CANALLS
AGROECOLOGICAL PRACTICES FOR SUSTAINABLE TRANSITION

D7.4 – Central and Eastern Africa Network of ALLs- (CANoLL)

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Executive Summary

Central and Eastern Africa is home to some of the world's most diverse ecosystems and agricultural systems, including the Congo Basin Forest, the second-largest rainforest in the world. However, the region faces significant challenges related to food and nutrition security, food safety, biodiversity conservation, climate change adaptation, and sustainable land management. The establishment of a Central and Eastern Africa Network of Agroecology Living Laboratories (CANoLL) presents a strategic opportunity to address these challenges while enhancing agricultural resilience, sustainability and productivity, consumer safety, and biodiversity in the region.

Agroecology, an integrated approach that combines traditional knowledge with modern ecological principles, holds immense potential to transform farming systems, improve soil health, and increase biodiversity while mitigating the negative impacts of industrial agriculture. However, the adoption and scaling of agroecological practices in Central and Eastern Africa are often hindered by limited access to knowledge, resources, and networks that facilitate learning and innovation across various stakeholders. Therefore, the establishment of the Central and Eastern Africa Network of Agroecology Living Laboratories (CANoLL) is a critical step toward addressing the challenges faced by the region's agricultural systems. By connecting diverse stakeholders, sharing knowledge and experience, and promoting locally adapted agroecological practices, the network will contribute significantly to the sustainable development of agriculture in Central and Eastern Africa, fostering long-term food security, climate resilience, and improved livelihoods.

CANoLL aims to establish a collaborative, decentralized platform that promotes agroecological research, practice, and innovation across the region. It's governance and operational model ensure inclusivity, transparency, and efficiency while fostering collaboration among diverse stakeholders, including farmers, researchers, policymakers, and civil society organizations. This model focuses on empowering local communities, enhancing regional integration, and ensuring the sustainability and scalability of agroecological practices.

List of acronyms

Abbreviation	Definition
AATF	African Agricultural Technology Foundation
AB	Advisory Board
AFAAS	African Forum for Agricultural Advisory Services
ALLs	Agroecological Living Labs
APDIK	Association Paysanne pour le Développement Intégré au Sud-Kivu
BR	Burundi
CAMFAAS	Cameroon Forum for Agricultural Advisory Services
CAPAD	Associations des Producteurs Agricoles pour le Développement CAPAD SHIRUKUBUTE
CIRAD	Centre de Coopération Internationale en Recherche Agronomique pour le Développement
CMR	Cameroon
COPED	Company for Protection of Environment and Development
DRC	Democratic Republic of Congo
ETHz	Swiss Federal Institute of Technology Zurich
GASD	Global Action for Sustainable development
IITA	International Institute of Tropical Agriculture
INERA	Institut National pour l'Etude et la Recherche Agronomiques
IRAD	Institute of Agricultural Research for Development
ISABU	Institut des Sciences Agronomiques du Burundi
KPIs	Key Performance Indicators
MFARM	Maggot Farm Production LTD
LL	Living Laboratory
NATUR	Naturland – Verband Für Ökologischen Landbau E.V

NALL	Network of Agroecology Living Laboratories
NIBIO	The Norwegian Institute of Bioeconomy Research
Q-PLAN	Q-PLAN International Advisors
RAB	Rwanda Agriculture and Animal Resources Development Board
RIK	Rikolto International
RW	Rwanda
SCOOP	SCOOPMAN - Coopérative
UCB	Université Catholique de Bukavu
UHOH	The University of Hohenheim

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1. INTRODUCTION

1.1 Background

The global shift towards sustainable food systems is essential for ensuring safe, nutritious, and affordable food for a growing population, while also supporting to climate adaptation and mitigation efforts to achieve the Sustainable Development Goals. Africa, particularly sub-Saharan Africa (SSA), faces significant food and nutrition insecurity due to poverty, conflict, economic instability, and climate change. Eastern and Central Africa have shown the highest levels of undernourishment, with stunting rates of 34% and 31% respectively in 2019 (Atukunda et al., 2021).

The CANALLS project aims to promote agroecological transitions in Central and Eastern Africa's humid tropics through multi-actor Agroecology Living Labs (ALLs). The project will engage over 20,000 farmers and value chain actors to co-create agroecological practices focusing on key crops such as cocoa, coffee, cassava, rice, and maize. Its objectives include establishing eight multi-actor ALLs in DR Congo, Burundi, Cameroon, and Rwanda, developing tools for identifying and testing agroecological practices, creating sustainable business models, and building capacity for adopting these practices.

The development and implementation of the CANALLS project are organized via nine work packages (WPs). WP1 analyses the current situation across rural communities and agroecosystems. WP2 develops and finetunes the co-creation methodology and assessment framework. WP3 establishes and operates the multi-actor ALLs. WP4 focuses on monitoring and evaluating performance and impact. WP5 designs fair, inclusive, and sustainable business models. WP6 scales innovations for agroecological transitions. WP7 manages the multi-actor dissemination, exploitation, and communication. WP8 ensures effective project management and coordination, and WP9 addresses ethical requirements.

The overall objectives of Tasks 7.4 include: (i) leveraging a Central and Eastern Africa Network of Agroecology Living Laboratories (CANoLL) as a key sustainability vehicle for the results obtained from the various work packages of the project, mainly WP2 and WP3; (ii) facilitating knowledge exchange among CANoLL members, supporting the development and harmonization of the maturity level of the eight Living Labs, and creating opportunities for more horizontal integration across agroecology programs. This is very necessary because

the CANALLS project is conducted in four African countries namely Cameroon, Burundi, Rwanda, and DR Congo, and eight living laboratories (LL) have been put in place operating with different focus crops. Some LLs share the same focus crops (Figure 1). A series of field experiments have been put in place in the respective ALLs concerning the specific contexts. Although ALLs operate differently, the general approach and targets remain the same.

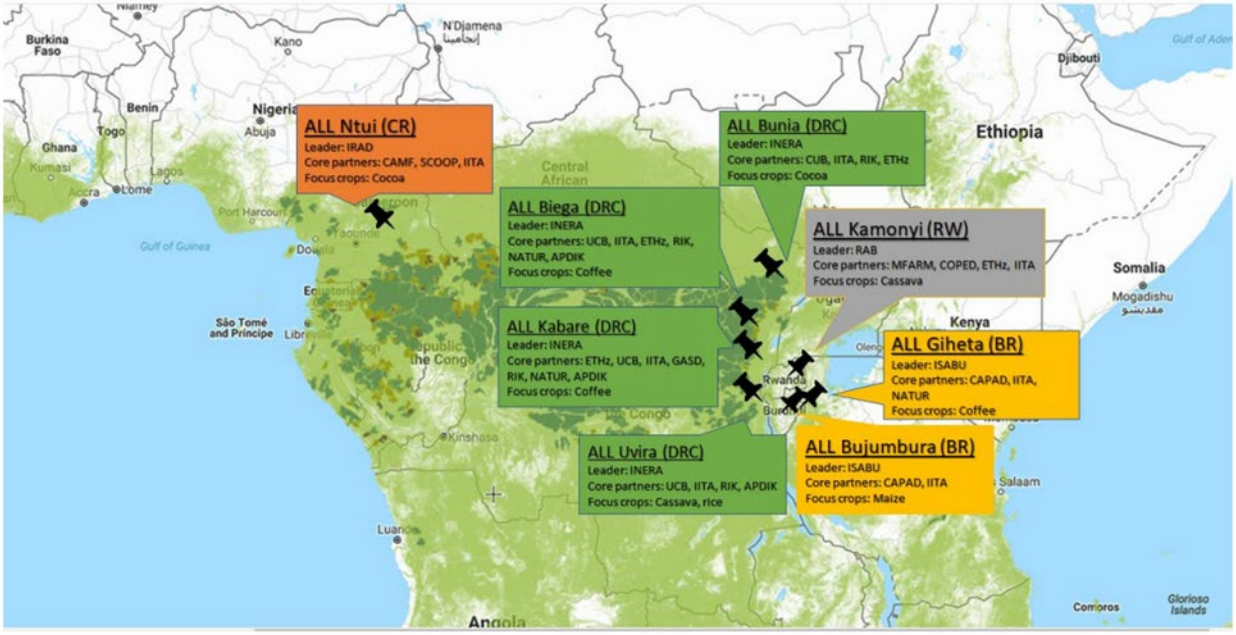

Figure 1: The agroecological living laboratories (ALLs) of the CANALLS project, focus crops, and leading organizations

CANoLL will operate throughout the project, facilitating knowledge exchange among its members, with future plans to collaborate with other Living Lab-related projects whenever possible.

1.2 Objectives and outline

This deliverable, D7.4, presents the initial network design for CANoLL, encompassing key components to ensure a robust and sustainable network structure. Specifically, the initial network design includes: (i) a Governance and Operational Model: This outlines the fundamental structure of the network, detailing its key components, sub-components, and the roles and activities associated with each. It provides a clear framework for the network's operation and management; (ii) Services to be delivered by CANoLL, mainly drawing from the results of WP2 and WP3. This section lists the key services and sub-services that the

network will provide. These services are essential for addressing stakeholders' needs and supporting the network's overall objectives; (iii) Key Performance Indicators (KPIs): This section outlines measurable indicators for assessing the network's progress and success. These KPIs will help monitor the effectiveness of the network and ensure it meets its goals; (iv) Capacity and Quality Criteria for Future Members: Since the network is designed for future growth and expansion, it is important to establish basic quality criteria for integrating new members. These criteria will ensure that future additions uphold the network's standards and contribute effectively to its objectives; (v) Purpose of the Digital Workshop: A key step in refining the network design is engaging with the network's stakeholders through a digital workshop. This workshop, involving key members from our Agroecology Living Labs (ALLs) and the Advisory Board (AB), provides an opportunity for fine-tuning the proposal and ensuring alignment with the broader goals and needs of the community; (VI) Strategy and Plan for Running and Growing the Network: This section outlines the proposed strategy for managing and expanding the network. It includes targets, timelines, and responsibilities, all of which require careful planning and consideration. The strategy considers various factors, such as the network's goals, the complexity of the agroecological systems involved, and the stages of development required to achieve long-term success.

Overall, this deliverable sets the stage for the sustainable development and growth of the CANoLL network beyond the project lifetime, providing a comprehensive overview of its structure, services, performance metrics, and future expansion plans.

1.3 Methodology

A Network of Agroecology Living Laboratories (NALL) serves as a collaborative platform where diverse communities, researchers, farmers, and other stakeholders work together to test, innovate, and scale sustainable farming practices based on agroecology. These laboratories operate as real-world ecosystems that allow participants to experiment with agroecological practices and principles, including soil health, biodiversity conservation, and climate resilience, in a controlled yet dynamic setting. By facilitating knowledge exchange and hands-on learning, the network fosters the development of solutions that address local food security challenges, promote ecological restoration, and empower communities. The NALL also represents hubs for creating regenerative agricultural models based on

agroecology that can be adapted and replicated across different regions, promoting a transition towards more sustainable and just food systems.

There is no single, unified NALL in Africa, but various networks are advancing agroecology and sustainable farming practices. Initiatives like Agroecology for Resilience in East and Southern Africa (ARES) and the Alliance for Food Sovereignty in Africa (AFSA) (https://afsafrica.org/) unite stakeholders such as smallholder farmers, policymakers, and non-governmental organizations (NGOs) to promote agroecological practices that enhance food security and climate resilience. The African Union's Comprehensive Africa Agricultural Development Programme (CAADP) (https://caadp.org/) and the Ecological Organic Agriculture Initiative (EOA) (https://biovisionafricatrust.org/eoa-initiative/) also focus on scaling organic farming and improving food system resilience. While not officially called agroecology living labs, these networks foster collaboration and knowledge-sharing to develop sustainable agricultural solutions, contributing to the growing momentum for agroecological practices across the African continent.

Global networks like the International Network of Agroecology Living Landscapes (INALL) (https://www.cgiar.org/initiative/agroecology/?section=Networkand) the EU's Agroecology Living Labs and Research Infrastructure (ALL-RESEARCH) (https://www.all-ready-project.eu/) promote knowledge-sharing, research, and practical innovations across regions. These networks enable cross-border collaboration, exchanging best practices and local solutions suited to various agro-ecosystems, while contributing to the global movement for sustainable, just, and resilient food systems. Through these efforts, agroecology is gaining recognition as a powerful tool for advancing both local and global food sovereignty.

The first step toward establishing CANoLL involved exploring existing agroecology networks in the region for potential collaboration, rather than creating a new network from scratch. However, the search yielded no results, as there were no existing ALL networks in the area. As a result, the initial design of the CANoLL network was developed based on a thorough literature review, the objectives of the CANALLS Project, and the specific goals of the task at hand. IITA drafted the first version of the network design. This initial draft was then shared with the primary supporting partner organizations, CIRAD and NIBIO, for their review and feedback. After incorporating revisions from this phase, a general online meeting was held with the key members of the A, and all supporting organizations namely CIRAD, IITA, ETHz, UHOH, NIBIO, UCB, INERA, IRAD, RAB, ISABU, RIK, CAMFAAS, AATF, AFAAS, Q-PLAN,

APDIK, SCOOP, CAPAD, COPED, MFARM, GASD, and NATUR, for further input. The draft was later uploaded online to gather additional feedback. Following the online review, a meeting with the Advisory Board (AB) of CANALLS was held to fine-tune the proposal. Once the AB's recommendations were integrated, the revised document was sent back to the AB for further suggestions and refinements.

2. INITIAL NETWORK DESIGN

2.1 Governance and operational model of CANoLL

CANoLL has a broad scope, so far encompassing eight ALLs composed of diverse agro-ecosystems, farming communities, and stakeholders across Central and Eastern Africa. Its objectives include fostering innovation in sustainable farming practices by creating a platform for knowledge exchange about the experiments, and research activities conducted within the CANALLS project for a start, with future extension plans. By connecting various agroecological initiatives, CANoLL will also facilitate the scaling of successful agroecological practices across regions, while fostering collaboration among researchers, policymakers, NGOs, and farmers.

The governance and operational model for a network of ALLs aims to facilitate collaboration, experimentation, and knowledge sharing among diverse stakeholders. The governance model refers to the structure, processes, and practices that define how decisions are made, roles are assigned, and responsibilities are distributed within the network of ALLs. It ensures that the network operates effectively, aligns with its mission and goals, and maintains transparency, accountability, and participation from stakeholders. Key features of the governance model include (i) Decision-making processes; (ii) Roles and responsibilities; (iii) Stakeholder engagement; (iv) Collaboration and coordination; (v) Conflict resolution; (vi) Accountability and transparency, and (vii) Sustainability.

An operational model describes the practical execution of the network's activities, processes, and strategies. It focuses on how the day-to-day operations are conducted to achieve the objectives of ALLs. Key components of the operational model include (i) ALL specific activities (specific tasks, research activities, and experiments conducted in each living lab to promote

agroecology principles); (ii) collaboration and partnerships; (iii) knowledge exchange; (iv) resource allocation; (v) monitoring and evaluation, and (vi) sustainability.

Figure 2 shows the key components, sub-components, and respective roles/activities for the governance and operational model.

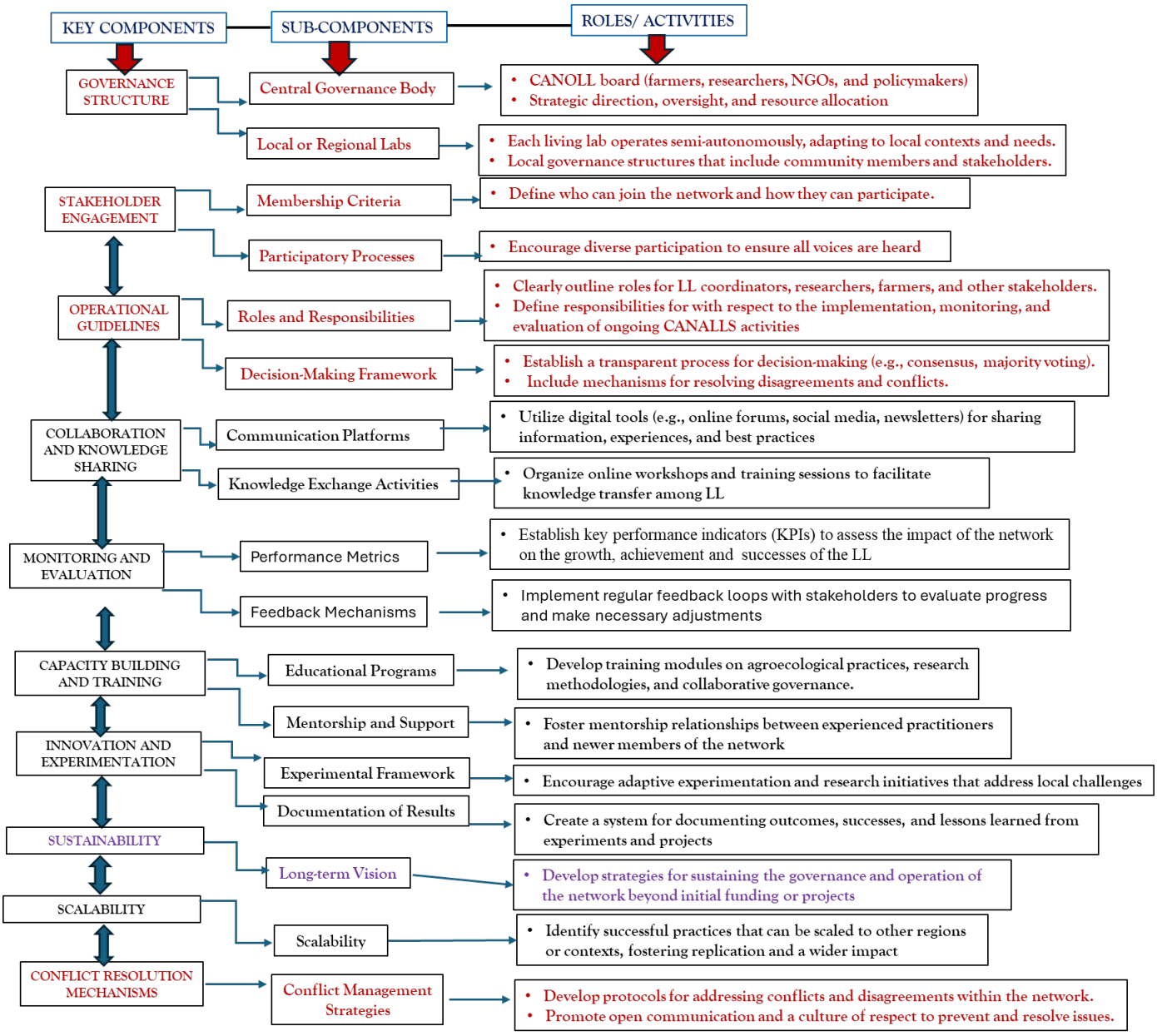

Figure 2: Governance and operational model of CANoLL

Keys

Red: Components of the governance model

Black: Components of the operational model

Purple: Component of both governance and operational models

At the top of management is the Management Board, responsible for overseeing the overall strategic direction. Initially, the board members of CANoLL will be assigned by project and work package leaders. Beneath it, is the coordinator who leads the day-to-day operations and ensures that the CANoLL's goals are met. Each ALL is managed by a Local Coordinator or Lab Manager, who coordinates activities on the ground, including collaboration with farmers and local stakeholders. The Technical Experts or Specialists in areas like soil health, agronomy, environmental sciences, and social sciences support the network with their knowledge, providing guidance on the discussions about implementing agroecological practices. At the community level, Farmers' Groups or Community Facilitators work closely with ALL participants to facilitate discussions around the co-created agroecological practices. Regular communication and reporting channels are maintained between the local coordinators, the CANoLL coordinator, and the management board to ensure progress and knowledge exchange across all ALLs in the network. This structure ensures both local-level adaptability and centralized oversight for effective management of the ALLs and CANoLL. As the network grows a democratic voting process will be introduced, with board members elected based on voluntary candidatures. This transition will create a more inclusive and transparent leadership as the network expands.

The leaders of our ALLs will sign a Memorandum of Understanding to formalize the network and increase commitment for its sustainability.

2.2 Services to be delivered by CANoLL

CANoLL will deliver services focused on sustainable agriculture, environmental stewardship, and community development. These services will support the transition to more ecologically sound farming practices while engaging local communities and stakeholders. At least in the beginning, the services provided will primarily aim to stimulate collaboration and facilitate the exchange of information, knowledge, solutions, and experience among the various ALLs working to develop agroecology. Figure 3 shows the key services, specific services, and related WPs and Tasks in CANALLS.

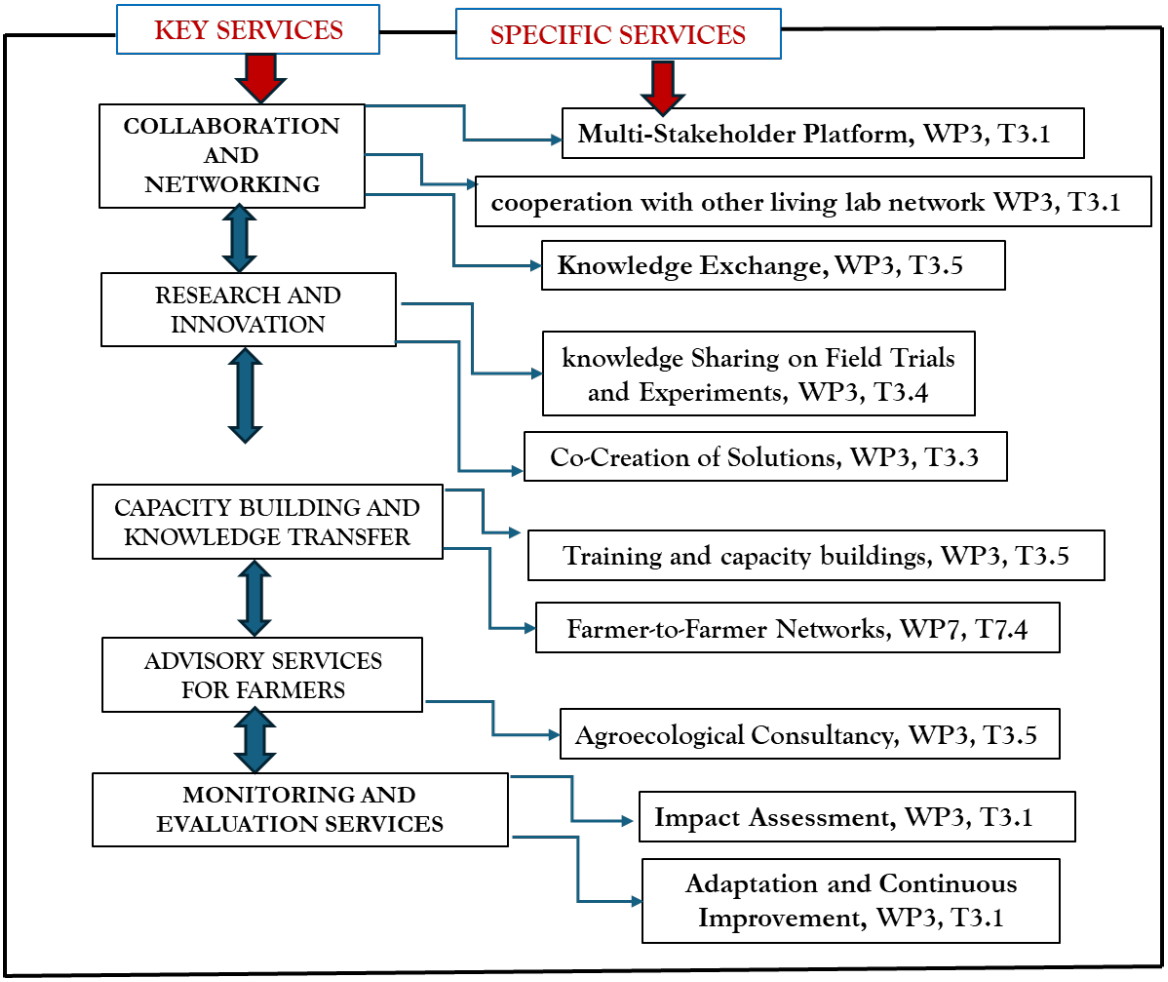

Figure 3: Services to be delivered by CANoLL

This range of services can make the CANoLL a powerful network for sustainable agricultural transformation, knowledge dissemination, and community engagement.

2.3 Key Performance Indicators (KPIs)

Defining KPIs for this network of ALLs required a thoughtful approach, ensuring they align with the network's specific objectives while being measurable, actionable, and relevant to stakeholders involved. The defined Key Performance Indicators (KPIs) of CANoLL measure the effectiveness, impact, and sustainability of the network. Table 1 shows some essential KPIs across various dimensions. KPIs were not defined for this specific task in the grant agreement of CANALLS.

Table 1: Key performance indicators (KPIs) for CANoLL

KPI Category	Key Performance Indicator (KPI)	Target
Capacity Building	Number of training programs and workshops held	4/year (1 / trimester)
	The number of stakeholders in ALL trained (farmers, farmer's organizations, government institutions, research institutions, academic institutions, non-government organizations, value chain actors, and civil society. etc.)	≥ 10 stakeholder categories/ALL
	Number of field trails to be analyzed	≥ 16 (2 per ALL x 8 ALL)
	Number of participants /members trained	≥ 25/ALL (10 farmers + representatives of the different levels of the value chain)
	Local working groups	08 (1/ALL)
	Diversity of working groups	10 stakeholder categories/ALL
Knowledge Exchange	Conferences, webinars, cross-lab workshops	≥ 2/year online
	Number of participants per event	≥ 66 (3/institution)

These KPIs provide a framework to measure the success of the network.

Beyond the online workshops, a permanent and active online page will be created for experience sharing, primarily among ALL members, but it can also serve other agroecology initiatives in the region. A group of dedicated individuals, mainly communications experts, will be voted by the CANoLL Board to keep the on-line platform active and provide regular stories, updates, and other content. The plan is to expand the network in the future by integrating other ALL-related projects that are active in the region, such the Multifunctional Landscape Program (https://www.cgiar.org/news-events/news/from-the-agroecology-initiative-to-the-multifunctional-landscapes-program-a-partner-forum/)

2.3 Key capacity and quality criteria for future members

To start with, the network will primarily consist of the ALLs of CANALLS. The criteria for selecting these ALLs include: (i) scores achieved in the interviews, (ii) diversity of the actors,

(iii) competence of the actors in agroecology, and (iv) the expected influence and interest of the actors in the ALLs.

The plan is to extend the network in the future by integrating other ALL-related projects in Central and Eastern Africa. Eventually, the network will be opened for other agroecology-related initiatives, especially those introducing innovations in the target region.

Establishing criteria for future members in CANoLL ensures that they contribute meaningfully to the network's mission of advancing sustainable and regenerative agricultural practices, based on agroecology. Table 2 shows an outline of capacity and quality criteria that can help evaluate and select future members.

Table 2: Capacity and quality criteria for future members

Criteria Category	Capacity Criteria	Quality Criteria
Research Capacity	Proven ability to conduct agroecological research and field trials	Results of previous research works and records of high-quality, peer-reviewed publications
Community Engagement	Experience in engaging local and regional communities and stakeholders	Previous working experience the local and regional communities
Environmental Stewardship	Proven commitment to sustainable land management	Results of works in relation to biodiversity, soil health, and water conservation
Collaboration and Networking	Willingness to collaborate with other ALLs and institutions	A strong network of existing partnerships across sectors
Training and Education	Capacity to offer training programs and workshops	Experience in capacity building for farmers, students, or communities
Technical and Innovation Capacity	Capability to transfer technology to farmers and communities	The adoption rate of new technologies by local farmers
Funding and Resource Management	Financial stability and resource mobilization capacity for internal activties	Efficient use of resources with demonstrated impact

Monitoring and Evaluation	Capacity to collect and analyze relevant data for assessing progress and impact	Established frameworks for evaluating environmental, social, and economic outcomes
Sustainability and Long-Term Vision	Commitment to the long-term sustainability of lab operations	Clear long-term goals aligned with the network's agroecological vision

The qualifications of members will be assessed by the coordination team. These criteria will help assess new members' potential to actively support the network's goals and enhance its collaborative potential. They ensure that future members are well-equipped and motivated to contribute to a holistic agroecological approach. However, the network will remain open to integrating projects that operate on innovation platforms, even if they do not meet all the listed criteria. It is also important to note that some projects may follow agroecological principles even if the word "agroecology" is not explicitly used as a keyword in their framework. The conditions for admission into the network will be flexible and adaptable to the existing context to ensure long-term sustainability.

2.4 A digital workshop with key members of ALLs and the Advisory Board of CANALLS

The first digital workshop with key members of our ALLs and the Advisory Board focused on building a shared understanding of the network's vision, objectives, and collaborative processes. This meeting was crucial for aligning partners with the established governance frameworks and outlining the operational model for CANoLL. Thus, the workshop aimed to fine-tune the initial network design.

2.5 Strategy and plan for running and growing the network (targets, timelines, and responsibilities)

A set of criteria will help assess the potential of new members to actively support CANoLL's goals and enhance its collaborative capacity. They ensure that future members are well-equipped and motivated to contribute to a holistic agroecological approach. The conditions for admission into the network will be flexible and adaptable to the existing contexts to ensure long-term sustainability. Creating a timeline for running and growing a network of ALLs

requires a strategic approach, with distinct phases for initiation, scaling, and solidifying impact. Table 3 shows a structured timeline broken down by key activities and milestones. It outlines the main targets, their timelines, and the parties responsible for ensuring the smooth functioning and progress of the network of ALLs. Each category has its designated team or committee, ensuring accountability and structured coordination across the network.

Table 3: Strategy and plan for running and growing the network

Main targets	Sub-targets	Responsible Parties	Timeline
Governance and Structure	Establish a clear governance framework and define roles	Network leadership, advisory board, key members	Jan-March 2025
	Set up the CANoLL boards and coordination teams	Network leadership, CANoLL board	
Operational Coordination	Set up digital platforms for collaboration and data sharing	Network coordinator	April 2025
Partnerships and Collaboration	Establish partnerships with stakeholders	Partnership committee, network leadership	May - July
	Secure funding and resources	Partnership committee, network leadership, fundraising team	
Capacity Building	Organize training programs and workshops	Capacity-building committee, local lab coordinators	Sept 2025
Monitoring and Evaluation (M&E)	Develop a M&E framework with defined KPIs	M&E committee, advisory board	Oct-Dec 2025
	Conduct the first impact assessment	M&E committee, external evaluators	
	Annual evaluation and reporting	M&E committee, network coordinator	

3. CONCLUSIONS

The CANALLS project aims to promote agroecological transitions in Central and Eastern Africa by establishing eight Agroecology Living Labs (ALLs) in the DR Congo, Burundi, Cameroon, and Rwanda. It involves over 20,000 farmers and value chain stakeholders to co-develop agroecological practices focused on crops like cocoa, coffee, cassava, rice, and maize, essential for both subsistence and economic development. Co-creation solutions have resulted in the setting up of trials with respect to specific crops and farmers' contexts.

To facilitate knowledge sharing across these ALLs, a collaborative network is essential. Therefore, designing an initial network structure is a crucial first step in establishing a foundation for a region-wide transition to agroecology. This design process ensures that the network is structured to effectively integrate diverse stakeholders, including farmers, researchers, policymakers, and community members from diverse ALLs, with a shared vision of promoting agroecological principles. By establishing clear goals, communication channels, and governance structures, the network design fosters knowledge exchange, resource sharing, and the scaling of agroecological innovations. Additionally, it provides a flexible framework that can adapt ALLs to local contexts while maintaining coherence across the ALLs. The success of this initial design will set the stage for continuous learning, iterative improvement, and long-term impact, ultimately contributing to the transformation of agricultural systems towards sustainability and resilience.

References

Atukunda, P., Eide, W. B., Kardel, K. R., Iversen, P. O., & Westerberg, A. C. (2021). Unlocking the potential for achievement of the UN Sustainable Development Goal 2–'Zero Hunger'–in Africa: targets, strategies, synergies and challenges. *Food & nutrition research*, *65*.