve yields or tackle pests and diseases). A series of innovations have been co-produced with other CGIAR Research Initiatives (Low-Emission Food Systems, Livestock and Climate, Nature-Positive Solutions). The five reported innovation use results include Tunisia on livestock feed production and feed chains, as well as Kenya, where stakeholders of partner organization, Community Sustainable Agriculture and Healthy Environmental Program (CSHEP) have incorporated agroecological co-design into their capacity-sharing activities.



0	7	# of innovations
9	PROVEN INNOVATION The innovation is validated for its ability to achieve a specific impact under uncontrolled conditions	1
8	UNCONTROLLED TESTING The innovation is being tested for its ability to achieve a specific impact under uncontrolled conditions	2
7	PROTOTYPE The innovation is validated for its ability to achieve a specific impact under semi-controlled conditions	2
6	SEMI-CONTROLLED TESTING The innovation is being tested for its ability to achieve a specific impact under semi-controlled conditions	3
5	MODEL/EARLY PROTOTYPE The innovation is validated for its ability to achieve a specific impact under fully-controlled conditions	0
4	CONTROLLED TESTING The innovation is being tested for its ability to achieve a specific impact under fully-controlled conditions	4
3	PROOF OF CONCEPT The innovation's key concepts have been validated for their ability to achieve a specific impact	0
2	FORMULATION The innovation's key concepts are being formulated or designed	3
1	BASIC RESEARCH The innovation's basic principles are being researched for their ability to achieve a specific impact	1
0	IDEA The innovation is at idea stage	0

NUMBER OF FSAS ENGAGED IN THE CO-CREATION OF AGROECOLOGICAL INNOVATIONS

FSAs are engaged when they have been involved with the Initiative, participating in the vision-to-action process, and the co-design or testing of technological or institutional innovations that they consider relevant to their particular social, economic, and political contexts. The table shows the food system actors engaged by gender, type of actor, and country. The data in the table comes from a tool developed by the Initiative to monitor direct engagement of FSAs in different stages of the process of co-creating innovations. The Initiative had engaged with approximately 6,200 individuals by the end of 2023.



NUMBER OF RESULTS BY PARTNER TYPE



WP1:	Transdisciplinary co-creation of innovations in Agroecological Living Landscapes (ALLs)	Cross-country progress rep Vision to Action for agroec in ALLs Reading Note 1: What are
WP2:	Evidence-based agroecology assessments	Context assessments for a Burkina Faso I India I Kenya
WP3:	Inclusive business models and financing strategies	Value chain analysis <u>Global analysis</u> I Burkina Fa <u>leafy vegetables</u> , <u>Mango</u> I <u>and livestock</u>
WP4:	Strengthening the policy and institutional enabling environment	Policy and institutional con stakeholder mapping Policy framework and track
WP5:	Understanding and influencing agency and behavior change	Country briefs <u>Kenya I Peru</u> Food environment reports
Global		CGIAR Research Initiative of pathways to a single destine Mockshell, Jonathan, Quint and Francesconi, Wendy 2



KEY RESEARCH OUTPUTS

Cross-country progress reports

cological transitions in ALLs I Co-designing technical innovations

Living Labs?

agroecological transitions in diverse food systems

a I Lao PDR I Peru I Senegal I Tunisia I Zimbabwe Mbire, Murewa

aso – <u>Dairy value chain</u> I India – <u>Ground nut</u> I Kenya – <u>Green</u> Tunisia – Olive oil, sheep meat and honey I Zimbabwe – Crop

ntexts in agroecological living landscapes and local and national

king tool I Burkina Faso I Peru I Tunisia I Zimbabwe I India

<mark>u I <u>Tunisia</u> I <u>Zimbabwe</u></mark>

<u>Tunisia</u> I <u>Burkina Faso</u>

on Agroecology. (2023) The Agroecology Transition: Different nation – Eight country experiences. p. 32.

tero, Marcela, Narjes, Sanchez, Manuel Ernesto, Jones, Sarah coni, Wendy. 2023. Agricultural Breakthrough Technology 6: Agroecological Approaches. Montpellier: CGIAR System Organization.





The Agroecology Transition: Different pathways to a single destination

In each country, the Agroecology Initiative concentrates on one or two distinct territories referred to as "agroecological living landscapes" (ALLs), where it engages with food system actors and partners in a vision-toaction process. The identified entry points for the agroecology transitions are tailored to specific ALL contexts



- Enhanced sustainable production of organic cacao systems, including ecological alternatives for prevention of pests and diseases, and diversification of smallholder farming.
- · Carbon markets as a complementary financial strategy for the agroecology transition.
- Increased involvement of youth in agroecological cacao business models.
- Co-development of the Regional Strategic Plan for Biotrade with an agroecology approach.
- 44 results | 9 innovation developments | 11 knowledge products 2 policy changes | 17 capacity sharing for development
- Improved cow feeding with diversified fodder, manure recycling and whole farm management of crop-livestock co-products.
- Diversified milk products and milk collection centers developed to improve the distribution system
- Consolidation of the dairy innovation platform as a result of participatory stakeholder mapping

32 results | 6 innovation developments | 11 knowledge products 4 other outcomes | 5 capacity sharing for development

which differ markedly in terms of climate, farming systems, soils, and other conditions that rural communities face. In seeking suitable entry points, the Initiative has built on important experience that each country gained previously in applying some of the 13 agroecology principles.

India Andhra Pradesh & Madhya Pradesh Entry points and first results

- Integrated rice and fish farming to improve farmer incomes, soil health, biodiversity, and climate change resilience.
- Strengthened fairness and economic diversification along the groundnut value chain, building on women self-help groups in Anantapur District.
- Integration with institutional efforts to restore the commons and benefit from

30 results | 7 innovation developments | 8 knowledge products 8 capacity sharing for development

Zimbabwe Murehwa & Mbire

IICIMMYT 😵 🛛 🐇

Entry points and first results

APT

- · Expanded mechanization to address labor, transport, and postharvest challenges
- Push-pull, conservation agriculture with dead or live mulch, biochar, integrated pest management, seed and livestock fairs.
- · Poultry value chain: Sorghum contract farming and brooding SASSO chickens. · Priority policy research identified for the Initiative with partners through local
- and national meetings.

45 results | 7 innovation developments | 17 knowledge products 1 innovation use | 3 other outcomes | 16 capacity sharing for development







Entry points and first results

- Advanced sustainable production systems, including practices such as plant-based biopesticides, farmyard manure, terraces, water harvesting, and agroforestry
- Strengthened farmers' networks and connectivity to markets along with creation of inclusive business models in prioritized value chains (mango and green leafy vegetables).
- Kenyan partner organizations DNRC and PELUM adapted trainings, and outreach programs to incorporate the co-designed practices in support of agroecological transformation.
- Connected with country-level efforts led by ISFAA to implement a national agroecology policy and support in policy recommendations for selected value chains at the regional level.

44 results | 9 innovation developments | 10 knowledge products 2 innovation use | 1 policy change | 3 other outcomes 17 capacity sharing for development



NETWORK OF PARTNERS BY PARTNER TYPE AND COUNTRY

Partnerships and Agroecology's impact pathways

Since the Initiative began two years ago, food system actors in target territories have shown strong commitment to co-development. Partners have helped strengthen farmers' agency and influence local institutional arrangements, business models, and policies.

In 2023, the Initiative forged partnerships with a total of 67 organizations including eight CGIAR Centers, two international research centers CIRAD and CIFOR-ICRAF, 24 local or national implementing partners, and 18 scaling partners operating in countries. Those partnerships involve 13 NARES, 14 NGOs, 13 government bodies, five platforms or agricultural networks, four farmer associations, and four private companies, which collaborate in public-private partnerships on organic cacao production in Peru, supply of forage mixtures for small ruminants in Tunisia, and dualpurpose chicken breed that can be kept for both meat and eggs in Zimbabwe. Outstanding collaboration among eight CGIAR Centers was reinforced by the operationalization of teams based in countries that integrate the multiple capacities of different Centers with capacities of partners.

The Initiative established alliances based on partner demand, the capacity to co-design and scale agroecology innovations, and the influence on actors expected to change practices. Here we highlight successful partnerships based on the specific agroecological transitions devised by stakeholders in each country.

In most ALLs, the Initiative relies on existing **multi-stakeholder platforms** – in Senegal, for example, the Initiative works through a national association of civil society organizations (<u>DvTAES</u>), which has joined forces with researchers promoting agroecology through policy advocacy.

Partnerships with **farmer-based organizations** are key, such as in Kenya with the Dryland Natural Resources Centre (DNRC) and Community Sustainable Agriculture and Healthy Environment (<u>CSHEP</u>), which both host ALLs. This responds to stakeholders' request to ensure engagement and ownership by ALL members in Initiative activities. The partnership is supported by Participatory Ecological Land Use Management (<u>PELUM Kenya</u>) and the Inter-Sectoral Forum on Agrobiodiversity and Agroecology (<u>ISFAA</u>), which are both experienced in mainstreaming evidence-based approaches co-developed with food system actors participating in the Initiative. As a result, DNRC and CSHEP have adapted their training and outreach programs to incorporate the co-design process and practice, which has already benefited 282 farmers. The first tangible gains are increased vegetable productivity in low-input systems.

Collaboration with the **government** of Ucayali (<u>Goreu</u>) in Peru is leading to a successful outcome. To promote sustainable use of native biodiversity, the government has approved the Regional Strategy for the Promotion of Biotrade with an agroecological approach and 2028 Action Plan, developed with the NGO <u>Terra</u> <u>Nuova</u> through a multi-stakeholder process. The strategy has multiple objectives, such as improving conditions for the supply of biodiversity products.

The Initiative works closely with **NARS** in almost all countries, and 79 results were co-developed with NARS. An outstanding **public-private partnership** in Tunisia involving the private seed society <u>COTUGRAIN</u> and National Agricultural Research Institute of Tunisia (<u>INRAT</u>) has closed major gaps in forage seed supplies for farmers (see section 8).



Active involvement with **international fora**, such as the Transformative Partnership Platform on Agroecology (<u>TPP</u>) and the Agroecology Coalition, and continuous exchange with GIZ GmbH, Biovision, INTPA and other international organizations that champion agroecology have increased the Initiative's visibility and <u>stakeholder support</u>. Agroecology TPP was fundamentally important in establishing the Initiative, which is creating synergies with other Agroecology TPP projects. Participation in the Agroecology Coalition led to collaboration with the Rockefeller Foundation in a COP28 side event at the Food Pavilion.

> Marcela Quintero, Initiative leader with T. Vijay Kumar, Executive Vice Chairman, Rythu Sadhikara Samstha (RySS), and Ex Officio Spl. Chief Secretary to Govt (Natural Farming), Agriculture and Cooperation Dept, Govt of Andhra Pradesh. Study tour, India, November 2023. Credit: S. Krishnan, Alliance Bioversity-CIAT



Portfolio linkages and Agroecology's impact pathways

The Agroecology Initiative is developing Portfolio linkages with other Initiatives and projects, including joint events and knowledge exchange, as well as co-production of scientific knowledge. This demonstrates how agroecology is gaining attention from partners and donors, and how the Initiative's teams go beyond the farm level to address agroecology's socio-political dimensions.

Portfolio linkages are successful in several countries. In Tunisia, ICARDA has strengthened linkages formed last year between the Agroecology Initiative and the Livestock and Climate Initiative. As a result, livestock feed chains in this ALL have been better integrated. The two Initiatives also collaborate in developing a national road map to upgrade animal feed resources with Tunisia's Bureau of Livestock and Pastures and the Institution of Agricultural Research and Higher Education (IRESA). In Lao PDR, the Initiative has linked with the ASEAN Innovate for Food Regional Program and the National Policies and Strategies Initiative to link field evidence with related national and subnational food, land and water policies. In Kenya, the collaboration with the Nature-Positive Solutions Initiative in support of the Intersectoral Forum on Agrobiodiversity and Agroecology (ISFAA) is paving the way for better policy harmonization in support of a national agroecology strategy. The Initiative is partnering in Kenya and Zimbabwe with CGIAR's Food Systems Accelerator, a WP of the Diversification in East and Southern Africa Initiative, which supports agribusinesses in scaling agroecological and climate-smart innovations in Eastern and Southern Africa.

Portfolio linkages also serve cross-cutting results: Agroecology co-leads the community of practice on multi-stakeholder processes (MSPs) with the CGIAR Research Initiatives on NEXUS Gains and Low-Emission Food Systems; 11 other Initiatives also participate, as well as bilateral projects (e.g., the Alliance Bioversity International and CIAT-led RUSTICA and the Global Comparative Study on REDD+ led by CIFOR-ICRAF). As all ALLs involve MSPs, this network provides a forum for knowledge exchange and synthesis of lessons from across Initiatives. Also noteworthy is collaboration with the NEXUS Gains Initiative on a paper about how networks and institutional pathways enable agricultural diversification. Collaborations with the TRANSITIONS program include a review of agroecological incentives and impact evaluations, and in Peru, the development of business models and incentives for adoption of agroecology practices. The 2023 CGIAR report, "Achieving Agricultural Breakthrough: A deep dive into seven technological areas" is a multi-stakeholder collaboration and includes agroecology as a pathway to achieve sustainable food systems and features the work on cacao in Peru.

Several **events** were organized in partnership. The Initiative's gender team connected its work on GEYSI with the Low Emission Food Systems Initiative in a side event at COP28, which was co-organized with the Agroecology Coalition. With Nature-Positive Solutions, the Agroecology TPP, and TRANSITIONS, a joint side event at African Agribusiness and Science Week 2023 featured lessons learned from collaborative research in Africa.

RECOMMENDATION

Foster the widespread adoption of agroecological innovations through scaling mechanisms.

Increase the capacity for cross-country analysis of technological innovations in ALLs.

Potentialize cross WP activities to enhance future agroecology research.

Emphasize the analysis and sharing of results of the holistic localized performance assessments.

Evidence for expected and unexpected Initiative outcomes.

Include an ALL in Mandla, Madhya Pradesh in India.

SUPPORTING RATIONALE

To achieve systemic changes in the environment, markets, institutions, and behavior required making agroecological innovations predominant in a system. More actions are needed to scale current innovations across ALLs and countries as well as globally. Collaboration with the Food Systems Accelerator Program of the CGIAR Regional Integrated Initiative on Diversification in East and Southern Africa (Ukama Ustawi) started in the second semester and will increase, while other accelerator mechanisms will be implemented in more countries.

Now that most countries have progressed significantly in data collection across WPs, additional capacity will be deployed for cross-country analysis and publication of results, particularly on the co-design in ALLs of technological innovations – current approaches and practices, types of technologies selected for experimentation, experimental set-ups, and monitoring and evaluation protocols. The WP1 team will be strengthened to support country teams and produce high-quality knowledge products that provide evidence of agroecology performance in the ALLs.

Several opportunities have been detected for closer collaboration between WPs, other Initiatives and bilateral projects. 1) The forthcoming report on behavioral change (WP5) and possible work on consumer preferences (WP3) and political economy (WP4);

2) GEYSI components in some countries resulting from the upcoming GEYSI study and related to agroecological transitions (WP1, 3, 4);

3) Cross-WP collaboration based on the analysis of technological innovations across ALLs.

Data collection for the holistic localized performance assessments in countries will be finalized by early 2024. Resources and efforts will be prioritized to ensure that science-based evidence is available to influence innovations in the ALLs for socialization and discussion in ALLs, countries, and international fora.

The MELIA and WP teams will identify clusters of outcomes, expected and unexpected, independently of the initial program theory of change. Outcome trajectories will be identified with ALL stakeholders for subsequent verification. Evidence on outcome trajectories will be compared to the existing program theory of change for learning and adaptability.

Just before the Pause and Reflect workshop, the Initiative undertook a <u>study tour</u> in India, including visits to Andhra Pradesh, where the work focuses on opportunities for Natural Farming practices. Members of the leadership team also visited communities in Madhya Pradesh, as interaction with partners – the German Agency for International Cooperation (GIZ), the national NGOs <u>Pradan</u> and <u>FES</u> – had revealed an opportunity for the Initiative to help generate evidence for scaling and policy influence. Therefore, it was decided at the Pause and Reflect workshop to establish a second ALL in Mandla, working with women's self-help groups on environment-friendly production of nutritious food, better water management practices, or opportunities for youth.

Section 8: Key result story

What's behind Tunisia's rapid agroecology transition?

The country is an example of how to tailor systemic agroecology solutions to local conditions with environmental and economic benefits.



Primary Impact Area

 \bigcirc

Other relevant Impact Areas targeted

Contributing Initiatives

Agroecology Livestock and Climate

Contributing Center

ICARDA

Contributing external partners

German Agency for International Cooperation (GIZ)- ProSol project COTUGRAIN National Agricultural Research Institute of Tunisia (INRAT)

Geographic scope



Region: North Africa Country: Tunisia

Tunisia has embarked on an agroecology transition to enhance climate resilience, with major benefits for rural people. The CGIAR Research Initiative on Agroecology has facilitated new public-private partnerships that are boosting production and sale of forage seed and enhancing soil health. Other new technologies, like small machinery for seed cleaning, have been co-designed and are being piloted with farmers. A novel business model that shifts from traditional to organically labeled olive oil promises important environmental and economic gains.

After four years of drought, Tunisia finds itself on the front lines of a global struggle to cope with climate change impacts. Drought and water shortages have aggravated land degradation, caused mainly by some inappropriate agronomic practices.

Drawing on diverse systemic interventions and relying on a multi-stakeholder approach in the crop-livestock and olive oil sector, the CGIAR Initiative on Agroecology has stimulated and co-designed these interventions, which range from better practices and business models to innovative organizational arrangements, policies, and insights on behavioral change that generate environmental and economic benefits.

Since 2022, the Initiative's work in the northwest of Tunisia has centered on an ALL identified through a participatory process in the El Kef-Siliana transect. In 2023, collaborative work in the ALL began to serve as a catalyst for positive change, reinforcing the efforts of rural communities and decision-makers to adopt agroecology principles, such as soil health improvement, enhanced synergies between farming systems components, and economic diversification. Data gathered since 2022 from about 700 rural households in the ALL marks the beginning of a thorough analysis of the Initiative's impacts.

The Initiative builds on nearly a decade of country experience and fruitful partnerships with sustainable agriculture that is close to agroecology principles. The multi-country ProSol project of the German Agency for

International Cooperation (GIZ), for example, has helped spread innovative methods for translating agroecology research results into development practice. The Initiative works with various national partners and six farmer organizations, with a total of more than 1,000 beneficiaries (40 percent of them women), who have begun adopting innovative practices that help achieve an agroecology transition. To further enhance the sustainability of small-scale crop-livestock systems, 13 technologies are now being tested in the ALL in 40 on-farm experiments.

In this context, the Initiative is increasing the supply of forage mixtures, which not only increase small-ruminant productivity but also improve soil fertility and enhance resilience. Partners have

99

In Tunisia, a changing climate is making livestock fodder scarcer. Given the importance of livestock in this country, two partners in the Agroecology Initiative, OEP and INRAT, welcome its support in disseminating a technical package for production of fodder legumes in mixed crop-livestock systems.

Mr. Anis Zaiem, General Engineer at the forage resources department at OEP (Office de l'Elevage et des Pâturages de Tunisie)

already established 362 participatory experimental plots with 276 beneficiaries to produce forages using biofertilizer technology. The plots have helped boost demand for the new forages and prompted seed companies to expand the market. As a result, dynamic public-private partnerships have been forged and facilitated by the Initiative, particularly between the private seed society COTUGRAIN and the National Agricultural Research Institute of Tunisia (INRAT).

These partnerships have helped close major gaps in forage seed supplies, ensuring wider availability to farmers. Moreover, an increasingly dynamic forage seed chain has created new opportunities for farmers to diversify their income. For example, some have embarked on contracts with the private sector to produce high-quality forage seed on a total area of 300 hectares over the next three years. To create further momentum behind these changes, the Agroecology Initiative, in collaboration with the CGIAR Research Initiative on Livestock and Climate, has participated in national policy dialogues and co-developed a national roadmap for enhancing livestock feed resources over the next decade, with the aim of reducing dependence on imported feeds.



Olive oil has been identified as a second promising agricultural value chain, resulting in a new business model to produce the oil with appropriate labelling and a specific focus on involving women farmers. Tunisia is a global leader in olive oil production, but plantations are generally grown in the traditional manner, with most of the products exported in bulk. Building on traditional ecological practices, value-added production has enormous potential to achieve more efficient input use, better soil erosion control, and higher revenues. Growers are undergoing training that will enable them to improve olive oil extraction for greater environmental and economic benefits and achieve their vision of improving the marketing for their local products.



Front cover photo

A farmer weeds his groundnut plot in Ndiob, Senegal. Credit: R. Belmin, CIRAD

Back cover photo

Forage mixtures cultivated between lines of olive and almond trees. Credit: Z. Idoudi / ICARDA



INITIATIVE ON Agroecology