

Learning in Transition: A Reflective Review of an Agricultural Learning Network Journey

Van Staden, W.¹, Sisitka, L.², Sithole, P.³, Ndulelisa, Y.⁴ and Lotz-Sisitka.⁵

Corresponding Author: W. Van Staden. Correspondence Email:

wilmavanstaden@gmail.com

ABSTRACT

This paper offers a reflective review of the Amanzi for Food Learning Network, an agricultural community of practice established to support the uptake and use of rainwater harvesting and conservation knowledge and practices in smallholder farming contexts across South Africa.. Initially catalysed through accredited training courses, the Network evolved into a virtual Learning Network following the COVID-19 pandemic. This paper examines the Network's functionality, challenges and transformation from 2023 to 2025 using Wenger's community of practice framework to understand how participatory agricultural learning and extension can be sustained in a digitally mediated context. Our analysis draws on participant feedback, digital engagement data, facilitation reflections and project documentation. While the Network developed a broad repertoire of agricultural tools and training platforms, sustaining inclusive participation proved difficult. Limited digital access, unclear roles and dwindling engagement revealed the need for intentional facilitation and co-engaged design. These insights led to the reimagining of the Network, grounded in relational care, shared ownership and hybridised interaction. We document the shift from participation-as-presence to participation-as-practice,

¹Environmental Learning Research Centre, Rhodes University, Makhanda, South Africa. Email: wilmavanstaden@gmail.com, ORCID ID: 0000-0002-2794-228X.

² Environmental Learning Research Centre, Rhodes University, Makhanda, South Africa. Email: heilaw@imagnet.co.za.

³ Environmental Learning Research Centre, Rhodes University, Makhanda, South Africa. Email: psithole65@gmail.com.

⁴Environmental Learning Research Centre, Rhodes University, Makhanda, South Africa. Email: yolandendulelisa@gmail.com.

⁵ Environmental Learning Research Centre, Rhodes University, Makhanda, South Africa. Email: h.lotzsisitka@ru.ac.za, ORCID ID: 0000-0002-5193-9881.

emphasising mutual engagement, joint enterprise and co-created relevance. The paper concludes with lessons for sustaining Agricultural Learning Networks in a resource-constrained context, highlighting purpose, peer recognition and local context. Our story contributes to the field of agricultural education and extension, offering insights for revitalising learning networks through reflective and adaptive approaches.

Keywords: Agricultural Learning Networks, Rainwater Harvesting and Conservation, Agricultural Extension, Communities of Practice, Education for Sustainable Development.

1. INTRODUCTION

The Amanzi for Food Learning Network (AfFLN) emerged as a dynamic community of practice (CoP), aiming to strengthen agricultural education and extension by disseminating and promoting the uptake of rainwater harvesting and conservation (RWH&C) knowledge and practices. South African small-scale farmers face persistent challenges, including water scarcity, climate variability and limited access to extension support, which constrain their productivity and food security (Carelson, Ncube & Fanadzo, 2021; Thabane et al., 2025). In response, the Water Research Commission (WRC)-funded Amanzi for Food Project (initiated in 2015) sought to bridge the gap between agricultural research, training institutions and on-the-ground farming practices. The Amanzi for Food Project began in 2013 with Phase 1, which developed and tested a collaborative approach for sharing RWH&C knowledge through training and pilot learning networks. Phase 2 (2017–2021) expanded this model to three provinces, strengthening links between agricultural colleges, farmers and extension officers through course-activated learning networks. Phase 3 (2023–2025) builds on these foundations to revitalise and digitise the Learning Network, extending its reach through online platforms and new forms of agricultural learning and engagement (Lotz-Sisitka *et al.*, 2016).

Despite these advances, a limited understanding remains of how Agricultural Learning Networks evolve, adapt to digital environments and sustain participation beyond initial project cycles. This is particularly true for the smallholder-oriented agricultural extension systems, where social learning and community-based knowledge exchange are still emerging as participatory alternatives to conventional top-down agricultural extension models (Metelerkamp *et al.*, 2021).

The Network was initially activated through the National Qualifications Framework (NQF) Level 6 Amanzi for Food Curriculum Innovation and Changing Practice course and NQF Level 5 Amanzi for Food Environmental Innovation and Changing Practices course, which built capacity among agricultural educators, trainers and extension officers. These initiatives promoted farmer-to-farmer learning and the collaborative use of knowledge in sustainable agriculture. In this context, the AfFLN provides an important case study for examining how participatory learning can strengthen agricultural education and extension through practical application. The Network's evolution offers insights into how farmers, agricultural educators, trainers, and institutions co-develop capacity for sustainable water management and food production.

The Network initially comprised three geographically separate Agricultural Learning Networks, developed from training courses held in different provinces: the Imvothu Bubomi Learning Network (Eastern Cape), the Sinakkela Sibusiso Semati Learning Network (Mpumalanga Province), and the #Pulawise Learning Network (North-West Province). While diverse in terms of geographic reach and composition, these learning networks, or communities of practice (CoP), were united by their focus on locally relevant knowledge exchange, mutual learning, and co-engaged agency (Lotz-Sisitka *et al.*, 2016). Ultimately, members from each of these networks, together with new partners, were absorbed into the A4F Virtual Learning Network in 2020.

The purpose of this paper is therefore to reflect critically on the functionality and evolution of the AfFLN as an Agricultural Learning Network, exploring what worked, what did not and what lessons can inform more inclusive and sustainable agricultural extension practices through the lens of Wenger's CoP framework. This perspective allowed us to explore how learning and the uptake of agricultural knowledge and practices occur through social and collective processes within the Network, and how shared practices, roles and relationships influence participation and sustainability. According to Wenger (1998), a CoP is a group of people who share a concern, a set of problems, or a passion about a topic, and who deepen their knowledge and expertise by interacting on an ongoing basis. In this article, we will consider the Agricultural Learning Network as a CoP.

Following the COVID-19 pandemic, the three original learning networks transitioned from in-person collaboration and engagement to primarily virtual learning networks, relying on tools such as WhatsApp, Zoom webinars and online platforms to maintain momentum. This shift

created new possibilities for engagement and knowledge exchange, but also gave rise to unexpected challenges around participation, access and sustainability. Over time, patterns emerged: a few members remained actively engaged, while most became passive observers, unsure of their roles or disconnected due to uncertainty about what was expected of them. Other challenges that hindered engagement included low connectivity and issues with mobile devices (Van Staden *et al.*, 2025).

In 2023, the Amanzi for Food team made another conscious effort to revive the Agricultural Learning Network as a central component of Phase 3 of the project. The team tried various approaches to sustain and energise the Network, with some approaches more successful than others. This paper offers a reflective synthesis of the AfFLN as a CoP's journey between 2023 and 2025, drawing on quantitative data, facilitation experiences and ongoing evaluation processes to explore what did or did not work, and what we have learnt in the process. Guided by this focus, this paper asks: How did the AfFLN evolve during 2023-2025, and what factors shaped participation within a digitally mediated CoP? Our reflections are informed by Wenger's CoP framework (1998), which outlines the importance of co-engagement, joint enterprise, repertoire of communal resources and shared matters of concern in building and sustaining learning communities.

As both facilitators and researchers, we write from a position of embedded involvement, offering insights into the day-to-day Network activities from a reflective perspective. This paper does not aim to present a formal evaluation. Instead, it shares the story of a 10-year Agricultural Learning Network, its successes, its challenges, and its reconfiguration into a new model or type of network functionality that we hope will offer more inclusive, participatory and sustainable knowledge dissemination. It is a story of practice informed by reflection on an Agricultural CoP reimagined through our lived experiences.

2. THEORETICAL FRAMEWORK

We draw on Wenger's (1998) theory of CoP as a theoretical framework, which views learning as a social process shaped by participation, shared purpose and evolving practice. Wenger (1998) defines a CoP as a group formed when people come together around a shared matter of concern and deepen their knowledge and practice through sustained practices. In our case, the Learning Network brought together agricultural educators, trainers, students, farmers, and non-governmental organisations (NGOs) to improve knowledge uptake of RWH&C practices.

Initially, the knowledge focused on rainwater harvesting, conservation and use, but this broadened to include practices associated with agroecology and other related sustainable agriculture approaches. This broadening confirms that agricultural communities are realising that sustainable water management is interconnected with agroecological and food-system approaches that integrate farmer knowledge (Altieri & Nicholls, 2017; Lotz-Sisitka *et al.*, 2016; Gliessman, 2018). In this way, the Learning Network's focus expanded naturally as participants' agricultural practices and priorities evolved.

Using Wenger's three key dimensions of mutual engagement, joint enterprise, and a repertoire of communal resources, we reflect on how the Network functioned over time by examining how people engaged, what supported active participation or impeded it, and which practices and tools enabled engagement. Wenger's framework was used as a reflective lens because it situates learning within processes of shared participation, mutual engagement and evolving practice. This made it particularly suitable for analysing how agricultural educators, trainers and farmers co-learned through collaborative activities, facilitation processes and the use of shared tools in the Learning Network (Wenger, 1998; Wenger-Trayner & Wenger-Trayner, 2020). However, applying this framework within a largely virtual context also revealed some limitations. While Wenger's theory emphasises co-presence and situated practice, digital interaction often disrupts community co-engagement and provides fewer opportunities for informal peer exchange (Roberts, 2006; Kienle & Wessner, 2005). Recognising these constraints, our reflection therefore considers how digital mediation both enabled and constrained participation, engagement and shared practice within the AfFLN.

Similar applications of the CoP framework have been reported in developmental and educational research. Wenger-Trayner, Fenton-O'Creevy, Hutchinson, Kubiak and Wenger-Trayner (2014) discuss how CoPs can support social learning and professional development in complex, multi-stakeholder contexts, particularly in developmental and educational contexts. In the AfFLN, mutual engagement took place through shared experimentation with RWH&C technologies and co-facilitated farmer training sessions; joint enterprise was shaped by the collective goal of strengthening water and food security for smallholder and sustenance farmers; and the repertoire included locally developed training materials, digital field tools and WhatsApp-based learning exchanges. These examples demonstrate how CoP principles materialised in agricultural extension practice, making the framework particularly relevant for analysing this case.

Our approach also resonates with Akella et al. (2021), who used reflective writing and autoethnography within a CoP framework to explore professional learning. As with their study, our reflection is grounded in lived experiences as facilitators, supported by participant feedback and structured around critical questioning rather than formal evaluation. Combined, these perspectives support our use of a CoP framework as a flexible yet insightful lens for reflecting on what proved effective, which actions added value and how we overcame the limitations and challenges in the Learning Network.

3. METHODOLOGY

This paper adopted a reflective, practice-based methodology informed by our embedded roles as facilitators, coordinators and researchers within the AfFLN. Reflective methods were considered appropriate given the paper's focus on learning from practice and on improving the sustainable design of the agricultural learning network, rather than conducting an external evaluation. Rather than positioning this as an external evaluation, we undertook a process of critical insider reflection to learn from experiences and improve practice. Drawing on participants' feedback, workshop discussions, digital interaction data and project documentation, we critically considered what was implemented, what outcomes emerged, what limitations were encountered and how learning informed the Learning Network's redesign as *Amanzi Ukudla*.

Our reflection was grounded in a combination of qualitative, anecdotal, verbal and documentary evidence generated over the WRC Amanzi for Food Project Phase Three (2023–2025). The project focused on revitalising and digitising the existing Learning Network. This paper draws on reflective analysis of facilitation processes and engagement data generated during this phase.

Sources of evidence used in this study included:

- WhatsApp group engagement patterns (frequency of posts, responses to polls, and shared media).
- Survey responses and Google Forms completed by Network participants.
- Facilitation reflections and internal team reviews.
- Project deliverables, progress reports and partner feedback workshops.
- Attendance and interaction records from webinars, virtual workshops and support sessions.

In addition to qualitative reflections, digital analytics were systematically collected from the Virtual Learning Network's WhatsApp group between January and October 2025. These monthly engagement records provided a structured dataset capturing participation patterns, activity types and content sharing over time. The dataset included fields such as the number of active, inactive and new participants; total messages exchanged; media types shared (text, images, videos, documents, links); most active participants; frequently discussed topics; and engagement activities conducted (polls, prompts, webinars).

Reports were compiled from the digital analytics and enabled a descriptive analysis of network interactivity and participation trends. For instance, engagement ranged from six to 24 active participants per month, with polls and webinars generating the most responses. These metrics were reviewed alongside qualitative reflections to interpret how digital participation supported or constrained engagement and collaboration within the Learning Network.

The reflective analysis followed Wenger's (1998) understanding of learning as participation and meaning-making within a CoP. The research team engaged in iterative cycles of reflection and discussion, reviewing facilitation notes, participant feedback and engagement analytics to identify recurring patterns of participation, collaboration and facilitation. Initial notes were clustered around Wenger's three key dimensions – mutual engagement, joint enterprise and shared repertoire, which provided a conceptual structure for identifying themes. Assumptions and interpretations were discussed collectively within the team, triangulated across multiple data sources, and examined alongside documented participation trends and participation feedback to ensure that interpretations were grounded in shared evidence rather than individual perspectives. Through collaborative sense-making, insights were refined into analytical categories that captured both the relational and functional dynamics of the Network as they contribute to agricultural learning and knowledge dissemination. This reflective analysis was further informed by Wenger, Trayner and De Laat's (2011) Value Creation Framework, which provides a lens for understanding how participation and agency in the Learning Network generated immediate, potential, and applied value for agricultural educators, farmers, institutions, and students.

The research team occupied dual roles as both facilitators and partners within the Network, providing direct access to practice-based insights while requiring a reflective stance in analysing participation patterns and lessons from successes and setbacks. The relationship with members has increasingly evolved into one of partnership, where everyone takes shared

responsibility for the Network's health. However, the Environmental Learning Research Centre Amanzi for Food team currently remains, to some extent, in the driving seat, as this seems preferable for most people.

4. FINDINGS AND DISCUSSION

4.1. Purpose and Scope of Learning Network

At the beginning of Phase 3 of the Amanzi for Food Project, our goal was to strengthen the use of RWH&C practices in support of small-scale and sustenance farming by consolidating the existing Learning Network and establishing new partnerships. We envisioned the Virtual AfFLN as a dynamic, adaptive community connecting agricultural trainers, farmers, extension officers, students and NGOs across South Africa and beyond (Lotz-Sisitka *et al.*, 2022; Van Staden *et al.*, 2025). As an online and mobile-enabled CoP, the Network functions primarily virtually, relying on low-bandwidth digital tools to support interaction, learning and resource exchange across geographic and institutional boundaries.

The Learning Network was established with three core aims:

- To disseminate RWH&C knowledge and practices, drawing from WRC resource materials and grounded in agricultural experience.
- To strengthen the national Agricultural Learning Network by expanding its reach, inclusivity and sense of shared purpose.
- To support participants in applying sustainable agricultural knowledge within their contexts and sharing their practices, innovations and insights with others.

To achieve these aims, the Network strategically used low-bandwidth digital tools and open learning platforms, including WhatsApp for peer exchange, the Amanzi for Food online courses for structured learning, the Digital Field Support Tool for applied practice support, and periodic webinars for dialogue and reflection.

We envisioned members taking active roles, initiating discussions, sharing practices, mentoring peers, and collectively shaping the Network's direction; however, the reality was more complex. While some of these aspirations were realised, others required rethinking. Our experiences revealed important insights into the conditions that support or constrain participation in digitally mediated learning communities and ultimately informed the redesign of the Learning Network into what is now known as *Amanzi Ukudla*.

4.2. Challenges and Barriers

While the AfFLN achieved notable successes, its journey was also marked by challenges in sustaining meaningful, distributed participation in the digital, post-COVID agricultural learning landscape. Drawing reflectively on Wenger's (1998) CoP framework, we now consider the areas where mutual engagement faltered, joint enterprise lost clarity, and the shared repertoire struggled to remain dynamic and responsive.

One of the most consistent barriers was the uneven pattern of participation within the Network. Despite initial collaborative excitement and moments of high engagement, particularly around webinars, the Digital Field Support Tool, and online course launches, sustaining continuous active engagement proved to be difficult. Between January and September 2025, active participation ranged from six to 24 members per month out of a total group of 85 participants. For example, in February 2025, although overall activity peaked with 95 WhatsApp messages, more than half of these interactions were generated by a small core group of facilitators and long-standing partners, while many registered members remained passive observers. Engagement was the highest mid-year. Many other participants became passive observers, unsure of their role or how to contribute meaningfully. These participation gaps limited opportunities for farmer-to-farmer learning and slowed the translation of training outcomes into practical field application. This uneven distribution of activity suggests a breakdown in mutual engagement, a key dimension of CoP functioning, where sustained involvement depends on shared purpose, role clarity and reciprocal contribution.

Connectivity, technological and digital literacy constraints deepened this issue. While WhatsApp was intentionally chosen for its accessibility, many participants still faced challenges related to limited data, outdated devices or unreliable mobile signals in rural and peri-urban areas. These barriers reduced inclusivity and hindered the co-creation of a truly representative shared repertoire. Another challenge lay in the assumptions built into the Network's design. At its core, the Learning Network was envisioned as a self-directed and increasingly co-led space. Yet our reflection shows that this vision did not unfold as expected. The Network required more structured facilitation and ongoing coordination to sustain participation and encourage self-organisation. Without clear leadership roles, defined expectations and a regular rhythm of interaction, the joint enterprise gradually lost coherence. For some members, the Network came to feel more like a broadcast platform than a co-engaged learning community.

Furthermore, the shift to a fully digital model, while necessary during and immediately after the pandemic, brought new kinds of fatigue. Participants expressed weariness with screens, webinars, and long WhatsApp threads (Van Staden *et al.*, 2025). The absence of informal, face-to-face engagements made building relationships, troubleshooting challenges or reinforcing a sense of shared ownership difficult. Face-to-face networks, such as the Imvotho Bubomi Learning Network, proved more resilient than the later, fully virtual course-based networks. In Wenger's terms, the lack of physical presence eroded some of the relational aspects that are often crucial in forming strong CoPs.

Finally, participant feedback and internal team reflections suggest that while many tools were developed, such as the Digital Field Support Tool, microlearning modules and an updated website and courses, Learning Network members' uptake of these new tools and resources has been slow and haphazard. These tools formed part of the Network's shared repertoire, but they were not always well aligned with participants' daily realities. For instance, while the Digital Field Support Tool and microlearning modules were introduced and promoted through webinars and WhatsApp, engagement data and feedback indicated that many members accessed these resources only sporadically, often citing limited time, data constraints or a lack of immediate relevance to pressing local agricultural challenges. In some instances, members expressed the need for shared content to better align with their immediate needs and interests. While RWH&C practices remain highly relevant, they also expressed the need to include current agricultural issues such as drought resilience, pests and policy changes. Without timely, localised relevance, engagement declined, especially when members perceived the Network as an information channel rather than a space for co-creating knowledge and active learning. Broadening of interests and relevance is considered a natural evolution within any network. Still, the challenge remains that the Amanzi for Food programme is primarily concerned with water use and conservation and is not geared to respond to broader agricultural issues. However, the website does include information from the Climate Smart (now Resilient) Agriculture programme.

These limitations were not failures but learning opportunities that revealed what needed to change to realise the full potential of a virtual CoP. They directly informed the decision to redesign the Network around a more intentional model grounded in co-engagement, clarified roles, participant affirmation and a hybridised, localised structure. This new iteration moves

beyond participation-as-presence to participation-as-practice, where relationships, context and co-ownership are central to sustaining a meaningful Learning Network.

4.3. Activities and Interventions Undertaken

Over the past two years, the AfFLN has undertaken a range of activities to sustain engagement, strengthen knowledge sharing, and support the uptake of RWH&C knowledge and practices across South Africa. These activities reflect the project's adaptive responses to lived experiences, network evaluations and member feedback from its earlier phases. This section reflects on key activities grouped into three themes:

- Facilitating dialogue
- Supporting practice
- Engaging digitally

These are analysed through the lens of Wenger's (1998) CoP framework, focusing on mutual engagement, joint enterprise and shared repertoire.

4.3.1. Facilitating Dialogue and Partner Engagement

Dialogue remained central to cultivating mutual engagement across the Network. Between 2023 and 2025, we facilitated a series of structured engagements:

- The Virtual Partner Support Workshop (May 2024) introduced the Digital Field Support Tool, showcased the updated website and opened discussions on sustainability and collaboration.
- Two follow-up partner workshops (September 2024) gathered feedback on the Digital Field Support Tool and explored strategies for expanding the Learning Network.
- The Virtual Learning Network Workshop (February 2025) brought together 47 stakeholders from universities, NGOs, agricultural training institutes and government agencies to explore partnerships and showcase field-level integration of Amanzi for Food resources.
- Multiple webinars, hosted in response to partner input, enabled ongoing discussion, knowledge sharing and reflection on course content and practical applications.

These engagements played a crucial role in sustaining interaction and supporting our joint enterprise, creating spaces where participants could exchange knowledge and develop shared purpose. They also laid the groundwork for a growing shared repertoire, including Learning

Network members sharing their stories on the Amanzi for Food website as blog posts, presentation materials, and facilitation tools, and collaboratively defining learning priorities. Participation rates varied, often due to digital fatigue and bandwidth constraints. These challenges led to explorations of hybrid models and regional clusters to strengthen localised engagement.

4.3.2. Supporting Practice: Tools, Training and Localisation

To strengthen the practical application of RWH&C knowledge, we co-developed a repertoire of tools and learning resources to support both agricultural training and on-the-ground extension practices. Key initiatives included:

- **Digital Field Support Tool (DFST):**

Launched in 2024, this tool provided multilingual, mobile-first guides, videos and activity guides for farmers, trainers and students. The partners reviewed the tool and provided feedback via an online review form, which was used to improve the tool. This WRC tool has since been integrated into youth-targeted agroecology microlearning units available on the Youth Agency Marketplace (YOMA) as additional reference resources. The integration of these resources with the YOMA platform, a digital ecosystem that supports youth learning, skills development, and employment opportunities, extends Amanzi for Food's reach to younger audiences, linking community-based agricultural learning with digital credentialing and employability pathways. User feedback has highlighted that the term '*digital*' could discourage those with limited access to devices or data. In response, the tool is now referred to simply as the Field Support Tool, reflecting its ability to function offline once downloaded, as a set of easily shareable PDFs accessible on mobile phones or laptops.

- **Training of Trainers' Courses:**

These accredited courses were revised and updated to improve accessibility and relevance across diverse learning contexts. In addition, we developed a series of short microlearning units using Articulate 360, now available on the Amanzi for Food website. These interactive knowledge-check microlearning units are also integrated into the (Digital) Field Support Tool, forming part of the broader digital support toolkit for agricultural educators and extension services.

● Capacity Building Through Contextualised Action:

Learning Network members are encouraged to share their own stories, write blogs, and create videos or posters to showcase what they are doing and the agricultural practices they use. We also encourage members to share their location on a Padlet activity during webinars, allowing them to connect (Figure 1). This activity supports applied learning and demonstrates mutual agreement through peer-to-peer contributions. The Padlet map has since been updated with additions from other Network members, with the intention of identifying geographical clusters of members who could meet physically and support each other in their work on Productive Demonstration Sites.

Together, these initiatives have helped shift the Network from content delivery to co-creation of knowledge, reinforcing both mutual engagement and the development of shared contextualised resources (toolkits) relevant to the Learning Network members' diverse settings.



FIGURE 1: Padlet Activity Indicating Where Some of the Learning Network Members Are in Southern Africa

4.3.3. Digital Engagement and Network Reorganising

The WhatsApp platform has been central to all phases of network engagement, but sustaining digital participation has remained one of our biggest challenges. From 2023 to mid-2025, the Amanzi for Food WhatsApp group saw:

- Periods of high activity (e.g. 95 messages in February 2025) during structured campaigns, and deep lulls (as few as 10 posts) in quieter months,
- Uneven contributions, with 60% of messages coming from a small core group,
- Repeated attempts to revive participation through polls, Google Forms, webinar invites and content sharing.

In response, a pivotal shift occurred in June 2025. After surveying the 80 members of the Virtual Learning Network created a new group: *Amanzi Ukudla*, meaning “Water is Food” in isiXhosa. This was not just a renaming; it was a reimagining of the Network as an agile, evolutionary, and adaptable platform able to respond to the different contexts, cultures, and needs of its members, and grounded in co-engagement. We then sent out a survey to those committed to the *Amanzi Ukudla* Learning Network to find out what they would like from the Network, regarding support and activities and what they could bring to the Learning Network.

Survey results revealed a strong demand for diverse forms of support. The majority (14 respondents) selected “all of the above” when asked about their needs, reflecting broad interest in training notifications, opportunities for dialogue and sustained engagement. Members joined the Network seeking education in RWH&C, connection with like-minded practitioners and opportunities to share their own practices. To sustain participation, respondents highlighted the importance of access to training, interactive spaces such as webinars and WhatsApp discussions, networking opportunities and practical support through tools like the Field Support Tool and YOMA modules. A strong sense of community, recognition and relevance emerged as key motivators for continued engagement.

Members who reaffirmed their commitment were invited into the new group not as passive participants but as Network Partners, a terminology shift that aimed to build shared accountability and purpose. Since then, the Amanzi Ukudla group has hosted two interactive webinars with co-facilitated discussions and follow-ups. WhatsApp analysis indicates regular sharing of learning materials, student videos and links to the Field Support Tool and YOMA platform. The first in-person Amanzi Ukudla Learning Workshop (August 2025) will bring together 18 partners to co-design the Network’s future. Initial feedback suggests greater

ownership, increased participation, and a renewed sense of community. Members have expressed appreciation for the clear structure, recognition of their roles and opportunities to contribute meaningfully.

4.4. Lessons Learned and Emerging Insights

Reflections on Phase 3 of the AfFLN reveal deeper insights into how participatory Agricultural Learning Networks can inform agricultural extension theory and practice in the digital era. Through analysis of facilitation processes, participant feedback and engagement data, this section identifies critical lessons that advance understanding of how CoPs can operate as adaptive extension systems – where learning occurs through shared practice rather than information transfer. These insights contribute to rethinking agricultural extension as a social, relational and context-responsive process, rather than a purely technical or top-down system.

A key finding is that participation in virtual agricultural CoPs is not self-sustaining. Contrary to conventional extension models that assume once-off training results in continued practice, the AfFLN experience shows that participation must be continuously facilitated. Structured prompts, follow-up activities and dialogic events were required to maintain presence and reciprocity. This highlights a theoretical shift from extension as dissemination to extension as facilitation of social learning, aligning with more contemporary participatory extension models.

The second insight concerns role definition and accountability. Within agricultural networks, clarity about who facilitates, who contributes and how feedback loops operate determines the sustainability of engagement. By reframing participants as *Network Partners*, the AfFLN adopted a co-responsibility model that mirrors horizontal extension approaches, in which practitioners, trainers, and farmers share leadership. This contrasts with hierarchical “transfer-of-knowledge” models and demonstrates the value of distributed facilitation in digital agricultural extension landscapes or contexts.

Third, the reflection reveals that shared purpose must remain open, flexible and contextualised. In extension terms, this underscores the need for ongoing alignment between programme objectives and participants’ evolving livelihood realities contextualised in the current social-ecological challenges that food growers face. While RWH&C remained the thematic anchor, members’ feedback highlighted emerging agricultural challenges, including pest management, drought resilience, and market access, showing that adaptive learning networks can serve as

listening systems for contextual needs. Theoretical coherence here lies in linking Wenger's (1998) concepts of joint enterprise with participatory extension's emphasis on co-defining problems and co-producing solutions.

Another insight relates to the limits of tool-based interventions. Despite the proliferation of digital resources such as the Field Support Tool, YOMA microlearning units and webinars, uptake was inconsistent without embedded facilitation. This finding contributes to extension theory by illustrating that technology mediates but is not a substitute for social learning. Digital tools amplify reach, but relational trust and contextual relevance remain the foundation of agricultural knowledge uptake.

Lastly, hybrid models that combine digital and in-person engagement offer a promising pathway for participatory extension. Member feedback consistently emphasised the need for relational, face-to-face interactions to complement online communication. The planned Amanzi Ukudla Partner Workshop (August 2025) embodies this shift towards hybridised extension practice, integrating digital coordination with situated, experiential learning and peer mentorship.

Taken together, these insights extend the application of CoP theory into the field of agricultural learning and extension systems. They demonstrate that digital learning networks, when intentionally facilitated, can evolve into distributed systems of agricultural innovation and co-engaged learning. The lessons emerging from this phase offer a critical reimagining of extension practice as co-engaged learning, rooted in context, reciprocity and adaptive participation. Figure 2 illustrates this transformation, showing how facilitation, co-design and hybrid interaction progressively redefined participation within the Learning Network. These understandings directly inform the reorganisation of the Learning Network discussed in the following section.

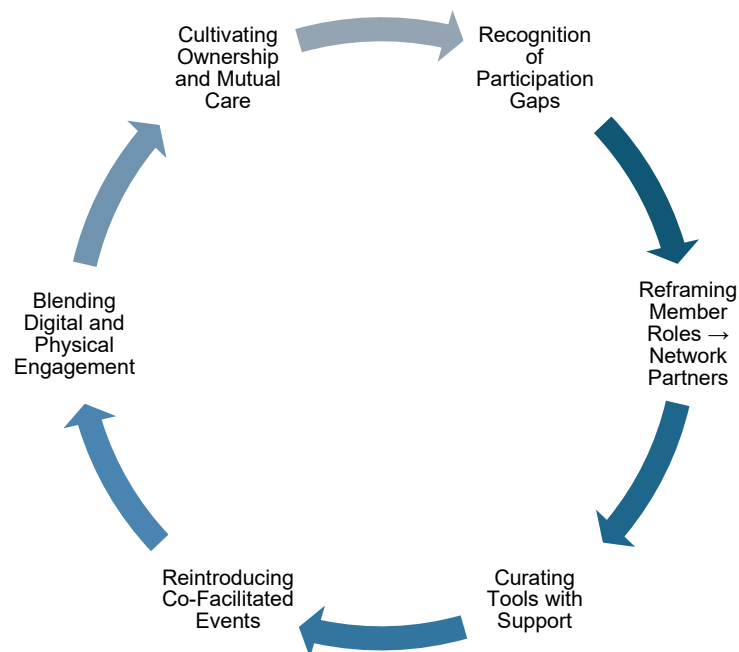


FIGURE 2: Transformation Flow: Participation-As-Practice

Reflections from Phase 3 revealed that the AfFLN’s digital-only structure had reached its limits in sustaining meaningful collaborative engagement among agricultural educators, extension agents, farmers, and other partners. While the Network continued to provide valuable content and committed participation from a small core group, interaction patterns indicated declining inclusivity and depth of collaboration. These findings initiated a systematic reframing of the Learning Network’s design to strengthen co-engagement, hybrid interaction and shared ownership.

The re-envisioned model, *Amanzi Ukudla*, embodies this transformation. It integrates lessons from the AfFLN into a more localised, participatory framework grounded in co-design, collective care and contextual responsiveness. Figure 3 summarises the structural evolution of the Learning Network, contrasting the assumptions and limitations of the earlier AfFLN with the adaptive, partner-driven principles underpinning *Amanzi Ukudla*.

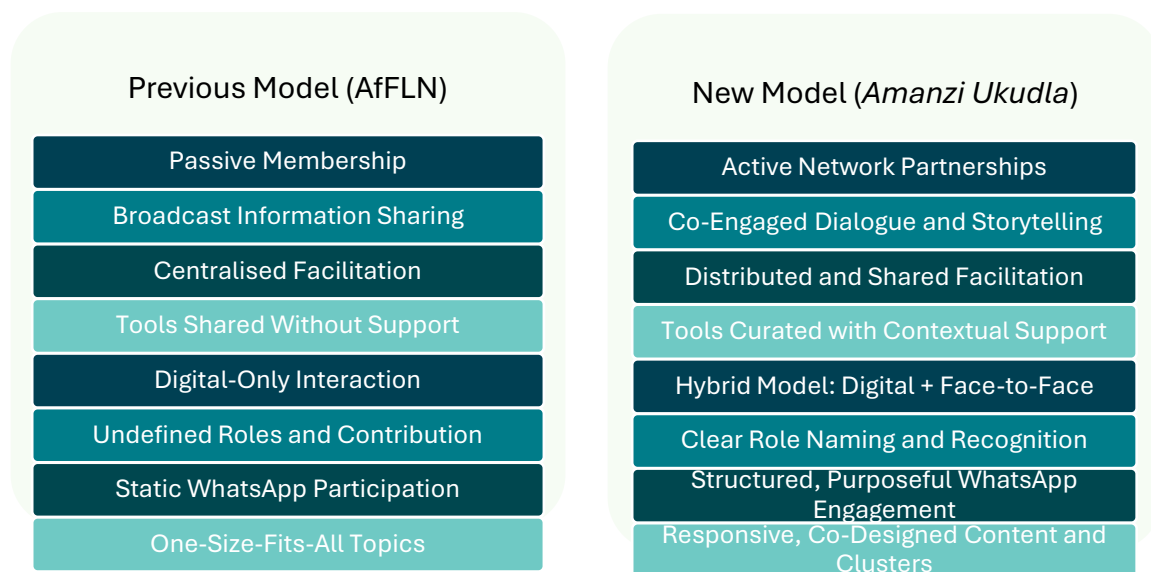


FIGURE 3: Comparative Overview of the Evolution of the Learning Network

5. PARTICIPATION AND PARTNERSHIP

One of the first changes was a shift in language and roles. Rather than referring to participants as “members,” we invited only those who reaffirmed their commitment to become *Network Partners*. This change has already created a stronger sense of mutual accountability and helped establish clearer expectations around participation, contribution and collaboration. New partners are required to complete a Google Form to share their skills, interests, motivations and commitment, which inform subsequent activities and connection-making within the group.

5.1. Digital Interactive Spaces

In June 2025, the *Amanzi Ukudla* WhatsApp group was relaunched as the primary platform for communication and interaction. The redesign was guided by the principle that digital spaces should be *facilitated learning environments*, not merely channels for information dissemination. To strengthen mutual engagement, the group was structured around shared goals, transparent expectations and interactive entry points for participants.

The onboarding process included a brief orientation outlining the Network’s aims and norms, a profile-sharing activity to foster familiarity, and a short student-produced video that prompted discussion and mentorship. These design features collectively reframed the WhatsApp space as a co-owned learning environment, illustrating how intentional facilitation can transform

everyday digital tools into participatory learning networks for agricultural education and extension.

5.2. Collaborative Learning Session

Within the first month, two collaborative webinars were convened, with one completed on June 11 and another on July 15. The latter was framed as a collective planning meeting to agree on a vision and chart a way forward for the Network. Unlike previous top-down webinars, these were designed in collaboration with Network Partners. For example, the responses to the partner questionnaire were used to frame the meeting on July 15. Topics were selected collaboratively, facilitators were invited from within the Network, and recordings and summary posts ensured broader access. These events served not only as knowledge-sharing and learning moments but also as community-building opportunities that deepened mutual engagement. These sessions illustrate co-design as a facilitation strategy within digital agricultural extension.

5.3. Embedding Digital Tools into Practice

We began curating our existing digital tools more intentionally:

- The (Digital) Field Support Tool was reintroduced through guided activities and discussion prompts.
- YOMA Agroecology microlearning units have been and continue to be shared with visual instructions and QR codes.
- Rather than simply distributing resources, we now support their use through examples, partner stories and contextualised guidance, linking tools to real practice.

5.4. Regional Learning Clusters

Recognising the limits of digital-only interaction, we planned the first face-to-face *Amanzi Ukudla* partner learning workshop in Howick (August 2025). With 18 partners confirmed, this gathering is designed to:

- Build deeper relational ties among participants.
- Offer hands-on sessions with the (Digital) Field Support Tool and YOMA units.
- Launch regionally-based learning clusters grounded in language, geography or thematic alignment.

These clusters represent decentralised, relational learning structures aligned with participatory extension theory and support the development of a locally grounded CoP while maintaining broader coordination.

5.5. Participation-as-Practice

Participation within *Amanzi Ukudla* has been reconceptualised as an ongoing, relational process rather than a static outcome. Building on Wenger's (1998) conception of *learning as participation*, this approach foregrounds interaction, reciprocity and shared responsibility as central to sustaining the Network. In practice, facilitation now emphasises mutual recognition, two-way communication and distributed leadership.

Regular feedback loops, public acknowledgement of contributions and rotating leadership roles encourage members to take active responsibility for the Network's vitality. Monthly reflective sessions are used to identify emerging patterns, successes and challenges, allowing adaptive adjustments and continuous co-learning. Through these iterative practices, facilitation has shifted from a centre-led model to a distributed form of stewardship, in which partners collectively nurture participation-as-practice within the Learning Network.

6. CONCLUSION: TOWARDS SUSTAINABLE KNOWLEDGE-SHARING COMMUNITIES

The AffLN journey since 2015, from its early course-activated beginnings to its transformation into *Amanzi Ukudla*, offers a powerful case study in the complexities and potential of sustaining learning networks in the context of agricultural education and community-based knowledge sharing. Over the past two years, our work has illuminated both the promise and the pitfalls of virtual engagement, and most importantly, it has taught us what it truly takes to build and maintain a CoP that is inclusive, responsive and resilient.

We have seen that digital platforms alone are not enough. Participation must be intentionally supported through facilitation, precise role definitions, timely and relevant content and strong human relationships. This understanding both requires and develops individual and collective agency. We have also learned that learning networks thrive when participants feel a sense of ownership, are recognised as partners, not passive beneficiaries, and when their lived experiences and contributions shape the direction of the community.

The creation of *Amanzi Ukudla* marks a hopeful shift towards a more co-engaged, hybrid model of learning and collaboration that honours the relational depth of face-to-face gatherings while harnessing the accessibility of digital tools. It represents a growing emphasis on curated, practical and mobile-first resources, youth-friendly learning pathways and multilingual support.

Our research findings have limitations, as they are grounded in a context-specific, practice-based reflection on a single agricultural learning network and are shaped by particular institutional, digital, and socio-economic conditions, as well as the authors' embedded facilitation roles. While the insights are not intended to be statistically generalisable, they offer analytically transferable lessons for agricultural learning and extension initiatives operating in comparable resource-constrained and digitally mediated contexts.

Therefore, this paper contributes to agricultural learning and extension by offering a longitudinal, practice-based analysis of how an agricultural learning network evolved in response to shifting participation dynamics, facilitation practices and contextual constraints. By tracing the AfFLN's development across multiple phases and its reconfiguration as *Amanzi Ukudla*, the study demonstrates how learning networks can function as adaptive extension systems rather than one-off training interventions.

This journey has reaffirmed that sustainable knowledge-sharing communities are not built through tools alone, but through trust, relevance, co-engagement and shared purpose. For those designing or revitalising learning networks in the fields of sustainability, education or agricultural development, our story may offer valuable insights: start with community, stay open to adaptation and commit to the slow, relational work that allows learning to take root and supports the core mandate of the programme, namely, knowledge dissemination. We move forward not with a fixed model, but with a living, evolving Network, grounded in reflection, nourished by practice and reimagined by the possibilities of working together differently.

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