Agricultural Assistants' Perceptions Towards Their Roles: A Case Study from Southern Province of Zambia

Abstract

Studies have been conducted in Africa to assess camp extension officers' perception towards their roles, however, little is known about agricultural assistants' perceptions towards their roles, as per government job description in Zambia. It was a cross-sectional qualitative study undertaken from January to July 2023, in which questionnaires were administered to 100 agricultural assistants (AAs) to assess the AAs perception of their roles. The collected quantitative data was analysed by using the Statistical Package for Social Sciences (SPSS) computer program. The findings show that most of the interviewed AAs perceived their roles namely; training, technical support, and performance management as important. However, AAs are faced with challenges such as low camp extension officer to farmers ratio; inadequate support to extension service delivery; conflicting methodologies in extension service delivery between public and private sector players; poor extension planning, reporting, and feedback culture; and inadequate in-service and refresher training for AAs. Based on these findings, it is recommended that there is a need to work out all aspects that affect the performance of the AAs' mandated roles. To considerably address the challenges of AAs in Zambia, the study does, however, encourage the government to recruit additional AAs, organise in-service and refresher training for AAs to improve their knowledge and skills, and adequate support to extension delivery. This would assist AAs in carrying out their mandated responsibilities and, ultimately, improve the delivery of extension services for improving agricultural performance across the country.

Keywords: *Agricultural Assistant, Perception, Roles, Southern Province, Zambia.*

1. Introduction

Agriculture is one of Zambia's top priority areas for economic development and poverty eradication. However, subsistence farmers who employ traditional tools and methods of farming provide a significant portion of the country's agricultural produce. "Several studies

have demonstrated that extension services boost the adoption of agricultural technology and practices, which leads to increased productivity, higher incomes, improved food and nutrition security, poverty reduction, and environmental benefits" (Waddington *et al.,* 2014; Lambrecht *et al.*, 2016; Pan *et al.,* 2018; Fabregas *et al*., 2019; Piñeiro *et al.*, 2020; Tambo *et al.,* 2020a).

"Agricultural Extension is the application of new knowledge and scientific research to agriculture through farmer education. It is the process of providing farmers with information and assisting them in acquiring knowledge, skills, and attitudes to increase productivity" (Rahim, 2008; 2010). "Roles are norms, values, and interaction patterns associated with individuals" (Anaeto *et al.,* 2012). "Role theory suggests that, if a role is emphasized as important within a given context, it is more likely to be enacted" (Theresa *et al.,* 1998). "Camp extension officers (CEOs) play a crucial role in global agriculture development, as they are change agents who deliberately bring about change or innovation" (Havelock, 1973). The effectiveness of extension services relies on Agricultural Assistants (AAs) who transfer information, innovation, and technologies effectively. The extension process relies on the AAs' ability to respond effectively to situations and function effectively, regardless of the innovative approach or resource supply. Agricultural Assistants, commonly referred to as camp extension officers' roles can be categorized as follows: process and technical skills (Suvedi and Kaplowitz, 2016), technology transfer roles, advisory roles, and facilitation roles, as well as educational and advisory (Moris, 1987; Mattee, 1994). "Based on the studied literature and the author's experience in the field of extension service, the seven categories of roles were summarized into three key result areas as training[1], technical support[2], and performance management[3], to aid in understanding the AAs' perceptions of their job responsibilities. The CEO's overall responsibilities come from the three key results areas and include providing extension services at the camp level to increase production and productivity, thereby improving farmers' livelihoods. Despite various roles assigned to CEOs, these efforts have not shown positive outcomes for farmers" (Ragasa *et al.,* 2013). "This is because the smallholder farmers produce low yields, and suffer from the problem of postharvest handling, processing, and poor access to markets that adversely affect their livelihood" (Magesa *et al.,* 2014). "The adoption of extension recommended practices and

[1] **Training** – conducts timely demonstrations and training of farmers to ensure effective delivery of appropriate information on technology.

[2] **Technical support** - conducts timely demonstrations and agronomic practices for the farmers to ensure effective delivery of appropriate technologies.

[3] **Performance management** – ensures timely development of individual and camp plans to monitor and evaluate performance.

inputs remains low in many sub-Saharan African (SSA)" (Aker, 2011; Sheahan and Barret, 2017). This is especially true for complex and knowledge-intensive technology packages such as conservation agriculture (CA) (Arslan *et al.*, 2014); integrated pest management (IPM) (Parsa *et al.*, 2014); and integrated soil fertility management (ISFM) (Lambrecht *et al.*, 2016).

Understanding AAs' perception of mandated roles helps policymakers and planners to develop strategies. Maintaining positive perceptions helps AAs fulfill their duties and improve extension service delivery, ultimately enhancing agricultural performance (Dube, 1993). Increasing farmers' access to extension services can help achieve SDGs 1 and 2, reducing hunger and poverty, adopting improved technologies, and increasing productivity and capacity (Swanson and Davis, 2014).

However, little is known about the perception of AAs in their roles, as per the Government of Zambia job description, and this study intends to fill the gap. Therefore, the objective of this study was to assess the AAs' perception of their assigned roles.

2. Material and Methods

2.1 Study area

The study was conducted in the Southern Province of Zambia. The selection of the study areas was based on the number of AAs in the province and farming activities. The study areas included fourteen districts: Siavonga, Chikankata, Mazabuka, Monze, Namwala, Pemba, Gwembe, Choma, Kalomo, Zimba, Sinazongwe, Livingstone, and Kazungula.

2.2 Study design and Data collection

A cross-sectional qualitative survey of AAs in the study area was conducted between January and July 2023. A questionnaire was prepared, reviewed, pretested, and a final version incorporating the pre-test results was produced. The questionnaire was pretested by interviewing ten AAs and four Agricultural Officers from Kabompo and Mwense Districts, whose responses were included in the final version. Data were collected from the selected AAs using a structured questionnaire that included both open-ended and pre-coded questions. The questionnaire assessed training, technical support, and performance management.

Respectfully, using the sample size chart created by Krejcie and Morgan (1970), the sample size for this study was determined to be 100 AAs (Table 1), while Wooldridge (2008) suggested 30 participants for statistical data analysis in a study where statistical data analysis is possible. The questionnaire was sent to AAs depending on their accessibility, willingness to participate in the study, and ability to provide information.

2.3 Data analysis

Data were entered into an Excel spreadsheet (Microsoft Excel 2016 version, Redmond, WA, USA) coded, summarized, and then exported to Statistical Package for Social Sciences (SPSS) version 16.0 computer program for statistical data analysis, where descriptive statistics were computed and presented using tables for categorical parameters. According to the study's objective, the summary tables were created.

Table 1: Distribution of Agricultural Assistants in the Study

Name of the District	**Total number of AAs in the district**			**Ratio**	**Sample Size**	**Percentage**
	Female	**Male**	**Total**			
Chikankata	7	14	21	(21/303)*100	7	7
Chirundu	2	9	11	(11/303)*100	4	4
Choma	22	27	49	(49/303)*100	16	16
Gwembe	6	9	15	(15/303)*100	5	5
Kalomo	11	25	36	(36/303)*100	12	12
Kazungula	2	17	19	(19/303)*100	6	6
Livingstone	2	3	5	(5/303)*100	2	2
Mazabuka	6	13	19	(19/303)*100	6	6
Monze	19	19	38	(38/303)*100	13	13
Namwala	6	10	16	(16/303)*100	5	5
Pemba	9	10	19	(19/303)*100	6	6
Siavonga	7	6	13	(13/303)*100	4	4
Sinazongwe	8	15	23	(23/303)*100	8	8
Zimba	7	12	19	(19/303)*100	6	6
Total	**114**	**189**	**303**		**100**	**100**

3. Results and Discussion

This section presents the results and discussion of the perceptions of AAs' towards their roles, which include training, technical support, and performance management. The AAs'

perception of each role's components is presented first, followed by the average perception of each role.

The following notations were used to rate each role's perceived importance on a five-point Likert scale: Most important (MI), Important (I), Moderate (M), Less Important (LI), and Not Important (NI). In this study, MI and I were combined as I, whereas M stayed as M, a LI, and NI were combined as NI. The results of the research are summarized in Table 2 below.

Table 2: Distribution of the respondents according to their perceptions towards training, technical support, and performance management (n=100)

Role category	**% Perceived level of importance**		
Training	**I**	**M**	**NI**
Train farmers on the best agricultural practices such as site selection, land preparation, planting, crop management, harvesting, post-harvest management	98	2	0
Train farmers on the best use of pesticides and fertilizers	86	3	12
Train farmers on the best use of soil water management	97	2	1
Train farmers on proper land use (e.g. land for crop production, livestock, etc.)	91	6	6
The average perceived level of training role	**93**	**3**	**4**
Technical support			
Disseminate new research findings to farmers	77	10	13
Participate in agricultural research	82	14	4
Conducts timely agronomic technologies demonstrations	95	4	5
Conduct research experiments with public and private researchers	91	3	2
Linking Farmers with Researchers	30	40	30
Evaluate agronomic practices in the camp	88	4	8
The average perceived level of the technical support role	**77**	**13**	**10**
Performance management			
Plan daily activities in the camp	77	17	6
Collect and keep rainfall data in the area	81	10	9
Organizing farmers' meetings to identify problems and setting priorities	85	7	8
Plan of extension program (e.g. weekly, Monthly, Quarterly, and annual plans)	97	1	2
Collect and keep research experimental data	63	20	17
The average perceived level of performance management role	**81**	**11**	**8**

3.1 Training roles

According to the study's findings (Table 2), 93% of the interviewed respondents perceived training roles as important to train smallholder farmers. Training is an important role that is commonly performed by CEOs in their daily activities. These results are consistent with those of Nwaogu and Akinbile (2018), who found that CEOs perceived the responsibilities of extension education and training. The study went further to investigate the level of importance of specific training roles performed, it was discovered that 98% and 97% of the CEOs thought it was important to train smallholder farmers in the best agricultural practices and the proper use of soil and water management, respectively. The findings are in agreement with other researchers' findings, who named face-to-face, small groups, and workshops for efficient instruction and training (Lakai, 2010; Nwaogu and Akinbile, 2018).

3.2 Technical support roles

Table 2 shows that, on average, 77% of the interviewed respondents perceived technical support roles as important. These findings are reflected in the specific aspects investigated under technical support roles, where 95% and 91% of the respondents regarded technical support roles to conduct timely agronomic technologies demonstrations and conduct research experiments with public and private researchers respectively. The findings are in agreement with those of Nwaogu and Akinbile (2018), who reported that CEOs perceived the technical support roles as important. According to Koutsouris (2012), "technical support roles mean bridging the gap between researchers and farmers. For example, linking farmers with research institutes and cooperating with researchers to conduct experiments were perceived as very important roles, but not well implemented, due to the weak linkage that exists between the research and extension services".

3.3 Performance management roles

The study findings presented in Table 2 show that, on average 81% of the interviewed respondents perceived that the performance management role is important for planning and monitoring extension activities effectively. This is especially important to make sure that individual and camp plans are developed on time, to track and assess performance at the camp level. Practically 97% of the CEOs surveyed said that scheduling follow-up activities helped them to prepare reports at the end of the week, month, and quarter respectively. The details of where, who, what, and when to undertake each activity each day, if feasible, in the planned activities are provided. In the event of any scheduled activity being cancelled, it becomes necessary to consider alternate activities. After the training role (93%), most CEOs

felt that the performance management role was important to the efficient operation of camp activities. Similar findings were reported by Kumar *et al.*(2013) and Al-Zahrani *et al.* (2017), they reported that the CEOs regarded performance management roles as important in planning extension programs and in the delivery of extension services.

3.4 The general perception of AAs towards extension work

While the previous sub-sections highlighted the perception of AAs towards their mandated roles, this sub-section describes AAs' perceptions towards extension work in general (Table 3). A five-point Likert scale was used to gather information on AAs perceptions as follows: 1=Strongly agree (SA); 2=Agree (A); Undecided (U); Disagree (D); and Strongly disagree (SD). In this study, SA and A were grouped as A; U remained U; while D and SD were grouped as D.

Table 3: Distribution of respondents according to their perception towards extension work in general (n=100)

Statement	% level of perception		
	A	U	D
Low Camp Extension Officer-to-Farmer Ratio	95	2	3
Inadequate Support to Extension Service Delivery	98	1	1
Conflicting Methodologies in Extension Service Delivery between Public and Private Sector Players	87	6	7
Poor Extension Planning, Reporting, and Feedback Culture	72	18	10
Inadequate In-Service and Refresher Training for AAs	91	6	3

3.5 Low Camp Extension Officer-to-Farmer Ratio

The study findings in Table 3 show that, (95%) of the CEO respondents perceived extension work as faced with a low camp extension officer to farmer ratio which leads to available CEOs attending to many farmers. There has been an increase in the farmer population with increased demand for agricultural extension services without a corresponding increase in the number of camp extension officers. This has resulted in the current Camp Extension officer-to-farmer ratio of 1:1200 in some cases (Livune, 2022). The capacity of camp extension officers to successfully provide extension services has been strained due to this low ratio, which is much below the internationally recommended requirements. Similar findings were reported by Bilonkwamanagara (2008) in his study in the Njombe District, Tanzania. He found that there was an inadequate number of CEOs in the study area, hence they were not able to reach every farmer and few farmers received agricultural extension services. This

suggests that inadequate camp extension officers may be one of the reasons why their work is unnoticed. This agrees with Kajigili's (2017) research, which pointed to a paucity of extension personnel at the camp level.

3.6 Inadequate Support to Extension Service Delivery

The majority (98%) of the respondents (Table 3) perceived extension work as being faced with inadequate logistic support, like transport facilities, accommodation and offices with well-equipped facilities to enhance the effective performance of extension work delivery. Currently, it is not uncommon for camp extension officers to work with limited or without operational resources. In some cases, AAs may inhabit dilapidated houses or are not placed in their designated areas and have to commute long distances at their cost. These include inadequate motorcycles, there is not enough time for AAs to operate effectively and provide reports when funds are provided, and lack of proper motorbike servicing and provision of spare parts among others that can assist them to perform their roles smoothly. Simelane *et al.* (2019), in their study in Eswatini, support the findings. According to the study, the CEOs believed their extension effort was underfunded, making it difficult and reducing their effectiveness and efficiency. Further challenging the camp extension workers is the fact that they have to play all key result area roles with inadequate resources. However, effective extension delivery requires the provision of adequate operational logistical support such as transport, appropriate accommodation (both staff houses and offices), and extension equipment and tools.

3.7 Conflicting Methodologies in Extension Service Delivery between Public and Private Sector Players

According to the study findings in Table 3, (87%) of the respondents reported competing methods in extension service delivery among public and private sector organizations. The government recognizes and encourages the participation of the private sector and NGOs in the delivery of extension services to complement public extension services. However, the coming on board by other players has brought about conflict in extension delivery strategies, with some providers going so far as to entice farmers to participate in extension programs with monetary incentives. This is because there are no policies to guide the extension education providers, and thus each other does what they see fit and not what is necessary and good for the farmers themselves.

3.8 Poor Extension Planning, Reporting, and Feedback Culture

The study findings presented in Table 3 show that 72% of the respondents perceived Poor extension planning, reporting, and feedback culture as one of the problems facing Extension operations. Spontaneous extension activities in camps cause inefficient resource use and lack functional information sharing platforms for harmonisation and planning. In addition, outcomes from most camp activities are either not reported or inadequately covered for conveyance to facilitate management decision-making. In cases where reports are conveyed, the culture of not giving feedback has been prevalent, thereby defeating the entire notion of a management information system. Sadly, the extension monitoring and evaluation system is inadequate.

3.9 Inadequate In-Service and Refresher Training for AAs

According to Table 3's findings from the survey, 91% of respondents said that one of the biggest issues they were encountering was a lack of proper in-service and refresher training. The current extension service delivery system does not adequately cater to extension staff in-service and refresher training. This results in some AAs confronting farmers with obsolete extension messages, leading to a possible loss of confidence in public extension services delivery and eventually to poor adoption and adaption of innovation, hence low production and productivity (Burrows et al., 2017). According to FAO (2008), CEOs' understanding of job performance is weakened due to a lack of in-service training.

Lack of in-service training significantly impacts extension delivery in agriculture due to changes in climate change, agricultural innovation, value chain, entrepreneurship, and ICTs. In-service and refresher training are essential for AAs to stay up to date, maintain a positive work environment, and be ready for new projects. Although AAs perceived various roles assigned to them as important, they have been blamed for failing to perform their roles as mandated. This is because smallholder farmers produce low yields, have post-harvest handling and processing problems and have limited access to markets, all of which have a negative impact on their livelihood.

Consequently, the study investigated the AAs' perceptions of extension work in general (Table 4).

Table 4: Distribution of AAs according to their perceived level of importance

Key Result area	Average % level of perception		
	A	U	D
Training	95	3	2
Technical support	73	14	17
Performance management	88	9	3

Table 4 shows that training, performance management, and technical support are prioritized by AAs (95%, 88%, and 73% respectively), demonstrating that AAs view these roles as essential for enhancing the effectiveness of the agricultural extension system as a whole.

4. Conclusion and recommendations

The study found that 93%, 77%, and 81% of AAs regarded training, technical support, and performance management as essential roles for achieving optimal performance in extension services. However, AAs face challenges such as a low camp extension officer-to-farmers ratio, inadequate support to extension service delivery, conflicting methodologies in extension service delivery between public and private sector players, poor extension planning, reporting, and feedback culture, and inadequate in-service and refresher training. These factors led to AAs being blamed for not fulfilling their job roles. Notwithstanding these challenges, AAs are the key role players in the transfer of technology to end users.

Based on these findings, it is recommended that there is a need to work out all aspects that affect the performance of the AAs' mandated roles. To considerably address the problem of the high AA-to-farmer ratio in Zambia, the study does, however, encourage the government to recruit additional AAs. This would help AAs carry out their duties under their mandate and, in the end, enhance the delivery of extension services for enhancing agricultural performance throughout the entire country.

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