

*Full Length Research Paper*

# **A case study analysis of extension service provision in Malawi**

**Kevan W. Lamm<sup>1\*</sup>, Fallys Masambuka-Kanchewa<sup>1</sup>, Alexa J. Lamm<sup>1</sup>, Kristin Davis<sup>2</sup>,  
Silim Nahdy<sup>3</sup> and Millicent A. Oyugi<sup>1</sup>**

<sup>1</sup>Department of Agricultural Leadership, Education and Communication, Faculty of Agriculture,  
University of Georgia Athens, GA, United States.

<sup>2</sup>International Food Policy Research Institute Pretoria, South Africa.

<sup>3</sup>African Forum for Agricultural Advisory Services, Kampala, Uganda.

Received 5 September, 2021; Accepted 22 October, 2021

**Evidence suggests that a lack of extension agents impedes the effective delivery of agricultural extension services in Malawi and many other developing nations. The purpose of this study was to examine the initiatives taken by the Malawi Forum for Agricultural Advisory Services Delivery (MaFAAS) to address the extension shortage. The research questions were addressed using a qualitative case study approach. MaFAAS and other partners launched an initiative to teach youth from local communities, particularly in rural regions, in agricultural extension so that they can serve their communities in positions comparable to extension agents. The effort resulted in the hiring of 427 extension agents to serve in their areas. While recruiting extension agents alone will not address the problem immediately, it is a start. The beneficial consequences of the Malawian organizations' partnership give an opportunity and potential paradigm for addressing the extension shortfall and difficulties farmers confront in Malawi and beyond.**

**Key words:** Advocacy, collective action, extension networks, access, policy, professionalization.

## **INTRODUCTION**

Malawi's emphasis on agricultural innovation systems stems from the realization that, despite a robust national research system, agricultural productivity remained suboptimal due to insufficient skills and technologies, a lack of credit and markets, and information asymmetry, all of which acted as a barrier to local producers adopting and utilizing contemporary agricultural technologies (Mapila et al., 2012). Access to extension agents' information fosters positive attitudes toward diverse

agricultural technologies and enhances their adoption by the majority of extension clients (Ghimire et al., 2015; Mariano et al., 2012; Olabanji et al., 2021). Agricultural extension appears to be a critical factor in agricultural development in developing countries as a result of technology adoption (Anaeto et al., 2012). Olabanji et al. (2021) discovered that increasing extension visits by one unit increased cocoa farmers' use of formal crop insurance by 57.6%. Abdurehman and Abdi's (2021)

\*Corresponding author. E-mail:KL@uga.edu.

systematic review confirmed access to extension communication as a critical determinant of farmers' adoption decisions regarding improved crop varieties. Several additional cross-sectional studies provide conclusive evidence for the hypothesized relationship between extension access and technology adoption (Lazaro and Alexis, 2021; Mathiu et al., 2021)

In Malawi, agricultural extension services began in 1907, during the colonial era, when extension services were top-down and directive. The colonial regime employed extension agents to compel farmers to adopt new agricultural practices (Knorr et al., 2007; Masangano and Mthinda, 2012). Additionally, Knorr et al. (2007) assert that extension service delivery was top-down, with a strong emphasis on cash crop production and the government supporting extension agent training during this time period.

Malawi's government continued to support extension agent training and delivery even after the country gained independence in 1964 (Botha, Personal Communication, 2019). Apart from assisting in the training of extension agents, the government owned and operated the country's sole college, Natural Resources College (NRC), until 1996 (Botha, Personal Communication, 2019). One reason for the college's closure was that the certificate program had become obsolete (Bayani, Personal Communication, 2019). Additionally, the college's closure was part of the government's effort to reduce the size of services deemed unprofitable as part of the Structural Adjustment Programs' implementation (Harrigan, 2003). However, about four years later, the government began implementing a decentralization policy with the goal of creating a democratic environment and institutions that facilitate grassroots participation in decision-making (Knorr et al., 2007). According to Knorr et al. (2007), implementing a new agricultural extension service delivery policy in the 2000s resulted in changes to extension delivery approaches. In contrast to the colonial era, decentralization emphasized bottom-up approaches to extension delivery, which promoted a demand-driven system in which farmers requested specific extension services based on their needs (Chowa et al., 2013; Masangano and Mthinda, 2012; Masangano et al., 2017).

The implementation of the policy resulted in the emergence of several new actors engaged in the provision of extension services (Masangano and Mthinda, 2012). The growing demands of farmers and the presence of multiple stakeholders in the delivery of extension services highlighted the need for more generalists and specialists in extension services delivery. To meet growing farmer demand and to professionalize extension delivery, the government reopened the Natural Resources College in 2001 and began offering a two-year tuition-based diploma program in Agricultural Extension and Natural Resources Management. Despite the college's reopening in 2015, other areas of Malawi

remained without public extension agents (Khaila et al., 2015). In 2011, the ratio of extension agents to farmers was approximately 1 to 600 (Kaunda, 2011).

## Background of *MaFAAS*

Apart from the need for additional extension agents, Malawi's extension services are poorly coordinated (Masangano and Mthinda, 2012; Chowa et al., 2013). To address the coordination challenge, the government established the District Agricultural Extension Services System (DAESS), which includes structures ranging from the village to the national level (Cai and Davis, 2017). According to Cai and Davis (2017), establishing structures was not a panacea for coordination difficulties.

The *MaFAAS* network was established in 2012 to address coordination bottlenecks in the delivery of extension services. Along with providing a forum for farmers to voice their concerns, the network's primary goals are to increase partner participation in district-level strategic planning and to facilitate DAESS service delivery collaboration (Masangano et al., 2017). The network serves as a coordinating body for agricultural extension and advisory services (AEAS) providers, actors, and stakeholders in Malawi and is a member of the African Forum for Agricultural Advisory Services (AFAAS).

Masangano et al. (2017) identify the public sector, local and international NGOs, the private sector, farmer organizations, donor-funded projects, and academia as AEAS actors and stakeholders. The network serves as a forum for discussion of issues relating to agricultural advisory services on a country-by-country basis. *MaFAAS* and its partners proposed and advocated for a project to train youth from local communities, particularly rural areas, in agricultural extension in response to challenges with recruitment, coordination, and monitoring of agricultural advisory services activities within the DAESS structures. After completing their training, the youth could serve their communities by increasing agricultural technology adoption and out-scaling it, as well as providing other advisory services comparable to those provided by extension agents. The proposal marked a significant departure from the recruitment and provision of extension service providers in the past.

## CONCEPTUAL FRAMEWORK

Change is required for an organization to remain relevant and meet its clients' needs (Medley and Akan, 2008). Implementing planned or unplanned change has been a significant challenge for the majority of organizations (Cameron and Green, 2019). However, organizational change studies are influenced by assumptions or

perceptions about an organization (Cameron and Green, 2019).

Kotter's (1995) eight-step process for implementing change was used in the current study. The model entails the following: (1) instilling a sense of urgency through discussion of current and potential obstacles and opportunities. It assists in visualizing the benefits of change through an aspirational and bold opportunity statement that emphasizes the critical nature of taking immediate action; (2) forming a strong guiding coalition, bringing together capable and influential groups to effect change. Through effective communication and information flow, a coalition of effective stakeholders creates a well-coordinated movement with a common goal. Multiple stakeholders eventually collaborate to optimize the value chain; (3) develop a vision and develop strategies for change. The change agent actively assists stakeholders in understanding the benefits of change and how the organization's future outlook will be achieved through strategies aligned with the organization's vision; (4) communicating the vision, providing guidance, and sharing the vision with other stakeholders. Significant change is only possible when the majority of the group's members embrace the initiative and coalesce around a shared opportunity; (5) empowering others to carry out the vision, identifying and resolving obstacles. This step entails eliminating waste and inefficiencies and establishes the latitude necessary to generate meaningful impact; (6) planning and developing short-term goals, as well as defining expectations and responsibilities. Wins are evidence of success and must be recognized and acknowledged early on to track progress and motivate change agents and stakeholders; (7) consolidating the improvements and generating additional change by revisiting and changing systems and policies that may act as impediments to implementing the change. This step's priority is to maintain the acceleration and momentum of success. The initial credibility gained is used to improve systems, structures, and policies that benefit stakeholders and enable the organization to achieve its vision; and (8) institutionalizing the new approach, including evaluation of the organization's outcomes or achievements as a result of the proposed change. New organizational behaviours and systems are implemented, which contribute to the participants' spirit. The ability of an organization to successfully initiate and implement change is contingent upon its recognition of the existence of a need and the criticality of addressing that need (Cameron and Green, 2019; Kotter, 1995).

### **Purpose and research question**

The purpose of this study was to examine MaFAAS's initiatives aimed at improving AES provision in Malawi. The following research question guided the study: How

was MaFAAS able to facilitate system-wide organizational change in Malawi regarding the development and provision of extension workers using Kotter's (1995) eight-step change implementation model?

### **MATERIALS AND METHODS**

Qualitative research methods were used to elicit participant experiences and opinions about agricultural extension service delivery and to address the research question (Gill et al., 2008). In-depth observation and analysis were possible due to a single instrumental case study (Creswell and Poth, 2016). The case study drew on a variety of data sources.

To begin, a one-hour focus group was held with representatives from various agricultural organizations in Malawi. Specifically, a representative from the Malawi Commodity Exchange (male), a private consultant for a non-governmental organization (female), a representative from the National Farm Radio (male), the president of the Malawi National Smallholder Farmers Association (male), a salesperson for a local fertilizer company (male), and a member of the national government (male). The session was facilitated using a focus group moderator guide (Chalofsky, 1999). The moderator guide encouraged participants to share their observations, experiences, and insights about Malawi agricultural extension services, MaFAAS, and systemic changes.

Interviews with key informants included the Director of the Department of Agricultural Extension Services (male), the Director of the Malawi Farmers Union (male), and a smallholder farmer (male). Interviews were conducted in a semi-structured manner and lasted approximately one hour. The interviews were facilitated by using an interview guide (DiCicco-Bloom and Crabtree, 2006), which prompted participants to share their observations, experiences, and insights about Malawi agricultural extension services, MaFAAS, and changes within the extension system. The MaFAAS network's Executive Secretary identified participants for both the focus group and the interviews. Individuals for participation were chosen based on their experience working with MaFAAS and their expertise in extension, rural and agricultural development, and capacity building.

The data were gathered, transcribed verbatim, and respondents' identities were protected using pseudonyms. The data were analyzed using a priori stratification (Casullo, 1999) in accordance with Kotter's (1995) eight-step change implementation model. Additionally, themes and subthemes emerged from a review of observational field notes, focus groups and interview transcriptions, artefact reviews, and journal entries (Creswell and Poth, 2016). Following content analysis, the themes were re-classified using the eight codes associated with the conceptual framework. The additional review was conducted to eliminate researcher bias and to increase the rigor of the study (Lincoln and Guba, 1985). The integrity of the research was ensured through field notes, artefact collection, observations, reflective journaling, and an audit trail of data analysis (Lincoln and Guba, 1985; Tellis, 1997). Peer debriefing was used to ensure the data's trustworthiness among team members and the MaFAAS and AFAAS executive boards.

### **Subjectivity statement**

It is critical to acknowledge the researcher's potential sources of bias and their effect on data analysis and interpretation. The study was conducted as part of a larger evaluation of the MaFAAS network, which was funded by AFAAS. The primary researcher aided the evaluation project as a consultant. Additionally, the primary researcher had previously worked with extension networks

in over 50 countries spanning all six permanently inhabited continents. The World Bank and the International Fund for Agricultural Development provided additional funding for the study.

## RESULTS AND DISCUSSION

### Establishing a sense of urgency

The analysis revealed a primary theme for establishing a sense of urgency: attrition among extension service providers, particularly in rural villages, was a significant challenge. "With attrition [among extension providers in rural villages] exceeding 30% and other extension providers [in more urban settings] at 5-10%, this was too high," one individual observed. Additionally, another individual stated, "there have been attempts in the past to improve the mode of mobility for extension services, such as providing extension via motorcycle versus push bike." These efforts, however, were insufficient to address the issues, as "people were leaving rural areas."

A parallel theme, which encompassed the symptomatic retention challenge, was associated with the overall approach to extension service provision. According to one individual, "the primary issue is the lack of professionalism and standards among non-governmental [extension service providers]." There is a problem without certification and training." Another individual stated, "The private sector is not as involved in capacity building as it should be when government [support] is lacking." Additionally, "People who do not already have money [to pay for extension services] are thus excluded from the benefits," an individual added. Without government-supported extension service providers to backstop private sector providers, it is possible that not all farmers will have access to professional extension services, heightening the sense of urgency to address the associated challenge.

### Building a powerful guiding coalition

The analysis revealed a recurring theme: MaFAAS was uniquely positioned to support any efforts to address the shortage of professional extension providers. To put it another way, "Extension is generating a public good, but it requires partnerships...organizations [like] MaFAAS to help provide context." "MaFAAS has dialogued with the government and villages; they act as a bridge," another individual stated. MaFAAS quickly assembled a coalition to provide the necessary support and insight to address the challenge, leveraging a network of affiliated individuals and groups.

### Creating a vision

To combat attrition, the organization pioneered a novel approach to recruiting, training, and retaining extension

agents in rural areas. The objective was to maintain a continuous pool of well-trained extension agents to facilitate rural farmers' adoption of technology by making pertinent information and practices regarding good agricultural practices readily available. According to respondents, MaFAAS's proposed training and supply model comparable to that used by the Ministry of Education. According to an individual, "the Ministry of Education used the same strategy to recruit teachers [in rural areas]; thus, this is not a new approach for the Malawi government." To be precise, the Ministry of Education recruited and trained individuals from rural communities to serve as rural teachers. MaFAAS used the same model to recruit extension agents in order to better serve Malawi's rural areas; previous efforts to do so had been unsuccessful. MaFAAS proposed the recruitment and training of a new cohort of extension personnel. According to the proposal, new extension personnel should be recruited from rural areas. The underlying premise was that individuals recruited from rural areas would be more likely to stay in rural areas as extension professionals after earning their degrees. The trainees who emerged from the program were believed to be familiar with their surroundings and to have acquired social capital in the community. Participants were to complete their degree programs and immediately begin providing extension services in their local communities. As one individual put it, "the vast majority of [extension agents] who are not from [rural] villages will leave villages." However, if the agent is a village resident, they are more likely to remain."

### Communicating the vision

Concerning the organization's vision to educate and train new extension workers, a recurring theme emerged: MaFAAS communicated the vision through its coordination role among stakeholders and policymakers. According to one individual, "when MaFAAS developed their proposal, the government agreed and supported them." According to another individual, "the Ministry [of Agriculture] has aided in the improvement of curriculum and field knowledge" as a result of the mutually beneficial proposed vision.

### Empowering others to act on the vision

The next step, based on the proposal, required the support and agreement of relevant stakeholders, most notably the government. The government was asked to subsidize the participants' education costs in exchange for signing a contract to work as extension professionals for a minimum of five years. Individuals would be required to repay the cost of their education in the event of a breach of contract. Participants would receive a

generalist education through extension and would complete their degree in approximately three to three and a half years rather than the standard two years required for full-time students.

While MaFAAS did not have the authority to enact or implement the proposal directly, they made policy recommendations. As a result, the primary theme that emerged was MaFAAS's role in establishing and enabling an environment conducive to action. "MaFAAS should suggest legal acts," one individual stated. They are an enforcing body." As a facilitator of expertise among stakeholders, MaFAAS was able to provide overarching support to others throughout the proposal's fulfilment.

### **Planning and creating short term wins**

To capitalize on the momentum generated throughout the process, a recurring theme emerged: MaFAAS leveraged its network and resources to support the program, despite the fact that the program's implementation was overseen by other entities and agencies. For instance, one individual observed, "When they [MaFAAS] began advertising in villages in order to recruit [new extension providers], the response was phenomenal." Additionally, MaFAAS was cited as having a unique and critical perspective that aided the process and ensured proper agent recruitment, training, and retention. Additional context was provided by one individual: "[Malawi] is generally food secure due to farmer production, but they [MaFAAS] demonstrated the critical nature of this change...they positioned the [new extension providers] as generalists, not specialists, making them more relevant to smallholder farmers." Another respondent echoed this observation, stating, "They [MaFAAS] targeted new markets where farmers lack the knowledge necessary to raise awareness of the benefits."

### **Consolidating improvements and producing more change**

MaFAAS, AFAAS, and their partners in government, private industry, and peer organizations recruited 427 new extension personnel, began their education, and jointly provided extension services in their communities. The initiative was deemed successful as a result of the Malawi Director of Extension's direct action and support, as well as financial support from the World Bank and the International Fund for Agricultural Development (IFAD). The new extension personnel served as a point of contact for clients seeking information and advice. A recurring theme was MaFAAS's role in proposing, supporting, enabling, and investing in the process. "The new approach was purpose-driven – there was a need." MaFAAS fought for numerous agricultural organizations." According to one individual, "[Farmers] can now make informed decisions

about what to plant and when to plant" as a result of the introduction of new agents into villages. Individuals indicated that one of the reasons the program was successful, in their opinion, was because it was based on the agents' familiarity with the rural villages they served. "They understand the proper way to approach the community," one individual observed. They are sensitive to gender and youth." Another individual succinctly summarized the situation as follows:

*Due to the fact that they [new extension providers] are village residents, they are a part of the community. They are more approachable and acceptable when they possess convening power. They significantly strengthen the village's clubs and associations. They can implement new technologies, relocate production, and assist farmers in adapting to factors such as climate change.*

Changes and recommendations were more readily attempted as a result of village recruitment. As a result, improvements were more quickly consolidated, demonstrating the program's efficacy and paving the way for future change.

### **Institutionalizing the new approach**

As per the analysis, respondents indicated that institutionalizing the approach remained an open question. Although the rural recruitment model was previously used in an educational setting, the primary theme associated with institutionalizing the new approach and new extension workers was viewed as more of a programming effort than a policy change. One individual stated emphatically, "I wish this [process] could be expanded." Increasing the ratio of extension providers to farmers from 1:3000 to 1:1500 in five years, ideally three." "Technical capability and strategy are still unknown," another individual stated. Collaboration is required."

Despite the desire to expand the program's scope, several individuals stated that it is critical to recognize the program's success. For instance, one individual suggested, "Others should consider this approach in order to retain extension providers in rural communities." Additionally, one individual observed, "The program has benefited rural retention by [assisting] in maintaining critical mass." Finally, an individual summarized the program's primary impact: "They [extension workers] can now reach out to more farmers than ever before...this will increase coverage." It's time to think big!"

### **Conclusion**

The success of the advocacy in securing 427 new extension workers in Malawi is notable. The results of the

program indicate that there are now more extension officers available to assist rural farmers with agricultural technology dissemination and adoption processes. Regardless of its success, the program's implementation requires ongoing political will. For instance, recruiting new extension agents will not address the attrition issue if these extension agents are dissatisfied with their working conditions. Additionally, reliable transportation, protective clothing, and other supplies are required to carry out role responsibilities (Fischer and Qaim, 2012). According to the findings of the analysis, MaFAAS and its partners should collaborate to ensure that the project does not end with the recruitment of these extension agents but also with their provision of the necessary resources to perform effectively.

A recurring theme was the critical nature of ensuring MaFAAS continues to advocate for farmer empowerment approaches. MaFAAS is well-positioned to bring farmers together to advocate with various organizations involved in input provision to ensure favourable conditions and markets for farmers.

As an example, MaFAAS's efforts are widely regarded as a model for enacting change in an international extension development context. According to Kotter's (1995) eight-step model, the study's findings indicate that MaFAAS contributed to or facilitated each step along the way. A recommendation to similar organizations would be to take a more purposeful approach when implementing or influencing similar changes. For instance, while MaFAAS completed or contributed to process steps, a more specific plan to support activities such as communicating the vision may have resulted in a more effective process. A more detailed change management plan may also assist in memorializing efforts, allowing for easier completion of retrospective analysis, specifically: what went well? What went wrong? What was discovered during the process? What can be done better the next time? The application of a structured process to future change efforts may be beneficial and informative.

Additionally, during the planning process, it would be prudent to synthesize both change efforts and contexts for change. For instance, Policy Leadership Theory (Lamm et al., 2019) proposes a process through which individuals and institutions can exert greater influence over policy changes. Navigating the policy process may necessitate specific considerations that are not always applicable to all change initiatives. Specifically, developing a policy agenda, formulating policies, adopting policies, implementing policies, and evaluating policies are all stages of the policy process that can be useful when planning policy change efforts.

Although the findings of this case study shed light on the experience of MaFAAS and other stakeholders in providing extension services in Malawi, the findings are not intended to be generalizable. Due to the fact that individuals expressed their personal views, the data may

not be representative of other stakeholders. However, this study provides insight into the role of collective action in the provision and delivery of extension services.

## CONFLICT OF INTERESTS

The authors have not declared any conflict of interests.

## ACKNOWLEDGEMENTS

The authors appreciate all the individuals and organizations that made this study possible. Specifically, their thanks goes to the World Bank and the International Fund for Agricultural Development for providing the much-needed monetary support. The research being reported in this publication was financially supported by the African Forum for Agricultural Advisory Services (AFAA).

## REFERENCES

- Abdurehman M, Abdi M (2021). Determinants of farmers adoption decision of improved crop varieties in Ethiopia: Systematic review. *African Journal of Agricultural Research* 17(7):953-960.
- Anaeto FC, Asiabaka CC, Nnadi FN, Ajaero JO, Aja OO, Ugwoke FO, Ukpongson MU, Onweagba AE (2012). The role of extension officers and extension services in the development of agriculture in Nigeria. *Wudpecker Journal of Agricultural Research* 1(6):180-185.
- Cai T, Davis K (2017). Malawi: desk study of extension and advisory services. United States Agency for International Development. Available at: [https://www.digitalgreen.org/wp-content/uploads/2017/09/Malawi\\_Desk-Study.pdf](https://www.digitalgreen.org/wp-content/uploads/2017/09/Malawi_Desk-Study.pdf)
- Cameron E, Green M (2019). Making sense of change management: A complete guide to the models, tools and techniques of organizational change: Kogan Page Publishers.
- Casullo A (1999). A priori knowledge appraised. Introduction to Casullo (Ed.) *A Priori Knowledge*, The International Research Library of Philosophy, Dartmouth Publishing Company, Aldershot.
- Chalofsky N (1999). How to conduct focus groups. *ASTD. Nonprofit World* 17:40-43.
- Chowa C, Garforth C, Cardey S (2013). Farmer experience of pluralistic agricultural extension, Malawi. *The Journal of Agricultural Education and Extension* 19(2):147-166.
- Creswell JW, Poth CN (2016). *Qualitative Inquiry and Research Design: Choosing Among Five Approaches*. Fourth Edition Sage Publications.
- DiCicco-Bloom B, Crabtree BF (2006). The qualitative research interviews. *Medical Education* 40(4):314-321.
- Fischer E, Qaim M (2012). Linking smallholders to markets: determinants and impacts of farmer collective action in Kenya. *World Development* 40(6):1255-1268.
- Ghimire R, Wen-chi H, Shrestha RB (2015). Factors affecting adoption of improved rice varieties among rural farm households in Central Nepal. *Rice Science* 22(1):35-43.
- Gill P, Stewart K, Treasure E, Chadwick B (2008). Methods of data collection in qualitative research: interviews and focus groups. *British Dental Journal* 204(6):291-295.
- Harrigan J (2003). U-turns and full circles: two decades of agricultural reform in Malawi 1981–2000. *World Development* 31(5):847-863.
- Kaunda E (2011). National case study on extension and advisory services: Malawi. International Conference on Innovations in Extension and Advisory Services: Linking Knowledge to Policy and Action.

- Khaila S, Tchuwa F, Franzel S, Simpson S (2015). The farmer-to-farmer extension approach in Malawi: A survey of lead farmers (No. 189). ICRAF Working Paper. Available at: <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.703.2335&rep=rep1&type=pdf>
- Knorr J, Gerster-Bentaya M, Hoffmann V (2007). The History of Agricultural Extension in Malawi. Margraf Publisher.
- Kotter JP (1995). Leading change: Why transformation efforts fail. *Harvard Business Review on Change* 73(2):59-67.
- Lamm KW, Randall NL, Lamm AJ, Carter HS (2019). Policy Leadership: A Theory-Based Model. *Journal of Leadership Education* 18(3):185-191.
- Lazaro AM, Alexis N (2021). Determinants of credit demand by smallholder farmers in Morogoro, Tanzania. *African Journal of Agricultural Research* 17(8):1068-1080.
- Lincoln YS, Guba EG (1985). *Naturalistic Inquiry*. Sage Publication, Inc. Social Science 416 p.
- Mapila MATJ, Kirsten JF, Meyer F (2012). The impact of agricultural innovation system interventions on rural livelihoods in Malawi. *Development Southern Africa* 29(2):303-315.
- Mariano MJ, Villano R, Fleming E (2012). Factors influencing farmers' adoption of modern rice technologies and good management practices in the Philippines. *Agricultural Systems* 110:41-53.
- Masangano C, Mthinda C (2012). Pluralistic extension system in Malawi. (IFPRI Discussion Paper No. 01171). Washington, DC: IFPRI.
- Masangano CM, Kambewa D, Bosscher N, Fatch P (2017). Malawis experiences with the implementation of pluralistic, demand-driven and decentralised agricultural extension policy. *Journal of Agricultural Extension and Rural Development* 9(9):185-195.
- Mathiu EM, Ndirangu SN, Mwangi SC (2021). Production of indigenous poultry among smallholder farmers in Tigania West Meru County, Kenya. *African Journal of Agricultural Research* 17(5):705-713.
- Medley BC, Akan OH (2008). Creating positive change in community organizations: A case for rediscovering Lewin. *Nonprofit Management and Leadership* 18(4):485-496.
- Tellis WM (1997). Application of a case study methodology. *The Qualitative Report* 3(3):1-19.
- Olabanji BT, Adeola OO, Kehinde TA (2021). Household welfare status and crop insurance uptake by cocoa farmers in Ondo State, Nigeria. *African Journal of Agricultural Research* 17(7):1031-1038.