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

The CGIAR Technical Report comprises:

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

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

Note: A summary of Work Package progress ratings is provided in Section 3.
The Initiative has helped 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 Laot PDR, the ALL focuses on integrated climate-resilient production systems, 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 Dominican Republic, 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 Lloros and the French firm Kaoka to test sustainable practices for controlling moniliasis disease. It is also working with the cooperative Banaban Cumanama to test biofertilizers. To promote sustainable use of biodiversity, the local government has formed a Regional Technical Commission on Biodiversity, 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 Senegal in the Initiative led to the establishment of an ALL with a national 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. In response, the Initiative is helping formulate policy recommendations aimed at facilitating the agroecology transition.
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 study 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 study is analyzing progress in the co-design of technological innovations.
- A global report 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 policy analysis, 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 FARI) collaborating with 3,469 farmers, 87 policymakers, and 271 private-sector companies. Comparative studies of the ALLs’ vision-to-action processes and subsequent co-design and testing of innovations are informing conversations in the ALLs network on how best to advance agroecology transitions. The network organized an exchange visit 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. Final context-assessment documents 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 sector 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 dual-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 national level and helping draft a national agroecology strategy. In Tunisia, it participated in policy dialogues around an enhanced feed and forage strategy. 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
Section 3: Work Package progress

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

Output WP1

- 3.1.1 Hard/soft multiple stakeholder participatory on-farm agroecological co-design workshops to explore relevant agricultural and agroecological approaches identified and agreed among the ALL.
- 3.1.2 WP1 and the RAPs develop the vision-to-action plan (V2A) for the agroecological transition through participatory design guided by the transdisciplinary working groups.
- 3.1.3 Key agricultural practices that require attention or change the agricultural approach identified in the vision statements.
- 3.1.4 All agricultural innovations and action plans identified for priority testing or evaluation developed during the transdisciplinary working groups.

EDR Outcome WP1

- Continuously relevant agroecological principles identified and communicated across the project and agreed on based on the working group’s recommendations.

Generalised Outcome

- Continuously relevant agroecological principles agreed with farmers and communies across a wide range of sectors supported by the vision-to-action process.

On track

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 team launched the International Network of ALLs (INALL) through an exchange visit organized around the natural farming approach in Andhra 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.

<table>
<thead>
<tr>
<th>Country</th>
<th>Key Underlying Agroecological Principle(s)</th>
<th>Specific Technologies and Experiments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Burkina Faso</td>
<td>Biodiversity, animal health, synergies, recycling, participation</td>
<td>Production of forage of several species (cowpeas, mucuna, maize, sorghum)</td>
</tr>
<tr>
<td></td>
<td>Covered manure pits</td>
<td>Recycling, efficiency</td>
</tr>
<tr>
<td></td>
<td>Advisory tool to produce forages, manure and mulch</td>
<td>Recycling, synergies, efficiency</td>
</tr>
<tr>
<td></td>
<td>Advisory tool for the diets of the dairy cows using pasture = forages + feeds</td>
<td>Efficiency</td>
</tr>
<tr>
<td>India</td>
<td>Synergies, economic diversification</td>
<td>Introduction of indigenous fish and optimization of the fish component in rice-fish based natural farming</td>
</tr>
<tr>
<td>Kenya</td>
<td>Recycling, input reduction</td>
<td>Compost</td>
</tr>
<tr>
<td></td>
<td>Soil health</td>
<td>Mulching</td>
</tr>
<tr>
<td></td>
<td>Input reduction, soil health</td>
<td>Plant-based biopesticides</td>
</tr>
<tr>
<td></td>
<td>Recycling, soil health</td>
<td>Animal manure (farmyard)</td>
</tr>
<tr>
<td></td>
<td>Soil health</td>
<td>Water terraces (farm ponds)</td>
</tr>
<tr>
<td>Lao PDR</td>
<td>Input reduction, economic diversification</td>
<td>Solar pumping of groundwater for farming, domestic and school consumption</td>
</tr>
<tr>
<td></td>
<td>Economic diversity, input reduction, biodiversification, diets</td>
<td>Rice-fish system</td>
</tr>
<tr>
<td></td>
<td>Economic diversity, input reduction, diets</td>
<td>Organic red rice growing</td>
</tr>
<tr>
<td>Peru</td>
<td>Recycling, input reduction</td>
<td>Control moniliasis in cacao: mixture of bio-inputs; comparison of various types of inputs</td>
</tr>
<tr>
<td></td>
<td>Recycling, input reduction</td>
<td>Improve cacao yield: frequency of use of bio-inputs</td>
</tr>
<tr>
<td>Senegal</td>
<td>Soil health, synergies</td>
<td>Conservation agriculture</td>
</tr>
<tr>
<td></td>
<td>Legume intercropping</td>
<td>Biofertilization with Sulfa</td>
</tr>
<tr>
<td></td>
<td>Biodiversity, synergies</td>
<td>Valorization of olive by-products</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Composting units</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tunisia</td>
<td>Animal health, biodiversity</td>
<td>Forage mixture</td>
</tr>
<tr>
<td></td>
<td>Biodiversity, economic diversity, animal health</td>
<td>Biofertilization with Sulfa</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Valorization of olive by-products</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Composting units</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Zimbabwe</td>
<td>Input reduction, biodiversity, soil health, animal health</td>
<td>Push-Pull</td>
</tr>
<tr>
<td></td>
<td>Recycling, soil health</td>
<td>Conservation Agriculture (Biomass mulch)</td>
</tr>
<tr>
<td></td>
<td>Input reduction, soil health</td>
<td>Biochar</td>
</tr>
<tr>
<td></td>
<td>Synergies, animal health</td>
<td>Conservation Agriculture (Live mulch)</td>
</tr>
<tr>
<td></td>
<td>Social values and diets</td>
<td>Traditional biopesticides as alternatives to Push-Pull, Conservation Agriculture</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Hay making, feed formulation, mechanization</td>
</tr>
</tbody>
</table>

Source: adapted from the Codesign report.
WP2: Evidence-based agroecology assessments

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.

The HOLPA framework

Holistic Localized Performance Assessment (HOLPA)

Context module (e.g. household and farm characteristics)

Agroecology module (e.g. adherence to agroecological principles)

Assessment Framework

Performance indicators

Agriculture

Economic

Environmental

Social

Piloting, local validation and indicator selection

Localization Process

Output WP2

WP2: Evidence-based agroecology assessments

On track

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.

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WP3: Inclusive business models and financing strategies

Work Package 3 progress against the theory of change

Results from rapid value chain analyses 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.

WP4: Strengthening the policy and institutional enabling environment

Work Package 4 progress against the theory of change

Building on analyses conducted in 2022, outputs were completed this year in 14 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 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.
WP5: Understanding and influencing agency and behavior change

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.

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

1. Progress rating
The targeted numbers of food system actors are being reached. All countries have established one or two ALLs, with co-designed transition pathways. Context-specific agroecological innovations are being tested in the ALLs through action research.

2. Progress rating
Context assessments successfully supported the creation of ALLs and shed light on current use of agroecology practices and principles. The assessment framework and tool were finalized and are being applied with guiding documents in all countries to provide a wealth of data for evidence-based analysis of agroecological performance.

3. Progress rating
Rapid value chain analyses were done in all countries, and eight value chains were prioritized in six of them. In most countries, findings include the identification of business opportunities and financial mechanisms, which are being pursued through partnerships.

4. Progress rating
Opportunities to issue policy recommendations and strengthen local institutions and governance mechanisms have been detected and are being pursued in seven countries. Researchers are working on political economy aspects to advance agroecology policy research.

5. Progress rating
Some modifications were made to the theory of change, and these enabled adaptation to country contexts and priorities, while still allowing for the delivery of planned outputs and outcomes.

Definitions

- On track: Annual progress largely aligns with Plan of Results and Budget and Work Package theory of change. Can include small deviations/issues/delays/risks that do not jeopardize success of Work Package.
- Delayed: Annual progress slightly falls behind Plan of Results and Budget and Work Package theory of change in key areas. Deviations/issues/delays/risks could jeopardize success of Work Package if not managed appropriately.
- Off track: Annual progress clearly falls behind Plan of Results and Budget and Work Package theory of change in most/all areas. Deviations/issues/delays/risks do jeopardize success of Work Package.
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.

### Outputs

<table>
<thead>
<tr>
<th>Knowledge product</th>
<th>107</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capacity sharing for development</td>
<td>75</td>
</tr>
<tr>
<td>Other outputs</td>
<td>33</td>
</tr>
<tr>
<td>Innovation development</td>
<td>16</td>
</tr>
</tbody>
</table>

### Outcomes

| Innovation use | 5 |
| Other outcomes | 5 |
| Policy change | 3 |

### Percentage of reported results tagged to CGIAR Impact Areas

<table>
<thead>
<tr>
<th>Impact Area</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nutrition, health and food security</td>
<td>48%</td>
</tr>
<tr>
<td>Poverty reduction, livelihoods and jobs</td>
<td>45%</td>
</tr>
<tr>
<td>Gender equality, youth and social inclusion</td>
<td>43%</td>
</tr>
<tr>
<td>Climate adaptation and mitigation</td>
<td>28%</td>
</tr>
<tr>
<td>Environmental health and biodiversity</td>
<td>6%</td>
</tr>
</tbody>
</table>

### 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.

### Number of innovations by readiness level

<table>
<thead>
<tr>
<th>Innovation Type</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proven Innovation</td>
<td>1</td>
</tr>
<tr>
<td>Uncontrolled Testing</td>
<td>2</td>
</tr>
<tr>
<td>Prototype</td>
<td>2</td>
</tr>
<tr>
<td>Semi-Controlled Testing</td>
<td>3</td>
</tr>
<tr>
<td>Model/Early Prototype</td>
<td>4</td>
</tr>
<tr>
<td>Controlled Testing</td>
<td>3</td>
</tr>
<tr>
<td>Proof of Concept</td>
<td>1</td>
</tr>
<tr>
<td>Formulation</td>
<td>0</td>
</tr>
<tr>
<td>Basic Research</td>
<td>0</td>
</tr>
<tr>
<td>Idea</td>
<td>0</td>
</tr>
</tbody>
</table>

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*Note: The result is principally about meeting any of the Impact Area objectives, and this is fundamental in its design and expected results. The result would not have been undertaken without this objective.*

*Source: Data extracted from the [CGIAR Results Dashboard](#) on 15 April, 2024.*
Agroecology is the process of co-creating innovations. The Initiative had engaged with approximately 6,200 individuals by the end of 2023. The data in the table comes from a tool developed by the Initiative to monitor direct engagement of FSAs in different stages of institutional innovations that they consider relevant to their particular social, economic, and political contexts. The table shows the food system actors engaged by 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 behavioral change influencing agency and understanding and evidence-based agroecology assessments.

### Number of FSAs engaged in the co-creation of agroecological innovations

<table>
<thead>
<tr>
<th>Country</th>
<th>Male</th>
<th>Female</th>
<th>Farmers</th>
<th>Private sector companies</th>
<th>Researchers</th>
<th>Extensionists</th>
<th>Staff</th>
<th>Staff (NARS)</th>
<th>Other</th>
<th>Policymakers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indonesia</td>
<td>3,189</td>
<td></td>
<td>2,971</td>
<td>3,460</td>
<td>271</td>
<td>212</td>
<td>164</td>
<td>160</td>
<td>151</td>
<td>87</td>
</tr>
<tr>
<td>Zimbabwe</td>
<td>2,033</td>
<td></td>
<td>1,318</td>
<td>1,785</td>
<td>648</td>
<td>384</td>
<td>279</td>
<td>270</td>
<td>54</td>
<td></td>
</tr>
<tr>
<td>Tunisia</td>
<td>1,188</td>
<td></td>
<td>879</td>
<td>829</td>
<td>61</td>
<td>48</td>
<td>35</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kenya</td>
<td>1,007</td>
<td></td>
<td>791</td>
<td>807</td>
<td>51</td>
<td>34</td>
<td>30</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>India</td>
<td>796</td>
<td></td>
<td>572</td>
<td>592</td>
<td>37</td>
<td>26</td>
<td>23</td>
<td></td>
<td>14</td>
<td></td>
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<tr>
<td>Peru</td>
<td>720</td>
<td></td>
<td>512</td>
<td>522</td>
<td>34</td>
<td>24</td>
<td>21</td>
<td></td>
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<tr>
<td>Senegal</td>
<td>540</td>
<td></td>
<td>336</td>
<td>330</td>
<td>21</td>
<td>18</td>
<td>16</td>
<td></td>
<td>11</td>
<td></td>
</tr>
<tr>
<td>Laos PDR</td>
<td>240</td>
<td></td>
<td>168</td>
<td>160</td>
<td>13</td>
<td>10</td>
<td>9</td>
<td></td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>Global</td>
<td>199</td>
<td></td>
<td>151</td>
<td>149</td>
<td>11</td>
<td>9</td>
<td>8</td>
<td></td>
<td>7</td>
<td></td>
</tr>
</tbody>
</table>

### Number of results by partner type

| Research organizations and universities (all types, most national or regional) | 142 |
| Research organizations and universities national (NARS) | 79 |
| Research organizations and universities international | 64 |
| Financial institution (national + international) | 26 |
| Government (national + international) | 24 |
| Organization, other than financial (national + international) | 23 |
| Private company (other than financial) | 14 |
| Other | 7 |
| Organizations | 4 |
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-to-action process. The identified entry points for the agroecology transitions are tailored to specific ALL contexts 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.

**Senegal**
- Fatick
- Entry points and first results
- • Expanded crop-livestock integration and agroforestry to improve yields and productivity.
- • Increased value of local food systems related to milk and millet production and value chains.
- • Integration with the framework and action plan of the existing national movement that promotes agroecology transitions.
- 26 results | 5 innovation developments | 6 knowledge products | 7 capacity sharing for development

**Tunisia**
- Kef-Siliana transect
- Entry points and first results
- • Expanded crop-livestock integration. Enhanced crop diversification and rotation, feed management to cope with forage scarcity during dry periods, reduced inputs, biofertilization and increased recycling in a variety of crop or tree-based systems.
- • Recycling and valuing olive trees (co-)products and improved business models for olive oil to increase market value.
- • Supported the development of national agroecology, and feed and forage strategies.
- 82 results | 11 innovation developments | 44 knowledge products | 2 innovation use | 22 capacity sharing for development

**Peru**
- Ucayali
- Entry points and first results
- • 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 Bromade with an agroecology approach.
- 44 results | 9 innovation developments | 11 knowledge products | 2 policy changes | 17 capacity sharing for development

**Burkina Faso**
- Bobo-Dioulasso
- Entry points and first results
- • 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 forage strategies.
- 32 results | 6 innovation developments | 11 knowledge products | 4 other outcomes | 5 capacity sharing for development

**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 farmers 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 the ecosystem services.
- 30 results | 7 innovation developments | 8 knowledge products | 8 capacity sharing for development

**Lao PDR**
- Attapeu Province
- Entry points and first results
- • Innovations in rice-fish systems, solar pumping of groundwater, organic red rice, & wetlands governance.
- • Improved gate price for farmers in the organic rice market system.
- • Multistakeholder platform joint with partners to achieve coherence across national food, land, and water policies.
- 18 results | 5 innovation developments | 4 knowledge products | 3 other outcomes | 5 capacity sharing for development

**Kenya**
- Kiambu & Makueni
- 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 (INBC and PELUM adopted 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 | 1 policy change | 10 knowledge products | 2 innovation use | 17 capacity sharing for development
Section 5: Partnerships

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 dual-purpose 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 (DyTAES), 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 (CSHEP), 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 (PELUM Kenya) and the Inter-Sectoral Forum on Agrobiodiversity and Agroecology (ISFAA), 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 (Goreu) 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 Biodiverse Agriculture with an agroecological approach and 2028 Action Plan, developed with the NGO Terra Nova 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 COTUGRAIN and National Agricultural Research Institute of Tunisia (INRAT) 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 (TPP) 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 stakeholder support. 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
Section 6: CGIAR Portfolio linkages

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 Laos, the Initiative has linked with the ASEAN Initiative for Food Regional Program and the National Policies and Strategic 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 (FIESA) 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 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.

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 (CRF). 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 cassava 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 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.

Section 7: Adaptive management

RECOMMENDATION SUPPORTING RATIONALE

Foster the widespread adoption of agroecological innovations through scaling mechanisms.

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.

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

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 WPI team will be strengthened to support country teams and produce high-quality knowledge products that provide evidence of agroecology performance in the ALLs.

Potentialize cross WP activities to enhance future agroecology research.

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.

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

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.

Evidence for expected and unexpected Initiative outcomes.

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 ALLs, countries, and international fora.

Include an ALL in Mandla, Madhya Pradesh in India.

Just before the Pause and Reflect workshop, the Initiative undertook a study tour in India, including visits to Andhra Pradesh, where the work focusses 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 Pradan and FES – 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.

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 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.

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 Zaïem, General Engineer at the forage resources department at OEP (Office de l’Elevage et des Pâturages de Tunisie)
A farmer weeds his groundnut plot in Ndiob, Senegal.
Credit: R. Belmin, CIRAD

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