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PERCEIVED IMPACTS OF ROYAL FM AGRICULTURAL PROGRAMMES ON LIVELIHOODS OF FARMERS IN GHANA

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ABSTRACT

The study determined the perceived impact of Royal FM agricultural programme on livelihoods of farmers in five districts and municipalities in the Broag-Ahofo Region of Ghana. An interview schedule was used to collect data from a sample of 198 farmers. The findings of the study showed that 62.5 % of the respondents who listened to agricultural programmes aired on Royal FM are males and 37.5% are females. The study show that farmers gained knowledge in the various improved practices as a result of the Royal FM agricultural programme and have impacted in the five districts and municipalities at different levels. The impact of the programme on farmers' livelihoods was highest in Banda District and Wenchi Municipal but was moderately high in Jaman North, Tain District and Techiman Municipal respectively. The Tamhane's T2 Post Hoc Multiple Comparison was used to test the differences in impact and the results indicated that other external factors may have also resulted in such differences which may be beyond the control of the programme or farmer. Similarly, majority of the farmers indicated that they were satisfied with Royal FM agricultural programme as it has improved the use agricultural technologies in the study area. The study recommended that the government should support the radio agricultural programme to ensure its sustainability. Also, there should be a further research to find out why some farmers are dissatisfied with Royal FM agricultural radio programme.

Keywords: Impact, radio, agricultural programme, farmers, livelihoods, Municipalities.

INTRODUCTION

Radio remains the most cost effective means of building awareness, and supporting the adoption of new farming practices by small scale farmers. Although radio is the most popular mass medium, agriculture programming is executed with little participation from the farmers and extension agents (Nabusoba, 2014). Availability of low cost receiving sets operated with electricity or battery have helped radio to penetrate messages deep into the rural community. Radio is appropriate for creating general awareness, to bring desirable changes in the attitude and listeners reinforce learning. Radio plays a significant role for illiterate farmers to gather information of various kinds on agriculture and other associated aspects so as to update their knowledge and skill. In developing countries, radio had made its place for backing up agricultural sector extension activities.

The rationale for using radio in extension and advisory services came from an understanding that radio is an excellent, cost-effective means of sharing knowledge, building awareness, facilitating informed decision-making and supporting the adoption of new practices by small-scale farmers (Chapota *et al.*, 2014.) The potency of modern electronic technology can be exploited for infotainment of farming community (Guenthner & Swan, 2011).

Livelihood is defined to include capabilities, assets (including both material and social resources) and activities required for a means of living (Al-hassan *et al.*, 2011). Economic theory postulates that Community Radio, to a large extent, if effectively organized, performs three main significant functions at the grass root level for rural development. Firstly, it promotes issues of agriculture, gender equality, education, trade and commerce, disaster awareness, weather, natural calamities, poverty and social problems. Community

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radio is usually for the people, run by the people and owned by the people. Secondly, it enhances the capacities of local people to work together to tackle a range of social problems, including poverty and exclusion through radio. Lastly, it contributes to nurturing of the creative talents of the community and providing a forum for a diversity of opinions and information. Royals FM operate on 104.7 FM. The station is located at Wenchi in the Brong Ahafo Region of Ghana. Its broadcasts can be received within a radius of 120km. Royals started operating on June 1, 2000. Royals FM broadcast for 20 hours a day from 0400. Ninety-five per cent of broadcasts are in Twi (Local language) and five per cent in English. The main aim of the radio programme is to enhance the generation and dissemination of agricultural technologies and information to benefit extension workers and farmers in the Brong-Ahafo Region of Ghana. The programme lasts for one hour and allows stakeholders to interact with the farmers and fishermen through phone-ins and follow-up by extension agents to the field. The topics discussed are determined through stakeholder meetings in the communities. Some of the topics discussed on the radio are on crop farming, animal farming, soil fertility improvement practices and post harvesting techniques (Ghana-QAS, 2010).

Radio has been proved as the important tool for the enhancement of agriculture in the rural areas. In developing countries, radio is a powerful and effective medium to project information and knowledge related to agriculture (Nakabugu, 2001). Khanal (2013), opine that radio is the reliable medium that can cover wider area and can reach to the large number of people. The strength of radio as the medium of communication is that it is cost effective in terms of transmission, presentation and portability. Radio can be useful medium to educate farmers if it appeals them with new programmes having modern agricultural technologies. However, the literacy of farmers is important to understand such programmes and apply them appropriately (Mohammad *et al.*, 2010). Modern radio programmes allow for phone-ins by listeners. As the rural farmers themselves participate in the radio programmes, they become more interested because of the feeling of belonging. The message and information easily gets absorbed.

Empirical studies measuring the perceived impact of Royal FM radio agricultural programme by farmers is

lacking. In order to achieve this, there is a dire need to identify the important components perceived by farmers in their mind while attaching credibility to the radio programme. The purpose of the study is to examine the perceived impact of Royal FM radio agricultural programme within its area of broadcasting in the Brong-Ahafo Region of Ghana.

Objectives of the study:The general objective of the study is to examine the perceived impact of Royal FM radio agricultural programme within its area of broadcasting in the Brong-Ahafo Region of Ghana since its inception in 2000.

The specific objectives of the study were to:

1. Describe the socio-economic characteristics of the farmers in the study area
2. Assess agricultural knowledge gained by the listeners
3. Ascertain the perceived impact of the programme on farmers' livelihoods in the five Districts and Municipalities in the area of study
4. Determine farmers' level of satisfaction with the Royal FM Agricultural programme

MATERIALS AND METHODS

Area of study: The Brong Ahafo Region has twenty seven (27) administrative and political districts/municipalities were created on 4th April 1959 (by the Brong Ahafo Region Act No. 18 of 1959). Brong Ahafo, with a territorial size of 39,557 square kilometres, is the second largest region in the country (16.6%). The region shares boundaries with the Northern Region to the north, the Volta and Eastern Regions to the south-east, Ashanti and Western Regions to the south, and Cote d'Ivoire to the west. The central point of the landmass of Ghana is in the region, at Kintampo. The region has a tropical climate, with high temperatures averaging 23.9oC (75oF) and a double maxima rainfall pattern. Rainfall ranges, from an average of 1000 millimetres in the northern parts to 1400 millimetres in the southern parts. The region has two main vegetation types, the moist semi-deciduous forest, mostly in the southern and southeastern parts, and the guinea savannah woodland, which is predominant in the northern and northeastern parts of the region. The level of development and variations in economic activity especially in relation to agriculture are largely due to these two vegetation types.

Population and sampling procedure: The case study approach was used for the study. The population for the study consisted of all farmers within the transmission range of Royals FM in the Brong-Ahafo Region. A

multistage sampling technique was used to select the respondents for the study. At the first stage, a simple random technique was used to select 50% of the ten municipalities and districts in the transmission range of Royal FM.

At the second stage, a list of farming communities was obtained from Ministry of Food and Agriculture (MOFA) offices. One of the communities was randomly selected in each district or municipality. At the third stage, the list of registered farmers was collected from MOFA offices in each of the districts and municipalities and six (6) farmers who listen to Royal FM agricultural programme were purposively selected from each community and interviewed. In all, 33 out of 101 communities were selected for the study. This was done based on time and resources available. The sample size of farmers for the study was one hundred and ninety eight (198).

Data collection and Analysis: Data were collected through the use of interview schedule. The interview schedule was pre-tested on ten farmers in a community in the Central Region of Ghana. This allowed for the modification of the questions to ensure reliability and validity. The researchers personally visited the farmers to conduct the interviews in the study site. The Statistical Package for the Social Sciences (SPSS) software version 17.0 was used to analyse the data. Descriptive statistics such as means, frequencies and percentages were used to analyze the result. Inferential statistics used was One-Way Analysis of Variance (ANOVA) and Tamhane's T2 post hoc multiple comparison were used to analyse mean perceived impact of Royal FM agricultural programme on respondents' livelihoods in the five districts and municipalities of the study area.

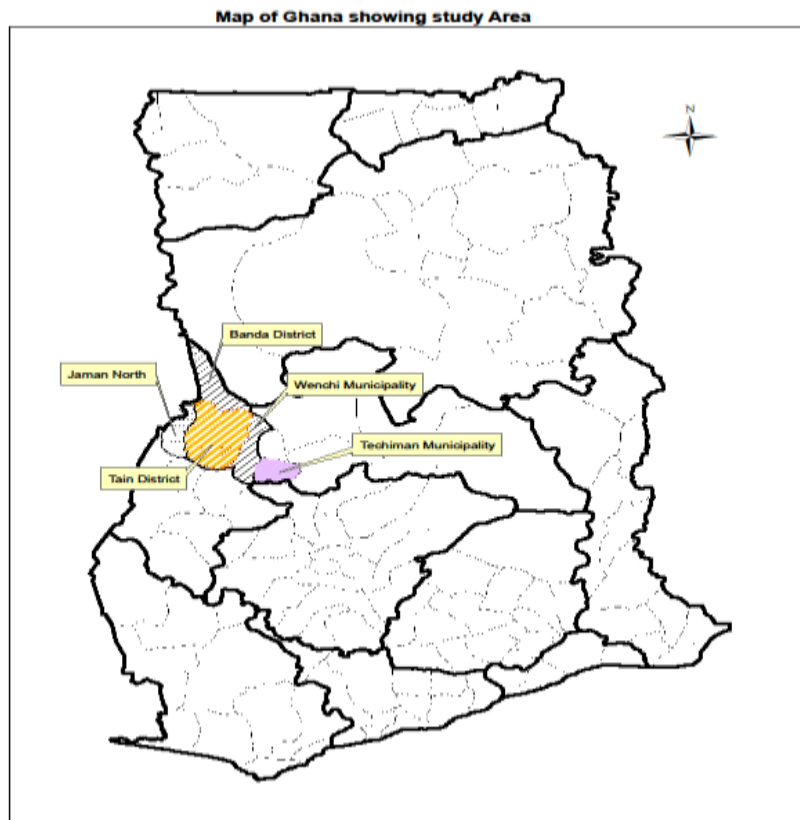


Figure 1. Map of the study Area.

RESULTS AND DISCUSSION

Socio-economic characteristics of farmers: Table 1 shows the frequency distribution of the gender of farmers who patronize the Royal FM agricultural programme. There were more males (62.5%) than females (37.5%) who patronize the agricultural

programme. This may be attributed to the fact that males are more active in farming area as compared to females. This finding is in accordance with Ango (2012) who posits that rural female farmers are not statistically identified as active population in farming; as a result, their reproductive economic roles are regarded as part

of their domestic and reproductive roles. Similarly the results indicated that 77% of farmers who listen to Royals FM agricultural programme were 50 years and below while 23% respondents were between the age ranges of 51-70 years. The mean age farmers in the study area are 42.6 years. This shows that, the farmers are young and are within the age bracket in which people are innovative and active at work Okwu, Kaku & Aba (2007). These farmers therefore can make meaningful impact in agricultural production when adequately motivated with the needed farming facilities. Equally, majority of the farmers (71.8%) who listen to the Royals FM agricultural programme sampled for the study were married, while 28.2% were either single or widowed. Since majority of the farmers were married, it is expected that married farmers will listen to the programme and increase agricultural productivity. Likewise, majority of the farmers who listen to Royals FM agricultural programme (81.2%) had formal education while 18.8% had no formal education. This is an indication that majority of the farmers in the study can benefit from the use of radio as a source of agricultural information. This assertion agrees with the work of Agbamu & Orborhoro, (2007) Age factor was found to be significant in agricultural information accessibility and utilization and as such young people (farmers) are more responsive to new ideas and practice than older ones who were observed to be conservative and less responsive to adoption of new practices. Therefore, the use of agricultural information is expected to be positively related to the level of formal education. Formal education contributes significantly to the use of agricultural information of improved agricultural technologies. Correspondingly, it was found out that, 38.5% of farmers who listen to the programme have a household size of 1- 4, 51.1% had 5-9 and 10.4% of farmers had 10-14 household sizes. Additionally, the mean household size of 6.2 persons was observed. This shows that the farmers had reasonable family labour that could help in farming. Household size in traditional agriculture determines the availability of labour and level of production (Aina, 2006). The assumption here is that the larger the household size of farmers, the tendency for more social activities and demand from the family members, and thus, the more the propensity for the usage of information. Table 1 illustrates this. In addition, the results in Table 1 showed that the primary occupation of majority of respondents (63.5%) was

farming while 22.9% had trading/business as their primary occupation. Civil servants/retirees (8.6.1%) and artisans (4.5%) used farming as their primary occupation. This showed that farming can be relied upon as a major source of income for the family. Data depicted in Table 1 shows that majority of the farmers (88.5%) are involved in crop production, whereas 11.5% are involved in animal production. Besides, more than half of the farmers (55.6%) had 1-19 years of farming experience and 46.3% of farmers also had 20-39 years of farming experience with a mean of 19.4 years. The farming experience showed most of the farmers had farmed for a reasonable number of years as would enable them to be abreast with the use of radio as sources of agricultural information. The farming experience of farmers to a large extent affects their managerial know-how as well as the use of various technologies disseminated through radio (Ani, 2006). An analysis of the farmer's farm sizes after listening to Royals FM agricultural programme indicated that 62.5% of the respondent had between 1-3 hectares, 35.9% had between 4-6 hectares and 1.6% had farm sizes between 7-10 hectares. The mean farm size is 3.4 hectares as against 1.4 hectares before the programme. Thus the use of agricultural information disseminated by radio has a positive effect on the farmers' farm size. Ani *et al.* (2004) reported that traditional method of farming predominates in most localities resulting from a personal low input-low output relationship. An attendant low productivity constitutes the hall mark of traditional agriculture as practiced in Ghana and farming based entirely upon traditional agriculture is inevitably poor.

Perceived knowledge-gain by Farmers through Royal FM agricultural programme: Table 2 shows the number of respondents that gained some knowledge about the various improved agricultural practices aired on Royal FM agricultural programme. The programme made impact on the knowledge-gain level of the farmers in the study area. The farmers indicated the various improved practices they gained knowledge in and found very useful as a result of the Royal FM agricultural programme. Majority of the farmers (79.6%) gained some new knowledge on improved varieties of crops/livestock. Furthermore, 75.2% of the farmers gained some knowledge on timely crop planting dates, yam minisetete technology (73.4%), appropriate type of fertilizer to apply (71.8%)

and correct fertilizer application methods (67.7%). Similarly, farmers gained knowledge through the programmes about farm produce processing methods (64.5%) and proper management of growing crops (64.0%). Equally, farmers (63.5%) indicated that they gained some knowledge in accessing agricultural credit and 62.5% gain knowledge in disease, insect and pest control on their farms.

Table 1. Socio-economic characteristics of farmers.

Sex	Frequency	Percentage	Mean	SD
Sex				
Male	120	62.5		
Female	72	37.5		
Age (years)				
21-30	40	20.8		
31-40	44	22.9		
41-50	64	33.3	42.6	10.1
51-60	32	16.7		
61-70	12	6.3		
Marital status				
Married	138	71.8		
Single	44	22.9		
Widowed	10	5.3		
Educational status				
Non formal education	36	18.8		
Primary school level	46	23.9		
Middle/JHS	86	44.8		
Secondary	24	12.5		
Household size				
1-4	74	38.5	6.2	3.0
5-9	98	51.1		
10-14	20	10.4		
Primary occupation				
Farming	122	63.5		
Trading / business	44	22.9		
Civil services / retired	17	8.9		
Artisan	9	4.7		
Type of farming activities				
Food crop farmer	170	88.5		
Livestock farmer	22	11.5		
Farming experience (years)				
1-9	31	16.1		
10-19	76	39.6	19.4	10.6
20-29	60	31.2		
30-39	29	15.1		
Farm size				
Before the programme				
1 - 2	168	87.5		
3 - 4	20	10.4	1.3	0.88
5 - 6	4	2.1		
After the programme				
1 - 3	120	62.5		
4 - 6	69	35.9	3.4	1.18
7 - 10	3	1.6		

Perceived impact of the programme on farmers' livelihoods among the five Districts and Municipalities: Results of the perceived impact of the Royal FM agricultural programme on livelihoods of farmers in the individual districts and municipalities show different levels of impact among the district and municipalities (Table 3). One way analysis of variance (ANOVA) was computed to determine whether statistically significant differences existed among the mean levels of perceived impact of the programme on farmers' livelihood in the five (5.) districts and municipalities.

The results in Table 03 showed that there was a significant (sig. 0.000) difference among the mean perceived impact in the districts and municipalities at 0.05 alpha level. This implies that the programme has impacted in the five districts and municipalities at different levels. The level of impact of the programme on farmers' livelihoods was highest in Banda District (mean=4.28, SD= 0.26) and Wenchi Municipal (mean= 4.22, SD= 0.26). This was moderate high in Jaman North (mean=3.98, SD=0.53), Tain District (mean= 3.89, SD= 0.38) and Techiman Municipal (mean=3.76, SD=0.58) respectively as shown in Table 3.

Table 2. Perceived Knowledge-gain by farmers through Royal FM agricultural programme.

Information given	Frequency	Percentage
Improved varieties of crops/livestock	153	79.6
Timely crop planting	145	75.2
Yam minisett technology	141	73.4
Appropriate type of fertilizer to apply	138	71.8
Correct fertilizer application methods	130	67.7
Farm produce processing methods	124	64.5
Proper management of growing crops	123	64.0
Easy access to information about credit	122	63.5
Disease, insect and pest control	120	62.5

Table 3. One-Way Analysis of Variance (ANOVA) of Mean Perceived Impact of Royal FM Agricultural Programme on Respondents' Livelihoods in the five Districts and Municipalities of the Study Area.

Districts/Municipalities	N	Mean	SD	F ratio	Sig
Banda District	30	4.28	0.31	8.923	0.000*
Wenchi Municipality	30	4.22	0.26	-	-
Jaman North District	42	3.98	0.53	-	-
Tain District	60	3.89	0.38	-	-
Techiman Municipality	30	3.76	0.58	-	-
Weighted mean	-	3.99	0.45	-	-

*p < 0.05 Scale: 5= Very High, (VH), 4=High (H), 3=Moderately High (MH), 2=Low (L), 1=Very Low (VI)

Differences in impact of Royal FM Agricultural Programme on Respondents' Livelihoods in the five Districts and Municipalities of the Study Area: Levene's test was used to determine appropriate post hoc multiple comparison to be used to determine where significant differences actually existed among mean impact of the five Districts and Municipalities since the F-test showed significance difference. The test reveals that variances existed among means were highly significant. (0.000*) This implies that equal variances are not assumed among the five Districts and Municipalities. Based on the outcome of the Levene's test, Tamhane's T2 was chosen as the appropriate post hoc multiple comparison technique for the multiple comparison of mean difference among the Districts and Municipalities as in Table 4 below. Differences in impact of the Royal FM agricultural programme may be as the

result of how well farmers use the information on each of the technologies disseminated in each district and municipality. Other external factors may have also resulted in such differences which may be beyond the control of the programme or farmer. One of such factors could have been the availability and distribution of rainfall in the various district and municipalities as depicted in Table 4.

Farmer's level of satisfaction with the Royal FM Agricultural programme: Table 5 reveals that 43.43% of the farmers were very satisfied with the Royal FM agricultural programme. Similarly, 30.80% were satisfied. The findings of this study contradicts that of Agwu *et al.* (2008) who stated that majority of farmers in Nigeria were dissatisfied with radio agricultural programme. It was also found out that 15.70% were unsure, 7.07% were dissatisfied and

3.03% were very dissatisfied with the radio farmer programme in the area of study. It could be that the time for airing the programme was not suitable to the farmers or the subject areas of the broadcast do not cover their farming interests. Though the farmers dissatisfied were in the minority, programmes targeted at them could lead to many more farmers diversifying their farming activities. The level of satisfaction of

individual farmers with the radio farmer programme will largely facilitate the utilization of radio agricultural information as a credible source of information. The results indicated that in response to listening radio agricultural programmes, farmers' knowledge has increased significantly and the results of the present study showed that educating through media can be effective.

Table 4. Differences in impact of Royal FM Agricultural Programme (Tamhane's T2 Post Hoc Multiple Comparison).

Districts/Municipalities		Mean Difference		
A	B	A - B	Std Error	Sig
Techiman	Jaman North	0.464*	0.116	0.003
	Banda	0.331*	0.067	0.000
	Wenchi	-0.059	0.073	0.995
	Tain	0.247	0.093	0.100
Jaman North	Techiman	-0.464*	0.116	0.003
	Banda	-0.133	0.118	0.955
	Wenchi	-0.524*	0.122	0.001
	Tain	-0.217	0.135	0.700
Banda	Techiman	-0.331*	0.072	0.000
	Jaman North	0.133	0.118	0.955
	Wenchi	-0.391*	0.076	0.000
	Tain	-0.084	0.096	0.992
Wenchi	Techiman	0.059	0.073	0.995
	Jaman North	0.524*	0.122	0.001
	Banda	0.391*	0.076	0.000
	Tain	0.307*	0.100	0.031
Tain	Techiman	-0.247	0.093	0.100
	Jaman North	0.217	0.135	0.700
	Banda	0.084	0.096	0.992
	Wenchi	-0.307*	0.100	0.031

n=198. *p< 0.05. Source: Field Data Source, 2015.

Farmer's level of satisfaction	Number	Percentage
Very Satisfied	86	43.43
Satisfied	61	30.80
Unsure	31	15.70
Dissatisfied	14	7.07
Very dissatisfied	6	3.03

Table 5. Farmer's level of satisfaction with the Royal FM Agricultural programme.

CONCLUSION AND RECOMMENDATIONS

The study shows that Royal FM agricultural programme had made significant impact on the farmers in terms of knowledge-gain in several areas of improved agricultural practices. The programme should therefore be continued. The study revealed that the level of impact of the programme on farmers'

livelihoods was highest in Banda District and Wenchi Municipal but was moderately high in Jaman North and Tain Districts and Techiman Municipal respectively. The evidence from the study showed that, there is a significant impact of Royal FM agricultural on the livelihood of farmers in the area of study. Similarly, majority of the farmers indicated that they were satisfied with Royal FM agricultural programme in the study area. The findings suggest that farmers will continue to rely on Royal FM agricultural programme as a credible source to gain agricultural information in the study area. If;

1. The government should support the radio agricultural programme to ensure its sustainability since the study found out that the radio programme is making positive

impact on the livelihood of farmers in the study area 2. It is recommended that there should be a further research to find out why some farmers are dissatisfied with Royal FM agricultural radio programme

3. Other research should be conducted in other radio stations to find out the impact of radio agricultural programmes on farmers in their areas of broadcast.

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