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STRENGTHENING THE RESILIENCE AND SUSTAINABILITY OF UGANDA'S COFFEE SECTOR: INVESTIGATING GOVERNANCE MECHANISMS IN COFFEE INNOVATION PLATFORMS

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ABSTRACT

Effective governance mechanisms for coffee innovation platforms are crucial to fostering resilience and sustainability in Uganda's vital sector. Despite extensive research on the governance of innovation platforms, a clear and unified definition of innovation platform governance mechanisms remains elusive. This lack leads to inconsistencies in interpreting and implementing innovation platform governance mechanisms, obstructing efforts to tackle critical challenges in the coffee sector. This study examines the governance mechanisms of coffee innovation platforms in Uganda, which serve as collaborative networks for stakeholders throughout the coffee value chain. Coffee innovation platforms play a crucial role in addressing sector-specific challenges by facilitating knowledge exchange, encouraging stakeholder engagement, and promoting the co-creation of solutions. Data from 91 farmers (54 males, 37 females) on the coffee innovation platform were collected using qualitative methods, specifically focus group discussions and individual interviews. Thematic analysis generated overarching themes for governance structures, processes, and principles. The study reveals that innovation platform governance structures encompass a diverse range of stakeholders, facilitators, interaction spaces, and frameworks. The innovation platform processes include stakeholder engagement, knowledge sharing, and capacity building. The fundamental principles of these platforms are participation, partnerships, and collaborative knowledge sharing. This research yields actionable insights for agricultural extension policymakers, leaders of coffee innovation platforms, and extension workers to enhance the governance of coffee innovation platforms.

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INTRODUCTION

The coffee sector is crucial to the livelihoods of Ugandans. Uganda's government policy and strategy depend on the coffee sector to reach her middle-income status and vision of 2040 (UCDA, 2019, 2020). In doing so, Uganda targeted exporting 20 million 60-kilogram (kg) bags worth US$ 1.5 billion annually. In 2023/24, Uganda sold 6.13 million 60 kg bags, earning US$ 1.144 billion (UCDA, 2025). This is below the set target of 20 million 60kg bags annually. The low figure is mainly attributed to Uganda's dependence on 1.8 million smallholder farmers (FAO, 2018; UCDA, 2025), who face complex challenges including climate change, pests, diseases, poor management practices, and market instability to produce coffee (Ochago, 2023). To address these challenges effectively, coffee sector stakeholders

are adopting Coffee Innovation Platforms (CIPs) (Isubikalu el al., 2019; MAAIF, 2013; Magala et al., 2019). These collaborative frameworks foster innovation and collective action by bringing together diverse stakeholders—farmers, traders, processors, researchers, policymakers, NGOs, private sector representatives, and government officials (Fatunbi et al., 2016). Together, they co-develop tailored strategies and solutions to address the coffee sector's specific challenges (Ochago et al., 2024).

Multiple stakeholders bring advantages and challenges due to their diverse requirements, interests, and goals. These differences can lead to interactions that create tensions and conflicts (Hinnou et al., 2018; Kilelu et al., 2013, 2017). Innovation Platforms often become battlegrounds where solutions for some members pose new challenges for others (Leeuwis, 2000). The success of coffee innovation platforms in promoting collaboration and developing strategies tailored to the coffee sector depends on effective governance mechanisms (Magala et al., 2018a, 2018b). Effective IP governance mechanisms can delineate roles and guidelines for membership (Audouin et al., 2021), clarify responsibilities within the platform, and define participation in learning activities (Fatunbi et al., 2016). Furthermore, effective governance fosters relationships that build commitment and trust among members, which are crucial for the long-term success of IPs (Hounkonnou et al., 2018; Lamers et al., 2017).

Innovation Platform governance mechanisms consist of various components such as organizational structure, objectives (Audouin et al., 2021), stakeholder representation (Fatunbi et al., 2016), and process facilitation (Lukurugu et al., 2021; Miningou et al., 2021), among others. Although these elements help to clarify the nature of IP governance mechanisms, the existing research reveals a fragmented understanding, lacking a unified and complete framework. For example, Magala et al. (2018b) found that organizational structure is one of several leadership components in Ugandan coffee innovation platforms. Conversely, Iorlamen et al. (2021); Kouyate et al. (2021); Puozaa et al. (2021) indicated that leadership demonstrated as a steering committee with roles such as chairperson, treasurer, and secretary, constitutes the organizational structure in groundnut and cowpea innovation platforms in Ghana, Nigeria, and Mali. Analyzing these perspectives—where leadership is seen as part of organizational structure versus organizational structure as part of leadership—differ. The former suggests leadership operates within a pre-existing organizational structure, while the latter implies that leaders actively shape the structure to align with the organization's strategy and objectives. Although organizational structure and leadership explain IP governance mechanisms, this research presents a fragmented view rather than a unified understanding. A clearer understanding of IP governance mechanisms is essential for developing practical strategies that enhance the management of innovation platforms effectively and adaptively. Hence, this study aims to identify the governance mechanisms within Uganda's Coffee Innovation Platforms.

Innovations platform governance mechanisms

Innovation Platform (IP) governance mechanisms are critical for understanding how collaborative frameworks function, yet they are not explicitly defined in the literature. For this review, the author defines governance mechanisms as the structures, processes, and principles that guide the operation, decision-making, and interactions among stakeholders within the platform.

Innovations platform structures

Evidence shows that IP governance structures involve multiple stakeholders, facilitators, interaction spaces, and frameworks. Key IP stakeholders include farmers, researchers, traders, input suppliers, processors, agricultural extension agents, government bodies, NGOs, private sector participants, and policymakers (Fatunbi et al., 2016). A dedicated team coordinates activities, maintains communication, and ensures the platform operates smoothly (Homann-Kee Tui et al., 2015). This team is crucial to promoting stakeholder communication, collaboration, and knowledge sharing by utilizing physical venues such as farms, research stations, community centers, and online platforms for broader engagement.

IP governance structures can be classified as formal or informal. Formal IPs adhere to strict laws and regulations, while informal ones follow loose guidelines (Adekunle et al., 2010). An executive committee typically oversees the operations of formal IPs, ensuring compliance with established rules and regulations (Adekunle, et al., 2013; Fatunbi et al., 2016). In some IPs, major decisions are made democratically at the general assembly, fostering stakeholder engagement (Sako et al., 2021).

Innovations platform processes

IP processes encompass stakeholder engagement, knowledge sharing, and capacity building. Stakeholders are identified through a value chain analysis of specific commodities (Fatunbi et al., 2016). Once identified, stakeholders are engaged via workshops, meetings, and other communication channels (Fatunbi et al., 2015) such as m-Omulimisa and Ezy-Agric. For instance, innovation platforms in Malawi and the Andes fostered connections among value chain participants, enhancing collaboration (Adekunle et al., 2010; Adekunle & Fatunbi, 2012; Homann-Kee Tui et al., 2013). To regulate interactions, IPs in Malawi and Andes supported farmers' access to other value chain stakeholders by building common ground and stimulating new stakeholder relationships (Kabambe et al., 2012; Thiele et al., 2011). The Groundnut Innovation Platform in Burkina Faso linked farmers with extension professionals to increase access to improved legume varieties through field demonstrations (Miningou et al., 2021). According to other studies e.g., (Davies et al., 2018; Lukurugu et al., 2021; Schut et al., 2017), IPs regulate interactions through increasing/supporting resource access, including inputs seeds, fertilizers, facilities, and finance, while providing institutional support for innovation, including standards, funding, and scalability.

Knowledge exchange among IPs occurs via workshops, demonstrations, study tours, and digital platforms that facilitate the sharing of best practices and insights. IPs assist farmers in knowledge generation through training, exchange visits, and observational learning (Akpo et al., 2021). Collaborations with research and development partners have established farmers' seed producer groups in various African countries, including Burkina Faso, Ghana, Mali, Nigeria, Ethiopia, Tanzania, and Uganda, enhancing extension efforts and technology adoption through field demonstrations (Monyo et al., 2021). Additionally, IPs utilize forums and meetings to promote awareness and disseminate knowledge (Audouin et al., 2023; Lukurugu et al., 2021; Miningou et al., 2021; Schut et al., 2017). Researchers (Kusters et al., 2018; Schut, 2017) found that IPs enable farmer experimentation by mobilizing essential resources like funding, stakeholders, land, venues, seeds, transportation, and research tools.

Innovation Platforms also provide training, technical assistance, and skill development programs to help stakeholders adopt innovative practices. For instance, coffee and wheat farmers in Uganda and Sudan learned new farming techniques—such as optimal plant spacing, line planting, composting, fertilizer application, and pest control—through interventions regulated by IPs (Ochago, 2023). The Kolokani Groundnut Innovation Platform in Mali exemplifies equitable access to training on good agricultural practices, extending support to all, irrespective of gender or activity (Sako et al., 2021). Moreover, IPs conduct technical training, demonstrations, and exchange visits to provide ongoing technical advice and support to smallholder farmers (Davies et al., 2018; Lukurugu et al., 2021; Miningou et al., 2021).

Innovations Platforms principles

Current literature emphasizes participation, partnerships, and knowledge-sharing, foundational principles guiding Innovation Platforms. IPs foster the inclusion of diverse stakeholders, particularly marginalized groups, to embrace multiple perspectives and enhance ownership of solutions. In the Kolokani Groundnut Innovation Platform in Mali, for instance, transparency in price negotiations protects the interests of all members (Sako et al., 2021), ensuring equal access to high-quality seeds. Local-led innovation platforms in Madagascar similarly prioritize member interests in setting IP objectives (Audouin et al., 2023). Furthermore, IPs promote stakeholder partnerships to leverage resources, skills, and networks for collective action and innovation. According to various studies (Lukurugu et al., 2021; Miningou et al., 2021; Schut et al., 2017), IPs broker, facilitate, and strengthen inter-actor relationships for the free exchange of knowledge and best practices, accelerating learning, innovation, and scalability of solutions.

In summary, while the existing literature highlights various governance mechanisms through different terminologies, it often lacks clarity. Innovation platforms' governance mechanisms include the structures, processes, and principles that guide their operations, decision-making, and stakeholder engagement. This research aims to clarify coffee IP governance mechanisms, enhancing our understanding of how these frameworks can improve the sector's resilience and sustainability.

METHODOLOGY

Research context

This study uses a case study method to explore the structures, processes, and principles of Innovation

Platforms (IPs) among coffee farmers in Uganda's Kapchorwa, Manafwa, and Namisindwa districts. According to Yin (2018), case studies provide practical insights into the topic. This condition suits the current research, which examines innovation Platform governance mechanisms with limited evidence.

Case selection

Purposive sampling was employed to select 91 (Figure 1) Coffee Innovation platform farmers. Eligible farmers were those who had been producing coffee for at least five years, indicating they possessed the experience to provide relevant responses. Coffee farmers from value chain innovation platforms were selected for the study. As a starting point, a target sample size of 16 participants was jointly determined by the author and leaders of the innovation platform to ensure comprehensive data collection while allowing in-depth analysis of individual viewpoints. The goal was to include at least two members of each sex from four innovation platforms per sub-county. During a one-day meeting, the author met with the Kapchorwa district innovation platform coordinator and facilitators to develop a list of potential focus group discussion participants. The facilitators then contacted potential participants to check their availability, ceasing calls after reaching the sixteenth respondent. The day before the focus group discussion, each facilitator personally reminded the participants about the event. Sixteen farmers were specifically selected from the Kapchorwa district for the focus group sessions.

A similar method was used for the other two districts, resulting in 15 participants from Manafwa and 12 from Namisindwa, respectively (Figure 2). With assistance from the district coordinator, facilitators, and focus group discussion participants, another list of potential farmers was created to triangulate the focus group discussions. The saturation point was reached during the sixteenth interview, after simultaneously collecting and analyzing data.

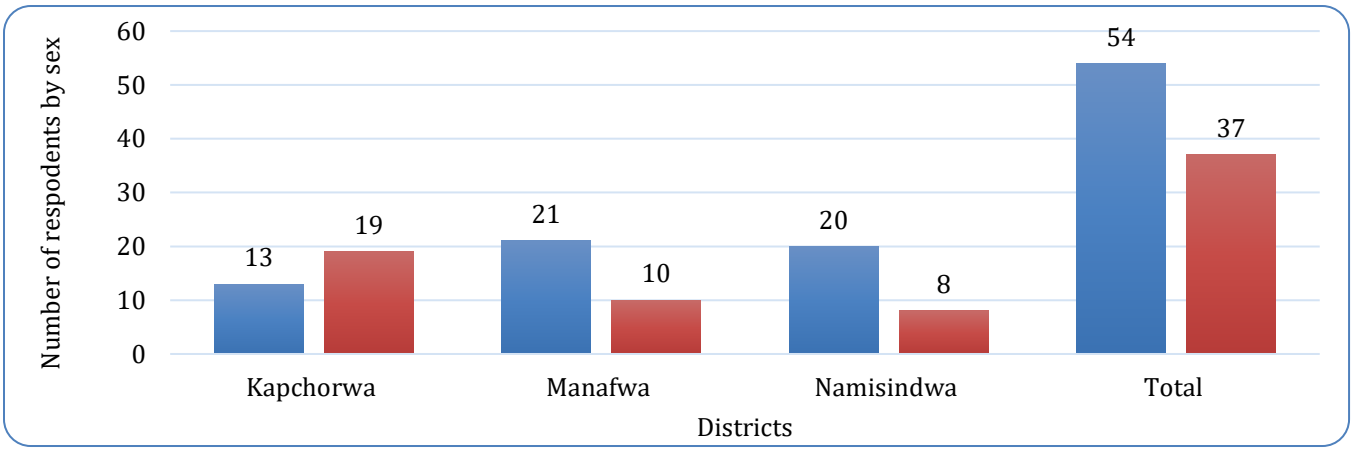


Figure 1. Respondents by sex.

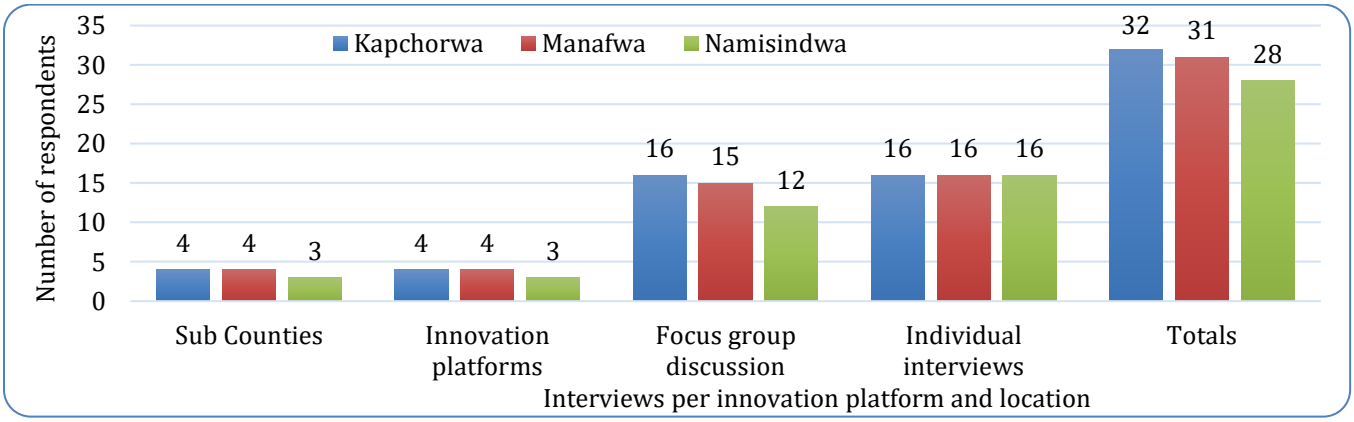


Figure 2. Respondents interviewed per innovation platform and location.

Data collection procedures

Data was collected through semi-structured interviews, including focus group discussions and individual interviews. We used flip chart papers, colored markers, and recording devices to collect data. The discussions were audio-recorded with the participant's consent. As the author was already familiar with the research site and in the company of trusted leaders from the farming community, he requested permission to record the conversations. Moreover, participants received a full summary of the study objectives and methods. Recording and subsequently replaying the conversations facilitated an in-depth analysis (Bryman, 2016). Two trained research assistants led each focus group discussion at a central location, consisting of a moderator and a note-taker. The focus group discussions began with a brief overview of the exercise to inform participants about the collected information, the methodology, and the purpose for which the data would be used. Ground rules established included that only one person could speak at a time; there were no right or wrong answers; participants didn't have to agree with each other; every opinion was valued; and individuals were encouraged to share their personal experiences throughout the discussion. Participants were invited to express their views in their native languages. At this stage, they were divided into two subgroups of eight. One group remained in one room while the other moved to another. In each room, the moderator and note-taker assigned codes to participants for easy interaction and to capture their responses. Following this, the facilitator asked questions to steer the discussion. While everyone's opinions were recorded, a hand vote was conducted to achieve consensus among at least half of the participants. Ultimately, two focus group discussions were held per district, resulting in six. After an 8-person group discussion on the study topics, a plenary session was conducted to gather new insights or points for consideration.

Finally, in the second stage, focus group discussion thematic areas were replicated at the individual coffee farmer level. During this round of data collection, each research assistant performed a one-on-one interview with a respondent. The respondent selected the interview location, alerting the field guide, who took the research team there. The interviews were documented in notebooks and audio recorded. In Kapchorwa, the saturation point was reached at respondent 16. The results for Manafwa were similar to Kapchorwa, with a saturation point reached at respondent 16. Since Manafwa and Namisindwa are similar, we simply interviewed 16 respondents in Namisindwa (Figure 2).

Data analysis procedures

Thematic analysis was used to interpret qualitative data using Atlas ti software. The coding process was iterative and drew on existing literature and ongoing field observations. It started with an initial round of coding based on data from the focus group discussions, which was later refined through follow-up interviews. During the analysis, the author performed three rounds of coding to identify emerging codes that accurately represented commonly used terms and concepts in the participants' responses.

The initial coding phase involved a detailed, sentence-by-sentence analysis of the transcripts to extract significant segments, including key phrases, sentences, and paragraphs. First-order codes like "maintaining coffee" and "picking/harvesting" were grouped to form second-level codes, such as "producing high-quality coffee." This hierarchical coding structure helped identify broader themes aligned with the study's objectives. Ultimately, the second-level code groups "producing high-quality coffee," "earning good incomes," and "enhancing livelihoods" were combined to form an IP goal of improving livelihoods and income for coffee stakeholders, known as the coffee IP structure or IP governance mechanism.

RESULTS

The interviews identified five key IP governance mechanisms, organized into structures, processes, and principles categories.

Coffee Innovation Platform structures

Results show that coffee IP structures encompass goals, multiple stakeholders, and coordination, with IP goals emerging as a key element. These goals determine the platform's purpose and direction and are aligned with the priorities of coffee sector stakeholders. The primary goal is to unify coffee farmers, encouraging them to produce high-quality coffee by jointly managing coffee gardens, harvesting ripe cherries, and marketing their products. This collective effort is expected to yield higher incomes and improved livelihoods, as illustrated below:

> Our innovation platform's goal is to produce high-quality coffee, earn good incomes, and change and improve our livelihoods **(Interview 51, male, Kabeywa coffee IP, Kapchorwa District)**
>
> Our goal is to produce high-quality coffee, build the capacity of members, protect the environment, and lobby and advocate for implementing policies in favor of farmers. **(Interview 52, female, Mt. Elgon women in coffee IP, Kapchorwa District)**

The other coffee IP structure focuses on membership and actor engagement. Each IP ensures diverse actor representation by establishing criteria for recruitment. With few exceptions for unique service providers like transporters, any coffee farmer over 18 years old can join the IP. Candidates must be among six selected representatives from a community farmer primary group. They should be active, dedicated individuals committed to attending IP meetings. Additionally, most IPs require entrants to contribute financially by paying an annual subscription fee of 50,000 Ugandan Shillings and purchasing an IP t-shirt bearing the IP's name.

> Sustaining an IP requires generating income internally, for instance in my IP everyone pays 20,000/= as membership fees, registration of 5000/=, and 1000/= for lunch during meetings. We also have a savings and credit scheme. (**Interview 004, male, Kabeywa coffee IP, Kapchowa District**)

The coffee IP governance structure includes a critical coordination component. This involves communication through various channels, particularly meetings. IP members convene monthly to address farming challenges and explore solutions. These meetings and other activities are managed by a steering committee, as shown in Table 1. This committee, comprised of facilitators, chairpersons, secretaries, and other stakeholders, provides the platform guidance, strategic direction, and decision-making authority. Each committee member is assigned specific roles and responsibilities, ensuring diverse input from all IP stakeholders.

Table 1. Coffee innovation platform coordination.

Position	Roles and responsibilities
Chairperson	✓ The chairperson handles general coordination and collaboration with the stakeholders such as researchers, governmental officials, NGOs, etc., and disseminates information to members. ✓ The chairperson coordinates IP activities, such as holding meetings, mobilizing members for meetings, and farming. ✓ The chairperson chooses representatives for workshops and other learning activities outside the IP and farming community.
Facilitator	✓ Provides translation to IP visitors during IP activities such as training. ✓ Sends information/invitations to primary group members via their chairpersons. The chairpersons of separate groups then notify members of their respective groups. ✓ Facilitates the training and distributes training materials to the participants. ✓ Manages meetings, mobilizes members for resource pooling, and networks
Secretary	✓ Take notes during meetings and keep meeting minutes.
Treasurer/Welfare	✓ Manages funds for the IP and ensures the well-being of its members
Time Keeper	✓ Keeps time
IP members	✓ Two primary group members observe what is going on in the IP and take reports to their respective members

Coffee Innovation Platform processes

In addition to stakeholder membership and engagement previously discussed, the coffee IP processes emphasize collaborative learning, enabling stakeholders to exchange knowledge, experiences, and innovations. For example, through structured discussions, farmers identified solutions to their challenges as detailed below:

> When faced with challenges, we convene as a group to discuss solutions. For instance, we may seek extension services from agricultural officials if necessary. To address low coffee prices, we focus on producing high-quality premium coffee for better prices. Additionally, we hold our coffee until prices rise before

making a sale. **(Interview 049, FGD Manafwa District)**

In collaborative learning, the free exchange of knowledge and experiences among members is essential, as detailed below.

To be in a group means developing very fast. The fast development lies in sharing ideas, exchange visits/look-and-learn, demand for training, offering collective labor, etc. **(Interview 050, FGD Namisindwa District)**

Networking and partnerships enhance coffee IP processes by connecting farmers with researchers, linking them to input suppliers, and fostering collaborations between academia and the coffee industry. For example:

I have benefited significantly from the IP through training and networking. Additionally, I have had productive interactions with visitors from Kampala, Australia, and more. Recently, we hosted a courtesy exchange visit under Value Chain Innovation Platforms for Food Security (VIP4FS) to Kapchorwa and Kamuli, where we shared valuable experiences. You are here today because we are members of an IP. Thanks to training and exposure visits, I am now taking on new roles. **(Interview 049, FGD Manafwa, Busyula coffee IP male participant B)**

Lastly, coffee IPs incorporated capacity-building activities to enhance stakeholders' skills and knowledge. This was accomplished through training sessions, mentoring, and exposure visits designed to encourage the adoption of new technologies and practices.

Our facilitator at Bukhokho Coffee IP has imparted valuable knowledge on pest and disease control. Our facilitator, GM, teaches us how to manage these issues and supervises our gardens. He demonstrated how to create organic fertilizer using urine, pepper, and cow dung mixed in water. After covering the mixture and storing it, we uncover it after 14 days to stir and cover it until ready. This method has proven effective; my coffee plants are thriving. Mr. GM sources this information from various places, which we appreciate. Additionally, Dr. P trained us on maintaining coffee growth, focusing on management practices like pruning and stumping to help reduce pests and diseases. **(Interview 044, male, Bukhokho Coffee IP, Namisindwa District).**

Coffee Innovation Platform Principles

Many interviewees agreed that inclusivity is a fundamental principle of coffee IP. Collective action and teamwork were notably highlighted as essential principles. For example, farmers were required to maintain well-managed coffee trees in their gardens.

Teamwork/collective action especially when it comes to pulping, drying, bulking, buying, and selling coffee (collective storage and marketing of coffee). Also, we collectively purchase farm inputs from genuine input dealers to improve our coffee production/increase coffee yields **(Interview 48 FGD, Kapchorwa)**

Sustainability: IP members mobilized resources for sustainability, including financial and technical expertise, infrastructure, and facilities. Each member contributes a registration fee of 5,000/-, a lunch fee of 1,000/- per meeting attended, a monthly fee of 5,000/-, and an annual membership fee of 20,000/- to 50,000/-. Additionally, the group saves collectively during weekly and monthly meetings to finance value-chain tasks, such as purchasing coffee and providing credits to members in need. Savings take the form of merry-go-rounds and Village Savings and Loans Associations (VSLAs). Grants from well-wishers are also welcomed, such as the 500,000/- received by Mt. Elgon women in coffee IP from their members of parliament to support activities. Non-financial resources include pooled technical expertise, knowledge, and skills from various stakeholders to enhance problem-solving.

I am a committed IP member, so all of us do our things together with no competition, and I do not think of completion because we share ideas and knowledge collectively with no discrimination among members. **(Interview 004, male, Kabeywa Coffee IP, Kapchorwa)**

Additional principles encompass value for money, innovation and creativity, transparency and honesty, accountability, trustworthiness, diligence, and effective time management. For instance:

Being well organized, trusting and trusting each other, and committed, model farmers within a group that is officially registered and recognized at the national level are our IP's core values

(Interview 51, male, Kabeywa coffee IP, Kapchorwa District)

IP members consistently oversee the activities of primary group members. Occasionally, they assist fellow members with coffee picking due to the shortage of skilled labor and the high cost of hiring available workers. It's important to note that unskilled laborers often pick unripe cherries, which detrimentally affects coffee quality, as illustrated below:

> Few trained coffee pickers make picking difficult and even stripe and break the tree branches, affecting the yield for the next season. **(Interview 005, male, Chema coffee IP, Kapchorwa)**

In addition to monitoring the activities of primary group members, policy advocacy serves as another governance mechanism for IP. IP members actively lobby for the implementation of pro-coffee farmer policies.

DISCUSSION

The interview findings reveal a complex yet clearly defined governance framework within Uganda's Coffee Innovation Platforms (CIPs). Analyzing the mechanisms categorized into structures, processes, and principles provides a nuanced understanding of how these platforms operate to support coffee farmers and enhance the sector's resilience, as discussed below.

Coffee innovation platform structures

An intriguing finding reveals that, unlike existing literature e.g., (Audouin et al., 2023), which sees goals as an implicit structure for Innovation Platforms (IPs), the Coffee Innovation Platform is built on a clear set of goals aligned with the needs of coffee stakeholders. The main objective is to unite coffee farmers, fostering collective learning and collaboration, which enhances their market bargaining power. By participating in joint activities—like production, harvesting, and marketing—farmers can realize economies of scale essential for boosting income and livelihoods. At the study site, coffee enterprise dynamics, age, affiliations, role identity, advocacy, and individual inadequacies, resource sharing shape IP goals. Moreover, inclusive membership criteria promote diverse representation, allowing any coffee farmer over 18 to join, cultivating belonging and active participation. However, the financial contributions required may limit access for some, necessitating an equitable support system for resource-poor farmers. The results align with those presented by Latynskiy & Berger (2016) , indicating that increased participation costs deter the inclusion of poor farmers. In Ethiopia, better-off farmers—especially those who are older, better educated, well-connected socially, and residing in easily accessible areas—are more inclined to become members of producer organizations (Mojo et al., 2017). In contrast, Minah & Malvido Pérez Carletti (2019) find that the cost of membership fees and share contributions is inversely related to female-headed household membership in Zambian producer groups. Finally, the steering committee plays a crucial role in governance, enabling communication and decision-making, while regular monthly meetings nurture ongoing dialogue and relationship-building—key for sustaining trust and cooperation.

Coffee innovation platform processes

The processes implemented by CIPs, especially the focus on collaborative learning, are valuable. They enable stakeholders to effectively exchange knowledge and experiences, which is crucial in a sector facing rapidly changing challenges like pest outbreaks and climate variability. Structured discussions foster collective problem-solving among farmers, leading to innovative practices in their operations. Besides, networking and partnerships play a vital role in these processes(Homann-Kee Tui et al., 2013). By connecting farmers with researchers, extension workers, and suppliers, CIPs act as bridges integrating knowledge and resources that promote innovation and efficiency. The Groundnut Innovation Platform in Burkina Faso linked farmers with extension professionals to increase access to improved legume varieties through field demonstrations (Miningou et al., 2021). Strengthening these networks empowers farmers to access improved services, resources, and appropriate technologies for their needs. Collaborations with research and development partners have led to the establishment of farmers' seed producer groups in various African countries, including Burkina Faso, Ghana, Mali, Nigeria, Ethiopia, Tanzania, and Uganda, enhancing extension efforts and technology adoption through field demonstrations (Monyo et al., 2021). Elsewhere, IPs facilitate stakeholder interactions by enhancing access to essential resources—including seeds, fertilizers, facilities, and finance—while providing institutional support for innovation, including standards, funding,

and scalability (Davies et al., 2018; Lukurugu et al., 2021; Schut et al., 2017). Then, capacity-building initiatives are essential for enhancing stakeholder skills, crucial for the ongoing development of farming practices. Training and exposure visits empower farmers to adopt new, sustainable agricultural technologies and methods.

Coffee innovation platform principles

Collective action is crucial for the success of CIPs, focusing on collaborative learning, networking, partnerships, and capacity building. It requires all IP members to embrace core values like trust, commitment, and accountability. Trust is fostered by openly sharing information, such as coffee prices, among members. Transparent price negotiations build trust and secure commitment (Sako et al., 2021). Commitment entails freely sharing knowledge, prioritizing others' needs, and holding each other accountable. This principle can enhance production quality, motivating members to care for their coffee gardens for the collective benefit. Through innovation, transparency, and accountability are admirable, their effective implementation demands diligence. A cooperative culture, especially in oversight, builds community, mitigating unprincipled behavior despite ongoing challenges in ensuring fair participation. As expected, IP members share resources such as inputs (seeds, fertilizers), facilities, equipment, finance (credit, grants, loans), and knowledge (Akpo et al., 2021; Davies et al., 2018; Kusters et al., 2018; Lamers et al., 2017; Schut, 2017; Schut et al., 2017). Their financial and technical knowledge can determine their participation in the IP. Coffee farming innovations often need ongoing investment and understanding. Farmers with financial acumen manage technology expenses effectively, while those with technical skills can troubleshoot issues and optimize innovations. This approach ensures the long-term sustainability of IP benefits, which are frequently reliant on donor funding (Dabire et al., 2017; Schut et al., 2018). However, selecting knowledgeable farmers might marginalize others, missing out on varied perspectives. These individuals may favor external innovations over efficient local practices, creating tensions among those feeling excluded and jeopardizing collaboration essential for collective agricultural success.

Implications

The interview findings reveal essential governance mechanisms for Coffee Innovation Platforms (CIPs) in Uganda, with significant implications for various stakeholders, including agricultural extension workers, platform leaders, and the Agricultural Extension Policy.

Agricultural extension workers

Agricultural extension workers hold two key roles in CIPS: ensuring goal alignment and promoting diversity in representation. Goal alignment involves working with IP facilitators to help farmers link their objectives with relevant coffee innovations, technologies, or practices on the platform. This is achieved through demonstrations, field visits, or training sessions that showcase how these innovations can facilitate their success. IPs utilize forums and meetings to promote awareness and disseminate knowledge (Audouin et al., 2023; Lukurugu et al., 2021; Miningou et al., 2021; Schut et al., 2017). This can foster transparency and collaboration among platform members, ultimately enhancing participation in collective activities. Then, farmers from coffee producer groups were selected at the study site. Agricultural extension workers should encourage IP facilitators to involve farmers from these groups and the wider community. Including farmers from producer groups ensures the representation of organized and experienced individuals who may already utilize specific innovations. Simultaneously, engaging farmers outside these groups helps reach marginalized individuals who could significantly benefit from the resources and support offered by the platform.

Innovation platform leaders

Platform leaders should collaborate with extension workers to align the goals of CIPs with stakeholders' priorities and communicate with the farming community. Then, leaders should actively recruit members from varied backgrounds within the coffee value chain to promote richer discussions and innovative solutions. They should prioritize the effectiveness of the steering committee by training members in their roles, encouraging collaborative decision-making, and maintaining regular communication. Finally, leaders should continue mobilizing financial and non-financial resources, building collective action platforms to support the coffee sector's sustainability and resilience. Collaboration with NGOs, government agencies, and private sector actors can improve resource availability (Lukurugu et al., 2021). Collaborations with research and development

partners have established seed-producer groups for farmers across several African countries, such as Burkina Faso, Ghana, Mali, Nigeria, Ethiopia, Tanzania, and Uganda (Akpo et al., 2021).

National Agricultural Extension Policy (NAEP 2016)/ Single Spine Agricultural Extension Policy (SAEP)

The findings emphasize the need for Agricultural Extension policy frameworks that support collaborative platforms. The NAEP/SAEP should advocate for a conducive environment for CIPs to thrive, ensuring that agricultural governance remains focused on inclusivity and sustainability. The NAEP/SAEP strives to consolidate and coordinate agrarian extension services to enhance efficiency and impact. With their structured goals and coordination mechanisms, coffee innovation platforms fit this objective well by offering a collaborative framework for stakeholders, including farmers, researchers, extension workers, and the private sector, focused on boosting coffee production and sustainability. Second, these platforms promote resource pooling among diverse stakeholders such as government agencies, NGOs, development partners, and private investors, optimizing resource allocation to ensure adequate funding and support for coffee sector extension services under the NAEP/SAEP.

The governance mechanisms of Coffee Innovation Platforms in Uganda are crucial for fostering collaboration among stakeholders and tackling key challenges within the coffee sector. By combining clearly defined goals, inclusive membership criteria, and effective coordination, these platforms create an environment conducive to knowledge sharing and capacity building. According to (Lukurugu et al., 2021; Miningou et al., 2021; Schut et al., 2017), IPs broker, facilitate, and strengthen inter-actor relationships for the free exchange of knowledge and best practices, accelerating learning, innovation, and scalability of solutions. Core principles such as inclusivity, sustainability, and shared responsibility not only bolster farmer resilience but also enhance the competitiveness of Uganda's coffee industry. Future initiatives should refine governance frameworks to promote equitable access and participation while furthering collaboration among diverse stakeholders. Additionally, increasing support for disadvantaged farmers can broaden participation and amplify the CIPs' impact on sustainability and productivity. For instance, the Kolokani Groundnut Innovation Platform in Mali exemplifies equitable access to training on good agricultural practices, supporting all regardless of gender or activity (Sako et al., 2021).

CONCLUSION

The governance mechanisms of Coffee Innovation Platforms in Uganda (Figure 3) are crucial for fostering collaboration among stakeholders and tackling key challenges within the coffee sector. By combining clearly defined goals, inclusive membership criteria, and effective coordination, these platforms create an environment conducive to knowledge sharing and capacity building. Core principles such as inclusivity, sustainability, and shared responsibility not only strengthen farmer resilience but also enhance the competitiveness of Uganda's coffee industry. Future focus should refine governance mechanisms to promote equitable access and participation while furthering collaboration among diverse stakeholders. Additionally, increasing support for disadvantaged farmers can broaden participation and amplify the CIPs' impact on sustainability and productivity.

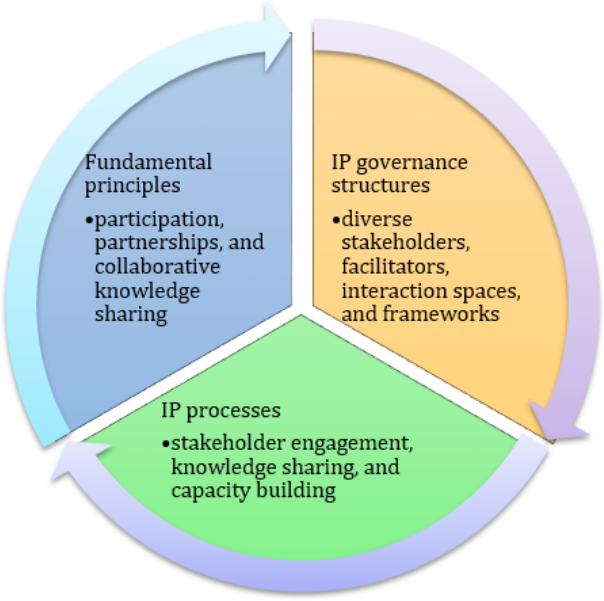


Figure 3. Governance mechanisms of coffee innovation platforms in Uganda.

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