

Agroecology and Organic: Evidence from Research and Demo Plots for Practice and Policy in Zambia



CONFERENCE REPORT

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Acronyms

AE Agroecology	ITPGRFA International Treaty on Plant Genetic Resources for Food and Agriculture
ATIs Agriculture Training Institutions	JCTR Jesuit Centre for Theological Reflection
CBD Convention on Biological Diversity	KATC Kasisi Agriculture Training Centre
CATSP Comprehensive Agriculture Transformation Support Programme	KHSA Knowledge Hub Southern Africa
CBNRM Community-Based Natural Resource Management	KCOA Knowledge Centre for Organic Agriculture in Africa
CIFOR Centre for International Forestry Research	MASAP Markets and Seeds Access for Small Grains and Legumes
COMACO Community Markets for Conservation	MOs Member Organizations
CSA Climate Smart Agriculture	MoA Ministry of Agriculture
CSOs Civil Society Organisations	NAIP National Agricultural Implementation Policy
EOA Ecological Organic Agriculture	NAS National Agroecology Strategy
EU European Union	NGOs Non-Governmental Organizations
FAO Food and Agriculture Organisation	PBR Plant Breeders' Rights
FAW Fall Army Worms	PGS Participatory Guarantee Systems
FiBL Research Institute of Organic Agriculture	SDGs Sustainable Development Goals
FMNR Farmer Managed Natural Regeneration	SIFAZ Sustainable Intensification of Smallholder Farming Systems in Zambia
FTCs Farmer Training Colleges	UNZA University of Zambia
GAP Good Agriculture Practices	ZAAB Zambia Alliance for Agroecology and Biodiversity
GART Golden Valley Agriculture Research Trust	ZARI Zambian Agricultural Research Institute
GIC Green Innovation Centre	8NDP 8th National Development Pl
GMO Genetically Modified Organisms	
GIZ Deutsche Gesellschaft für Internationale Zusammenarbeit	
ICRAF International Council for Research in Agroforestry	
IFOAM International Federation of Organic Agriculture Movements	
ISFM Integrated Soil Fertility Management	



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1. Introduction

On Thursday, November 9, 2023, stakeholders from Zambian civil society, research, academia, farmer organisations, and relevant government departments, in collaboration with international cooperating partners, convened for the **Agroecology and Organic: Evidence from Research and Demo Plots for Practise and Policy in Zambia Conference**, at the M'kango Golfview Hotel in Lusaka, Zambia.

The objectives of the workshop were threefold:

- To bring together organic and agroecology stakeholders in Zambia to share and engage on research and policy evidence, particularly related to on-farm and on-station research and demo plots.
- To provide clarity on the key commonalities and differences between organic agriculture and agroecology in the Zambian context. The workshop aimed to unpack nuances, fostering a deeper comprehension of these sustainable farming approaches.
- To establish a dynamic platform for networking around agroecology and organic evidence and knowledge. This aspect of the workshop aimed to transcend the confines of the event, creating lasting connections that will contribute to the advancement of sustainable agricultural practices in our region.

The workshop, jointly organised by PELUM Zambia, Kasisi Agriculture Training Centre (KATC), The Knowledge Hub Southern Africa (KHSa), and the Research Institute of Organic Agriculture (FiBL), operated under the auspices of the Knowledge Centre for Organic Agriculture in Africa (KCOA) Programme, in collaboration with the Zambia Alliance for Agroecology and Biodiversity (ZAAB) and the Markets and Seeds Access for Small Grains and Legumes (MASAP) Project in Zambia and Zimbabwe. It was officially opened by Dr. Nguni, the Director of the Zambian Agricultural Research Institute.

Commencing in 2019, the KCOA Programme, facilitated by the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH, collaborates with national, regional, and international partners across five regional hubs in Africa (Central, East, Northern, Southern, and West). Supported by the German Federal Ministry for Economic Cooperation and Development, this program aims to enhance knowledge and practices in organic agriculture.

This report provides an overview of the programme discussions and key outcomes that emerged from the collaborative spirit that unfolded on the day.

2. Programme Discussions and Presentations

Below is a running order of the programme and links to material if and as provided by presenters.

1. Official Opening of the Workshop: **Dr. Dickson Ng'uni** (Director, Zambian Agricultural Research Institute, ZARI)
2. [Background to FiBL and Agroecology and Organics in Africa](#): **Gian Nicolay** (Research Institute of Organic Agriculture, FiBL)
3. [Agroecology and Organics in Zambia: an Overview on Evidence and Further Knowledge Needs for Practise and Policy](#): **Mutinta Nketani** (Zambian Alliance for Agroecology and Biodiversity, ZAAB)
4. [Agroecology Research Mainstreaming in National Programmes](#): **Victoria Mbewe** (Zambian Agricultural Research Institute, ZARI)
5. FAO Global Support for Agroecology and Strengthening Awareness of the FAO Agroecology Knowledge Platform in Zambia: **Zuba Mwanza** (Food and Agriculture Organisation) (no visual presentation provided)
6. Plenary Discussions: **Dr. MacLoyd Mbulwe** (Zambian Agricultural Research Institute, ZARI)
7. [Organic and Agroecology Performance: Practical Evidence from Research and Demo Plots in Zambia](#): **Father Claus Recktenwald** (Kasisi Agricultural Training Centre, KATC)
8. [Agro-biodiversity in Smallholder Farming in Zambia: Knowledge Status, Gaps and Opportunities](#): **Charles Nkhoma** (Community Technology Development Trust, CTDT)
9. [Organic and Agroecology: Evidence from Selected Regions in Africa and Elsewhere in the World](#): **Dr. Irene Kadzere** (Research Institute of Organic Agriculture, FiBL)
10. [KCOA Case: Policy Engagement and Knowledge Dissemination on Organic and Agroecology in Zambia](#): **Muketoi Wamunyima**, PELUM Zambia
11. Plenary Discussions: **Professor Benson Chishala** (University of Zambia, UNZA)
12. Panel Discussion 1: Long-Term On-Station and On-Farm Research and Demo Plots on Organic and Agroecology in Zambia: **Mwansa Mungela** (GIZ-GIC), **Patricia Masikati** (ICRAF), **Dr Benson Chishala** (UNZA), **Sebastian Scott** (Grassroots Trust) and **Dr. Mbulwe** (ZARI Plant Breeders)
13. Panel Discussion 2: Key Knowledge, Challenges, Evidence Requirements and Collaboration on Organic and Agroecology for Practise and Policy in Zambia: **Charity Kabongo** (Rescope), **Penelope Malilwe** (MoA), **Rutger Persson** (MASAP), **Kanangwa Newlove** (IFOAM EOA) and **Christopher Chishi** (Journalist- 5FM)
14. **Plenary discussions**: Consolidating presentations and programme outcomes, identifying needs and opportunities to take forward.

3. Highlights from official opening remarks and overview presentations

In his official opening remarks, **Dr. Nguni from the Zambia Agriculture Research Institute (ZARI)** touched on several key points including the following:

- The challenge to achieve food and nutrition security in Zambia
- Increasing land degradation and climate change - impacts on agricultural productivity and food security
- Organic and other AE practices offer options to mitigate these challenges, especially critical aspects of improving soil fertility and smallholder farmer resilience.
- Zambia's need for more contextual evidence on organic practices and AE; potential for generating evidence through collaboration in on-station and on-farm research and networking, and well-designed demo plots in order to inform practice, decisions and policies.
- The value of generating contextual scientific evidence and its translation into policy, learning and practise through collaboration, exchange and networking.



The overview online presentation by **Gian Nicolay, from Research Institute of Organic Agriculture (FiBL)**, focused on the trends in agricultural development over the decades, some of which focused on industrial agriculture, and have contributed to land degradation and environmental pollution. The presentation underscored the essential need for transitioning into more sustainable production and food systems through approaches such as organic and agroecology. It argued for greater linkages and collaboration between organic and agroecology stakeholders.



Mutinta Nketani from The Zambia Alliance for Agroecology and Biodiversity (Zaab) pointed out the following in her presentation on AE in policy and practice:

- Increasing number of farmers are transitioning to or taking up agroecology in Zambia following awareness raising, capacity development and backstopping from CSOs, faith-based organisations and other initiatives supported by development actors.
- The pace of AE transitions is still slow due to various reasons, including the limited technological, training and practical expertise, competing and strongly marketed conventional systems and trade industry's lock-in, lacking support and policy framework to AE, inappropriate market design and bias unsupportive to AE production systems, etc.
- Opportunities for greater AE uptake exist in Zambia considering the existence of research and academic actors, the CSOs promoting AE, and other actors.
- Considerations for the development of a national AE strategy in Zambia, which Muketoi Wamunyima outlined in a later presentation.



4. Evidence of Organic and Agroecology from Research and Demo Plots in Zambia

The conference provided an exploration into the diverse range of research initiatives, demo plots, and related programme evidence emerging from work on agroecology or organic practices by different actors in Zambia.

4.1 Insights from ZARI

Victoria Mbewe from the Zambian Agricultural Research Institute (ZARI) highlighted their research initiatives and ongoing programmes related to agroecology and organic agriculture in Zambia through the Ministry of Agriculture and various cooperating partners. Notable national research initiatives encompassed Integrated Soil Fertility Management (ISFM), incorporating practices like crop rotation, intercropping, and green manuring. Climate-smart agriculture initiatives, particularly agroforestry and conservation agriculture, were also emphasised. Additionally, Good Agricultural Practices (GAP), climate-smart crop varieties, and various organic practices were integral components of Zambia's agricultural landscape. Currently, a significant

focus of ZARI's trials includes the validation of the Push and Pull technology for managing fall armyworms (FAW) and the examination of the effectiveness of ecological control options for FAW, acknowledging the importance of sustainable pest management strategies.

4.2 Insights from FAO

Zuba Mwanza from the Food and Agriculture Organisation (FAO) noted that the FAO global programme is playing a crucial role in promoting support for agroecology through the Agroecology Knowledge Platform, although this initiative is not yet being implemented by the FAO in Zambia. Other organic or agroecology related projects they are supporting, particularly in relation to adaptation to climate change, include: 1) The EU-funded Sustainable Intensification of Smallholder Farming Systems in Zambia (SIFAZ) project, aimed at promoting agroforestry tree species for soil fertility in specific crops on its on-farm trials. These trials facilitate adaptive research, ensuring enhanced farmer participation in interventions geared towards increasing crop production on limited land. Interventions include crop diversification, smart agriculture practises, weeding strategies, and the use of cover crops, all of which have contributed to improved harvests. 2) The Zambia SCRALA Project - a partnership with the Ministry of Agriculture and the Ministry of Green Economy. This project aims to strengthen farmers' capacity to plan for climate risks by promoting climate-resilient agricultural production and diversification practises to enhance food security and income generation. FAO is also working actively with ZARI to implement sustainable, evidence-based practices to further enhance agricultural productivity in the region.

4.3 Insights from Kasisi Agricultural Training Centre

Father Claus Recktenwald from the Kasisi Agricultural Training Centre (KATC) shared practical evidence emerging from their own work and research conducted through the production unit at KATC as well as with farmers and demo sites around the country. For two decades, KATC has been at the forefront of implementing demonstration plots across various settings in Zambia, including villages, government institutions, and agriculture colleges. These demo plots have served as invaluable tools for hands-on learning and experimentation, allowing stakeholders to witness and engage with organic and agroecological practices firsthand.

Within these demo plots, KATC has explored a range of agroecological practices to understand their impact on agricultural productivity. Notable practices include intercropping, crop rotation, crop mixture, and undersowing. Through these initiatives, KATC aims to contribute to the body of evidence supporting sustainable and organic farming practices in Zambia. Fertility enhancement, a critical aspect of sustainable agriculture, is achieved organically within these demo plots through the application of compost and biofertilizers.

In a compelling comparison, KATC has undertaken an assessment of maize yields from their organic demo plots in contrast to yields from FAO. The results are significant: organic demo plots consistently outperform FAO maize yields by as much as 100% in some cases. Varying combinations of intercropping have also resulted in improved soil fertility, despite the fact that intercropping can be challenging without sufficient knowledge of the crops involved and how they interact. This comparison underscores the efficacy of organic and agroecological practices championed by KATC, providing empirical evidence of the tangible benefits of these sustainable approaches in the Zambian context.

4.4 Insights from Community Technology Development Trust

Charles Nkhoma from the Community Technology Development Trust (CTDT) provided an overview of his organisation's efforts to bolster agro-biodiversity within smallholder farming communities in Zambia. In his address, Nkhoma emphasised the pivotal role played by the diversity inherent in farmer-held seeds in combating the challenges posed by climate change. The significance of this diversity extends beyond the immediate benefit to farmers; it serves as a crucial resource for plant breeding. Differences in biodiversity, as highlighted by Nkhoma, offer a valuable tool for plant breeders in identifying both threats and opportunities in the agricultural landscape taking into consideration the needs and preferences of farmers, consumers and other stakeholders.

CTDT is actively involved in the promotion and conservation of agrobiodiversity through approaches that include the establishment of community seedbanks, on-farm conservation initiatives, and a strategic shift towards cultivating greater diversity in agricultural products to diversify income generation for local farmers. A noteworthy aspect of CTDT's work lies in the creation of value chains for neglected or underutilised species, a key step in unlocking the economic potential of diverse crops. The organisation also supports farmer-managed seed systems, facilitates participatory plant breeding, and advocates for the implementation of global plans and agreements such as the Convention on Biological Diversity (CBD) and the International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA).

4.5 Insights from some global research

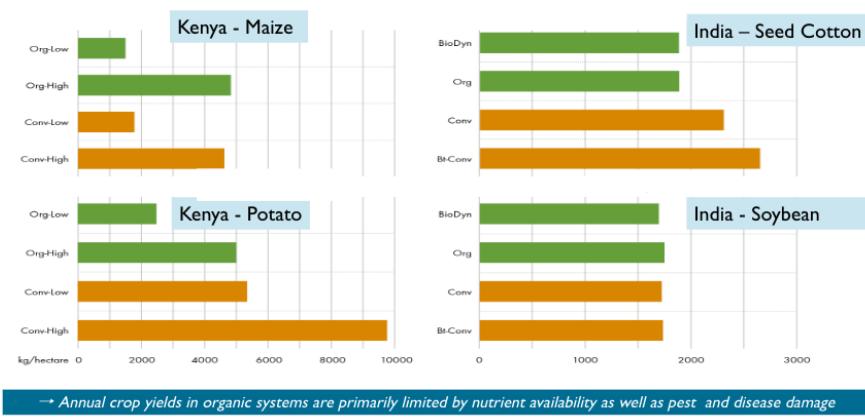
Dr. Irene Kadzere from FiBL, based in Switzerland, presented highlights from global and specifically African research that FiBL has been leading over the years in collaboration with local partners. The background to the research in tropics is that meta-analyses of data from developed countries indicated yield gaps, with organic yields being on average 25% lower than conventional. This prompted FiBL and local partners to engage in research aimed to evaluate the performance of organic in the tropics. To provide useful comparison and inspiration, Her presentation showed

clear insights into the potential for organic agriculture to match, and in some cases outperform conventional agriculture, supporting the increasing global recognition of organic agriculture.

The detailed presentation answered the question of how organic agriculture performs in tropical conditions where circumstances significantly differ from the temperate regions. In a farming systems comparison (SysCom) in Kenya, India, and Bolivia, Dr. Kadzere highlighted that after 12 years of experimentation, maize and soybean from well managed organic plots yielded similar to well managed conventional plots, except for potato and seed cotton where the yields were lower due to pests and diseases and nutrient synchrony related challenges. However, for some crops such as cabbage and french beans, once better pest and disease management was introduced organic outperformed conventional. Soil fertility build-up was also higher under well managed organic systems. Low-input systems, both organic and conventional, were not sustainable.

Dr. Kadzere emphasised that the results are crop-dependent and that there are many other factors at play. In dynamic cocoa agroforestry systems in Bolivia, the number of products harvested from the agroforestry plots were many thereby helping to make the system more resilient. With regards to profitability, while organically grown crops yielded higher, they also had higher production costs due to labour, for instance, for compost making and weeding. With a price premium, the profitability was higher for organic.

Productivity: average yields - annual crops, Kenya & India (2007-2019)



A major win for growing organically is that it is gentler on the environment, a fact that this research supports. In this case, pesticide residues were only found on conventionally grown crops, and the impact on soil fertility is minimal, with organic plots showing higher carbon stocks compared to conventional plots and improved species diversity. Dr. Kadzere underscored the long-term nature of research in the realm of agroecology and organic practices, acknowledging the time required for the fruition of practices and results.

5. Panel discussion: Long-term on-station and on-farm research and demo plots on organic and agroecology in Zambia - past, current and future prospects

5.1 Insights from organic demo plots in the Green Innovation Centres in Zambia

In a panel discussion on the long-term trajectory of on-station and on-farm research and demo plots related to organic and agroecology in Zambia, **Mwansa Mungela**, from **GIZ Zambia** - shared insightful details emerging from the **GIZ Green Innovation Centre (GIC)** programme. He highlighted the implementation of demo plots at farmer training centres, a strategy employed to foster practical learning and evidence generation. The project, initiated two years ago, has been designed to not only generate evidence but also to scale up its impact through collaboration with partners, including Kumwaku. Notably, this endeavour adopts a participatory approach, with 20 farmers actively engaged at each site as implementers. These farmers are involved in every aspect of the process, from land preparation to harvest and packaging, contributing to a holistic understanding of the agricultural practices being promoted.

The demo plots provide on-site, tangible proof of concept. Through a comparative lens, the project has incorporated both conventional and organic demo plots for research purposes. Interestingly, observations from these plots indicate that, contrary to conventional expectations, organic plots are currently demonstrating higher yields. This on-the-ground evidence challenges preconceived notions and underscores the potential efficacy of organic practices in enhancing agricultural productivity in Zambia.

5.2 Insights from CIFOR-World Agroforestry Centre

Following Mungela, **ICRAF's Patricia Masikati** highlighted the existing evidence showcasing the effectiveness of organic and agroecological approaches in fostering climate resilience and mitigation. She emphasised the use of agroforestry and other sustainable practices that not only enhance soil fertility but also contribute to biodiversity conservation and the reduction of land degradation. For example, simulations of technologies to improve soil fertility showed that healthy soil is a vital buffer against the impacts of climate change.

Masikati also drew attention to the significance of trees in the context of climate resilience and mitigation. Notably, she underscored their role in generating rainfall, emphasising the importance of training farmers in the development of nurseries to support tree planting for agroforestry and indigenous fruit trees for food security – which is work that ICRAF is actively involved in across Africa. Key takeaways were the emphasis on research in development, its importance in yielding relevant information and training for up-to-date informed practise. By acknowledging the dynamic nature of agricultural practices, she emphasised the need for ongoing research to align with the evolving needs and challenges faced by farmers.



Picture: from left right - Mungela Mwansa, Patricia Masikati, Lloyd Mbulwe, Ben Chishala, Seb Scott

5.3 Insights from ZARI

Dr. Mbulwe, a plant breeder from ZARI based at GART and working closely with CTDT in participatory plant breeding, shared that there has been a significant shift in the institution's design for programmes. Regarding plant breeding, ZARI now uses a bottom-up approach with active engagement with farmers, who communicate their specific requirements to ZARI. In response, ZARI tailors its breeding efforts to meet the identified needs, creating varietals that align with the preferences and priorities of the farming community. This participatory model ensures that the breeding process is informed by the practical insights and preferences of those directly engaged in the growing process.

As an example, Dr. Mbulwe discussed ongoing experiments with two sorghum varieties. Farmers expressed their preference for two varieties: one with a tall stem and bigger grain, and another with a shorter, sweeter stem. In response to this specific request, ZARI successfully combined the desired traits, incorporating the large grain characteristic of the tall variety into the shorter, sweeter one. The success of this approach highlights the effectiveness of involving farmers directly in the breeding process as well as showcasing a model for disseminating and scaling climate-friendly varieties.

5.4 Insights from University of Zambia

Dr. Benson Chishala, representing the Department of Soil Science at the University of Zambia, provided insights into the department's initiatives in Chipata. He highlighted the utilisation of improved technologies to benefit farmers, acknowledging the ongoing need to assess soil conditions more comprehensively for a clearer understanding. He also unpacked the

collaborative work between UNZA and FiBL in Kasama and Chipata through the ORM4Soils project, where, using a participatory approach, they encouraged farmers to actively engage in the decision-making process by expressing their preferences for organic resources for soil fertility management technologies. Dr. Chishala and his team then researched and implemented the top three choices in collaboration with the farmers. In Kasama, the chosen technology was the "fundikila," a grass-mound system of cultivation. Through modifications to this system, better yields were achieved. Dr. Chishala also acknowledged that, despite the dissemination of information and some positive outcomes, they were finding it challenging to convince farmers to adopt some new ideas and technologies. This underscores the complexity of bridging the gap between research findings and practical acceptance and utilisation by the farming community. The pressing question was raised as to how to effectively gain the buy-in of farmers, with the consensus being that demo plots needed to be explored for longer periods of time to facilitate buy-in and further observe results.

5.5 Insights from Organic Orchard Farm/ Grassroots Trust

Sebastian Scott, an organic farmer affiliated with the Grassroots Trust, provided valuable insights into their efforts to address constraints associated with organic farming. Scott highlighted nitrogen deficiency and labour costs as particularly limiting factors in organic farming. In order to get around these problems, Grassroots Trust is extensively testing nutrient cycling to improve the effectiveness of nitrogen fixation, drawing on relevant research results. Significant strides have been made in this regard, showcasing the practical application of research insights to improve organic farming practises. Another critical aspect of their work involves the efficient and cost-effective production of manure with minimal labour requirements, exploring methods that make manure production accessible and sustainable for organic farmers. Scott underscored the challenge of conveying messages to farmers effectively, noting that farmers tend to learn more from direct observation than from reading or hearing information. He emphasised the importance of farmers understanding the principles behind their practises, asserting that this knowledge is key to enhancing both yields and income but that research should not be restricted to just yields, but should cover the whole system. He also stressed the importance of balancing expectations, promises, and results.

6. Gaps and Opportunities for further Knowledge and Evidence Requirements for Practise and Policy in Zambia

The discussions and presentations underscored significant gaps and opportunities for further knowledge and evidence, which are crucial for shaping practises and policies in Zambia's agroecology landscape. The need for a conducive policy environment emerged as a central theme, with the realisation that Zambia's current policy landscape falls short in this regard.

6.1 Gaps around policies presentations from PELUM and ZAAB

Speaking on policy engagement efforts in Zambia, **Muketoi Wamunyima, Director of PELUM Zambia** revealed that while various policies and strategies currently exist that ostensibly address sustainable agriculture and align with national agendas such as the 8th National Development Plan (8NDP), Vision 2030, and the Sustainable Development Goals (SDGs), critical gaps and contradictions persist. Notably, there is a glaring absence of specific mentions of organic or agroecological recognition in the current policy framework, signalling a need for policy realignment to encompass these more holistic and climate adaptive systems. Existing agricultural policies instead favour industrialised agriculture and corporate interests. Frameworks like The Comprehensive Agriculture Transformation Support Programme (CATSP) were identified as potential threats to smallholder farmers, raising concerns about the broader impact of policy choices on the grassroots agricultural community.

Policy support emerged as a key factor in facilitating the adoption and promotion of agroecology practises. In her overview of the agroecology landscape in Zambia, **the National Coordinator of ZAAB, Mutinta Nketani**, explained that agriculture-related policies in Zambia in general fail to recognise agroecology. Despite a few principles of AE, such as respect for traditional knowledge, being included in the second National Biodiversity Strategy, newly developed laws and policies, including the implementation strategies, continue to sideline AE. This is exemplified by initiatives like CATSP, seed laws (PBR and Seed Acts), and the draft (revised) Biotechnology and Biosafety policy. These developments contribute to the consolidation of corporate interests in agriculture, driven by a profit motive, posing a significant threat to the adoption and scaling of agroecology, and building resilience within farming communities. Nketani shared the encouraging increase in the number of stakeholders in Zambia who are connected to networks and working to support increased evidence, build capacity, and strengthen agroecology and organic practices and policies in Zambia.

Despite these positive initiatives to support agroecology among smallholder farmers, the strong push by the private sector and policy bias towards industrialised systems, including ongoing subsidies to conventional agricultural inputs and financing, continue to present significant

barriers to adoption. The limited support for agroecology farmers, coupled with the scarcity of agroecology markets for both inputs and outputs, further compounds these challenges.

The limited research on agroecological farming systems and organic agriculture in Zambia was identified as a significant gap. The entire meeting agreed on the need for more and better coordinated research and information sharing. This particularly included broader holistic scientific investigations on diverse, scaled practices, measured over time and in different agroecological zones, as evidence for policymakers and consumers. Additionally, lack of education around agroecology and organic practices, as well as skilled labour, was a prevalent theme throughout the discussions. The lack of extension officers trained in organics and able to train and work with farmers is stark. This was also noted as a missed opportunity and key area for new focus, given that extension offices have the potential to support research and act as catalysts for the wide scale promotion and adoption of agroecology and organic approaches in Zambia.

6.2 Panel discussion on key knowledge, challenges, evidence requirements and collaboration on organic and agroecology for practice and policy in Zambia

6.2.1 Insights by PELUM Zambia

Muketoi Wamunyima of Pelum Zambia announced the establishment of a technical working group chaired by the MoA, to develop a National Agroecology Strategy for Zambia. The framework and roadmap for the strategy is already being developed. A planned agroecology conference is also planned for December 2023 (subsequently moved to early 2024). The overarching strategy's goal is to guide the incorporation of agroecological practices within the national agricultural programmes and budgets, in both the Ministries of Agriculture, and Livestock and Fisheries. Pelum Zambia has already engaged policymakers and the House of Chiefs, presented submissions to Parliament, and secured buy-in from the Ministry of Agriculture. Additionally, the organisation has organised field trips, providing tangible evidence through on-site visits to farms for government officials and Members of Parliament. Additionally, the dissemination of knowledge under the KHSA project has been robust, with various validated knowledge products, including fact sheets, manuals, policy briefs, and videos, accessible to all through the continental [open database](#). The increased prominence of the terms "organic" and "agroecology" in the sector was recognised as a reflection of a growing awareness and acceptance of these approaches.

6.2.2 Insights from the MASAP project

In Zambia, the Markets and Seeds Access Project, MASAP, has recently partnered with CTDT Zambia to support the ongoing development of a robust legal framework for the registration of farmer varieties, as presented by Charles Nkhoma at the meeting. This initiative acknowledges the current limitations on Farmers Rights and farmers' freedom to market their own seed. It aims to develop an alternative system for farmers' seed marketing beyond the current restrictions of national seed certification and trade measures and, most importantly, ensure the protection and wider recognition of farmers' contributions.

6.2.3 Insights by a farmer and EOA leader

Kanangwa Newlove, a Lusaka based smallholder organic farmer, PGS practitioner, and IFOAM EOA Leader, shared her experiences in scaling her organic production rapidly, securing and developing market linkages, training hundreds of other farmers, and cutting input costs. She mentioned the potential of PGS systems as important spaces not only for market entry but also for farmer to farmer learning and support. Switching to bokashi for soil enhancement can cut the cost of production by almost 40% and, most importantly, build soil for improved water holding capacity in the face of erratic rains. Kanangwa emphasised the need for a paradigm shift in the public narrative on organic research and development. She shared her experience of realising the broader benefits of organic farming that transcend the narrow financial and crop yield debates in dominant research and development narratives and provide much more significant value, both economically and socially. She noted the market opportunities generated by the transition to organic farming and the increasing demand for organic products across all financial groups, not only by the wealthy, as commonly argued. However, this market needs to be nurtured and grown. Cooperation and support by the government and international agencies, which currently drive biased policies towards industrialised systems, are desperately needed.



6.2.4 Insights by MoA, Agricultural Training

In the panel discussion, **Ms. Penelope Malilwe, Chief Coordinator - Agriculture Training Institutions, MoA**, highlighted the pivotal role of extension services within the Ministry of Agriculture and the fact that these services act as a bridge between research emanating from ZARI and the critical need for the dissemination of valuable information and knowledge to farmers across the country. There are currently seven agricultural colleges spread across five provinces, with more than 5,000 students and extensive land resources that can be used for demo plots, connecting national research programmes, and teaching. In partnership with KATC, the MoA has already developed a module on Sustainable Organic Agriculture which is taught at all ATI's. This provides a good start but needs to be much further expanded to include further topics and teaching capacities strengthened, and agroecology practises have been developed (aided by KATC) and should be expanded on and turned into a curriculum.



6.2.5 Insights by the media

As one of few members of the media in attendance, journalist **Christopher Chishi** spoke about the existing connections facilitated by PELUM's support to journalists to enhance their capacity in comprehending and covering organic agriculture. However, he highlighted the necessity for additional accessible and well-coordinated evidence to empower journalists in their endeavours, ultimately amplifying public awareness and support.

6.2.6 Insights by ReSCOPE

Charity Kabongo, representing ReSCOPE, provided valuable perspectives on how the organisation leverages educational institutions to promote environmental awareness and sustainable agricultural practices. ReSCOPE's methodology entails the transformation of educational

premises into sustainable landscapes and food forests, with an added focus on involving young people and offering them an experiential learning opportunity that transcends the confines of conventional classroom settings. Kabongo emphasised the significance of community engagement in this endeavour, transforming educational institutions into dynamic centres that enrich the local communities while also making positive contributions to their welfare.

Kabongo further recognised potential obstacles, specifically in situations involving transitions in school personnel or administration, which could impede the ongoing sustainability of these endeavours. She emphasised the importance of systemic integration, proposing that by incorporating these practices into the curriculum or institutional structure, they could endure shifts in personnel and guarantee the sustainability of the transformative endeavours.

6.3 Insights and opportunities identified through plenary deliberations

Several interesting prospects for additional knowledge and evidence requirements were identified at the conference, which provide useful insights for the strategic support to grow the organic sector and agroecology in Zambia. These centred on the unanimous agreement by all participants of value sound research and demos plots in Zambia for building evidence for advocacy at all levels (farmer, public, policy makers); of the clear need for more research; and most critically the need for enhanced coordination, information sharing and networking, to not only make research more accessible to all stakeholders (in the various forms needed), but also to leverage shared resources among stakeholders and supportive cooperating partners. Continuing the discussions amongst the group of participants present was agreed as a first step, with the need for ongoing strategic coordination as a key strategy to amplify the impact of valuable research underway and ensure research gaps are addressed.

It was emphasised that institutions such as the ZARI play a crucial role in bridging the gap between research and policy. However, further efforts to collaborate, to fill research gaps and to generate the evidence necessary to influence not only policy but also training and extension services on the ground were critically highlighted. These were noted as an important need and opportunity going forward. Partnerships with the MoA Farmer Training Colleges and Agriculture Institutes, which are located across Zambia, were identified as a key opportunity to expand the visibility and influence of organic and agroecology research and publicly accessible evidence. Partnerships enable more government involvement as the Ministry of Agriculture is highly involved in the colleges' activities through extension services training and ongoing in-service learning programmes. It is also one way to ensure that youth are involved and exposed to future livelihood opportunities in agriculture.

The conference discussions further underscored the importance of translating research findings into popular media to stimulate consumer awareness and influence public policy and market

demands. Recognising the significant impact of public choices on policy, the conference called for concerted efforts to bring agroecological practices into the mainstream through effective communication channels.

The conference recognised the potential for agroecological farming systems to bolster farmers' climate resilience and adaptation. The importance of designing and budgeting for concrete action to support this, linking climate commitments to the diverse work by stakeholders, key institutions like ZARI, and local CSOs, is needed to realise this long term potential and critical need, given the effects of climate change already experienced. Rutger Persson presented the MASAP project's efforts for market system development. Started two years ago, the initiative targets four key crops: sorghum, millet, cowpeas, and groundnuts, with the primary objective being to build market value chains for each crop. MASAP's approach involves engaging the private sector initially, followed by the development of business plans and collaboration to build market demand and access. The project aims to develop both the market and supply sides of the identified crops, enhancing farmer livelihoods and broad nutrition indicators. MASAP is collaborating with PELUM Zambia to host seed and food festivals in 2 districts (Chipata and Sioma) as knowledge sharing opportunities.

7. Indicative List of Stakeholders Involved in Organic and Agroecology Research and Demo Plots in Zambia and Their Focus

This information on the table, below, was contributed by participants at the conference. It provides an indication of the stakeholders who are working on agroecology research and/or demo plots in Zambia at different levels and in different thematic topics. Contact names are also provided. The list is not a comprehensive cover of all work underway but was intended as a start for further input and potential future collaboration.

Table 1: Stakeholders involved in agroecology research and/or demo plots in Zambia

WHO	FOCUS OF RESEARCH	WHERE	CONTACT
GIZ-GIC	Organic farming	Farmer Training Colleges	Mwansa Mungela Cynthia Mwandwe
COMACO	Gliricidia Impacts	Chipata	Dale Lewis
PELUM	Policy reviews Baselines on farmer varieties	Sioma, Chipata	Muketoi Wamunyima
CTDT	Seed and food festivals	National	Charles Nkhoma

ZAAB Members	Practise in various agroecological regions	National	Mutinta Nketani Frances Davies
ZARI	Soil fertility Climate-smart agriculture Sustainable farming	National	Dr. Dickson Ng'uni Victoria Mbewe
UNZA/JCTR	Impacts on soil Socio-economic studies Organic resources Mineralization	National (working with ZARI)	Dr Benson Chishala
KATC	Demo plots: Intercropping Crop rotations Soil Improvement Pest and disease control	Southern Province Eastern Province	Father Claus Recktenwald
Grassroots Trust	Agroforestry Manure management Crop rotation Planned grazing FMNR/ CBNRM Integrated farming	Central Province Southern Province Western Province	Sebastian Scott Rolf Shenton
Ubuntu	Agroforestry and syntropics	Project based across Zambia	Annie Chikanji

8. Suggested Next Steps on Organic and Agroecology Opportunities for Demo Plots and Research Networking, Zambia

The meeting yielded useful insights and recommendations for the next steps in maximising prospects for demo plots and research to help develop agroecology in Zambia. Participants' cumulative expertise identified critical issues that require attention and deliberate action moving forward.

1. Building a robust research network:

- All participants agreed on this as a critical next step. Participants underscored the necessity of continuous evidence building and fostering collaboration among research institutions, government bodies, and CSOs to collectively contribute to the knowledge base on organic and agroecological practices. This needs to be actively supported with coordination and mobilisation of resources.
- Strengthening ties between organisations like ZARI, government and non-government training and extension programmes, and NGOs actively engaged in demo plots and promoting sustainable agriculture was identified as a priority.

2. Further research on organic and agroecological farming practises:

- Including production methods at various scales and across agroecological areas, post-harvest handling and processing, seed systems and adaptive capacity for climate change, market trends, and consumer preferences - to support enhanced systems on the ground as well as drive policy change.
- Research validation and participatory input by farmers were noted as crucial across all work.
- A systems approach to the research was encouraged - moving from small plots to larger plots and landscape levels on a long-term basis. Inclusion of true-cost accounting was also emphasised.

3. Making research accessible:

- Participants further emphasised the need to create and nurture appropriate channels for engaging all stakeholders and policymakers once evidence is gathered. The links between research, evidence, policy, and practise need to be deliberately strengthened and supported through communication means that make information accessible and useful to all target groups.

4. The value of demo plots:

- Participants acknowledged the value of extending demo plots further across the country and, most importantly, establishing a coordinated network to link demo plot research, evidence, and impacts.
- Demo plots were noted for their practical and participatory research and learning value, as well as for showcasing the viability of organic and agroecological practices.

5. Further integration and more holistic research are needed:

- Research on broader system wide impacts of agroecology and organics in Zambia is needed, particularly for policy advocacy. FIBL has been instrumental in gathering this evidence worldwide, but further evidence for Zambia is specifically needed. Cooperation can support the realisation of this, as the skills and capacity in Zambia already exist.
- Participants emphasised that more holistic methodologies that recognise the dynamic interplay between scientific evidence and traditional knowledge and incorporate traditional knowledge systems into research, demo plots, and overall agricultural strategies need to be implemented.

6. The National Agroecology Conference and National Agroecology Strategy for Zambia

- Scheduled for December 2023 (subsequently moved to early 2024), the conference will serve as a stakeholder consultation platform, facilitating the identification of further stakeholders and policy gaps, which this meeting will feed into.
- The outcomes from the current workshop will provide some good insights into the conference and contribute to the Agroecology Strategy that is being developed for Zambia.

7. Platforms for continuous dialogue

- There was a consensus on the importance of creating more platforms for continuous dialogue and knowledge exchange among stakeholders, especially smallholder farmers. This includes sharing information generated in conferences, workshops, and forums that facilitate the building of experiences, addressing challenges, and shifting public narratives. Such gatherings can contribute to collective learning and foster a sense of community and collaboration essential for the advancement of research and practise in organic and agroecology in Zambia and can be effective in informing policy.

Further suggested next steps from participant Mentimeter inputs:

1. The National Agroecology Strategy

- Plan the National Agroecology Conference
- Establish a stakeholder consultation platform, identify stakeholders, and address policy gaps.
- Implement the roadmap developed for the National Agroecology Strategy (NAS).

2. Continuous Evidence Building

- Emphasise the ongoing need for research and evidence generation to promote agroecology and organic practices.
- Establish an AE research agenda and a strategy for translating research into action.
- Implement more large-scale trials with a wider range for data collection.
- Advocate for more diversity and simplification in research processes.

3. Stakeholder Engagement

- Create and nurture appropriate channels for engaging concerned stakeholders and policymakers.
- Facilitate dialogue to transition policy into actionable steps.

4. Data Gathering and Validation

- Gather comprehensive data on organic/agroecology agriculture, including processing, markets, and consumer trends.
- Validate knowledge gathered to ensure accuracy and reliability.

5. Challenges in Adoption

- Address the scalability challenge related to land and resources, particularly for smallholder farmers
- Tackle farmer adoption barriers, such as fears of smaller yields.

6. Knowledge Dissemination

- Disseminate knowledge, strategies and good practices in the field of organic/agroecology agriculture to all stakeholders.
- Create more relationships with journalists and include them in our agenda.
- Stimulate youth involvement through advocacy campaigns and FTCs.

7. Expansion of Demo Plots

- Extend the network of demo plots within the country.
- Create more partnerships with FTCs and improve extension services systems.

8. Changes to Approach

- Move towards a more integrated systems approach, combining traditional knowledge with scientific evidence.

- Create a new certification system for organic seed so that breeding objectives fit the context.

9. Networking and Value Chains

- Support and expand ongoing networking efforts rather than creating parallel structures
- Facilitate the establishment of organic value chains in the region, including seed.

10. Soil Dynamics and Climate Understanding

- Gather more robust data and understanding of soil dynamics, including soil biomass and nutrient levels.
- Enhance understanding of climate influences for better recommendations and resilient systems.

9. Annexes

ATTENDANCE LIST (in person)

1. Dr. Dickson Ng'uni (Director, Zambian Agricultural Research Institute)
2. Gian Nicolay (Research Institute of Organic Agriculture FiBL)
3. Mutinta Nketani (Zambian Alliance for Agroecology and Biodiversity)
4. Victoria Mbewe (Zambian Agricultural Research Institute)
5. Zuba Mwanza (Food and Agriculture Organisation)
6. Dr. MacLoyd Mbulwe (Zambian Agriculture Research Institute)
7. Father Claus Recktenwald (Kasisi Agricultural Training Centre)
8. Charles Nkhoma (Community Technology Development Trust)
9. Dr. Irene Kadzere (Research Institute of Organic Agriculture, FiBL)
10. Muketoi Wamunyima (PELUM, Zambia)
11. Professor Benson Chishala (University of Zambia)
12. Mwansa Mungela (GIZ-GIC)
13. Patricia Masikati (CIFOR ICRAF)
14. Sebastian Scott (Grassroots Trust)
15. Dr. Mbulwe (ZARI Plant Breeders)
16. Charity Kabongo (Rescope)
17. Penelope Malilwe (Minister of Agriculture)
18. Rutger Persson (MASAP)
19. Kanangwa Newlove (Loctaguna Organics)
20. Christopher Chishi (Journalist- 5FM)
21. Mushota Chansa (Solidaridad Zambia)
22. Barnard Mwaba (JCTR)
23. Abraham Muluku (MFL/HQ)
24. Joseph Cheelo (Minister of Agriculture)
25. Albert Mutasu (WE Effect)
26. Emmanuel Mutamba (GLM)
27. Josephine Kachapidula (Kasisi Agriculture Training Centre)
28. Misozi Ngulube (Kasisi Agriculture Training Centre)
29. Rhett Hamsen (CIFOR ICRAF)
30. Frances Davies (ZAAB/KHSA)
31. Omali Phiri (Zambian Alliance for Agroecology and Biodiversity)
32. Rebecca Mwila (PELUM, Zambia)
33. Rhodwell Monze (PELUM, Zambia)
34. Etinala Tembo (PELUM, Zambia)
35. Chimika Lungu (PELUM, Zambia)
36. Balewa Zyuulu (Phoenix FM)

AGENDA

Time	Activity	Speakers
08:00	Registration and Coffee	
08:30	<i>Welcome and tools for mapping stakeholders in Zambia</i>	
08:45	Background and workshop objectives	<ul style="list-style-type: none"> • Muketoi Wamunyima - PELUM Zambia • Angela Coetzee – Knowledge Hub for Organic Agriculture in Southern Africa (KHSA) and Sustainability Institute
09:00	Official opening of the workshop	<ul style="list-style-type: none"> • Dr. Dickson Nguni – Director, Zambian Agricultural Research Institute (ZARI) (TBC)
09:20-10:20	Background to FiBL and Agroecology and Organics in Africa Agroecology and organics in Zambia: an overview on evidence and further knowledge needs for practice and policy Agroecology research mainstreaming in national programmes FAO global support for Agroecology and strengthening awareness of the FAO Agroecology Knowledge Platform in Zambia Plenary discussions	<ul style="list-style-type: none"> • Gian Nicolay - FiBL • Mutinta Nketani – Zambian Alliance for Agroecology and Biodiversity • Graybill Mukombwe, Zambian Agricultural Research Institute (ZARI) (TBC) • Vincent Ziba, Food and Agriculture Organization Zambia <p>Key messages by Dr MacLoyd Mbulwe, ZARI - (TBC) followed by Q&A</p>
10:20-11:15	Organic and agroecology performance – practical evidence from research and demo plots in Zambia Agro-biodiversity in smallholder farming in Zambia - knowledge status, gaps and opportunities Organic and agroecology: evidence from selected regions in Africa and elsewhere in the world Plenary discussions	<ul style="list-style-type: none"> • Father Claus Recktenwald, Kasisi Agricultural Training Centre (KATC) • Charles Nkhoma, Community Technology Development Trust (CTDT) • Dr. Irene Kadzere, FiBL <p>Key messages by Prof. Benson Chishala (TBC), University of Zambia (TBC) followed by Q&A</p>
11:15	Coffee break and contributions to stakeholder mapping	
11:45-12:20	KCOA case: Policy engagement and knowledge dissemination on organic and agroecology in Zambia Plenary discussions	<ul style="list-style-type: none"> • Muketoi Wamunyima, PELUM Zambia <p>Key messages by Louis Chikopela, Ministry of Agriculture (MoA) (TBC), Q&A</p>
12:20-13:30	Panel Discussion 1: Moderated by Irene Kadzere, FiBL Long-term on-station and on-farm research and demo plots on organic and agroecology in Zambia – past, current and future prospects	<ul style="list-style-type: none"> • GIZ-GIC (Mwansa Mulenga) • ICRAF (TBC) • MASAP (Rutger Persson) • Holistic Livestock Management (TBC) • Min of Fisheries and Livestock (TBC)
13:30	Lunch Break and contributions to stakeholder mapping	
14:30-15:45	Panel Discussion 2 - Moderated by Muketoi Wamunyima, PELUM Zambia Key knowledge, challenges, evidence requirements and collaboration on organic and agroecology for practice and policy in Zambia	<ul style="list-style-type: none"> • CARITAS (Gertrude Simae - TBC) • COMACO (Dale Lewis - TBC) • ReSCOPE (Walter Nyika - TBC) • Old Orchard Organic Farm / Grassroots Trust (Seb Scott -TBC) • Kanangwa Newlove (IFOAM EOA Leader and PGS practitioner) • MoA (Penelope Malilwe – TBC)
15:45-16:15	Plenary Activity Continue to map key stakeholders on organic and agroecology and the opportunities for demo plots and research networking	Participant mapping exercise
16:15	Plenary activity: Conclusions and identified opportunities	
16:45	End of Workshop, Coffee and Departure	Event Facilitator

EVALUATION FORM FEEDBACK

22 participants: 13 male and 9 female.

All 22 participants (100%) that filled out the evaluation form agreed to use what they had heard/discussed/learned during the workshop in their work.

What stood out or was found most significant:

- What participants commonly found as the most valuable at the workshop was the level of research data presented, information sharing among stakeholders, networking, and the general consensus from the majority of the stakeholders to push the agroecology agenda forward through policy advocacy as currently policies in Zambia appear silent on favouring agroecology.
- Participants also indicated that the information shared during the panel discussions was very insightful; especially the evidence based researched results by FiBL, and others from KATC and ZARI.
- Participants noted that it was enlightening for them to hear through the presentations the competitive yields between conventional and agroecological farming systems as an important determining factor for farmers.

What could have been better about, or was missing from the workshop:

- It was also noted that the workshop should have also highlighted actual figures on yields expected in Zambia when one embraces agroecological farming practices.
- Also noted as missing during the workshop; was the need to have a database/register of organic fertiliser producers/suppliers in Zambia for people to know exactly where to purchase these fertilizers should they choose AE & OA.
- Zambia Environmental Management Agency (ZEMA) should be invited to gatherings such as this workshop.
- The Ministry of Health representation was missing. Agroecology leads to healthier foods/yields
- Local research results in arid areas to reduce on migration for better soils and ultimately yields should have been shared/presented.
- Participants also expressed that although CSOs were already doing a lot of work around agroecology, there is still a need for more publicity and documentation.
- Small Scale farmers who are not using agro ecological farming systems should have been present to give their perspectives on what would really inspire them to adopt AE practices
- More evidence on economic benefits of AE should have been presented
- The meeting was rich in content but could have been spread over a longer period. Time was limited.
- There was a need for a high-level panel from ministries; permanent secretaries and directors to be present at the workshop.

Participants suggested the following topics as what they would like to hear/learn more about:

- Link between health and conventional farming
- The socio-economic impact of agroecology
- How agroecology can increase the economy's performance
- The different organic resources and how they can contribute to productivity of different systems
- Government's plans to support agroecology
- Use of indigenous knowledge in AE and OA
- How to revive lost crops and/or commercialise indigenous climate-resilient crops in AE
- Health, nutrition and value addition on natural foods
- Entrepreneurship
- Trade (Import & Export)
- Extension Officer's role in this program
- Strategies to adopt farming practices to changing climate conditions

Most accessible format when receiving information on AE and OA

- Participants selected options as follows:
- Video = 50%, Guide/manual=41% , Brief=36%, Leaflet/Brochure=27% , Webinar=23%
- It was also suggested that farm visits were also an accessible format to receive information on AE and OA.

Channels preferred to receive information or knowledge on AE or OA

- Participants selected options as follows:
- Training/Workshop = 50% , Youtube = 45% , TV = 36%, Dialogue and Exchange Events = 32%, Whatsapp = 32%
- Participants also indicated that there is a need for more platforms such as the current workshop in order to foster learning across different stakeholders. There is also a need to increase the number of farmers accessing AE information.