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RESEARCH ARTICLE (Open Access)

Role of extension services in the livelihoods of pastoralist women in Kwara State, Nigeria

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Abstract

This study aims to show that extension can play significant role in equipping pastoralist women with knowledge and technology required so as to reduce pastoralist women's vulnerability and attainment of their desired level of economic empowerment. Most importantly, this study investigates the models being used by extension service providers to determine whether pastoralist women in this study adequately benefit or access extension services. To achieve this, the study draws on the questionnaire which was administered to 63 pastoralist women and focus group discussions which was carried out with 88 wives of pastoralists in Kwara State, Nigeria. The study found that pastoralist women face cultural barriers that deter them from accessing productive resources, live in marginalised areas and lack access to extension services as a result. It was observed the women are not willing to diversify into non-cattle related economic chores. The study therefore recommends employment of more female extension personnel so as to reach out to pastoralist' women particularly in areas where factors such as culture bar them from benefiting from productive resources and services such as extension.

Keywords: marginalisation, economic empowerment, culture, access, and availability.

1. Introduction

It has been established that extension education and appropriate government policies can aid the reduction of risks and vulnerabilities among pastoralists [19]. It is expected that the reduction of their vulnerability would further empower pastoralist women and lead to improved livelihoods. The objective of this study was to establish the role and influence of extension services in the livelihoods of pastoralist women in Nigeria. It sought to investigate whether services are available, and if so, what approaches and models are being used by providers, as well as determine if pastoralist women access those services? The paper is divided into four sections. The first section examines the approaches and models being used by extension service providers so as to determine their appropriateness for improvement of pastoralist women's livelihoods. The second highlights the methodology and approach used in carrying out the study while section three presents and discusses the results of the study. Section four summarises and concludes the study.

2. Models and approaches to agricultural extension

Extension has developed through the use of different models to teach and impart knowledge. Among the methods used are training and visit (T&V), farmer field school (FFS), participatory rural appraisal (PRA), and rapid rural appraisal (RRA) [4]. The training and visit (T & V) system of extension was designed to support training of field extension workers and to address technical issues as observed by extension officers. The system was traditionally a diffusion approach of extension delivery system [13] and it visit proved effective in training extension agents and management of the overall system [12]. Notwithstanding the acceptance and amount of success in most African countries, T & V system has largely been criticised for lack of financial sustainability, poor linkage to research and use of extension agents for non-extension purposes, ineffective communication skills by extension agents, cultural barriers and transportation issues faced by agents of extension [12, 13, 4]. As a result of the mentioned problems, more recent approaches of providing extension services,

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such as the participatory extension models, pluralistic extension providers as well as decentralisation, fee for service and cost sharing of extension services are were introduced [4, 5, 12, 25].

Fee for service is a development in extension provision whereby the public sector provides the service while farmers pay for the extension service [4]. A major drawback of this model of extension is that small scale farmers are not able to benefit as they do not have enough cash to access the programme [4]. In recent time, [26] have similarly advocated for a fee for service approach for providing extension services to rural communities. It was found that privately funded extension services may not be viable, if farmers are not willing to pay for extension [31]. Moreover, farmers were not part of the decision making processes of the system of extension that was commonly practiced across developing countries. Hence, many farmers would not be willing to pay for services which did not include them in the planning [6]. This is one reason why there has been a dynamic advocacy for the bottom-up participatory or demand-driven approach for providing extension services.

Agricultural extension is perceived as technology transfer by some schools of thought [24, 25] while another sees it as a human development programme [14, 18]. It can thus be argued that while some extension officers view farmers as recipients of extension, others view them as participants in extension. Therefore, one could infer that there is no one 'best' model for providing extension service. The main reasons for a failing extension service are the problem of funding and inappropriate use of approaches and models [3, 18, 12]. The problem of funding is symbolic to agricultural extension because its programmes are usually financially overwhelming [1]. This problem persists and is being compounded by dwindling resources despite the seeming interest and loyalty of organisations and donor agencies to their projects. Donor agencies may completely withdraw funds, often resulting in the intervention being discontinued, bringing about an abrupt end to the extension service [3].

Another major reason for failure of extension service provision is the use of inappropriate approaches or models. As Chant [9] disputes the feminisation of poverty, so are extension researchers agitating for a community demand-driven and pluralistic approaches of extension service [11, 27, 15, 16, 30] that will allow women to participate in innovation and adaptive learning opportunities. It is being established that women persistently fail to benefit from extension services due to social, cultural, and environmental reasons [27, 14, 8]. Given the inequality in extension agent-user relationship, it can therefore be argued that the approaches being used do not support culturally constrained women to engage in processes of innovation and adaptive learning opportunities [27, 14]. This may, partly, be as a result of failure by the extension service to respond to diversity of need. The models and approaches in place by extension service providers may not have incorporated the recent models. These approaches, for example - participatory bottom-up and demand-driven approaches, will allow for increase in productivity due to the involvement of extension providers and users in planning and implementing the services required [16, 30].

Other factors constituting challenges for extension service provision are environmental factors, farmers' unrealistic demands from extension workers, culture, inadequate number of extension officers, transportation, communication barriers, among others [27, 12, 14, 18, 2]. Extension services have suffered from top-down approach which has been the conventional practice. More often than not, communication in many formal bureaucracies has always been a top down format [18] and this has greatly been responsible for failures in many institutions.

3. Methodology and methods

The study was carried out among pastoralists situated in Kwara state of Nigeria. The state was specifically chosen because it is among the recognised buffer areas of the country where pastoralists have settled due to acute desertification and low rainfall in the arid areas [22, 21]. Kwara State is divided into four zones by the agricultural development programmes (ADP) for easy administration. The study employs a multi-stage sampling technique to arrive at 7 out of the 16 local government areas in Kwara State. A sample population of 169 participants arose using simple random sampling procedure. 63 pastoralist women were selected to respond to a questionnaire survey, 95 pastoralist women engaged in 7 focus group discussions, 3 key informant interviews were held while 8 pastoralists (men) participated in in-depth interviews with the researchers. The data emanating from the study were subjected to descriptive and qualitative analyses. Simple frequencies and percentages were used to analyse the data from the questionnaire while identified themes based on the qualitative analytical procedure were used to present

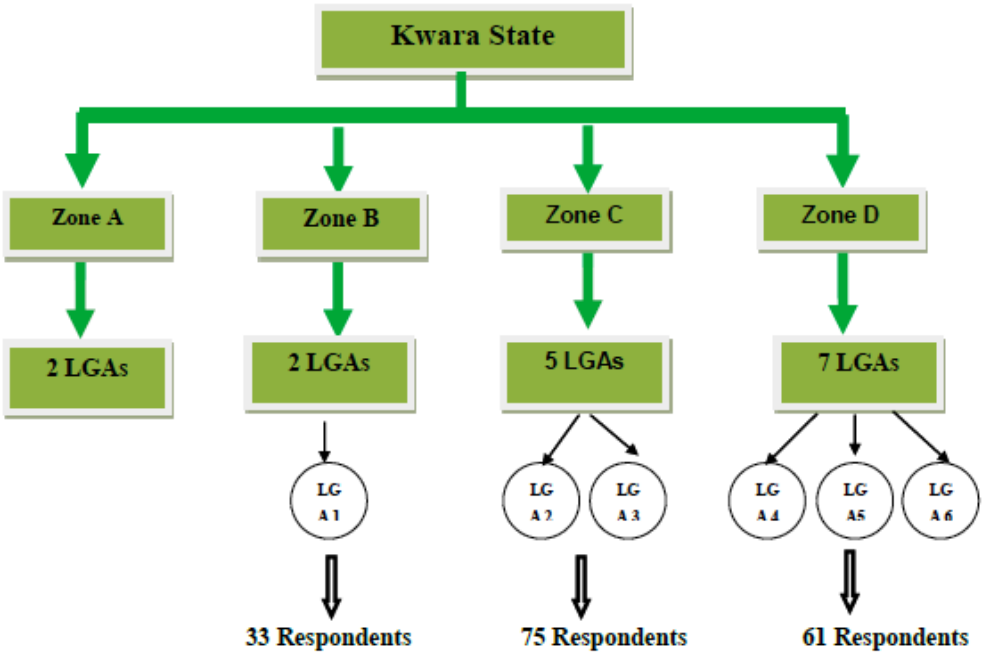
and discuss the results qualitatively. Respondents gave verbal consent to participate and they were made to realise they could withdraw at any time they choose to. Ethical considerations were also observed, therefore, all names in the study are fictitious. Figure 1 shows the multistage procedure used to arrive at the sample population.

4. Results and Discussion

To start with, a resource needs to be available before it can be accessed. Availability, in the context of this study is the existence of extension facilities. However, the availability of a resource does not guarantee access as observed by Sen [29]. Similarly, the availability of productive resources and extension services do not guarantee access for pastoralist women because this study found that availability of these resources largely depends on governance, political, and cultural issues. This study established that pastoral communities lack productive resources and infrastructure that can make them feel integrated into the larger society. Participants in the focus group discussions emphasised their lack of possession of lands, capital, and livestock as well as social amenities such as hospitals, good roads, potable water, electricity, and schools for their children.

> *We do not enjoy basic infrastructure in our communities. There is no electricity, potable water, hospital, schools, good roads and transportation for us to go to markets to sell our produce. My child has been sick for four years and I cannot afford good health care service for him because we do not have hospital in our locality. The nearest is in the capital city which is about 30km away. The bottom line is that pastoralists are being marginalised by government (Shafaatu, Gaa Abdullahi, 4th August, 2011).*

Figure 1: Multi-stage sampling procedure



Access is regarded as all possible means of benefitting from a resource and this can be in form of rights, entitlements or physical ability to achieve the resource [28]. Thus, access to extension services for pastoralist women in this study is depicted as their ability to utilise extension facilities without any form of physical, social, political, or cultural restraints. Unfortunately, women in this study do not have access to extension services as stipulated by the cultural laws of their lands. Talatu in a focus group discussion stressed that women are not allowed to possess or acquire productive assets such as land and livestock. They are also not allowed to mingle with males whom they are not related to by birth or marriage. As a result, women may not be able to benefit from extension services given that the bearers of these services to their communities are males.

> *''If anyone comes from city to preach to us about modern technology, they would have to see our husbands first. We can only see or talk to them if our husbands permit. The norm in our community is for visitors to consult with the village elders who comprise male representatives and they will pass on the information to our husbands. Sometimes, we*

do not get to hear of the news. For example, a banker comes forth to discuss how we can access loan but we cannot give consent because permission to discuss with strangers lies with our husbands.'' (Talatu, Gaa Bolunduro, 19th September, 2011).

It therefore means women may still not benefit from extension services even if they were available, given their level of vulnerability to social factors such as culture and marginalisation in their areas. This results in failure to secure an adequate and improved means of sustenance.

Table 1: Availability of extension services in pastoralists' areas (n= 63)

Extension service	*Availability*	*Frequency*	*Percentage*
Training	-	63	100
Milking machine	-	63	100
Cheese-making machine	-	63	100
Preservatives for cheese	-	63	100
Animal husbandry	x	5	7.9
Provision of improved seeds	-	63	100
Provision of fertilizer	-	63	100
Provision of pesticides	-	63	100
Provision of medicine	-	63	100
Vaccination for livestock	x	9	14.3
Loans from government	-	63	100
Loans from NGOs	-	63	100
Loans from banks	x	4	6.3

Questionnaire survey (Pastoralist women), 2011/12
x: is used to represent availability of an extension facility. The lower case is used to depict limited access.

Table 2: Access to extension services for pastoralist women (n= 63)

Access	*Frequency*	*Percentage*
No	45	71.4
Yes	16	25.4
No response	2	3.2
Total	63	100

Questionnaire survey (Pastoralist women), 2011/12

Table 3 Ranking of extension services in order of importance by pastoralist women (n= 63)

Extension service	*1*	*2*	*3*	*4*	*5*	*Total*	*Score*[1]	*Rank*
Information on modern milking	56	6	1	0	0	63	71	1st
Demonstration on cheese-making	36	24	3	0	0	63	93	2nd
Training (workshops and seminars)	37	13	7	3	3	63	111	3rd
Animal husbandry training	30	18	12	2	1	63	115	4th
Provision/usage of cheese processing machine	31	10	9	7	6	63	136	5th
Vaccination for livestock	30	9	11	10	3	63	136	5th
Information on pesticide application	19	6	28	5	5	63	160	7th
Information on fertilizer application	21	5	16	10	11	63	174	8th
Information on improved seeds	19	2	25	7	10	63	176	9th
Provision of medicine	14	4	22	15	8	63	188	10th
Information on NGO loans	4	5	31	10	13	63	212	11th
Information on government loans	4	5	14	30	10	63	226	12th
Information from banks on loans	3	0	13	32	15	63	245	13th

Questionnaire Survey (Pastoralist women), 2011/12

[1] Score: this was derived by multiplying the frequencies of respondents by the Likert score to arrive at the rankings. Given that 1 is scored as the most important and 5 the least important, the highest possible score is therefore 315 while the least is 63. The nearer the score to 63, the more important the service is while the closer the score is to 315, the less important the service.

Table 1 shows the views of pastoralist women about the existence of the listed services and facilities. The table indicates that services and facilities are limited in pastoralists' areas as a hundred per cent of the participants claimed that facilities such as milking machine, cheese making machine and cheese preservatives are not available in their areas. A few women (7.9 & 14 per cent respectively) mentioned that they had limited information on animal husbandry and improved seed variety in their locality. Similarly, 6.3 per cent of the participants informed that there was information on bank loan in their areas.

Table 2 further shows the distribution of pastoralist women based on their level of access to extension services in their areas.

To further determine the area of needs of pastoralist women for the listed extension services, they were asked to rank these facilities in order of importance based on their desire for the facilities. The ranking adopted the Likert scale method. The scale ranked from 1 to 5 with one being highly needed (most important) and 5 the least needed (least important) service. Given the results of the ranking (refer to score columns in Table 3), information on milking, cheese processing and extension training were the most favoured services for a hundred per cent of the participants (Table 3). It can be observed that women's preference for extension services lies in the area of value addition. This result supports that pastoralist women may want to strengthen their level of economic empowerment through trading in milk products. It can thus be argued that their mode of economic diversification is within milk value-chain addition. This was also understood from their preference for information on animal husbandry and livestock processing equipment and facilities. In one of the focus group discussions, Samira[2] related that cattle-breeding is their birth right and they cannot successfully engage in any other economic activity except those that are cattle related.

> *''Our mothers do tell us tales of their grandparents being born in cattle ranches. I also remembered my mother, though of late memory, telling me that my father was born while his father was away grazing cattle. It was at a time when herders relocate for water and pasture. My grandfather did not see his son until he returned two and a half months after the birth of his child.'' (Samira).*

Mujida[3], in another focus group, mentioned that she made four attempts at diversifying into different economic activities. For example, she tried processing locally-made butter from milk, but lack of processing equipment limits her production. Mujida tried hairdressing enterprise but, due to lack of electricity, water, and other infrastructure, the business did not thrive. She also attempted sale of textiles and fashion designing. Mujida claimed that each attempt was a failure as she lost her financial investment. She turned out to be worse-off because the experience had never been profitable. She had therefore given up on commercial enterprise to concentrate on cheese production. She acknowledged that even though her present economic situation is not in any way better, she however preferred to remain in cattle related chores for the singular reason that cattle-breeding is her heritage. These findings reinforce women's inability to deviate from their cultural heritage of cattle rearing. The findings are however in contrast to those reported in another study carried out in Uganda, Somaliland, and Sudan. There, it was found that pastoralist women did not restrict their livelihood options to cattle-related economic activities [20]. Women in that study do not only process milk into cheese, but they are also expanding their livelihood choices by diversifying into yoghurt enterprise, groundnut processing, management of smaller livestock, hairdressing, fashion designing, as well as other crop processing economic activities [20].

It can be argued that Mujida's failure to diversify is partly as a result of malfunction of the extension service providers to engage with women's need, thus not fulfilling their role as supporters of social learning and innovation. Women in this study could learn of their counterparts' development and economic diversification through extension service and they can be motivated to aspire to expand their economic choices as a result of the success stories of their counterparts. By implication, the provision of adequate and appropriate extension services, through seminars and workshops, to pastoralist women in this study may enable them to diversify better to other economic activities, especially during dry seasons when the herds have relocated. This will reduce their financial and social vulnerability and their livelihoods may improve as a result. Pastoralists in this study engage in farming on a subsistence level, hence, their requirement for information on crop innovation that supports their

[2] Samira: a participant in focus group discussion at Gaa Temidire held on 8th October, 2011.

[3] Mujida: a focus group participant in Gaa Abdullahi held on the 4th August, 2011.

circumstance (Table 3). This means that extension service providers need to support female farmer innovation that can address women's economic constraints around farming inputs. The results of the ranking as shown in Table 3 show that pastoralist women are not inclined towards taking loans, irrespective of the source. The study found that women are also constrained from taking bank loans as a result of lack of collateral. This might be why loans appear at the bottom on their list of needs. For example, two pastoralist women in a focus group discussion held at Gaa Ajegunle[4] (Sala[5] and Ruka[6]), reported that they were informed of loan facility from banks. They however, declined the offer because they do not have collateral.

> *''I heard through my friend from another pastoral community that there is facility for loans in a particular bank. The only constraint was that the bank required collateral before loans can be approved and repayment will be spread over a period of five years. The grant was enticing but I declined the offer as I do not have any collateral.'' (Sala).*
>
> *''I heard the same information through a different source from Sala's. However, I was also not able to benefit from the loan owing to the same reason as Sala's.'' (Ruka).*

Apart from the availability of bank loans, there was indication that the people benefited from vaccination of their livestock, albeit this happened more than a decade ago. By implication, it can be argued that access to extension service in this area is still limited. Sumbo[7] reported that the vaccination against Rinderpest disease took place about twelve years ago. She does not know who was responsible for the vaccination and why the event took place. This study, however, found out from extension staff of the ADP that the vaccination was a government intervention to combat the infestation among livestock at that time. Tayelolu[8] confirmed that it was announced on radio that there was an outbreak of cattle disease about ten to twelve years ago and that their livestock were all vaccinated against cattle plague - another name for Rinderpest.

5. Conclusion

The paper began by giving insight to the approaches used in providing extension services and built on this to explore the availability of extension facility among pastoral households. It was found that the marginalisation of the pastoralists further exacerbates pastoralist women's access to extension services. The paper thus concluded that no one system of extension provision may be the best. The idea is for relevant stakeholders to embrace a user-centred participatory approach [30, 17, 10] in addition to a pluralistic-provider which will encompass models such as the demand-driven. This will ensure a bottom up approach where farmers or pastoralists will be part of decision making to identify specific needs and the best approach to execute the intervention. Effort should, therefore, be geared towards an extension system that would be sustainable and responsive to the socio-cultural conditions of users (for example, pastoralists) and their economic productive capacities. Given that pastoralist women indicated that cultural barriers hinder them from accessing extension services, there will be a need for extension providers to invest in employment of more female extensionists to reach out to women in areas where cultural factors bar them from access to extension services.

Overall, the study established that pastoralist women require extension facilities to include information on livestock and crop innovation, capacity building, and all other aspects of extension services that can be provided. Additionally, due to women's unwillingness to diversify outside cattle-related chores, this study proves that extension service provision in the study area needs to adopt a more participatory model to cater for the needs of pastoralist women. This will ensure that the exact needs of pastoralist women are met by the providers.

6. References

1. Adegeye, A. & Azeez, I. (2006). **Challenges of funding forestry education and research for sustainable forestry development in Nigeria**. *In:*

[4] Gaa Ajegunle: one of the pastoral communities where the focus group discussions took place (Table 3.3).

[5] Sala: a focus group discussion participant at Gaa Ajegunle held on 17th August, 2011.

[6] Ruka: a participant in focus group discussion held at Gaa Ajegunle.

[7] Sumbo: a focus group participant at Gaa Ajegunle held on 17th August, 2011.

[8] Tayelolu: another focus group participant at Gaa Ajegunle.

Proceedings of the 31st Annual Conference of the Forestry Association of Nigeria, 20th to 25th November 2006 Makurdi, Benue State. 558-574.

2. Adomi, E. E., Ogbomo, M. O. & Inoni, O. (2003). **Gender factor in crop farmers' access to agricultural information in rural areas of Delta State, Nigeria.** Library Review, **52,** 388-393.
3. Anderson, J. & Feder, G. (2003). **Rural extension services.** World Bank Policy Research Working Paper, **2976**.
4. Anderson, J. R. & Feder, G. (2004). **Agricultural extension: Good intentions and hard realities.** The World Bank Research Observer, **19,** 41-60.
5. Agwu, A., Dimelu, M. & Madukwe, M. (2008). **Innovation system approach to agricultural development: Policy implications for agricultural extension delivery in Nigeria**. African Journal of Biotechnology, **7,** 1604-1611.
6. Ajayi, A. (2006). **An assessment of farmers' willingness to pay for extension services using the contingent valuation method (CVM): The case of Oyo State, Nigeria.** Journal of Agricultural Education and Extension, **12,** 97-108.
7. Arokoyo, T. (2003). **ICTs in the transformation of agricultural extension: The case of Nigeria.** 6th Consultative expert meeting of CTA's observatory on 'ICTs transforming agricultural extension', Wageningen.
8. Budak, D., Darcan, N. & Kantar, M. (2005). **Women farmers and extension services in small ruminant production in mountain areas of Turkey.** Journal of Arid Environments, **62,** 507-515.
9. Chant, S. (2011). **The 'feminization of poverty' and the 'feminization' of anti-poverty programmes: room for revision?** *In:* Nalini, V., Lynn, D., Nan, W. & Laurie, N. (eds.) The women, gender & development reader. London: Zed Books.
10. Chikwendu, D. (2004). **A review of agricultural extension in Nigeria: the need for an alternative model.** UNISWA Journal of Agriculture, **10,** 62-70.
11. Chowa, C., Garforth, C. & Cardey, S. (2013). **Farmer Experience of Pluralistic Agricultural Extension, Malawi.** The Journal of Agricultural Education and Extension, **19,** 1-20.
12. Davis, K. (2008). **Extension in sub-Saharan Africa: Overview and assessment of past and current models and future prospects.** Journal of International Agricultural and Extension Education, **15,** 15-28.
13. Feder, G., Ganguly, S. & Anderson, J. R. (2006). **The rise and fall of training and visit extension: an Asian mini-drama with an African epilogue,** World Bank Publications.
14. Garforth, C. (2005). **The challenges of agricultural extension.** In: Levy, S (ed) Starter packs: a strategy to fight hunger in developing countries? Lessons from the Malawi experience 1998-2003, CABI Publishing.
15. Garforth, C. (2011). **Education, training and extension for food producers.** Global Food and Farming Futures Project, State of Science Reviews. SR16B. Report. The Government Office for Science, London, UK. pp14.
16. Klerkx, L., Aarts, N. & Leeuwis, C. (2010). **Adaptive management in agricultural innovation systems: The interactions between innovation networks and their environment**. Agricultural Systems, **103,** 390-400.
17. Koyenikan, M., Koyenikan, E. & Ilekendi, B. (2012). **Bottom-Up Agricultural Extension Services Delivery in Nigerian Local Government Councils: An Assessment of Delta State.** OIDA International Journal of Sustainable Development, **5,** 87-96.
18. Leeuwis, C. (2004). **Communication for rural innovation: Rethinking agricultural extension,** Oxford, Blackwell publishing.
19. Little, P. D. (2013). **Reflection on the future of pastoralism in the Horn of Africa**. *In:* Catley, A., Lind, J. & Scoones, I. (eds.) Pastoralism and development in Africa: Dynamic change at the margins. London: Earthscan.
20. Livingstone, J. & Ruhindi, E. (2013). **Pastoralism and development in Africa: Dynamic change at the margins.** *In:* Catley, A., Lind, J. & Scoones, I. (eds.) Pathways to Sustainability. London: Earthscan.
21. Medugu, I. N., Majid, M. R. & Choji, I. D. (2008). **A comprehensive approach to drought and desertification in Nigeria: A brief evaluation of government policies.** International Journal of Climate Change Strategies and Management, **19,** 690-704.
22. Medugu, N. I., Majid, M. R. & Johar, F. (2011). **Drought and desertification management in arid and semi-arid zones of Northern Nigeria.** Management of Environmental Quality, **22,** 595-611.
23. Mutimukuru-Maravanyika, T. & Almekinders, C. (2011). **Learning from learning: the experiences with implementing adaptive collaborative forest**

management in Zimbabwe. *Knowledge in action***,** 169-189.

24. Oladele, O. I., Koyoma, O. & Sakagami, J. I. (2004). **Africa in search of extension system: Experience from Nigeria.** Journal of Food Agriculture and Environment, **2,** 276-280.
25. Ozor, N., Agwu, A., Chukwuone, N., Madukwe, M. & Garforth, C. (2007). **Cost-sharing of agricultural technology transfer in Nigeria: Perceptions of farmers and extension professionals.** Journal of Agricultural Education and Extension, **13,** 23-37.
26. Ozor, N., Garforth, C. J. and Madukwe, M.C. (2013). **Farmers' willingness to pay for agricvultural extension service: Evidence from Nigeria.** Journal of International Development, **25** (3), 382-392.
27. Rad, S. T., Boz, İ., Polatöz, S. & Ateş, H. Ç. (2011). **Women's literacy and extension education in rural eastern Mediterranean Turkey.** African Journal of Agricultural Research, **6,** 2807-2819.
28. Ribot, J. C. & Peluso, N. L. (2003). **A Theory of Access.** Rural sociology, **68,** 153-181.
29. Sen, A. K. (1981). **Ingredients of Famine Analysis: Availability and Entitlements.** The Economic Quarterly, **96,** 433-464.
30. Spielman, D. J., Ekboir, J. & Davis, K. (2009). **The art and science of innovation systems inquiry: applications to Sub-Saharan African agriculture.** Technology in Society, **31,** 399-405.
31. Yapa, K. & Ariyawardana, A. (2005). **Willingness to pay for a fee-based extension service by tea smallholders in Galle District**. Sri Lankan Journal of Agricultural Economics, **7,** 68-84.