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Constraints to Level of Adoption of Improved Agricultural Technologies Among Radio Farmer Programme Listeners in Imo State, Nigeria.

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Abstract
This study examined constraints to level of adoption of improved agricultural technologies among Agricultural Development Programme (ADP) radio farmer programme listeners in Imo, State-Nigeria. The specific objectives included to: examine the socioeconomic characteristics of the programme listeners, ascertain their major sources of agricultural information, determine the level of adoption of the various identified improved technologies disseminated to the farmer listeners and identify constraints to level of adoption by the radio farmer programme listeners. The data for the study were collected through questionnaire administered to 270 farmers in the three agricultural zones of Imo State. The data were analyzed using descriptive statistics like frequency table, mean and likert scaling type. The results revealed that the majority (81 %) of the farmers were males. Most (70%) of the farmers were involved in crop production while 78.5 % belonged to farmer associations. Among major available sources of agricultural information to farmers were, radio farmer programme (X = 2.5) and extension agents (X = 2.5). Level of adoption indicated among others, that farmers were at the adoption stage for technologies like fertilizer and its application (X = 5.9), and supply of vacancies to cassava/maize plots (X = 5.9). Some of the constraints to level of adoption of the radio farmer programme included lack of feedback and non conformity to seasonal farming activities. It was recommended among others that broadcast of farming activities/operations to conform to seasonal operations if objectives of adequate food supply and improved standard of living will be achieved in Imo State through this laudable programme.

Keywords: Agricultural Technologies, Radio Farmer Programme, Adoption, Constraints.

1.0: Introduction

Majority of the small holder farmers and artisans, some three-quarters live in rural areas where they draw their livelihood from agriculture (Ogunleye and Oladeinde, (2013). Poverty eradication and food security have moved to the centre stage of the global development agenda. An estimated 239 million people in Sub-Saharan Africa were hungry and malnourished. 925 million people were hungry worldwide. Africa was the continent with the second largest number of hungry people as Asia and Pacific had 576 million, principally due to much larger population of Asia when compared with Sub-Sahara Africa. Sub-Saharan Africa had the largest proportion of its population undernourished and estimated 30 percent in 2010 compared to 16 percent in Asia and the pacific (FAO, 2010). World Bank (2000) observed that despite the emphasis on development in most third world countries towards rural/agricultural model as against Urban design in the recent past, developments are still hindered by institutional and administrative programmes characterized by schemes and programmes imposed on the rural poor, rather than clientele participation.

The need for rapid improvement in the strategies for agricultural production in the developing countries and in Nigeria does not warrant any more serious debate. According to Ewuola & Ajibefun (2002) the Nigerian population increased by between 2.5 and 3.0 percent annually, while food production increased by only 1.5 to 2.0. It is therefore very obvious that hunger and starvation are not only being felt but have become precarious. This is because food prices have gone beyond the reach of the average persons and therefore affecting their

living standard.

Agricultural technology can be defined as any behaviour or practice that involves the interaction of individuals within the farming production system. Consequently, those practices and/or behaviours applied by both farmers and agricultural professionals constitute agricultural technologies (Asiabaka, 2002). Agricultural technologies include both components (seeds, fertilizers, pesticides, and machinery) and the process, that is, elements (planting time, spacing, time of application of fertilizer, etc) needed by the producer. The latter include information on the component and the management and the technical know-how to use the components and its adaptation. Farmers are the ultimate users of the modern or improved agricultural technologies developed through research. Many workers have defined technology transfer in different ways to suit their purpose. According to one such definition, technology transfer is "an ongoing process of getting useful information to people and assisting them to acquire the necessary knowledge, skill and attitude to quicken the utilization of necessary supply of inputs and agro-services (Ekpere & Durant, 1996). Adoption is the process by which an individual accepts to use innovation or technology after due consideration of its merits and demerits. The initial step towards the adoption of new practice is that the innovation is available to the farmer. Asiabaka (2002) stated that adoption is a decision to make full use of new idea as the best course of action available over a period of time; this is why an innovation can be accepted or rejected after adequate consideration has been made.

The transfer of information could be done by the use of information media. Such information media include newsletters, radio/television programme, extension publications/bulletins, field days, field trips, jingles, posters, leaflets, agricultural shows and exhibition. Research is developing appropriate and adoptable technologies and transferring such technology to the farmers. According to Unamma *et al*, (2004), the job of research is to develop technologies and prove their worth to a relatively small number of farmers, using various combinations of upstream and downstream research. The extension service and/or any other similar organization complement this role of research through diffusing the innovations to as many farmers as practicable using appropriate strategies. Consequently, the extension service is responsible for informing, advising and teaching large number of farmers and other input agencies in a timely fashion. Asiabaka (2002) noted that extension has educational component. This is underscored by the continued use of the Agricultural Development Programme (ADP) extension system as the main organ for extension delivery for the past three decades.

Since the inception of Imo ADP, one of its major responsibilities is the dissemination of information on improved modern technologies to the rural farmers in the three agricultural zones, namely Okigwe, Owerri and Orlu. Various methods of information dissemination have been utilized and they include bulletins, leaflets, radio/television programme, film shows, farm demonstrations and posters (Onu, 1991; Ekumankama, 2000; Ekumankama & Nwankwo,2002). In spite of the growing realization, the essential social and information mechanisms and infrastructural facilities are not yet sufficiently developed to foster the generation, storage, preservation, repacking, retrieval, dissemination and utilization of information (Agwu*, et al*, 2008). However, radio programmes are most widely used because majority of the farmers can afford radio set, and radio programmes are quick in information dissemination. Regardless of power failure or inadequate supply of power, absence of good road, etc farmers understand communication in their local language. Serious doubts have been expressed as to whether the extension services bureaucracy, are capable of providing effective educational services to the rural clientele (Onu, 1990). The use of contact farmers as an extension communication strategy has been described by some scholars as alienating to non-contact farmers and caused disparity in client treatment (Agbanu, 2005). Although some contact farmers have been egalitarian in sharing extension messages and training experience with non-contact farmers, other contact farmers have been known to hide information on innovations from farmers in their neighbourhood. In other instances contact farmers distort messages. However, the great potential of these media like radio and television, for adult education in agriculture is yet to be fully exploited for high cost of transmission to absence of proper framework, within which to properly integrate the media (radio and television) into the agricultural programme (Egbule & Njoku, 2008). In addition, the media system in many states in Nigeria are highly centralized and clustered in urban areas. Consequently very little of the needed information reaches rural communities, where more of the

population live and actual farming takes place. Nwachuchwu (2010), on a study on adoption level of organic agriculture technologies, through radio broadcast programme, identified among others, low level of adoption, inadequate exposure of farmers due to poor radio reception and lack of group listenership among farmer listeners in Imo State

Radio farmer programme (RFP) is an educative and informative broadcast through which farmer listeners are reached in their various official and local languages at their various homes or work places with new and improved agricultural technologies developed by experts in specialized fields of agriculture for adoption to improve their productivity and economic enhancement. To meet the food requirement of the populace at affordable cost through the massive adoption of improved agricultural technologies, the Imo State extension service in 1997 introduced the radio farmer programme (ADP, 2004). However, since the inception of the radio farmer programme, no valid and concerted effort has been made to ascertain the constraints to the level of technology adoption among the radio farmer programme listeners as it affects its effectiveness in information dissemination. This has created a gap in knowledge. The study therefore aimed at identifying constraints to level of adoption of improved agricultural technologies adoption among the ADP radio farmer programme listeners in Imo State. The findings will assist to unraveling the obstacles to effective communication and adoption of technologies by use of radio farmer programme among farmer listeners. The specific objectives of this study include to; examine the socioeconomic characteristics of the radio farmer programme listeners, ascertain major sources of agricultural information, determine the level of adoption of the various identified technologies disseminated to the farmer listeners through the radio farmer programme and, identify constraints to level of adoption by the radio farmer programme listeners.

2.0: Materials and Methods

This study was conducted in Imo State. The state is located in the South Eastern part of Nigeria with a population of about 3,934,899 people made up of 2,032,286 males and 1.902,613 females (NPC, 2006). It is strategically located within the five South Eastern States and boarded on the East by Abia State, on the West by River Niger and Delta State, on the North by Anambra State, while the Rivers State lies to the South (MLS, 2002). The settlement structure is still rural with over seventy percent (70 %) of the people living in rural areas (ISGN, 2007).The state is culturally homogenous and predominantly inhabited by the Ibo ethnic group of Nigeria, where Igbo language is spoken with minimal difference in dialects. The people are predominantly Christians and English language is however the official language. The people are predominantly farmers as an average family engaged in the production of food crops like yam, cassava, cocoyam, rice and maize, and livestock like sheep, goat, rabbit, poultry birds and pig. Cash crops cultivated include palm produce, rubber, oil bean, pear, mango, and oranges (ISGN, 2007).

Imo State is divided into 27 Local Government Areas (L.G.A.). It has three (3) agricultural zones namely Okigwe, Orlu and Owerri with six (6), ten (10) and Eleven (11) Local Government Areas (L.G.A.s) respectively. A random sampling of two (2), three (3) and four (4) L.G.A.s from Okigwe, Orlu and Owerri zones respectively was taken, given a total of nine (9) L.G.As for the study. The list of communities in each selected LGA was collected from the community Development Officers at the LGA headquarters. Three (3) communities were selected from each of the LGAs giving a sample size of twenty seven (27) communities.

The list of Extension contact farmers (programme listeners) in each community was compiled with the assistance of the Imo ADP Extension Agents. The list formed the sampling frame. From this sampling frame totaling 431 radio farmer programme listeners, proportionate sampling technique was used to select 60, 90 and 120 radio farmer programme listeners from Okigwe, Orlu and Owerri agricultural zones respectively making a sample size of 270 radio farmer programme listeners for the study. Random sampling technique was employed in each agricultural zone to select the radio farmer programme listeners after the proportionate sampling was performed.

Data were collected using questionnaire. Simple descriptive statistics such as frequency distribution, percentages, mean and likert scaling type were used in analyzing the data.

Frequency distribution, percentages, and mean were used to analyze objective 1.

Objective 2, a three point likert type scale of 'often' =3, 'sometimes' =2, and 'not at all' =1 was applied. In objective 3, a six point likert type scale of 'adoption', 'trial' =5, 'evaluation' =4, 'interest' =3, 'awareness'

Objective 2, a three point likert type scale of 'often' =3, 'sometimes' =2, and 'not at all' =1 was applied. In objective 3, a six point likert type scale of 'adoption', 'trial' =5, 'evaluation' =4, 'interest' =3, 'awareness' =2, and 'not aware' = 1 was used. For objective 4, the following three point likert scaling procedures were adopted; 'very serious constraints' =3, 'serious constraints' =2, and 'not serious constraints' =1.

The likert scaling type measuring instrument is represented by the formula:

$$X = \frac{\Sigma fx}{N}$$

Where X = mean score

Σ = summation sign

f = frequency

N = no of respondents.

x = no of nominal value of each response category

$$3 + 2 + 1 = 6 \qquad [2]$$

6+5+4+3+2+1 = 21 = 3.5

3, 3 for objectives 2 and 4 and 6 for objective 3.

Therefore, 2 is the weighed mean of the scaling statement for objectives 2 and 4. Weighed mean for objective 3 is 3.5.

Decision rule: Any mean value greater or equal to 2 is positive for objectives 2 and 4. Mean value less than 2 for objectives 2 and 4 is negative. While any mean value greater or equal to 3.5 for objective 3 is positive and mean value less than 3.5 is negative.

3.0: Results and Discussion

3.1: Socioeconomic characteristics of the farmers.

Table 1. The percentage distribution of radio farmer programme listeners by socioeconomic characteristic is presented in Table 1. Data in the table show that majority (81.5 %) of the farmers were males, with a greater proportion (57.4 %) of them being between 51 and 60 years of age with a mean age of 50.5 years**,** and most (82.9 %) of them were married. The table indicated that most (60.7 %) of the farmers spent 7-12 years in school. This implies that most of the farmers are literate. Majority (70.7 %) of the farmers were primarily engaged in farming with majority (70 %) of them involved in food crop production like cassava, yam, cocoyam, maize and rice. Only 18.9 % of them were involved in livestock production while 11.1% of the farmers were involved in fish farming. Majority (51.9 %) of the farmers had 11-20 years of farming experience. Long farming experience is an advantage for increase in farm productivity since it encourages rapid adoption of improved technologies (Obinne, 1991). A large proportion (53.7 %) of the farmers had 1-2 contacts with extension agents, 37 % of them had no contacts with extension agents, while 9.3 % of them had 3-4 contacts with extension agents in the last one month. The mean contact with extension agents in one month was 1.4, which implied low extension contact.

Table 1. Percentage Distribution of Radio Farmer Programme Listeners by socioeconomic Characteristics (N=270)

Socioeconomic Characteristics	Frequency	Percentage	Mean (x)
Sex			
Male	220	81.5	
Female	50	18.5	
Age (Years)			
31-40	34	12.6	
41-50	74	27.4	
51-50	150	57.4	
61-70	7	2.4	50.5
Marital Status			
Single	14	5.2	
Married	224	82.9	
Divorced	10	3.7	
Widowed	20	7.4	
Separated	2	0.8	
Household size (No. of persons)			
1-4	70	25.9	
5-8	180	66.7	
9-12	15	5.6	
13-16	5	1.8	5.8
Level of Education (years)			
O (No formal education)	15	5.6	
1-6	65	24.1	
7-12	164	60.7	
13-18	26	9.6	8.1
Primary occupation			
Farming	191	70.7	
Trading	37	13.7	
Civil Service	29	10.7	
Artisan	13	4.9	
Type of farming practiced			
Livestock production	51	18.9	
Food crop production	189	70.0	
Fish farming	30	11.1	
Farming experience (years)			
1-10	112	41.5	
11-20	140	51.9	
21-30	13	4.8	
31-40	5	1.8	12.2
Farm size (Hectare)			
0.5-1.0	81	30.0	
1.1.-1.6	135	50.3	
1.7-2.2	38	14.1	
2.3-2.8	16	5.9	1.3
(Fish Ponds)			
0	239	88.5	
1-3	20	7.4	
4-6	10	3.7	0.4
5-8	1	0.4	
(Animal Head)			
0	217	80.0	
0-20	10	3.7	
20-500	29	10.3	10.7
500-1000	14	5.0	
Animal Farm Income			
131000-160000	40	14.8	
161000-190000	38	14.1	
191000-220000	64	23.7	
221000-250000	103	38.1	
251000 and above	25	9.3	208046.30
Membership of farmers association			
Non-member	58	21.5	
Member	212	78.5	
Frequency of Extension Agent Contact in one month			
No visited	100	37.0	
1-2	145	53.7	
3-4	25	9.3	1.4

Source: Field Data, 2013.

3.2: Major sources of agricultural information

Data in the table 2 show that the major sources of agricultural information from professional interpersonal sources was extension agents (x = 2.5). The non-professional interpersonal sources had fellow farmers and friends (X = 2.6) and farmers' cooperative organization (x = 2.5). Broadcast sources had radio farmer programmes (x = 2.6) as major sources of agricultural information. Social Media sources indicated that use of mobile phones was a major source of information. Use of mobile phones (mean of 2.50) in recent times, as a social communication network has proved very effective means of interaction among farmers in Nigeria. This agrees with Salau, *et al* (2014). On broadcast sources, farmers obtain information through the radio farmer broadcast (X = 2.6). Farmers did not consider Agricultural Journals and traditional rulers like 'Ezes' as major sources of agricultural information to them.

Table 2. Percentage distribution of radio farmer programme listeners by their major sources of agricultural information

Information	Sources	Farmers' Responses						
		Not at all (1)		Sometimes (2)		Often (3)		Mean (x)
		Freq	%	Freq	%	Freq	%	
1.	**Professional Interpersonal Sources**							
(a)	Extension agents	34	12.6	66	24.4	170	63.0	2.5*
(b)	Staff of research institutes	156	57.8	76	28.1	38	14.1	1.6
(c)	Agricultural shows	174	64.5	66	24.4	30	11.1	1.5
2.	**Non-professional interpersonal Sources**							
(a)	Fellow farmers and friends	28	10.4	48	17.8	194	71.8	2.6*
(b)	Village Heads/Ezes	182	67.4	56	20.7	32	11.9	1.4
(c)	Farmers Cooperative Organization	26	9.6	78	28.9	166	61.5	2.5*
3.	**Printed Sources**							
(a)	Imo ADP News letters	184	68.2	56	20.7	30	11.1	1.4
(b)	Posters	168	62.2	66	24.4	36	13.4	1.5
(c)	Academic Journals	180	66.7	56	20.7	34	12.6	1.5
4.	**Broadcast Sources**							
(a)	Radio farmer programmes	28	10.4	46	17.0	196	72.6	2.6*
(b)	Television farmer programmes	200	74.1	44	16.3	26	9.6	1.4
	Mean				45.8	22.1	32.1	1.9
5	**Social Sources**							
(a)	Mobile phones	26	9.6	77	28.8	167	66.6	2.5*
(b)	Internet	186	69	56	20.1	28	10.9	1.4

* Major sources of agricultural information

Source: Field Data, 2013.

3.3: Level of Adoption of the Technologies Disseminated through the Radio Farmer Programme.

The different stages of adoption of improved technologies disseminated through the Radio Farmer Programme are presented in Table 3. Data in the table show that weed and its control had the highest level of adoption (x = 6.0). This was followed by harvesting and storing of yam/maize/cassava (x = 5.9), supply of vacancies to maize and cassava plots (x = 5.0), harvesting and processing of cassava roots (x = 5.9), fertilizer and fertilizer application, (ring, broadcast, band, etc) (x = 5.9). Others were timely harvesting of yam/maize and its proper storage (x = 5.9), and appropriate spacing of cassava/yam/maize (x = 5.6).

The mean adoption scores of these technologies indicated that the farmers were at the adoption stage of improved technology adoption process. The high adoption scores of these technologies could be because they are the staple food crops in Imo State which are cultivated by all farming households in the State (Ekumankama & Nwankwo, 2002).

Yam minisett production technology had adoption score of (x = 4.6) which implied that the farmers

Table 3. Percentage distribution of radio farmer programme listeners by level of adoption of improved agricultural technologies through the radio farmer programme.

	Technologies	Not Aware (1)		Aware (2)		Interest (3)		Evaluation (4)		Trial (5)		Using (6)		Mean
		Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	($\bar{X}$)
1.	Yam minisett production	6	2.2	50	20.7	18	6.7	4	1.5	56	20.8	136	48.1	4.6
2.	Staking of yam and vine trimming	30	11.1	130	48.1	16	5.9	4	1.5	20	7.5	70	25.9	3.2
3.	Dry season vegetable production	38	14.1	136	50.4	12	4.4	16	5.9	60	22.2	8	3.0	2.8
4.	Appropriate spacing of cassava/yam/maize	16	5.9	4	1.5	0	0.0	0	0.0	0	0.0	250	92.6	5.6
5.	Fertilizer and fertilizer application (ring, broadcast, band, etc)	0	0.0	10	3.7	0	0.0	0	0.0	0	0.0	260	96.3	5.9
6.	Line planting	28	10.4	132	48.8	82	30.4	0	0.0	28	10.4	0	0.0	2.5
7.	Weed and its control	0	0.0	2	0.7	0	0.0	0	0.0	4	1.5	264	97.8	6.0
8.	Supply of vacancies to maize, cassava plots	4	1.5	0	0.0	0	0.0	0	0.0	0	0.0	266	98.5	5.9
9.	Fish pond treatment and flooding	28	10.4	164	60.7	60	22.2	0	0.0	0	0.0	18	6.7	2.4
10.	Stocking of rabbit wieners	60	22.2	182	67.4	24	8.9	0	0.0	4	1.5	0	0.0	1.9
11.	Harvesting and processing of cassava root	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	270	100.0	5.9
12.	Drugs for de-worming of sheep and goat	72	26.7	150	55.5	48	17.8	0	0.0	0	0.0	0	0.0	1.9
13.	Fish seed production stocking	72	26.7	168	62.2	12	4.4	0	0.0	2	0.7	16	6.0	2.0
14.	Feeding/housing requirement in poultry keeping	30	11.1	162	60.0	38	14.1	0	0.0	0	0.0	40	14.8	2.5
15.	Harvesting and storing of yam/maize/cassava	0	0.0	0	0.0	12	4.4	0	0.0	0	0.0	258	95.6	5.9
16.	Fish pond maintenance/management	58	21.5	136	50.4	30	11.1	0	0.0	0	0.0	4.6	19.0	2.6
17.	Fish handling, processing, preservation and storage	56	20.7	144	53.3	42	15.6	0	0.0	0	0.0	28	1 0.4	2.4
18	Timely harvesting of yam/maize and its Proper storage	0	0.0	0	0.0	0	0.0	0	0.0	14	5.2	256	94.8	5.9
	Mean ($\bar{x}$)		5.5		32.4		8.1		0.5		3.9		49.6	3.9

Source: Field Data, 2013.

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were at the trial stage of the technology adoption process. Results of mean percentage responses indicated that a large proportion (49.6 %) of the farmers were using the technologies, 32.4 % of them were at the awareness stage of technologies in the adoption process. Nwachukwu (2010) agrees that radio is most effective at the awareness stage of adoption categories.

Also, 18.1 % and 3.9 % of the farmers were at the interest and trial stages of technologies in the adoption process. The data equally show that 5.5% of the farmers were unaware of the improved technologies disseminated through the Radio Farmer Programme while 0.5% of them were at the evaluation stage of improved technologies of the adoption process

3.4: Constraints to Effective utilization of the Radio Farmer Programme.

The farmers' perceived constraints to effective utilization of the Radio Farmer Programme are presented in Table 4. The table shows that farmers considered the following as serious constraints to effective utilization of the Radio Farmer Programme in Imo State. They included; lack of group listenership (x = 2.7), non-supply of 'radio without batteries' to farmers (x = 2.7), poor radio reception (x = 2.6), power failure (x=2.6). Others were complexity of technologies (x = 2.5), lack of opportunity to ask questions (x = 2.3) or seek clarification where they fail to understand the message of the broadcast and the result also suggested that some of the messages of broadcast did not conform to farming seasonal activities/operations (x = 2.2) as this would help them obtain farm inputs as and when due. The findings of this study on lack of questions and answers agreed with those of Agwu *et al* (2008) that inability to ask relevant questions and get the feedback from the radio presenter constituted barrier to radio farmer broadcast programmes.

Table 4. Percentage distribution of radio farmer programme listeners by their major constraints to source of agricultural information

Constraint	Very Serious (3)		Serious		Not Serious (2)		(3)	Mean
	Freq	%	Freq	%	Freq	%		
Power failure	189	74.8	60	16.3	21	8.9		2.6*
Non conformity to farming seasonal Activities/operations	122	45.2	72	26.7	76	28.1		2.2*
Lack of Group Listenership	202	74.8	44	16.3	24	8.9		2.7*
Non-supply of 'radio without batteries' to farmers	200	74.1	66	24.4	4	1.5		2.7*
Poor radio reception	176	65.2	76	28.1	18	6.7		2.6*
Failure of technical demonstration	34	12.6	66	24.4	170	63.0		1.5
Lack of radio set	29	10.7	45	16.7	196	72.6		1.4
Short duration of broadcast/programme	32	11.9	94	34.8	144	53.3		1.6
Last of consistency in extension agents contact	34	12.6	64	23.7	172	63.7		1.5
Lack of interest	60	22.2	58	21.5	152	56.3		1.7
Language used in presenting the programme	69	18.1	103	38.2	118	23.7		1.7
Lack of question and answer (immediate feedback)	144	53.3	70	25.9	56	20.8		2.3*
Unavailable/cost of batteries	74	27.4	78	28.9	118	43.7		1.8
Complexity of technologies	176	65.2	60	22.2	34	12.6		2.5*
Lack of divisibility of the technologies	38	14.1	76	28.1	156	57.8		1.6
Non agreement with people's way of life	34	12.6	70	25.9	166	61.5		1.5

* Serious constraints = 2.

Source: Field Data, 2013.

4.0 Conclusion and Recommendations

This study dwelt on the constraints to level of adoption of improved agricultural technologies among radio farmer programme listeners in Imo State, Nigeria. Major available sources of agricultural information were extension agents, fellow farmers and friends, farmers' cooperative organization, use of radio farmer programme and use of mobile phones. Farmers through the radio farmer programme adopted some improved technologies. Some of the serious constraints included lack of group listenership, non-supply of radio without batteries to farmers, power failures, poor radio reception, complexity of technologies, lack of questions and answers, and non-conformity to farming seasonal activities/operations .Based on the findings of this study, it recommended the use of modern radio transmission equipments to minimize the high rate of poor reception experienced by farmers, an increase in extension agents contact with farmers, increase in power (electricity) supply, encouragement of farmers to belong to farmer organizations like cooperatives. Also there is need to adjust the time and period of the broadcast to fall within the actual time of farming activities/operations since most farmers in the state depend on seasonal rainfall. Finally, farmer listeners were to be encouraged to listen to the radio farmer programme in groups and this would be made possible through the establishment of radio broadcast centers in all the communities in Imo State.

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