

## Rural Extension Service Delivery and Participation among Smallholder Farmers in Amathole District, South Africa

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**ABSTRACT** Assisting farmers to recognize and evaluate their production hitches and become abreast of the inherent prospects for perfection has been the focus of rural extension services. A total of 70 farmers were selected and interviewed using quantitative methods of data collection. The objectives of the study were to examine the methods commonly used to deliver community extension service and to determine the preferred delivery method as perceived by selected farmers. Education was the most significant predictor (p-value of 0.002) and positively related to rural extension delivery service. This result suggests that, for every unit increase in the level of education, there is a 0.155 increase in the log odds for participation in rural extension service. Study results also revealed that farmers' participation is enhanced when rural extension officers use farm visits. The study concluded on the need of adopting farm visit in extension service delivery.

### INTRODUCTION

Project debacles and low agricultural productivity have been ascribed to inadequate extension services or insufficient expertise within extension exacerbated by government failure in prioritizing, overhauling and total review of extension services (South Africa, Parliament 2011). The adoption of the right policy option by the government of developing countries is a panacea to intensifying agricultural development (Boon 2010). Agricultural extension policy should be stable and complementary with national agricultural development policy (OECD 2015). A well-managed Agricultural Extension in developing countries can contribute to greater agricultural output and improvement of the standard of living of farming communities. However, one of the challenges before the extension is the absence of formal policies, which has caused many developing countries to adopt temporary strategies to keep pace with the ever-changing society.

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Extension has a universal meaning, however, it is pertinent that its aims and mission may require adjustment in line with needs of the farmers and general objectives. The mission of extension must echo within agricultural policy and in the bylaws guiding the nation's extension structure whilst periodical revisions of extension policy is eminent (Contado 1997). The theme of extension, which is currently replicated in its statutory declaration, is a noticeable challenge. The difference between agricultural extension and rural extension is the subject matter that the extension service provider prioritizes in its programs and groups to be served among the community (Contado 1997). The subject matter of extension that is presently covering the promotion of arable crops and livestock production appears too narrow. The inclusion of training and mentorship program into the curricular of extension may allow for proper coordination of extension services (ICAR 2010). The training of local and emerging farmers in livestock and crop production and marketing will move farmers towards sustainable agricultural intensification. A good number of small scale farmers are females who require skills training but the unfortunate incidence is that majority of the public extension officers are males who seldom visit these female farmers (Agholor et al. 2013). The collective prejudice against extension service delivery in several emerging countries is the abandonment of a substantial numbers of small hold-

er farmers in favor of a small percentage of existing commercial farmers (DOA 2008). In sub-Saharan Africa, about fifty-one percent of the active population involved in agriculture at rural and national level is female and their participation in vegetables and food production is as high as seventy-six percent in most areas (FAO 1990). The technique used in the organization and planning of extension training affects the cost, effectiveness, scope, level and the performances of rural extension delivery. Community extension training encompasses ways and means of knowledge acquisition and skills development for positive assertiveness in other to keep pace and be up to date with the dynamic environment in a specified context (ICAR 2010). Rural farmer's education and training is a procedure by which skills are acquired in a set of strategic activities mainly designed to enhance their quality of life involving instructors. Rural farmer's willingness to accept training is intertwined with his personal lifestyle, socially recognized roles, and assertiveness as against his intrinsic capacity to absorb (Seever et al. 1997). Adult learners exhibit some characteristics, which rural extension practitioners must recognize regardless of the perceived circumstances. These characteristics include adults must have access to regulate what they want to learn, feel that learning has immediate utility or usefulness, expects that learning must focus on issues that have relationship to their needs, assess their learning as they progress, anticipate how they will use what they have learnt, and requires an atmosphere that is mutual, respectful and informal (Knowles 1990). These highlighted characteristics of adult learning have plausible implications for extension in the area of selection of educational delivery technique, teaching methods and assessment of learning outcome in rural areas (Birkenholz 1999). Moreover, rural extension practitioners must have the aptitude and skills to build and transform a farmer and to transfer technical message (Terblanche 2008). In the promotion of well-organized learning, a delivery arrangement must include methods that will provide the anticipated experiential opportunities for the farmer and allow the farmer to incorporate new information with already existing knowledge and skills (Richardson et al. 1994). The rural extension delivery methods (Richardson 1994) used in extension is classified as follows:

1. **Experiential:** It allows a person to gain experience through the exertion of physical activities that may involve senses and excitements that is contingent to program content.
2. **Reinforcement:** It provides support an individual to continue in the learning through motivation.
3. **Interactive:** It allows opportunities for discussions and seeking clarity for more understanding and comprehension.

In selecting appropriate community extension delivery method, that is, objective, content, available resources, prior knowledge of the selected group and available time frame are the necessary recipe (Birkenholz 1999).

### **Research Objectives**

The study attempts to examine the delivery methods and household participation in rural extension service. Therefore, the objectives of this study were:

1. To examine the methods commonly used to deliver rural extension service.
2. To determine the preferred delivery method for rural extension program as perceived by the farmers.

## **METHODOLOGY**

### **Research Design**

In identifying the main respondents for the study, a formal fact-finding visit was initially carried out to the study areas. Subsequently, the information gathered from the exploratory visit, assisted the researcher to adopt quantitative research procedure using survey research design. This design allowed the researcher the opportunity to gather a holistic picture and perception of farmers' on the topic (Creswell 2005) and to create the chances of replication and generalization, allow for group comparison and provide adequate insight into a range of experiences (Creswell and Plano-Clark 2011). The questionnaire was pre-tested on farmers and thereafter refined with the inclusion of few questions. A well-structured questionnaire was designed to examine the methods commonly used in the delivering of rural extension service and the preferred delivery method as perceived by the farmers.

### Sampling Procedure

The random sampling method was used to elicit information from 70 livestock farmers comprising 57 males and 13 females. The sampled respondents were into arable crop production and animal husbandry representing peasantry, subsistence and commercial producers in the study area. In the sampling procedure, no singular group of respondents was favored as the selection was random.

### Data Analysis

The collected data was screened, revised for omissions and later computed for mean percentages of socio-economic background of respon-

dents using SPSS version 21. Logistics regressions were used to show whether there were relationship between farmers' social background and preferences to methods adopted in rural extension service delivery. The logistic regression method is an established approach applied in empirical studies focused on finding the determinants of perceptions (Mercer et al. 2005).

### RESULTS

The age of the respondents was significant for using seminars with a p-value of 0.030 but negatively related to rural extension delivery (Table 1). This suggests that for every unit increase in age of households there is a -.021 decrease in the log odds for participation in rural

**Table 1: The correlations between farmer's demographic characteristics and participation in extension programme**

<i>Dependent variable</i>	<i>Farmers' social background</i>	<i>Coefficients (B)</i>	<i>SE</i>	<i>T</i>	<i>P-Value</i>	<i>95.0% CI for B (Lower bound)</i>	<i>95.0% CI for B (Upper bound)</i>
<i>Seminars</i>	Intercepts	.294	1.500	.196	.851	-.3.376	3.965
	Gender	.154	.335	.462	.661	-.664	.973
	Age*	-.021	.025	-.854	.030*	.082	.040
	Marital status	.208	.109	1.909	.105	-.059	.474
	Level of education	-.038	.117	-.328	.754	-.325	.248
	Farm experience	.059	.046	1.266	.252	-.055	.173
	Land size	.151	.161	.935	.386	-.243	.544
<i>Farmers' Field Days</i>	Intercepts	1.814	.845	2.146		-.254	3.883
	Gender	.223	.189	1.185	.076	-.238	.685
	Age	-.005	.014	-.339	.281	-.039	.030
	Marital status	.015	.061	.247	.746	-.135	.165
	Level of education	-.091	.066	-1.374	.813	-.252	.071
	Farm experience	.015	.026	-.565	.218	-.079	.049
	Land size*	-.306	.091	-3.373	.015*	-.528	-.084
<i>Individualised Method</i>	Intercepts	-.401	.919	-.437	.678	-2.647	1.84
	Gender	-.106	.205	-.516	.624	-.607	.396
	Age	.030	.015	1.965	.097	-.007	.067
	Marital status	.055	.067	.827	.440	-.108	-.218
	Level of education*	-.233	.072	-3.251	.017*	-.408	-.058
	Farm experience	.014	.028	.496	.638	-.056	.084
	Land size	-.074	.099	-.752	.480	-.315	.167
<i>Farm Visit</i>	Intercepts	.691	.680	1.015	.349	-.974	2.356
	Gender	.322	.152	2.119	.078	-.050	.693
	Age	-.001	.011	-.051	.961	-.028	.027
	Marital status	.018	.049	.370	.724	-.102	.139
	Level of education*	.155	.053	-2.926	.002*	-.285	-.025
	Farm experience	.036	.021	1.695	.141	-.016	.087
	Land size	-.091	.073	-1.252	.257	-.270	.087
<i>Process Demonstration</i>	Intercepts	-.214	.678	-.316	.763	-1.874	1.446
	Gender	.049	.151	.323	.758	-.321	.419
	Age	.000	.011	-.020	.985	-.028	.027
	Marital status	-.080	.049	-1.633	.154	-.201	.040
	Level of education	-.080	.053	-1.509	.182	-.209	.050
	Farm experience	.009	.021	.435	.679	-.042	.061
	Land size*	.347	.073	4.766	.003*	.169	.525

extension delivery. Farmers' field days as a method for rural extension service delivery was significant ( $p$ -value = 0.09) but negatively related to rural extension delivery. In the use of individualized method, education as one of the socioeconomic variables was found to be significant with a  $p$ -value of 0.017 but negatively related to rural extension service delivery. The level of education was the most significant predictor ( $p$ -value of 0.002) and positively related to rural extension service delivery. This result suggests that, for every unit increase in the level of education there is a 0.155 increase in the log odds for participation in the rural extension program. The size of landholding was significant in the case of adopting farmers' field day ( $p$ -value = 0.015) but negatively related to rural extension service delivery. The result suggests that, for every unit increase in land size there is a -0.091 increase in the log odds for participation in rural extension service. In process demonstration, the size of land holding as a socioeconomic variable was also significant and positively related to rural extension service delivery ( $p$ -value = 0.003).

## DISCUSSION

### Demographic Characteristics of Farmers

The study result revealed that 81.4 percent of the respondents interviewed were male while 18.6 percent were females (Table 2). However, the dominance of male farmers in the area is a common phenomenon. This findings lead credence to the result by Montshwe (2006), which posited that males are more into agricultural production especially in the livestock sector in South Africa. In accordance with the age range, the number of able bodied men and women classified as youths involved in farming are far less. On the whole, thirty-seven percent of the respondents are within the ages of 41 to 60 years, which depicts that older males and females are more into agricultural activities. The households (21-40 years) that are into farming for 21 to 40 years were 34.3 percent, for 41 to 60 years was twenty percent, for 61 to 70 years were twenty percent and 80 years and above were 5.7 percent, respectively. However, most of the older farmers that are incapacitated because of age have large and small livestock in the care of their siblings. Respondents' educational level were secondary education at 37.1 percent, tertiary

education at 21.4 percent, primary education at 17.1 percent, junior secondary education at 11.4 percent and no formal education for twelve percent, respectively. Farming is the major source of income of the majority of the respondents (95.7%) and 4.3 percent of them depend on old age pension and child support grant. Results revealed that 31.4 percent of farmers had a land size of 1 to 5 hectares, which indicates that they were mostly practicing agriculture at a subsistence level. However, many of the respondents have no idea of the size of their field put under cultivation and therefore, arbitrary figures were given. On the contrary, farmers who were on leasehold gave precise amounts of land allocated to them. About 17.1 percent of respondents who had a landholding size of more than 20 hectares were in the commercial category. The respondents were not specific on the sizes of the available communal land. Land allocation in the area shows that 42.9 percent of the livestock farmers own their grazing land. Twenty percent of farmers agreed that their land that is used in cultivation was inherited from their parents. However, land owned by the community accounts for 22.9 percent and is mostly utilized for grazing. About 12.9 percent of respondents who are on leasehold were mostly commercial farmers.

**Table 2: Demographic characteristics of farmers**

<i>Farmers' characteristics</i>	<i>Summary of responses (%)</i>
<i>Gender (n=70)</i>	
Male	81.4
Female	18.6
<i>Age Category in Years</i>	
20 – 40	34.3
41 – 60	37.1
61 – 70	20.0
71 – 80	2.9
81 and above	5.7
<i>Level of Education</i>	
No school	12.9
Primary school	17.1
Junior secondary	11.4
Senior secondary	37.1
Tertiary	21.4
<i>Land Size</i>	
≤ 1ha	15.7
1 – 5ha	31.4
6 – 10ha	27.1
11- 20ha	8.6
≥ 20ha	17.1

The level of education was the most significant predictor ( $p$ -value of 0.002) and positively

related to rural extension service delivery. These findings supported the assertion of Rwigema and Venter (2004), that good educational background reinforces endowed talents and can ensure basic foundation for informed decision-making in adopting extension services. Household educational background may impact managerial competence and decision-making in terms of farm planning and access to information. Dlova et al. (2004) asserted that the probability of a farmer becoming successful increases when the farmer is exposed to some skilled training. In process demonstration, the size of land holding as a socioeconomic variable was also significant and positively related to rural extension service delivery (p-value = 0.003).

#### **Method Commonly Used to Deliver Extension Program**

Extension training and service delivery is a progressive outcome based learning plan that assists in needs identification and the development specific action geared towards meeting farmers' felt needs. Choosing a suitable training method is perhaps the most crucial step in training programs after the content has been identified. From the result, it is evident that most rural extension officers depend on seminars and conferences (48.6%) as a method of teaching or delivering rural extension service. Results from the study also revealed that 22.9 percent of the respondents asserted that extension officers used individualized instruction techniques (one-on-one). However, 18.6 percent of farmers agreed that farm visits were used as a method of delivering community extension message.

#### **Preferred Delivery Method Used by Rural Extension**

In teaching and delivery of extension services, majority of extension practitioners used varieties of methods. About 37.1 percent of respondents agreed that participation in extension programs are at its best when farm visit is used as a method for delivery of extension service. However, 28.6 percent of the respondents agreed that individualized method (one-on-one) was the best method that enhances participation. While respondents that had preferences for field days were 18.6 percent, seminars and conferences 1.4 percent, result demonstration 7.1 percent, and

process demonstration 7.1 percent, respectively. Eighty percent of respondents interviewed asserted that they preferred farm visits as a method of receiving training and information. In contrast 11.4 percent of the respondents had preference for home visit while 8.6 percent preferred telephone contact. Overall, commercial farmers preferred telephone contacts. The majority of the farmers who preferred home visit asserted that training and information dissemination should be made available as written materials such as newsletters, articles, magazines and books.

### **CONCLUSION**

The study examines the methods commonly used to deliver rural extension programs and also determine the preferred delivery method. From the result obtained, it is evident that the approach most regularly adopted by extension practitioners to convey community extension services in Amathole district was mostly seminars and conferences. The use of seminars and conferences seldom prioritize and cater for the needs of farmers, as it is non-participatory. The requirement and typology of the farming community are diverse and requires different approaches in addressing their felt needs. Adults are of the view that learning must have immediate utility and therefore expect that it must focus on issues that have a relationship with their immediate needs. Rural extension officers must be saddled with the responsibility of partnering with these community farmers. Results also revealed that farmers have a passion for farm visit. In essence, what farmers achieved during the extension service is easily associated to the contemporary existing situation in the farm. The level of education was the most significant predictor when rural extension officers adopt the use of farm visit (p-value of 0.002) and positively related to rural extension delivery service.

### **RECOMMENDATIONS**

Rural extension practitioners must vary their teaching techniques because of individual differences inherent in farming households. In planning of extension programs, the rural farmers must be properly consulted. The suggestion here is that empowerment of farmers through proper coordinated rural extension should be put in

place. However, the rural communities require links and social arrangements that will boost alliance and meet farmers' needs in terms of rural extension programs. The reinforcement of rural based organizations to stand for farmers' interest during agricultural policy initiatives should be considered for rural communities to enhance agricultural development in South Africa. Farmers' participation in decisions making regarding issues that influence their wellbeing, is important to enhance collective responsibility for outcomes achieved. Therefore, it is suggested that all farming communities be consulted in extension planning for enduring rural extension program. For this to happen, it is important that the government should enforce participatory extension approaches in order to increase farmers' participation.

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