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Full Length Research Paper

Demystification of administrative de-linking: Farmers access to agricultural extension information and service delivery in Arumeru District, Tanzania

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This study examined the accessibility of agricultural extension information and service delivery to farmers during the implementation of administrative de-linking reform under Decentralisation by Devolution Policy. The study employed a cross-sectional research design. Data was collected from 390 respondents using semi-structured questionnaire. Quantitative data were analyzed through McNemars chi square test and paired t test where as qualitative data were analysed using content analysis. The findings revealed that, contrary to the administrative de-linking reforms objectives, farmers' access to agricultural extension information and services delivery in the study area has remained critical. Findings show that farmers accessed more agricultural input, markets, financial services and information on agricultural technologies before administrative de-linking than after and it was statistically significant at p≤ 0.01. Moreover, high cost, long distance and shortage of extension staff were among limiting factors. Strengthening of local institution is recommended for improving farmers' access to agricultural extension information and service delivery.

Keywords: Administrative**,** de-linking, agricultural extension, information, services, accessibility.

INTRODUCTION

The Administrative de-linking of services has emerged as an important trend in development policy discourse across nations. It is a form of decentralisation focusing on transferring of core organisational functions such as planning, financing and management from the centre to the other levels of the government (Ozmen, 2014). It is worth noting that, administrative de-linking of services is a double edge sword and therefore the outcome of it depends on the way it's handled (FAO, 2005; Lanaj et al. 2013). If well designed and executed, it has the potential to improve efficiency and access in the delivery of services. The underpinning philosophy behind administrative de-linking is mainly bringing services close to the community and enhancing accountability in delivery of services. Aboagye (2015) pointed out that, when beneficiary are engaged in all stages of programme development, the delivery of services becomes more responsive.

In the context of agricultural sector, most of the countries worldwide reformed their National Agricultural Extension Systems (NAES) in the late 1990s. The reform was from technology-focused, public services dominated, transfer of technology approaches to a much broader scope with Multi actors (Suleiman and Davis 2012). It is an undisputed fact that, the reform was necessary to redress the impact of society, of government and market failures (World Bank and IFPRI 2010, Bitzer et al. 2016). Some of the earmarked malfunctions in provision of sound agricultural

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extension information and service delivery (AEI&SD) included weak interaction with agricultural research, misuse of extension officers for political purposes, and poor performance of extension staffs. Others included lack of political will, and dominance of bureaucratic procedures in provision of AEI&SD. (Bitzer et al. (2016). Therefore among others, transferring of some of the ministerial functions to the lower levels through the so called "administrative-delinking" was seen as the most effective approach towards making AEI&SD more accessible and responsive to the farmers needs.

However, empirical studies have revealed that, the outcomes of de-linking in enhancing accessibility of AEI&SD remains patchy and therefore cannot be generalised (WB and IFPRI, 2010; Birner and Resnick 2010; Mogues and Omusu-Baah, 2014). For example, in Costa Rica, FAO, (2008) found that the de-linking reforms have improved farmers' access to AEI&SD as well as their capacity to initiate and demand for services. Moreover, in the Netherlands, administrative de-linking have improved financing of agricultural extension functions where as about 60% of the agricultural extension budget comes from the farmers, while the remaining 40% is provided by the government (Qamar, 2005). This approach has on one hand, led to an increased quality and efficiency in AEI&SD and on the other hand, it has reduced the Government powers and authority over farmers due to its inability to keep financial promises (Qamar, 2005).

Similarly, Glendenning et al. (2010) found that in India de-linked AEI&SD had both positive and negative impacts. On the positive side, It has boosted the working morale and motivated frontline extension agents. In addition it has improved accessibility of extension funds, and promoted career and professional development of extension workers. However on the negative side, Raabe (2008 as cited by IFPRI 2011) found that administrative de-linking reforms in India suffered from weak local ownership, attitudinal barriers and administrative failures.

In Africa especially in Nigeria, the results of de-linked AEI&SD are mixed. For example, Akramov (2009) found that, despite administrative-delinking of AEI&SD, only 46.4 percent of Nigeria farming households used modern agricultural inputs such as improved seeds, chemical fertilizers, and pesticides. Similarly, Adesiji et al. (2010) assessed farmers access to extension services in Ogun State and found that, 90% of the respondents had access to agricultural extension information services; but it was less than half, 49% of the respondents who reported that agricultural extension information and service delivery were effective. Therefore, these findings confirm that, the impact of de-linking on AEI&SD in Nigeria were context specific.

In Tanzania, de-linking of the national agricultural extension services was carried out in 2000 by devolving AEI&SD to Local Government Authorities (LGAs). Under administrative de-linking reforms, some of the roles were transferred from the Ministry responsible for agriculture to LGAs (Komba et.al.,). Therefore, the ministry was left with such roles as policy and guideline formulation, monitoring and evaluation as well as provision of technical backstopping to LGAs. On the other hand, LGAs were given new mandates of recruiting agricultural extension staff, promotions as well as developing professional development programmes, (URT, 2009). In addition, LGAs were responsible for AEI&SD financing, planning, and budgeting. The main objective of de-linking AEI&SD to LGAs among others was to improve its access to farmers' rural farmers in Tanzania (Komba et al., 2018). However, since the execution of this major administrative reform in AEI&SD there is little evidence as to whether these particular objectives have been achieved (Kyaruzi et al., 2010; Mvuna, 2010). Therefore, this study assessed the influence of administrative de-linking on AEI&SD accessibility to farmers in Arumeru District in Tanzania. The study findings provided insights on the efficacy of the reform and subsequently unravelled future reform areas for a robust AEI&SD system.

MATERIAL AND METHODS

Description of the study area

The study was conducted in Meru District Council (MDC) and Arusha District Council (ADC) in Arumeru District in Arusha Region. The surveyed villages included Poli, Ndatu, Karangai and Kikwe found in MDC and Lengijave, Olkejulenderit, Kisyeria and Mlangarini in ADC.

The two Councils were purposively selected based on the nature of agriculture practices. The selected district council practices both crop farming and livestock keeping and therefore enabled gathering of data from agro-pastoralist.

Sampling Procedures

This study used a two-stage sampling technique; first involved a selection of study areas, while the second stage involved selection of agricultural households.

Stage I: Selection of geographical location

Meru and Arusha District Council were purposely selected from a list of seven Councils in Arusha Region. The choice was basically aimed at covering both crop growers and livestock keepers in the two councils. In Meru District Council, Poli and Ndatu villages found in Poli ward located in the highland zone were selected to represent crop growers, while Kikwe and Karangai villages in Kikwe ward located in lowland represented livestock keeping communities.

In Arusha District Council, Lengijave, Olkejulenderit villages in Olkokola ward found in the highlands zone were selected to represent livestock keepers communities while Kisyeria and Mlangarini villages in Mlangarini wards found in lowland zone were selected to represent crop farming communities.

Stage II: Selection of farming households' respondents

According to 2007/2008 National Agriculture and Livestock Census, Arumeru District had a total of 97,545 agricultural households from which a sample size of 398 households were determined using a formula provided by Yamane (1967) as cited by Tepping (2014) which states $n=N/1+N\ (e^2)$ with the level of precision of 0.05 assuming 95% confidence level. Whereas N= number of population size 97,545 for agricultural households and E is the level of precision at 0.05. Hence, the calculation gave a sample size of 398 agricultural households which was later equally divided to two District Councils to get 199 agricultural households. A farming households' list kept at the District Agricultural office was used to select adult respondents for the study.

Primary data collection

The study employed a cross-sectional research design. Quantitative data was collected through a semi-structured questionnaire. Information collected included farmers socio-economic factors, farmers perception on access to land, linkage and access to markets, agricultural inputs, financial services, agricultural information and technologies, timeliness and responsiveness of the services. Other indicators included extension officer's contacts with farmers, distance that farmers walked to access agricultural extension services, and an average time that it took for a famer to receive the request for extension services.

Secondary data

Secondary data were collected through reviewing different relevant documents relating to this study such as Tanzania Agricultural Policy of 2013, D by D policy, agricultural extension guidelines, Controller and Auditor General performance report of 2015 on assessment of extension services under decentralized system, and Presidents Office – Regional Administration and Local Government annual agricultural extension development reports from 2001 to 2015.

Data processing and analysis

A number of analyses were conducted in this study such as determination of descriptive statistics, McNeymar's chi- square test and paired t-test. The detailed results and discussion are presented here below.

RESULTS AND DISCUSSION

Access to agricultural inputs

The results from McNeymar's test shown in Table 1 revealed that, before administrative de-linking of agricultural extension information and services delivery (AEI&SD), of the 390 respondents, 82.6% of them reported that they had access to agricultural inputs. Whereas after de-linking only 50.7% of the 390 respondents reported to have access to agricultural inputs. The difference between respondents who reported access to agricultural inputs before and after de-linking reform was 32% and it was statistically significant at $p \leq 0.05$ (Table 1). This signifies that, the de-linking of agricultural services did not enhance respondents' access to agricultural inputs. These findings correspond with those of Akramov (2009) who found that, despite decentralization of agricultural extension services in Nigeria, only 46.4% of farming households accessed and used modern agricultural inputs such as improved seeds, chemical fertilizers and pesticides.

A number of reasons can explain the limited access to agricultural inputs for some of the respondents during the implementation of administrative de-linking of AEI&SD. First, agricultural extension service delivery system under decentralized system had adopted demand-driven approach as opposed to supply-driven, which was dominant before the decentralization process. During the demand-driven era, farmers had to initiate demands for services and were obliged to pay for the service which later discouraged majority of farmers to seek for such services.

More observation revealed that, some of the agricultural extension interventions that were advocated during administrative de-linking were narrow in focus and targeted only certain groups of farming communities. For example, in 2010 the Government of Tanzania through the Agricultural Sector Development Programme adopted agricultural inputs voucher system through the National Agricultural Inputs Voucher System (NAIVS). The system provided subsidies to a selected middle income household farmer both in Meru and Arusha District Councils. The subsidy, included inorganic fertilizers, maize and paddy seeds aimed at increasing farmer agricultural production and productivity. However, further observation in the study villages of Mlangarini, Poli, Kikwe, and Lengijave revealed that, only few farmers benefited by voucher system. Again, those who received the agricultural inputs ended selling them to the input dealers (Hepelwa et al. 2013).

Access to agricultural financial services

Findings (Table 1) show that, of the 390 respondents 89% of respondents indicated that they had an access to financial services before administrative de-linking of AEI&SD. On the other hand, only 40% of the 360 respondents reported to have access during the implementation of de-linking reform. The study findings

Table 1. McNeymar's chi square test results for accessibility of agricultural inputs before and after de-linking of services (n=390).

	Current 2015			**Chi square Value**	**P-Value**
Before 2000	**Access to agricultural inputs**				
	Not accessed n (%)	**Accessed n (%)**	**Total**		
Not accessed	17(25)	51(75)	68(17.44)	72.84	0.01
Accessed	181(56.21)	141(43.79)	322(82.56)		
Total	198(50.77)	192(49.27)			
	Access to financial services				
Not accessed	0 (0)	43 (100)	**43 (11.03)**	96.20	0.01
Accessed	194 (55.91)	153 (44.09)	**347(88.97)**		
Total	**194 (49.74)**	**196 (50.26)**			
	Access and linkage to markets				
Not accessed	20 (30.30)	46 (69.70)	**66 (16.92)**	99.85	0.01
Accessed	204 (62.96)	120 (37.04)	**324 (83.08)**		
Total	**224 (57.44)**	**166 (42.56)**			
	Access to agricultural information technology				
Not accessed	16 (23.88)	51 (76.12)	**67 (17.18)**	76.08	0.01
Accessed	185 (57.28)	138 (42.72)	**323 (82.82)**		
Total	**201 (51.54)**	**189 (48.46)**			

showed that there was a significant decrease in the percentage of farmers who accessed financial services after delinking of agricultural extension information and service delivery. The differences in proportion between respondents who reported to accessed financial services before and after de-linking agricultural services were statistically significant at $p \leq 0.05$ (Table 1).

Moreover, study by Madafu (2015) and Faye and Triki (2012) in Tanzania revealed that, access to formal credits was confined to large urban centers with high collateral requirements. Further observation in the studied areas indicated that, information asymmetry; high interest rate associated stringent conditions hindered farmers' access to financial services. On the contrary, before de-linking, the government regulated the financial sector by subsidizing agricultural credit window, which in turns facilitated farmers' access to credits.

Access and linkage to agricultural market

In addition, McNeymar chi-square test in Table 1 shows that before de-linking reform, of the 390 respondents 83% of the respondents reported to have linked and accessed markets. However, with implementation of administrative de-linking of agricultural extension services less than half 42.6% of the respondents reported to have accessed and were linked to the markets. McNeymar's chi-square test results indicated that there was decrease on the proportion of farmers who reported to have accessed and linked to agricultural markets after de-linking of agricultural extension information and service delivery and was statistically significant at $p \leq 0.05$.

The results are astonishing as currently, Tanzania is more connected with road networks than before 2000s which is a prerequisite condition for enhancing linkages and farmers' connections to markets. However, observations in the study area revealed that, poor access and linkages to markets are aggravated by limited number of agricultural extension agents and inefficient cooperative societies among many others. The importance of timely and reliable information for enhancing and promoting market access and linkages needs not to be over-emphasized. For example, Mwangi et al. (2015) recommended that in order to promote market access, policy makers should formulate policies that promote group membership, improve physical infrastructure, and facilitate access to credit as well as promoting market-led extension services especially to women and youths. Therefore, connections to road networks are important in enhancing linkages and access to markets for increased production. Moreover, Baghat and Dhar (2012) posit that, timely information on agricultural marketing accessibility was essential for increased farmer's productivity in west Garo hills district of Meghalaya in India.

Access to information on agricultural technologies

McNeymar's chi-square tests results in Table 1 show that there was significant decrease in the proportion of respondents who reported to have accessed information on agricultural technologies after de-linking of agricultural extension information and service delivery. Of the 390 respondents 82.82% of them reported to have accessed to information about agricultural technologies before de-linking compared to 76% during the implementation of de-linking. Generally, about half (51.54 %) of the respondents had the view that de-linking of agricultural extension services had not positively influenced access to information on agricultural technologies.

Several factors have contributed to this. For example, respondents in the study area complained about the absence of agricultural extension staff in their village and the weak local government coordination of agricultural extension stakeholders compared to when extension services were managed and supervised by the Ministry of Agriculture and Livestock Development. According to AFDB (2012) agricultural extension services (AESs) in Tanzania is characterized by weak research- extension-farmer linkages, poor public-private coordination and poor technological diffusion.

Moreover, according to World Technology Achievement Index (WTAI) report of 2015, Tanzania was ranked at 157 out of 213 countries with a technology index of 0.102 indicating a poor technological achievement. Linking to the latter, of the 390 respondents 57% reported to use old technologies, which limited their capacity and efforts to increase agricultural production and productivity. One Participant in a Focus Group Discussion (FDG) participants supported by saying that:

De-linking of agricultural extension services has done nothing with regard to access to agricultural technologies. We are still using our old technologies just like our ancestors did (Ndatu Village FGD, -15.07.2015).

Farmers' contacts with extension officers

The assessment of contacts that, agricultural extension agents made to farmers was done through a number of indicators. Such indicators included contacts days Agricultural extension agents (AEA) spent in a farmer group and individuals in a village per month, the number of meetings AEA held per village per year, and the number of organized field demonstrations held per year. Others were average time lapsed after AEA had attended the respondents' request, and the traveling distance respondent walked to access agricultural extension information and services.

Average number of AEA contacts days' to famers group per month

Regarding the average number of contact days that AEA had with the farmers' group per month before and after de-linking. Findings in Table 2 show that the number of days AEA spent in a farmer group per village per month before 2000 had a mean score of 2.39 while in the 2015 was 1.48. The mean difference on the average contacts days' AEA spent per farmers' group between two periods was 0.91 and it was statistically significant at $p \leq 0.05$. The findings indicated a decrease in mean scores in the average contacts days in a month that AEA spent per farmers' group per village with a 95% confidence interval stretching from 0.76 to 1.54 upper bound. The contacts days of an AEA to a famers' group in the village per month was lowered by one meeting per month after de linking of extension services. The results are in disagreement with Aboagye (2015) who confirmed that de-linking of agricultural services increased the frequency of agricultural extension agent's contacts with farmers' groups.

The decrease in mean score between two periods under study can be explained by shortage of extension staff and poor staff management and supervision compared to the period before de-linking when the management and coordination was under the central government. In the surveyed areas of Ndatu, Lengijave, Kikwe, Poli and Elkujerenderit the researcher visited and witnessed villagers complaining that, AEA spent more time in offices doing paper work such as report preparations, report writing and action plans. It was anticipated that, with de-linking process and bringing supervision and management of extension officers to the lower levels farmers could have more access and contacts with farmers.

Average number of AEA contacts days' to individual farmer per month

The results in Table 2 show that, there was a statistically significant decrease in the average number of contacts that AEA had to individual farmer per month from before 2000 with mean score 2.17 to currently (2015) with mean score 1.02.The mean difference score between two periods in relation to average number of AEA contacts days per individual farmer per month was 1.15 which was statistically significant at $p \leq .0.05$. Based on 95% confidence interval the difference stretched from the 0.99 being the lower limit to 1.31 being the upper limit. The results obtained are in agreement with Gido et al., (2014) in a comparative study between organic and conventional farmers who found a significant decrease in number of contacts days in smallholder farmers between conventional and organic farmers. Organic farmers had a mean of three contacts with extension providers compared to conventional farmers who had a mean of one contact day during the year.

The decrease in number of contacts days per month that AEA had before delinking process have been attributed by increased number of farming enterprises in relation to staff disposition in the village. In addition, continuously the LGAs increased number of administrative areas such as villages and wards without increasing number of extension staffs. For example, it was noted that in Meru District Council the number of villages and wards increased from 69 to 89 and wards from 17 to 26 respectively. The increased number of administrative areas did not correspond with the policy requirements which needed every village to have two AEA one being for crops and the other one for livestock. For example, in 2015, Meru District Council (MDC) had village agricultural extension agents requirements of 180 but the actual number was only 50% both serving the livestock and crops production sections. Similarly in Arusha District Council (ADC), the requirement was 142 and the actual was 21%.

Table 2. Average extension staff contact with respondents before and after administrative de-linking of AEI&SD (n=390).

Extension staff contact with the respondents	Mean Score Before 2000	Mean Score 2015	95% confidence interval Lower	Upper	t	Sd	df	P value
Number of contact days AEA spent in a farmer group per village per month.	2.39	1.48	0.76	1.54	12.44	1.44	389	0.01
Number of contact days AEA spent per farmer in per month.	2.17	1.02	0.99	1.31	14.15	1.60	389	0.01
Number of meetings Village Extension Agents held per village per year	2.69	1.48	1.06	1.35	16.22	1.47	389	0.01
Number of organized field demonstration days held per year	2.80	1.51	1.17	1.39	23.06	1.09	389	0.01
Average time lapsed after AEA attended farmers' request	1.67	2.18	-.70	-.40	-11.20	1.50	389	0.01
Travel distance a farmer made to access agricultural extension services.	6.89	7.44	-.51	-.42	-7.28	.90	389	0.01

Basically, most of the surveyed villages had acute shortage of agricultural extension agents. The situation was critical in Lengijave village which is a pastoralist village where the researcher found a case where a large number of cattle died because the respondents gave a wrong vaccine after consulting an agro-dealer in Arusha town, located 40 kilometers from the village centre. The situation could have been minimized if the policy pronunciation regarding extension officers' disposition could have been complied.

Number of meetings that village AEA held per year in the survey villages

Regarding the number of meetings that AEA held per year in villages, the results in Table 2 show that, the mean score in the number of meetings that AEA held per year per village before delinking was 2.69 and currently in 2015 was 1.48. The mean difference in the number of meetings that village AEA held in the village per year was 1.21 and it was statistically significant at p≤.05 ranging from 1.06 lower limit to 1.35 upper limit. The findings indicated a significant decrease in the average number of meetings that AEA held with farmers in the village per year. The findings are in disagreement with Saeed et al. (2006) who posited that, decentralization of extension systems increased mobilization of AEA to provide advisory services to farmers.

These study findings can be explained by a number of reasons including increased number of farmers-extension officer ratio and inadequate resources to enable extension workers execute their duties as required. In 1970s and early 1990s majority of farmers were organized in cooperative societies and practiced communal farming under the so called socialism' and rural development ideology. During that period, it was easy for an extension officer to organize agricultural knowledge dissemination under the umbrella of village meetings or cooperative societies. However, it was noted that, with both political and extension service pluralism, it has been very difficult to organize village meeting as farmers had a mixed of feelings regarding village meetings convened with village government chaired with representative of political parties called village chairperson. In most cases, the villagers associated meeting with propagation of specific political agenda. It was reported by members of village government that poor attendances of the villagers during organized village general meetings deter extension officer's plans and strategy for sharing and disseminating agricultural knowledge and information with farmers. The situation was alarming in Meru District Council due to strong political competition between the ruling and opposition parties.

Moreover, shortages of AEA explain the reduction of extension officers meetings with farmers. According to Davis et al. (2010) it is estimated that, in Tanzania the overall farmers to extension worker ratio is 1:2,500. In addition, the number of AEA is 10,089 compared to the required number of 15,853 (URT, 2015). The general impression from both farmers and AEA indicated that, shortage of AEA is one of bottlenecks towards effective extension officer's contacts with farmers. This reality on the ground is in line with Mattee et al. (2008) who assessed the performance of AEA under agricultural sector development programme and the state of AEA respectively confirmed that. According Mattee et al. (2008) despite extension services reforms, the numbers of AEA were low compared to the number of villages.

This assertion is justified by the arguments from farmers during focus group discussions who claimed that:
I *have never seen such a person, and I'm not sure if at all we have one in this village. We, farmers we have been neglected by the government and we are suffering a lot. We are just doing agriculture as routine work based on past years experience* (FGD-Ndatu village-15.07.2015)

Number of organized farmer field days per year

The data in Table 2 show that, there is no sufficient evidence to substantiate that, de-linking reform has influenced positively the implementation of organized demonstration days to farmers by AEA. The results revealed that, there was a statistically significant decrease in the average number of farmer field days per year before de-linking with average mean score of 2.80 and after delinking with mean score of 1.51. The data show that there was a mean difference of 1.28 which was statistically significant at p≤ 0.05 ranging from 1.17 lower limits to 1.39 upper limits. In the surveyed villages, most of the respondents testified that the majority of them are not interested in joining the farmers' groups claiming that they get no new additional value, while others were not interested due to group's leadership challenges. These findings are in agreement with Kyaruzi et al. (2010) in Tanzania who pointed out that extension methods that attract attention and stimulate desire for further information, such as farmers' field days, agricultural shows, folk media and film, were not commonly used in the study area hence reduced the quest for joining field days.

Distance in accessing agricultural extension services from nearest provider

The results in Table 2 indicated that there was statistically significant increases in the average mean distance for respondents in accessing AEI&SD before delinking with average mean score of 6.89 to a currently mean score of 7.44. The mean difference between two periods in the actual distance that a farmer walked to access agricultural extension services was -.55 which was significant at p≤.0.05 ranging from -.70 to -.40. This implied that respondents currently walked longer distances to access agricultural extension services than before. Readers and interested parties might get puzzled why the phenomenon is like that despite improvement in road infrastructural networks and increased number of agricultural extension service points and ways of communicating. It appears that, despite the increase in agricultural extension services points in the study area, majority are run by private agro-dealers contrary to the focus of this study which was limited to public extension services.
The increase in travelling distance for farmers in accessing agricultural extension information and delivery services can be explained by inefficient extension services system at the grass root level. Despite having many administrative level following de-linking of extension services still it is possible to find an extension officer without working facilities due to inadequate extension service funding which is contrary to reform envisaged objectives. As a result, it impedes extension officer's capacity to serve farmers timely. Moreover, agricultural challenges emerged overtime to expedite farmers urge to look for better services especially when the available supply is inefficient. Things such as emergence of new pest and diseases that public agricultural extension officers are incapable to handle are just few to mention.
These findings are in line with Gido et al. (2014) in Kenya who found that distance to the nearest extension service provider significantly influenced the demand for extension services. To justify that statement one of the farmers was quoted saying that:
"If you want to access extension service you need to travel to National Artificial Inseminations Centre (NAIC) about 30 Km or to Tengeru which is about 40 Km from here. At Tengeru you can meet with agro chemicals dealers who can offer advice on crops and animals production issues"(FGD-Lengijave village-27.08.2015)

Cost of accessing agricultural extension services

The researcher did descriptive analysis to determine respondents' opinion on the influence of cost in accessing agricultural extension services before and after the de-linking process. The results revealed that, majority (83%) of the respondents reported not to get relief in terms of cost in accessing agricultural extension services. Before de-linking reform, the government of Tanzania took a series of measures which were geared to reduce cost and provide relief to farmers. Some of the measures included the provision of agricultural subsidies in 1980s which was later banned with implementations of International Monetary Fund (IMF) and World Bank Structural Adjustment Programmes, (Heidhues and Obare, 2011). Therefore, these findings implied that, farmers either incur more cost or have not noticed any cost relief in terms of access to agricultural extension information and service delivery between the two periods under study.
In the surveyed villages of Elkujeranderit and Lengijave majority of respondents were pastoralist, the researcher noticed respondents incurring transport cost to Arusha town which is located 40 km from village centre searching for vaccines or refunding the cost for livestock specialist from near villages. The demand–driven nature of decentralized extension services has to the greatest extent contributed to such trends. Works of Literature have shown the same experience worldwide. Masangano and Mthinda (2012) confirmed that, a well-designed decentralized demand driven extension services deliberately creates a cost recovery mechanism to sustain agricultural extension service financing. For example, the

Malawian National Agricultural Extension Policy of 2000 emphasized the importance of extension services cost sharing by having a policy statement "Those who benefit pay". As a result only those who are capable to pay for the cost can access extension services. During a focus group discussion one participant was quoted as saying that.

"Since the public agricultural extension agents are not easily accessible, we normally call private extension agents for the urgent solution. Although consultation cost is very high still we keep in touch with them because they are the only one available at our village. (FGD-Kisyeria Village-22.08.2015).

CONCLUSION

It appears that, de-linking reforms have failed to live up to its expected promises, as there is lack of evidence on its positive influence on farmers' access to AEI&SD in studied areas. Results from McNeymars chi-square test and paired t- test have indicated that respondents accessed more AEI&SD before de-linking reforms than during the implementation of it. Despite clear institutional arrangement, the access to AEI&SD to majority of farmers in the study area has remained to be a challenge. High proportion rate of respondents reported limited access to agricultural inputs, agricultural financial services, agricultural information and poor linkages and access to markets is an indication of system malfunctions. To justify the latter, all indices used to measure the influence of administrative on AEI&SD accessibility were found to be statistically significant. Moreover, from the surveyed villages, it was noted that there were long distance and high cost in accessing AEI&SD, shortage of agricultural extension agents and reduced frequency in the contacts between extension agents and farmers was an obstacle for realization of de-linking objectives in the study area. Therefore, these findings call the attention of the reform Presidents Office-Regional Administration and Local Government (PO-RALG), the Ministry of Agriculture and Livestock Development and LGAs to cordially work on the earmarked faults to make the reform more robust.

RECOMMENDATIONS

Given the above study findings, there is a need to re-examine the administrative de-linking of AEI&SD under the D by D reform policy so that it benefits the smallholder farmers in Tanzania in general and in the study areas in particular to increased production and productivity. Hence, the study gives the following recommendation:

1. The Government through the LGAs should avail required resources (financial, manpower) to AEI&SD as stipulated in the D by D policy document and Local Government Finance Act of 1999 to better serve the smallholder farmers.
2. The Meru and Arusha District Council should improve coordination of AEI&SD using its various machineries as stipulated in the D by D policy document.
3. The studied districts should try approaches that aim at financially empowering field AEAs by making them establish Farmers Field School for teaching farmers to address location-specific problems and needs.
4. D by D sector coordination Ministry, which is PO-RALG, should enforce the application of laid down rules, guidelines and procedures to make AEI&SD under administrative de-linking in Arumeru District more effective.
5. The Ministry responsible for Agriculture and PO-RALG should rethink on reviewing the D by D institution arrangement to fit specific contextual needs of the smallholder farmers in the country

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