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Cost Sharing As An Alternative Approach To Financing Agricultural Technology Transfer In Nasarawa State, Nigeria.

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ABSTRACT

The study ascertained cost sharing as an alternative approach to financing agricultural technology transfer in Nasarawa State, Nigeria. Interview schedule/questionnaire as well as Focus Group Discussion (FGD) were used to collect data from a sample of sixty-two (62) farmers and sixty-eight (68) public extension agents (PEAs). Data were analyzed using descriptive statistics such as frequency and percentage. Result shows that majority of the respondents were married, about 60% of the farmers were males, while all (100%) public extension agents were males, middle aged, having a fairly large household size. Government was the major (70.3% and 70.9%), source of funding for agricultural extension service as indicated by the farmers and PEAs, respectively. Majority (64.6%) of the farmers contributed to cost-sharing practices in the area of provision of accommodation to public extension agents. A greater percentage (81.3%) of the farmers and public extension agents (80.7%) were of the view that inadequate budgetary allocation is a major problem associated with agricultural extension funding in the study area. Other problems identified by farmers (12.0%) (4.0%) and public extension agents (10.9%) (4.8) were bureaucracy and corruption, respectively, among others. The study recommends the need for a gradual introduction of cost-sharing designed in collaboration with stakeholders using a location-specific approach in order to suit the consumers of agricultural technology.

KEY WORDS: Cost-sharing, agricultural echnology, extension services, funds, stakeholders.

INTRODUCTION

The provision of agricultural extension service involves financing of the system. Every extension service that is delivered must be funded; such financing can either come from the public or private sectors or both. The latter paradigm results in the existence of a continuum where the different stakeholders from the sectors have different levels of participation in the delivery and financing of agricultural extension service which recognizes changes in needs of clientele and redefinition of government roles (Ozor, 2010).

There is increasing dissatisfaction with the conventional approaches to financing extension services, which are largely based on services

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financed with public money and delivered by public extension organizations. These happen to the extent that donor agencies and government decision-makers increasingly wonder if extension should remain high or not on their priority list.

This scenario gave rise to what is termed cost sharing. Cost sharing is a system where beneficiaries of services pay user fees. It is a privatization strategy where farmers participate in funding of agricultural technology transfer (Ozor, 2010). Charging farmers minimal sum of money for services can encourage them to exercise rights as information consumers and increase their voices in the management of technology generation and transfer, thereby ensuring programme effectiveness. Farmers can choose who will provide the service and agricultural technology providers who would want to remain relevant must respond quickly to meet the farmers' information demands thus making the market competitive. This will transmit to efficient technology delivery to farmers, increased output and poverty reduction.

Consequently, there is a need for a redefinition of the role of government to concentrate on ensuring favourable policy environment and regulatory functions that will address the issues of ineffective public funding of extension services as they do not respond sufficiently to farmers' felt needs. This is expected to minimize the negative effects of unsustainable funding base due to donor withdrawals and the overall dissatisfaction with the position of rural communities who see public free service as part of their own national cake.

According to Daudu, Anum and Madukwe (2009) and Madukwe (1999), the World Bank part-financed ADP system in Nigeria is constrained by inadequate funding, thus making it incumbent on an extension organization to develop ways of alternative sources of funding to be able to perform effectively (Madukwe, 1995). Ozor, Agwu, Chukwuone, Madukwe and Garforth, (2007) reported that majority of farmers and extension professionals in Nigeria had favourable perceptions towards cost-sharing.

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Agwu and Ugwu (2008) found that farmers are willing to pay for agricultural extension service delivery to them. The study therefore sought to answer the following questions. What are socio-economic characteristics of farmers and extension professionals in the study area? What are sources of agricultural extension funds? And what are problems associated with sources of agricultural extension funding?

OBJECTIVES OF THE STUDY

The specific objectives were to:

1. describe socio-economic characteristics of the respondents;
2. identify sources of agricultural extension funds;
3. identify farmers' areas of participation in cost-sharing practices
4. ascertain problems associated with sources of agricultural extension funding.

METHODOLOGY

The study was carried out in Nasarawa State, Nigeria. The State was purposively selected because of its agricultural potentials and seemingly ineffective agricultural extension services in the study area. Nasarawa State has a population of 2,040,097 people (NPC, 2006), 180,433 farm families and 137 extension agents with a ratio of 1:1156 extension agents/ farmers (NADP, 2010). Nasarawa State is predominantly guinea savannah grass land with an annual rainfall of 1250mm-2000mm and temperature range of 25^{o}C-36^{o}C. It is found in the middle belt region of the country and lies between latitude 8.3^{o} and 8.5^{o}N and longitude 8.2′ and 8.3′E and has an approximate land size of about 137.8km^{2} comprising 13 Local Government Areas (Wikipedia, The Free Encyclopaedia, 2013). The major crops grown here include: yam, cassava, rice, sweet potatoes, sesame, sugar, millet, maize and various tree crops. Nasarawa State is divided into three agro-ecological zones, namely; Central, Southern and Western (CAZ, WAZ and SAZ). All the three zones in the state were used for the study. The population of the study comprised all farmers and public extension agents in Nasarawa State (130) who benefited from agricultural extension services. A multistage sampling technique, involving purposive, stratified and simple random sampling techniques was adopted

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to select a sample size of 62 farmers and 68 PEAs. A local government area was selected from each of the zones using simple random sampling technique. Two communities were selected from each of the Local Government Areas purposively on the basis of settlement orientation-rural/urban. A list which contained the population of farm families were obtained for each of the communities and this gave rise to Gwanje (27), Andaha (83), Aloshi (80), Giza (94), Laminga (33) and Udege (27). A proportionate sampling technique was used to select 18% of the respondents from each of the communities. This gave rise to a total of 62 farmers used for the study. There were 135 extension agents in the state. Also, 50% of public extension agents were used, which gave a total of 68 respondents. Generally, 62 farmers and 68 extension agents were used for the study. Data for the study were collected using interview schedule/questionnaire as well as Focus Group Discussion (FGD). Descriptive and inferential statistics such as frequency and percentage were used for data analysis.

RESULTS AND DISCUSSION

Socio-economic Characteristics of Farmers

Results show that about 39% of the farmers aged between 40 and 50 years, 32.3% were within the age range of 50-60 years, while about 18% were aged 30-40 years, among others (Table 1). This implies that the respondents were middle aged and energetic to carry out farming activities. This is attributable to the limited opportunities of white collar jobs in the urban centres in recent times that have led to renewed interests in farming among the youths with a consequent reduction in urban migration. This disagress with the findings of Adewumi *et al*. (2007) who stated that the farming population is ageing.

About 60% of the respondents were males, while 40.3% were females. This suggested that males are still predominant in the farming occupation in the study area which corroborates the finding of Ejembi (2009) that farming is largely an exclusive male preserve in Nigerian rural communities. This situation may be because

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of the leadership system which puts men in charge of the farming resources than with the actual number of male or female practically involved in farming activities. The result also revealed that majority (56.8%) of the respondents attended primary school. This is an indication that most of them were literate which is in line with the findings of Ozowa (1997) where literacy levels of majority of farmers were found to be within the primary school. According to Chapman and William (1999), this level of educational qualification is helpful in raising perceptual threshold since there is a proportional relationship between perception and literacy level.

Data in Table 1 show that majority (93.5%) of the respondents were married, while about 5% were separated/divorced. This shows that the respondents had members of their family who can serve as source of labour for farm work thereby reducing cost of production. This is especially so as high premium is placed on functional family system in rural Nigeria (Ejembi and Ejembi, 2005) and it agrees with a study carried out by Eremie (2005) which states that majority of farmers in Nigeria are married as they assume early responsibility of family care in line with the African tradition and practice.

Majority (66.1%) of the respondents had a household size of 5-10 persons, while 30.7% had a household size of 1-5 persons, among others (Table 1). Household size seek to treasure reinforcement of decisions as psychological impetus is usually provided by members of one's household which constitutes, in most cases, a significant factor that can greatly enhance quality decision as ideas may be subjected to critical analysis by members of each household. It could also help each member of the household's opinion to be reinforced by one another since they will all be involved in the process; such that once an opinion is formed, it would be sustainable.

Entries in Table 1 indicate that 48.4% of the respondents had a farming experience of 10-15 years, 25.8% had been farming between 1 and 5 years, among others. This showed that majority of the farmers did not have many years of farming

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experience. This may be due to the age composition of the farming population (the modal age category of 40-50years) in the study area. Within this age category many may not have taken to farming as primary occupation in practice. This farming experience may also have the advantage of dynamism as opposed to the aged population which is usually conservative and traditional. It therefore, had positive implication on perception generally and cost-sharing, in particular. However, it had the negative effect of in-depth understanding of what farming activities entail especially as it affects extension services.

Majority (75.8%) of the respondents were engaged in farming a primary occupation while the remaining 24.2% had other means of livelihood such as trading, crafts, carpentry, etc, in addition to farming activities. This positively influences farming since income realized from other occupations can be used to obtain agricultural technologies needed in farming.

About 77.4% had an estimated annual income of between ₦200, 001 and ₦300, 000. This translates to less than ₦700 per day which indicated a condition of poverty (FAO, 2002). About 10% and 6.5% had income of ₦300, 001. 00- ₦400, 000. 00 and ₦400,001-₦500,000, respectively. According to Ejembi (2009), poverty elicits some social feelings such as marginality, helplessness, dependency, not belonging, powerlessness, inferiority and personal unworthiness in the psyche of the poor. Under this condition, it would be difficult for an individual to come up with any positive impression about life and, as such, may not be very good for positive perception. This, according to Adeniyi (2001), could lead to capability deprivation, including the ability to think and appreciate anything that has implication for monetary cost. The resultant effect is a development of the culture of poverty.

Socio-economic Characteristics of Public Extension Agents

Data in Table 2 show that 57.3% of the respondents were aged between 50 and 60 years, while about 27% were aged 61-70 years, among others. The result revealed that majority of the

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PEAs was in their productive ages and physically resilient. According to Weil (2005), there are many disadvantages of an ageing population. As people age, they become more dependent on the care of others and presents a burden for which many families find challenging. This is in contrast with the youthful age which is literally advantageous in all spheres of human endeavours, as it is usually characterized by venturesome, agility and vibrancy, both physically and mentally.

All the PEAs were males. This may be attributed to tedious nature of extension work. However, it calls for a concern that women are not well represented in extension work hence urgent attention is required to ensure equal representation of men/women in extension services. However, this posed some challenges to effective extension service in Nasarawa State where the Islamic religious beliefs place limits on degrees of male-female formal interactions.

All (100%) of the respondents had post primary education. Most (55.9%) of them had OND/HND, among others. This revealed that they were literate enough to carry out extension tasks. This finding, however, provides a degree of departure from that of FAO (2002) that high formal educational level attainment may make people not to associate themselves with rural activities of which extension work forms a major component. However, the present situation of unavailability of paid employment which, in turn, makes job choices difficult provides a possible explanation for this finding.

Results in Table 2 further indicate that 83.8% of the respondents were married, 10.3% and 5.9% were widowed and separated/divorced, respectively. This implies that the respondents had wives and children who may be providing financial assistance with which they will pay for cost of extension services provided for them.

All (100%) of the respondents had civil service as a major occupation. This implies that the PEAs were solely involved in their paid employment of extension works. This was evidence that they may be unwilling to participate in cost-sharing

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practices in terms of financial contribution as they depend fully on salaries gotten from their employers as well as the fact that they do not have any other serious stake in extension service vis-a-vis its policy.

It is evident in Table 2 that 95.6% of the respondents had a household size of 6-10 persons, while 4.4 % had between 1 and 5 persons. Household size seeks to underscore the importance of collective decision making as psychological impetus is usually provided by members of one's household which constitutes, in most cases, significant others. It can greatly enhance quality decision as all ideas may be subjected to critical analysis by members of each household. It will also help each member of the household's opinion to be reinforced by one another since they will all be involved in the process; such that when once an opinion is formed, it would be sustainable.

Table 2 shows that majority (about 59%) of the respondents had an estimated annual income of ₦300, 001. 00-600,000. 00, among others. This is comparatively low for a person to be able to cope with the present day living standard which according to Swanson *et al*. (1990), has a far reaching implication on interest to participate in voluntary socio-economic activities like cost-sharing.

Majority (72%) of the respondents had a work experience of 11-15 years, among others (Table 2). The long period of work experience could make them to use the wealth of knowledge they had acquired teach other stakeholders the need to diversify extension approaches to areas such as cost-sharing for efficiency and effectiveness of the services.

TABLE 1: DISTRIBUTION OF SOCIO-ECONOMIC CHARACTERISTICS OF FARMERS (n= 62)

Socio-economic characteristics	Frequency	Percentage

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Age (years)		
30 – 40	11	17.7
41 – 50	24	38.7
51 – 60	20	32.3
61 – 70	3	4.8
Above 70	4	6.5
Total	**62**	**100**
Sex		
Male	37	59.7
Female	25	40.3
Total	**62**	**100**
Level of Education (years)		
No formal education	47	75.8
Primary	15	24.2
Secondary	-	-
OND/HND	-	-
Total	**62**	**100**
Marital status		
Married	58	93.5
Single	1	1.6
Separated/Divorced	3	4.9
Total	**62**	**100**
Household size (numbers)		
1 – 5	19	30.7
6 – 10	41	66.1
11 – 15	2	3.2
Total	**62**	**100**

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Farming experience (years)		
1 – 5	16	25.8
6 – 10	7	11.3
11 – 15	30	48.4
16 – 20	6	9.7
Above 20	3	4.8
Total	**62**	**100**
Primary occupation		
Farming	47	75.8
Others	15	24.2
Total	**62**	**100**
Estimated annual income (₦)		
≤200,000	3	4.8
200,001 – 300,000	48	77.4
300,001 – 400,000	6	9.7
400,001 – 500,000	4	6.5
Above 500,000	1	1.6
Total	**62**	**100**

TABLE 2: DISTRIBUTION OF SOCIO-ECONOMIC CHARACTERISTICS PUBLIC EXTENSION AGENTS (n=68)

Socio-economic characteristics	Frequency	Percentage
Age (years)		
40 – 50	11	16.2
50 – 60	39	57.3
60 – 70	18	26.5

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Total	**68**	**100**
Sex		
Male	68	100
Female	-	-
Total	**68**	**100**
Level of education (years)		
Secondary	16	23.5
OND/HND	38	55.9
Degree	9	13.2
Postgraduate		
Diploma	5	7.4
Total	**68**	**100**
Marital Status		
Married	57	83.8
Separated/Divorced	4	5.9
Widowed	7	10.3
Total	**68**	**100**
Major Occupation		
Civil service	68	100
Total	**68**	**100**
Household size (numbers)		
1-5	3	4.4
6-10	65	95.6
Total	**68**	**100**
Estimated annual income (₦)		
≤300,000	**5**	**7.4**

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300,001- 600, 000	40	58.8
600,001- 1, 200, 000	13	19.1
Above 1, 200, 000	10	14.7
Total	**68**	**100**
Working experience (years)		
1-5	2	3.0
6-10	9	13.2
11-15	49	72.0
16-20	4	5.9
Above 20	4	5.9
Total	**68**	**100**

Sources of agricultural extension funding

Various sources of extension funding were examined based on knowledge of the respondents. Farmers and public extension agents identified government as the major (70.3% and 70.9%), respectively source of funding for agricultural extension service (Table 3). This implies that government is still the major provider of funds used for extension service delivery in the study area.

TABLE 3: DISTRIBUTION OF RESPONDENTS BASED ON SOURCES OF AGRICULTURAL EXTENSION FUNDING

	Farmers (n = 62)		**PEAs (n = 68)**	
Sources *	**F**	**%**	**F**	**%**
Government	52	70.3	56	70.9
Not for profit organization	9	12.2	9	11.4

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Private	13	17.5	14	17.7
Total	**74**	**100**	**79**	**100**

*Multiple responses

Areas of participation in cost-sharing by farmers

Majority (64.6%) of the farmers have contributed to cost-sharing practices in the area of provision of accommodation to public extension agents (Table 4). This may be attributed to the presence of the Islamic religion in Nasarawa State with its attendant hospitality inclination and the spirit of brotherhood. The finding is supported by Ozor *et al.* (2007) who emphasized the need and importance of cost-sharing practices as an alternative way of making extension service delivery more effective and result oriented.

TABLE 4: DISTRIBUTION OF FARMERS BASED ON AREAS OF PARTICIPATION IN COST-SHARING PRACTICES

	Farmers (n = 62)	
Areas of participation*	**Frequency**	**Percentage**
Transportation	5	6.1
Accommodation	53	64.6
Field assistance	11	13.4
Farm implements	13	15.9
Total	**82**	**100**

*Multiple responses

Problems associated with sources of agricultural extension funding

Majority (81.3%) of farmers and public extension agents (80.7%) were of the view that inadequate budgetary allocation is a problem associated with agricultural extension funding. Other problems identified

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by farmers and public extension agents were bureaucracy (12.0%) (10.9%), respectively, among others (Table 5). This agrees with Rivera (1993) who noted that inadequate budgetary allocation which leads to poor funding slows down activities of agricultural extension services.

TABLE 5: DISTRIBUTION OF RESPONDENTS ACCORDING TO PROBLEMS OF SOURCES OF AGRICULTURAL EXTENSION FUNDING

	Farmers (n = 62)		PEAs (n =68)	
Problems*	**F**	**%**	**F**	**%**
Inadequate budgetary allocation	61	81.3	67	80.7
Bureaucracy	9	12	9	10.9
Corruption	3	4	4	4.8
Erratic release of funds	2	2.7	3	3.6
Total	**75**	**100**	**83**	**100**

*Multiple responses

CONCLUSION AND RECOMMENDATIONS

Farmers and public extension agents in the study area were within the average age range of 40-55 years. There were more male farmers than their female counterpart, majority were married and moderately literate. Government was the major source of funding for agricultural extension service as indicated by the farmers and PEAs. Provision of accommodation to PEAs was the major area of cost-sharing practices contributed by the farmers. Major problem associated with agricultural extension funding in the study area as identified by the farmers and public extension agents was inadequate budgetary allocation. Other

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problems include bureaucracy and corruption, among others. There should be a gradual commencement of the implementation of cost-sharing practice as a result of high interest demonstrated by the farmers. Cost-sharing implementation strategies should be designed in collaboration with stakeholders to ensure effective monitoring in order to achieve the goals and objectives as well as ensure adequate participation of the farmers.

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