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An Evaluation of Youths Involvement in Agriculture and Adoption of Agricultural Technology Information

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Abstract: Agricultural production in Nigeria is largely subsistence and characterized by primitive tools and the preponderance of matured and ageing farmers. In Adamawa state, the youths constitute the larger percentage of farm labour. But soliciting for their continued involvement in farming is threatened by several production constraint and drudgery involved in farming. This study seeks to determine the level of involvement of the youths in farming, identify factors considered as hindrances to continuous involvement in farming among others. Two local government areas namely Mubi North and South were purposively selected and data were on several variables. Findings indicated that majority of the youths involved in farming activities are of the male sex, they are married and into mixed farming as a source of livelihood. The study showed that cereals and legumes are largely cultivated by the youths. Farm activities of interest to the youths are cultivation, weeding, fertilizer application and harvesting. The level of involvement in farming was influenced largely the nature of involvement in farming, number of wives, marital status, household size. While an independent association was found between sex, educational attainment and the level of involvement in farming. Variation was not observed for the level of involvement in farming across the two locations studied. The level of involvement in farming was determined largely by age, sex, educational status, household size and number of wives.

Key words: Youths involvement in farming, mixed farming, stepwise regression, adoption of agricultural technology, evaluation

INTRODUCTION

Most developing countries in sub Sahara Africa operate basically an agrarian economy. In Nigeria over 70% of the population are actively involved in farming at different levels (Olajide and Ogunfiditimi, 1980). Before the advent of crude oil, agriculture constitutes the viable source of revenue. Farming in Nigeria is largely subsistence, characterized by crude implements and high labour demanding. Presently food production seems to be declining over the years, while the population is on the rise. The rapid increase in population growth, decline in the cultivable land area, ageing of the farmers, poor farm yield among others threaten the fragile food security in Nigeria. With the population of Nigeria well over 150 million NPC (2007) there is a serious need to meet the manpower need for farm activities. Youth is a state or time of being young, a transition between childhood and adulthood. This stage is characterized by energy, intelligence and hope attributes that enables youths to improve their knowledge and capabilities for development and which partly compensate the seeming handicaps of limited access to economic assets such as land (Eremie, 2002). The United Nations identified a youth as person between the ages of 15 and 24 years. However, Perez-Morales (1996) had noted that in some developing countries, this range goes up to 30 years of age. He stressed that no matter what the age range may be, the point is that anytime we talk and think about youth. It implies a group of young people in the society who have a lot energy, new ideas and new ways to see life. In furtherance, Eremie (2002) had noted that the age limit ascribed to youth varies from country to country. In recent time in Nigeria, efforts have being made to incorporate the youths as an integral part of agricultural development. This is derivable from the fact that the youths constitute between 60-80% of the labour force in the country (Eremie, 2002). Therefore, for an effective and

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progressive development in agriculture to take place concerted efforts must be made to involve the young ones in farming. In Nigeria where adverse socioeconomic conditions are bound, this influence natural growth; many people remain youth up to 35 years of age. Perez Morales (1996) further pointed out that important differences exist between rural and urban youths. He noted that there is a trend for rural youth to start work and family responsibilities at an earlier age as compared with urban youth. Who are faced with challenges of achieving higher educational qualification and many difficulties of life.

Inadequate capital, problems associated with land acquisition, use of traditional tools, inadequate extension services, rural urban migration, poor rural infrastructure, pest and disease outbreak, poor processing methods and manpower (etc) still constitute hindrances to low food production in Nigeria. Also a large chunk of food crop production is carried out by farmers in the age bracket of 45-70 years. Nowadays Nigerian youths prefer a "white collar job" to farming as a profession. The critical challenge for sustainable agricultural and rural development in Nigeria is therefore the mobilization of the large number of youths as active participants in developmental process. The provision of adequate infrastructure, capital incentives and agricultural technology information to the youths may in the long run turn around the negative perception about farming. Adoption of an innovation or a decision to make a full use of a new idea by the youths requires a change in orientation and behaviour of the youths from the time he became aware of an innovation to its adoption. The adoption of an innovation by an individual is influenced largely by personnel, socio-economic and communication factors (Roger and Shoemaker, 1971).

Agriculture has been a major source of livelihood for the people of Mubi region (Adebayo and Tukur, 1999). Also a Mubi North and South local government area accommodates a large population of youths actively involved in farming and income generating activities. Moreover the locations for this study accommodate a University, Polythenic, College of Health Technology and Agriculture and a host of secondary schools. This trend could explain could explain the preponderance of youths in these communities. Therefore, an understanding of the level of involvement of the youth in agricultural activities is imperative as its outcome could provide information vital for youth development. In addition, an evaluation of access to agricultural technology information packages by the youths may provide a framework for future extension services.

The objectives of this evaluation are:

- To evaluate the socio-economic characters of youths in the two locations.
- To ascertain their level of involvement in agriculture.
- To access the relationship between the socio-economic variables of the respondents and their level of involvement in agriculture.
- To evaluate the level adoption of agricultural technology information.

Hypothesis:

- There is no significant relationship between the socio-economic characteristics of the youths.
- There is no significant relationship between the socio-economics characteristics of the youths and their level of involvement in farming.

MATERIALS AND METHODS

This study was conducted in two locations each from Mubi North and Mubi South local government. Mubi north and South local government constitute part of the Mubi region. Mubi region lies between latitude 9°30^{l} and 11°N of the equator and longitude 13° and 13° 45^{l} East of the Greenwich meridian. Mubi region falls within the Sudan savannah belt of Nigeria's vegetation zones. Two districts head namely Mubi and Sabo Layi were picked from Mubi south local government area, for Mubi North Local government area, Vintim and Wuopategi were purposively selected. These districts were purposively selected due to their high agricultural activities, population density and available tertiary institutions.

Data were collected using structured questionnaires and interview schedule administered to 150 randomly selected Youths. For the purpose of this study any individual between the age of 18 and 40 years were classified as youths and were interviewed. For each location, 75 questionnaires were administered. The variable evaluated in the study includes: Age (measured of years), marital status, educational qualification, household size, farm size (in hectares), nature of participation in farming (full time and par time) and level of involvement in farming (number of hours spent on the farm/day). For each agricultural technology information the youth were required to give information on the stage of effectiveness as "Very effective", Effective, Ineffective, Very ineffective. The "Very effective" stage was score 4, "Effective" stage "Ineffective and "Very ineffective were scored, 3, 2 and 1, respectively. Data collected were summarized and subjected to inferential statistical analysis as the mean, percentage, Chi square, correlation, Stepwise multiple regression analysis using SAS (1999) statistical package and Likert scaling test.

RESULTS AND DISCUSSION

Table 1 shows the socio-economic characteristics of the respondents. Eighty nine percent of the respondents interviewed are of the male sex as compared with the female sex (4%). This show that majority of the youths interviewed are male. Meaning that a high involvement of the males in agricultural production as compared with females. About 53% of the youths interviewed had educational qualification above primary school leaving certificate. This development may likely enhance the adoption of modern agricultural technologies. This study indicated that most of the respondents are married (87%) and to a lesser extent, 9% are single. This trend agrees with the assertion of Perez-Morales (1996) who noted that young people in rural areas get married earlier than their peers in the urban cities and also become involved in adult responsibilities before urban youths. Respondents with household size of 3 and 2 summarized 45 and 16%, respectively of the respondents interviewed. Also respondents with one wife accounted for 52% while those with 2 wives accounted for 30% of the respondents interviewed. The socioeconomic characteristics of the youths further revealed that majority (63%) of the youths are into mixed farming and a small percentage (9%) are livestock farmers. The preponderance of youth in mixed farming may be associated with desirability to secure security against crop or livestock failure. This also keeps the youth busy throughout the cropping year. Our findings show that respondents with farm size between 2-4 ha summarized 59%, while youths with farm size of 1 ha accounted for 17%, while those with 7 ha and above were 13 in number representing 9%. This is a clear indication that the youths are into small scale farming. They are likely to increase their level of production if necessary incentives are made available to them. The study showed that the youths interviewed are into full-time farming (63%) indicating that they are professional farmers. As shown in Table 1 majority (63%) of the respondents spend more than 8 h day^{-1} doing one farm activity or the other. While 9% of the respondents spend less than 4 h day^{-1}. The implication of this is that majority of the youth spend much of their time on the farm. This is sequel to the fact that they are into professional farming and the rural nature of the environment did not provide much time for to partake in other activities. During the off season periods some are likely to be engaged in dry season farming, some in

Table 1: Socioeconomic variables of the youths surveyed

Variables	Frequency	(%)	Chi square	Df	Phi coefficient	Prob
Sex						
Male	134	89	30.06	1	0.45	0.001
Female	16	11				
Educational qualification						
No formal education	30	20	18.21	3	0.35	0.004
Primary school certificate holder	40	26				
Secondary school certificate holder	30	20				
Diploma certificate	50	33				
Marital status						
Single	14	9	17.04	2	0.34	0.002
Married	133	87				
Divorced	0	0				
Widowed	3	2				
Household size						
1	38	25	17.55	3	0.34	0.0005
2	24	16				
3	68	45				
4	20	13				
Farming occupation						
Crop farmer	41	27	13.45	2	0.30	0.001
Livestock farmer	14	9				
Mixed farming	95	63				
Farm size						
1 ha	25	17	20.84	3	0.37	0.001
2-4 ha	88	59				
4-6 ha	24	16				
7 ha	13	9				
Nature of involvement						
Full time	126	85	29.07	1	0.47	0.001
Part time	24	15				
Hours spent on the farm						
<4	14	9	16.82	2	0.33	0.0008
5-8	41	27				
8>	95	63				

Table 2: Types of crops planted by the youths *

Crop type	(%)
Maize	67
Cowpea	57
Millet	23
Rice	12
Guinea corn	30
Soya beans	6
Ground nut	21

*= Multiple responses

Table 3: Farm activities involved by the youths*

Farm activities	(%)
Fertilizer application	69
Sales	40
Insecticides application	21
Harvesting	63
Processing	30
Farm sanitation	15
Breeding	20
Vaccination	18
Bush clearing	21
Feeding livestock	53
Weeding	72
Cultivation	86

* = Multiple responses

Table 4: Challenges faced by the youths in farming

Challenges	(%)
Low capital	70
Risk	52
Drudgery	51
Poor yield	64
Social amenities	40
Inadequate farm inputs	65
Farm location	40
Parental restriction	10

Table 5: Correlation coefficient among selected variable and the number of hours spent on the farm

Variables	Correlation coefficient
Age	0.02
Sex	-0.28**
Educational status	-0.24**
Marital status	0.16**
Number of wives	-0.01
Number of children	0.23**
Household size	0.27**
Type of farming	0.15
Farm size	-0.07
	-0.17
Nature of involvement in farming	0.27**

**= Significant at 1% level of probability

marketing of their farm produce and others take care of their livestock. Occasionally, they find time to engage in social activities and enlist in social groups that will contribute positively to their farming activities.

As shown in Table 2, cereals and legumes are largely cultivated in the locations evaluated; more specifically maize 67% of the respondents cultivate maize. While 57, 30 and 23% are into cowpea, guinea corn and millet cultivation. Table 3 shows a summary of the type of farm activities youths are actively involved. Of all the farm activities land proportion (86%), weeding (72%), fertilizer application (69%), harvesting (60%), feeding livestock (53%) and sales of farm produce (40%) are activities youths are highly involved. The foregoing agrees with findings of Roy (2003). They posited that youths in several locations in Nigeria are engaged in energy demanding farm activities with the hope of earning an income. Therefore, to secure further interest of the youths in agriculture, provision of incentives and necessary farm inputs will assist in further involvement in farming.

The youths interviewed highlighted several limitations to their involvement in farming. (Table 4). These include low capital, poor yield, parental restriction, drudgery in farming, farm location and land acquisition among others. However, low capital outlay was ranked first (70%) as a major impediment to youth involvement in agriculture. This was followed by inadequate farm inputs (63%), poor yield (64%), drudgery (51%) and risk (52%). To a lesser extent was parental restriction (10%). This trend could be associated with the fact that farming is a major occupation in the study area and both the parents and the children are involved in farming. In most cases the parents' passes on to their children farmlands as well as agricultural technology information as part of their inheritance. It could be possible that limitations to an effective participation in farming could vary from location to another, but this was not so for this evaluation. The study showed that significant differences were observed across locations for number of wives, number of children, household size and farm size (Table 5). But no significant variation exist for the number of hours spent on farm activities across the two local government area surveyed.

The analysis of the relationship between the socio-economic variables and the level of youth involvement in farming (Table 6) indicated that sex ($r = -0.28^{xx}$), educational qualification ($r = -0.24^{xx}$), harvested size ($r = -0.24^{xx}$), recorded a statistically ($p<0.05$) negative correlation coefficient with the level of participation in farming by the youths. A negative relationship between educational qualification and involvement in farming implies that youths with lower educational qualification tend to participate more in farming activities. As involvement in farming will provide a source of income. Conversely the educated youths tend to seek a better job to avoid drudgery involved in farming. Similarly, the negative correlation coefficients recorded between sex and level of participation, may suggest that as more males constitute the youth, hence involvement in farming will be high and the reverse could be a low participation if the female sex predominates. The household size ($r = 0.27^{**}$), number of children ($r = 0.28^{**}$) and nature of involvement in farming ($r = 0.27^{**}$) correlated positively with the participation in farming. This implies that respondents

Table 6: Analysis of variance for selected variables across locations studied

Source	Df	Age	No of wives	Children	Household size	Farm size	Hours spent in farming
Location	1	32.83	14.26**	373.72**	7.02**	12.96**	1.76
Error	148	11.06	2.40	9.01	0.88	0.57	0.65
R^2		0.02	0.04	0.22	0.05	0.13	0.02
CV		9.10	102.82	55.36	48.20	34.74	32.06

Table 7: Stepwise contribution of the variable to the involvement if farming by the youths

Variable	Partial R^2	Model R^2	Probability
Age	0.08	0.08	0.005
Sex	0.07	0.15	0.01
Educational status	0.05	0.20	0.007
Household size	0.04	0.24	0.003
Number of wives	0.03	0.27	0.04

Table 8: Effectiveness rating by the youths of agricultural technology information packages

	Very effective	Effective	Ineffective	Very ineffective	
Mechanized land preparation	73 (1.4%	68 (1.06)	28 (0.37)	21 (0.19)	3. 33
Planting technology	83 (2.21)	62 (1.24)	3 (0.04)	2 (0.01)	3.5
Modern storage	3 (0.08)	2 (0.04)	57 (o.76)	88 (0.59)	1.47
Disease management	23 (0.61)	25 (1.50)	56 (1.12)	46 (0.30)	2.53
Improved seeds	84 (2.24)	62 (1.24)	2 (0.04)	2 (0.04)	3.56
Modern processing	12 (0.32)	8 (0.16)	53 (0.17)	77 (0.51)	1.96
Marketing	21 (0.56)	36 (0.72)	73 (0.97)	20 (0.13)	2.38

with a large farm size, a high number of children will participate actively in farming activities. However, these variables solicit for a high involvement in farming. This trend is expected as more hands would be needed in the farm. Also full time involvement in farming will secure high level of involvement in faming.

The stepwise contribution of selected variables to the participation of farming activities return the age of the respondents, sex, educational qualification, household size and number of wives to have summarized 27% of observed variation in the level of participation by the youths in agriculture (Table 7). The age of the respondents independently accounted for 8%, alongside with sex summarized 15%. Educational qualification, household size, number of wives summarized 5, 4 and 5% of variation, respectively. Other variables did not meet the a = 0.05 level of entry into the model.

Table 8 shows the effectiveness rating of agricultural technology information exposed to by the youths in Mubi north and Mubi south local government area. Using a 4-point Likert scale. Item that scored 2.5 (i.e., XS=2.5) and above were rated as effective in production. While those that scored below 2.5 were regarded as not effective in production. Findings in this study showed that the most effective crop production technology information among the youths are improved seeds (3.50) followed by planting technology (3.50) and land preparation (3.31). Figure in parentheses are the scores of individuals issues.

CONCLUSION

The study indicated that in the study area the youths are largely involved in farming. However, they operate on a small scale The provision of adequate incentives may solicit for an increased participation in agriculture. This can be achieved through targeting and encouraging the youths to play active role in agricultural production activities. Efforts should be made to provide more incentives to the youths to solicit for more participation in farming.

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