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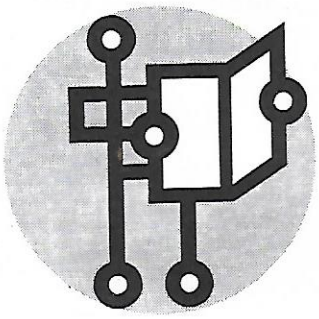

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ANNALS OF CHILD AND YOUTH STUDIES

BRIEF HISTORY OF THE JOURNAL

At the 7th Annual General Meeting of the National Research and Development Network of Children and Youth in Agriculture Programme (CY AP-Network: visit our website www.cyiapnetwork.org for more information) held at Tai Solarin University of Education, Ijagun, Ijebu-Ode, Nigeria on the 28th November, 2006, it was resolved that a journal named Annals of Child and Youth Studies (ACYS) of the Network be established Dr. Dixon Olutade Torimiro, an Associate Professor in the Department of Agricultural Extension and Rural Development, Obafemi Awolowo University, Ile-Ife, Nigeria was unanimously appointed as the Editor-in-Chief and the Department was chosen as the Editorial Office of the Journal.

The Networks Editorial Board are

CONTENTS

inspirational and timely. They address topical local and global issues in the fields of child, youth and agricultural developments. Ogunba and Akinyele open the discussion with their interrogation of determinants fathers' involvement in childcare. Their findings indicate that roles of fathers have strong implications for mother-child dyad relationship as well as for the overall development of child. Oyekunle and colleagues' findings show that children at certain age begin to participate in farming activities and that such participation is very important to achieving food security. Ajayi, on the other hand, posits that children's participation in farming activities varies in rural areas not only because of their personal characteristics but also because of their diverse household-related factors. **Sodiya and colleagues identify various farming hazards that children encounter during their participation in farming activities while** Kehinde and colleagues tackle issues of child-labor associated with children's participation in farming activities. **Sodiya and colleagues' findings as well as those of** Kehinde and colleagues collectively suggest that though children's participation in farming activities is beneficial, removing hazards and reducing child-labor will make the participation more profitable and sustainable. They also indicate how the hazards and the child-labor can be reduced if not eliminated.

Ogunjimi and Farinde shift the discussion from children to youth. They examine youths' attitude toward involvement in farming. Their findings alert every Agricultural Youth Empowerment Programme as a case study, posit that the level of involvement of youth in agriculture is a reflection of the level of support and training they had enjoyed from social institutions around them. In other words, they argue that lack of excitement among farm youths in Ogunjimi and Farinde's study is a function of the dwindling enthusiasm among various stakeholders' institutions. Lawal-Adebowale and colleagues further the discussion on the role of institutions in farm youths' disposition towards agriculture. They conclude that agricultural education can raise farm youths' enthusiasm. Similarly, Adisa and Adeloye identify parental support as a crucial institutional variable that can increase participation of farm youth, especially the in-school category, in agriculture. Okorie and colleagues move the discussion of farm youths' involvement in agriculture from issues of institution to environment. They argue that involvement of youths in climate-smart-agriculture is not a cost to be justified but rather an investment to be leveraged. Adekunle and Agboola study the application of environmentally responsible practices, such as indigenous farm practices, in vegetable production. They find that sources of information are a major determinant of the use of the practices. Omotara and Yusuf, on the other hand, identify challenges associated with the transferring and utilization of indigenous knowledge system among farm youths. They also indicate ways of overcoming the challenges.

DETERMINANTS OF FATHER'S INVOLVEMENT IN CHILDCARE IN OSUN STATE NIGERIA: IMPLICATION FOR SUPPORT FOR THE MOTHER-CHILD DYAD

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Traditionally, care, nurturing food preparation and other support for the growing child is the sole responsibility of women in Nigeria. The study investigated the involvement of fathers in child care of both urban and rural fathers in Osun State of Nigeria. A multistage random sampling technique was used to select 450 mothers of children between the ages of 0-24 months from rural and urban communities. Mothers were interviewed about their spouse socio economic characteristics and involvement in child care using a structured interview schedule. Results revealed that 77.4percent of fathers were involved in various activities in child care. Fathers engaged more in giving financial support (93.7%). Some play with the baby (82.8%), and carrying of the baby (81.5%), while feeding the baby and bathing the baby followed in frequency with percentages of 23.5percent and 14.4percent respectively. Most fathers (13.3% and 9.3%) do not change diapers or wash baby wears respectively. Care involvement of fathers increased with years of formal education. The result of correlation analysis revealed that husband's involvement in child care had negative significant relationship with stunting($r=-0.202$), $p<0.05$). Fathers educational level also correlate positively($r = 0.258$) with fathers involvement in child care. Factor analysis showed that age of father, education, place of residence and age of child are the major determinants of father's involvement in care. The study concluded that young fathers with tertiary education living in the urban centres are more involved in child caring activities.

Keywords: fathers, mothers, child, care involvement and support

INTRODUCTION

Women play important roles in agricultural production and processing and they are the key to household food security. Rural women work ranges from crop production to harvesting operations, from livestock rearing to raising babies and they are expected to regularly engage both domestic and

(Khalida, 2009). Traditionally mothers care for children, are engaged in domestic activities, are full time housewives, but recently trends have changed as more women are now into full time paid employment thereby increasing the work load of women (Sevilla-Sanz, 2005). Traditionally in Nigeria, it is the sole responsibility of mothers to provide care, food and other related support for the growing child (Ojofeitimi and Adelekan, 2006). However, the increasing number of working mothers has set a change in roles of mothers and fathers in Nigerian families. In the last 20 to 30 years, research has increasingly focused on fathers due to the growing role modern day father play in care giving and contributing to the overall development and well being of their children (Moore and Kotelchuck, 2004). Mothers spend more than twice as much time in childcare than fathers do, a pattern which holds for all countries and the different subgroups. On average the childcare takes up 42 minutes per day for fathers whereas it occupies 1 hour and 40 minutes of mothers' time (Society at a Glance, 2011).

There is then uncertain availability of nutritious adequate and safe food as food choices changes from home-made food to street and convenience foods and also the reduction of quality care for the growing infants

virtually every culture infant care is almost exclusively a woman's realm, no doubt due in part to the fact that only women can breast feed. Yet the father has important roles to play both in sharing childcare responsibilities and in providing crucial support to the vulnerable mother-child dyad in the early weeks and months of life (Greiner, 1998). Many have grown up thinking of baby care as "women's territory." Some are disconcerted by their newborn's appearance, or feel unsure of their ability to look after a baby (Hoffman, 2002).

Men are sometimes urged to get involved with their babies because "it's good for the child's development" or because their wife needs their help. Occasionally, fathers take on the major burden of childcare and thus know it is possible for men to do more. This is much needed in a changing world that puts increasing pressure on women, threatening to reduce the quality of care received by children, particularly among impoverished groups struggling just to survive (Greiner, 1998). A pregnant mother generally makes the decision to breastfeed before her baby is born. Her decision is strongly influenced by the level of support she receives from the baby's grandmothers and/or her partner (Canadian Child Care Federation, 2001). From studies of

time allocation within the family from different countries, men have more leisure time than women (UNU, 1990; Poalisso et al., 1991). This is an inexpensive potential source of additional support to the breastfeeding mother available already within the home.

Sharma (1997) established an evidence of the father's role in breast-feeding decisions. Support of the father was identified as the strongest and most consistent factor associated with the willingness to breast feed among mothers. Father's influence is frequently and consistently associated with breast-feeding intent, initiation and particularly duration of breast-feeding. Naturally it would be valuable if the father understands the benefits of breastfeeding and is willing to support the mother in doing so if she so chooses. It would be even better if he were willing and able to provide her with emotional support and assistance to get through any difficulties or crises that might occur during breastfeeding (Greiner, 1998).

There are many types of support women need from the baby's father. When fathers look after a baby, they develop a "language of touch" that both understand. Bathing, burping, comforting, dressing and changing diapers are all things that fathers can do (Hoffman, 2002). Once solid feeding starts, the father could also easily take part or better yet take full or major responsibility. It works much better when a man feels he is completely in control, understands what to do, and figures out the details of how to do it himself. Men enjoy much more doing things their own way rather than being given instructions from a woman on how to do something her way (Greiner, 1998). Adekunle (2005) observations of these families with severely malnourished children indicate that full family support, especially from fathers, is an important factor in a child's nutritional status. This study therefore investigated the involvement of fathers in child care since men's parenting role has in the past been neglected by researchers, educators, policy-makers, employers and the media.

Objectives of the study

The general objective of the study is to examine the male involvement in childcare responsibilities and support to the vulnerable mother-child dyad. The specific objectives are to:

i. identify the characteristics of children
ii. identify the socio economic characteristics of fathers
iii. identify the activities of fathers in child care
iv. determine the effect of fathers involvement on child nutritional status

METHODOLOGY

The study was carried out in Osun State of Nigeria. A multistage random sampling technique was used to select a total of 450 mothers who were interviewed about their husband's socio economic status and involvement in child care. The interview schedule was validated through content validity with the objectives taken into consideration. Child nutritional status was also determined with anthropometry measurements. Data on height-for-age and weight-for-height were converted to Z-scores of the WHO/National Center for Health Statistics (NCHS) reference population using the EPINUT component of the Epi Info 6.04 package. This was further grouped into stunting, wasting and underweight using the Z score. Six care activities were examined and scored one mark each. Data generated by the study were analyzed using SPSS version16.0. Data were analyzed using frequency count, percentage, cross tabulation and correlation. Cross tabulation of father's occupation, age and formal education and the type of activities involved in was also carried out. T test analysis was carried out to determine difference in child care activities of rural and urban fathers. Correlation analysis was carried out to determine the relationship of father's involvement and child nutritional status.

RESULTS AND DISCUSSION

Respondents' demographic characteristics

Data in Table 1 showed that 55.8percent of the children were female while 44.2percent were male. This finding is consistent with National Population Census figure for Osun State, which indicated that there were more female than male in the State National Population Census 2006). About 33.7percent of the children were between the ages of 0 and 6 months, 24.7 percent were 7 - 12 months, while 18.6 percent and 22.9 percent were between the ages of 13 and 18 months and 19 and 24 months, respectively. Older children those within the age bracket of 13 and 24 months were almost of the same percentage for both communities, while infants between the ages of 0 - 6 months were more in the urban communities compared to the rural communities. Mean age of children was 11.4±7.4.

With respect to parents' socio-demographics, Data in Table 1b showed that the fathers' mean age was 37.6±8.0. None (0%) of the fathers was below 20 years, but few (1.9%) were above 60years, and this group was more in the rural than urban communities. About 6.5percent and 55.8percent of the fathers were between the ages of 20 and 29 years

respectively. Only 28.7percent were between 40 and 49 years just as only 7.0percent were between 50 and 59 years. Only a very few (1.5%) of the fathers had no western education. About 16 percent had primary school education, 41 percent had secondary education and some (39.2%) attended tertiary institutions. None (0%) of the fathers in the rural settings had tertiary education; about 56.2% of them had secondary education.

However, many (46.7%) of the fathers in urban communities had tertiary education. Many (37.1%) of the fathers were civil servants, some (34.6%) were traders and businessmen just as 8. 2percent were artisans while others (20.1%) were farmers, cyclist, pastors and drivers. Civil servants were concentrated in the urban centre (43.7%) than in the rural communities (16.9%).

A few (0.9%) of the fathers had income between N60, 000 and ₦70, 000while many (57.9%) had income between N10, 000 and ₦20, 000(28.5%) and ₦20, 001–₦30, 000(29.4%). Other groups were ₦30, 001 – ₦40, 000(18.7%), ₦40, 001 – ₦50, 000 (6.4%),–₦50, 001 – ₦60, 000(0.9%) and ₦60, 001 – ₦70, 000(0.9%). However men in the rural communities have lower income than their urban counterparts.

Data in Figure 1 showed that many(93.7%) of the fathers engaged in giving financial support, playing with the baby (82.8%), and carrying the baby (81.5%), while 23.5 percent and 14.4percent were involved in feeding and bathing the baby, respectively.

A tabulation of father's characteristics and involvement in caring activities

Father's occupation in cross tabulation with the various activities fathers were involved in on Table 2 revealed that fathers that were civil servants participated the more in child care than others. They participated mostly in playing with baby, carrying baby and giving financial support. Traders and business men also do participate but that of fathers that were artisans were particularly low. Changing of diapers, bathing baby and washing children's wears were activities that recorded low involvement of fathers.

Age of fathers and care involvement

The result in Table 2 revealed that younger fathers especially between the ages of 30-39 were more involved in child care compared to their older counterparts. Involvement of ages 40-49 was also high compared to the very young fathers of 20-29 years of age which was particularly very low.

show much interest in child care.

Father's years of formal education and care involvement

As presented on Table 2 , fathers that have above the primary level of education participated more in child care. However, the very educated ones with postgraduate degrees show little interest in child care activities. Fathers with primary school education also participated but not as fathers that have tertiary education which that has the highest involvement.

Maternal occupation and father's care involvement

Table 2 shows that maternal occupation has some effect on the type of care received from the husbands. Housewives received lower participation from spouses in caring activities. Women that received more financial support were those that were traders and spouses of fathers that were civil servants engage more in for washing of children wears.

Father's location and care involvement

Results revealed that fathers in the urban communities participated more in all the caring activities as compared to their rural counterparts with the highest in washing of wears (Table 2).

Age of child (months) and father's care involvement

Results revealed on Table 2 shows that fathers were involved in caring for children of different ages. However in bathing of babies fathers preferred the children in the age range of 19-24.

Paternal characteristics and child nutritional status

Table 3 shows the result of the linear correlation between paternal characteristics and child nutritional status. Age of father, father's years of formal education and husband involvement in child care were correlated with the three presentation of malnutrition. Only husband involvement in child care had negative significant relationship with stunting($r=-0.202$), $p<0.05$).

Difference in care practices of fathers

Result on Table 4 revealed the difference in caring activities involved in both rural and urban communities. Fathers in the urban communities were more involved in caring activities with significant difference in all the activities ($p<0.000$).

Determinants of father's involvement

The variables in this study were inter-correlated to give a result of varimax factor rotation pattern in order to identify the principal factors. Data

presented on Table 5 shows the result of the varimax factor rotation with the variables that were highly loaded on each of the four factors extracted. The factors are age of father, educational status, place of residence and age of child.

Mothering involves more overall time commitment , more multitasking, more physical labour, a more rigid timetable, more time alone with children, and more overall responsibility for managing care than fathering (Craig, 2006). Although mothers still shoulder the lion's share of the parenting, fathers' involvement relative to that of mothers appears to be on the increase (Yeung,et al, 2001). In the study area, fathers are involved in various activities in child care which include carrying, playing, feeding, bathing and changing diaper for the infant. However, fathers were more involved in playing and carrying of babies more than any other activities in child care. Research has showed that children whose fathers are involved in care have better educational outcomes (Peters et. al., 2008). A number of studies suggest that fathers who are involved, nurturing, and playful with their infants have children with higher IQs, as well as better linguistic and cognitive capacities (Pruett, 2000; Cowan, et. al., 2008).
In contrary to Yeung, et al, (2001) study that revealed that father involvement is highest when children are young , in this study fathers tend to be more involved with older children (19-24 months). The feeding of the baby, both breastfeeding and complementary feeding is done by the mother, but men also can be involved as soon as complementary feeding starts. This however should include complementary feeding since this involve the using of cup/plates and spoon for the baby which is a lot easier for the fathers to handle. The breastfeeding period is usually a time of bonding for both mothers and child. Men also need to know that they will feel left out and experience jealousy at times during the first months, as the mother and baby develop a special bonding. But the baby's bonding with the father will increase as time goes by, as long as they continue to spend time together.

Fathers' involvement in child raising is influenced by factors such as job constraints, education and their earlier experiences (Dubeau, 2002). Civil servants or educated men were more involved, but the very educated fathers participated less. Mothers' work hours have no effect on children's time with fathers (Yeung, et al, 2001). In the study fathers participated more in child care when mothers engaged in paid employment. Just as mothers are involved in the workplace, fathers are increasingly involved in all aspects of their children's care (Bianchi, Robinson & Milkie, 2006; Sandberg

& Hofferth, 2001). Women that are full time housewives had limited participation of fathers in child care. They were supposed to take the full responsibility of childcare, however often times they combine this with other household chores like fetching of firewood, water and agricultural production which further increase their work load leaving less time for child care.

Young fathers in particular are more inclined to take care of their children. They are more concerned about their children's upbringing and they are ready to dedicate more energy toward it than older fathers. They are more open to the idea of an interchangeability of roles, especially with respect to very young children. When fathers engage with their children in positive ways, they contribute to the development of their children and to their own enjoyment and sense of purpose (Lamb & Lewis, 2004; Edwards, Sheridan & Knoche, 2008). Stunting which is chronic malnutrition in children had a relationship with involvement of fathers in caring activities. Especially in the early years of children were there are young and older children to take care, fathers could take up the responsibility of care of the older children to allow more time for mothers with children that are still breastfeeding or on complementary feeding to combat protein energy malnutrition of under-five children. Breastfeeding is the first step in life which ensures that infants and young children get a healthy and nutritious start in life. It continues to provide up to half or more of a child's nutritional needs during the second half of the first year and up to one third of the second year (WHO, 2001).

Fathers have a direct impact on the well-being of their children and also have a powerful and positive impact upon the development and health of children (Rosenberg and Wilcox, 2006).

Significant difference existed between the involvement of fathers in urban and rural communities. Decisions are greatly influenced amongst rural fathers by cultural practices and values. It is often seen as a taboo to engage in household activities and child care. It is important as seen in Rosenberg and Wilcox, 2006 study that fathers should be responsive to their babies' cries, hold and hug them often, and participate in their basic care e.g., feeding, changing diapers. The involvement of fathers in child care will create more time for women and encourage the adoption of better feeding practices for infants and also to attend to other household chores which traditionally may be a "taboo" in the African setting. Involved fathers bring positive benefits to their children that no other person is as likely to bring (Stanton, 2003).

CONCLUSION

The health of both mother and child could be enhanced when fully supported by household members especially the father. Fathers should get involved in more caring practices. More time will then be available to women for all other activities involved in child care especially breastfeeding which is the best source of nutrient for the 0-6 month's infant. Men can engage more in activities such as feeding the baby, wash children wears and bathing of babies. Men should be educated of the importance of their involvement as it affects the development of the child as this will help the mother in adopting the best caring option for the growing child.

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Table 1a: Frequency distribution of the characteristics of children

Variables	Urban No=337		Rural No=113		Total No=450	
	Frequency	%	Frequency	%	Frequency	%
Sex						
Male	145	43	54	47.8	199	44.2
Female	192	57	59	52.2	251	55.8
Age of children (months)						
0 – 6	114	33.8	37	32.7	150	33.5
7 – 12	82	24.3	27	23.9	111	24.8
13 – 18	64	19.6	21	18.6	84	18.7
19 – 24	75	22.3	28	24.8	103	23.0

Table 1b: Frequency distribution of father's socio - economic characteristics

Variable	Urban (337)		Rural (113)		Total (450)	
	Freq.	%	Freq	%	Freq	%
Age of father (years)						
20-29	13	4.8	11	11.1	24	6.5
30-39	160	59.3	46	46.5	206	55.8
40-49	75	27.7	31	31.3	106	28.7
50-59	19	7.0	7	7.1	26	7.0
>60	3	1.2	4	4.0	7	1.9
Years of father's education						
None	6	1.9	0	0.0	6	1.5
1-6(primary)	40	13.1	27	30.3	67	16.9
7-12(secondary)	112	36.6	50	56.2	162	41.0
13-18(tertiary)	143	46.7	12	13.5	155	39.2
>18(postgraduate)	5	1.6	0	0.0	5	1.3
Father's Occupation						
Artisans	28	8.7	7	8.8	35	8.2
Trading/Business	116	36.0	32	30.1	148	34.6
Civil Servant	141	43.7	18	16.9	159	37.1
Others	37	11.6	49	44.2	86	20.1
Spouse Occupation						
Artisan	23	6.8	4	3.5	27	6.0
Trader	171	50.7	65	57.5	236	52.4
Civil servant	96	28.5	8	7.0	104	23.1
Others	10	2.9	26	23.1	36	8.1
Housewives	37	10.9	12	10.6	49	10.4

Figure 1: Fathers involvement in care

Table 2: Cross tabulation of fathers Characteristics and care involvement

Characteristics	Change diaper	Bath baby	Feed baby	Play with baby	Carry baby	Wash wears	Financial support	P value
Fathers occupation								
Artisans	10	06	05	30	30	07	32	
Traders	13	12	31	118	114	06	143	0.00
Civil Servant	28	35	49	149	147	22	160	0
Others	08	12	20	70	70	07	81	
Age of fathers(years)	07	07	05	33	34	03	42	
20-29	26	31	52	178	176	22	199	0.37
30-39	15	16	26	92	91	10	99	7
40-49	02	07	12	26	25	01	32	
>50								
Fathers level of education	09	09	13	60	60	04	69	
Primary School	22	21	40	130	125	16	153	0.00
Secondary School	23	27	45	142	141	16	152	0
Tertiary	03	05	03	05	05	03	05	
Postgraduate								
Spouse occupation								
Housewives	04	08	09	18	18	03	21	
Artisans	07	07	07	33	33	04	33	0.00
Traders	24	25	45	187	184	16	219	4
Civil Servant	21	25	38	102	101	18	110	
Others	03	01	05	26	25	01	30	

Age of child(months)	17	12	20	116	112	11	142	
0-6	23	14	25	98	97	13	105	0.06
7-12	09	17	27	69	70	09	77	3
13-18	11	23	34	90	88	09	98	
19-24								
Father location								
Urban	50	51	80	288	281	36	315	0.00
Rural	09	14	25	84	85	06	106	5

Source: Field Survey

Table 3: **Correlation analysis showing relationship between paternal characteristics and child nutritional status**

Variable	Weight for height (Wasting)			Weight for age (Underweight)			Height for age (Stunting)		
	Correlation Coefficient (r)	Coefficient of determination (r^2)	% of Contribution	Correlation Coefficient (r)	Coefficient of determination (r^2)	% of Contribution	Correlation Coefficient (r)	Coefficient of determination (r^2)	% of Contribution
Age of father	0.064	0.00409	0.40	0.022	0.00048	0.048	-0.020	0.0004	0.04
Father's years of formal education	0.041	0.00057	0.057	-0.005	0.00027	0.027	-0.053	0.0028	0.28
Fathers involvement in child care	0.077	0.0059	0.59	0.011	0.00012	0.012	-0.202*	0.0104	1.04

Table 4: T test for rural and urban fathers

Variables	t	df	Sig. (2-tailed)
Change diaper	117.605	336	.000
Feed baby	86.708	336	.000
Play with baby	33.458	336	.000
Carry baby	32.961	336	.000
Wash wears	147.318	336	.000
Bath baby	88.706	336	.000
Financial support	29.713	336	.000

Table 5: Principal component analysis of determinants of father's involvement in care

	Factor label names	Eigen value	Proportion variance	Percentage of variation	Cumulative % variance
1	Age of father	3.073	0.2364	23.64	23.64
2	Education	2.126	0.1635	16.35	39.99
3	Location	1.418	0.1090	10.90	50.90
4	Age of child	1.230	0.0945	9.45	60.36

PARTICIPATION OF FARMERS' CHILDREN IN FARM ACTIVITIES FOR SUSTAINABLE FOOD SECURITY IN ODEDA LOCAL GOVERNMENT AREA OF OGUN STATE, NIGERIA

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The study examined the participation of farmers' children in agricultural activities in the study area. A Multi-stage Sampling technique was used to select 112 respondents for the study. Chi-Square, Pearson Product Moment Correlation and Spearman Correlation were used to analyze the data. Available data showed that the mean age of the children was 14.29 years. and (58.0%), were females. Most (55.2%) were Christians with (42.0%) in primary schools and (58.0%) in secondary schools. Majority (85.71%) participated in processing of agricultural produce while (33.92%) participated in land preparation. The rate of participation in other farm activities varies among the children. Most (79.47%) showed low interest in farming, (16.07%) indicated high interest while (4.46%) showed no interest. Most (91.07%) saw tiredness after returning from school and domestic activities during weekend as the foremost constraint to their participation in agricultural activities. Other constraints identified were drudgery associated with farming (82.14%), non profitability of farming (53.37%), operational hazards (30.35%), lack of modern farm equipment (19.64%), lack of rural infrastructural facilities (16.07%) and lack of interest in agriculture (6.25%). Chi-Square analysis showed a significant association between the children's participation in agricultural activities and sex (χ^2 1.83, $p \leq 0.05$), education ($\chi^2 = 6.12$, $p \leq 0.05$). An inverse relationship was established between the constraints experienced by the children and their participation in agricultural activities ($r=-0.20$, $p=0.00$. It was concluded that sex and education played significant roles in children's participation in agricultural activities.

Keywords: Participation; farmers' Children, Farm activities, Food security.

INTRODUCTION

Agriculture is the most important industry in Nigeria and therefore occupies a strategic position in the economy. However, recent developments, showed agricultural production as been on the decline, perhaps due in part to the low productivity levels of small scale farmers.

The question of food sufficiency and security is germane to the survival of the human race. Furthermore, stability of the economy of the nation is considered important as well. Over 800 million people throughout developing countries around the globe and beyond do not have enough food to meet their basic needs (Ladele *et al.*, 1996).

Consequently, millions of people experience prolonged hunger resulting in malnutrition, growth retardation, susceptibility to diseases and sometimes outright death due to starvation. According to NARP (1997), nearly half of Sub-Saharan Africa's total population lives in households suffering from food deprivation, not because they lacked capacity to produce enough food for its fast growing population but rather that the wrong focus has often been applied by planners in food security strategies.

Jibowo (1998) emphasized that students who grew in rural areas are more likely to show interest and participate in agriculture than those who grew up in urban centers. Adedoyin (2000) also reported that rural children were future role players in agricultural economy of any nation.

Participation was conceptualized by Paul (1987) as an active process through which people influence the direction and execution of development in terms of income, personal growth and self-reliance. Participation of farmers' children in the context of this study connotes the physical involvement of rural children in agricultural production activities with a view to increasing family labor force hence increasing agricultural production and family income.

The most pressing challenge of Nigerian Agriculture Practices in this century is how to meet the food need of an ever increasing population in the face of myriads of social, cultural and economic problems (Fakoya et al). Consequently, the Nigerian government, through the various agricultural agencies has made attempts at assisting farmers so that they can improve their levels of agricultural production. Farmers due to age factor, require their children's

participation to improve the production profile.

It is against this background that this study provided answers to the following research questions: What are the farming activities available to the children to participate in? To what extent do the children participate in these activities? How do the children perceive farming? Are the children interested in farming? What are the constraints associated with children's participation in agricultural activities.

METHODOLOGY

The study was conducted in Odeda Local Government Area of Ogun State, with a land mass area of 1263.45 square kilometers. The set ups of the study area is basically rural and the inhabitants are predominantly farmers who practice mixed cropping and mixed farming. They grow tree crops, prominent among which are cocoa, kola nut, oil palm, oranges and mango, as well as food crops like yam, cassava, plantain, banana maize and cowpea. Major livestock in the area include poultry, pigs, goats, sheep and cattle. The population of the study consists of farmers' children in the study area. A multi-stage sampling procedure was used to select 112 respondents. The study area has 2 extension blocks; they are Ilugun and Opeji blocks which have 6 and 8 cells respectively. Three (3) cells (50%) were randomly selected from Ilugun block and four villages were selected randomly from each of the cells giving 12 villages while 2 households were randomly selected from each of the villages to give a total of 24 households from Ilugun block. Four (4) cells (50%) were randomly selected from Opeji block and 4 villages were selected randomly from each of the cells to have 16 villages while 2 households were randomly selected from each of the villages to have a total of 32 households from Opeji block. Two (2) children whose parents were predominantly farmers were randomly selected from each of the households. In all, 48 children from Ilugun block and 64 children from Opeji block to make a total of 112 children were used for the study. Primary data used for the study were collected through the administration of interview schedule tailored towards realizing the objectives of the study. Variables studied included the personal characteristics of the children, participation of children in agricultural activities, interest of children in agriculture, children perception of agriculture and constraints associated with children's participation in agricultural activities. Descriptive statistical tools were used to describe the personal characteristics of the respondents. Pearson product moment correlation (PPMC), Chi- square and Spearman

Correlation were used to test the hypotheses of the study.

RESULT AND DISCUSSION

Socio economic characteristics of the farmers' children

Findings as indicated in Table 1 showed that the mean age of the Children was 14.29 years. This suggests that the children were old enough to participate in most of the agricultural activities engaged in by their parents. Majority (58.0%) were female while most (55.20%) were Christians with 42.0 percent in primary schools and 58.0 percent in secondary schools. Available data further showed that most (65.2%) of the children were Christians. In addition, majority (77.67%) used 1-2 hours on agricultural activities per day while about (68.75%) participated in agricultural activities in 3-4 days per week. More than half (55.36%) of the children have 4-6 years of experience on the farm. In other words, they have been participating in agricultural activities in the last 4-6 years and have been contributing to the household income. This aligns with the findings of Basa (1998) who confirmed that children contribute as high as one third of household income. This finding is also in agreement with the ILO (2009), who observed that in Nigeria, an estimated 12 million children participate in various categories of work including agricultural extension practice is that the more the children participate in agricultural activities, the better the family income and agricultural production. Such participating children also stand the chance of replacing the ageing farmers who currently dominate the farm labor force.

Interest of children in agricultural activities

As shown in Table 2, most (79.47%) of the farmers' children had low interest in agricultural activities, 16.07 percent showed high interest while few (4.46%) showed no interest in agriculture. The low interest shown by the children might be due to the constraints associated with farming. For example, lack of rural infrastructure and social amenities which has heightened the level of participation of children in the supply of farm labor. This observation is in consonance with the opinion of Dorgaramaci and Naidu (1985) who maintained that socio economic development is inversely related to the incident of child labor. The result is also in agreement with Akinkanmin and Williams (1997) who found that children's interest in farming activities is rapidly diminishing. In the same vein, Auta (1999) deduced that the cause of the diminishing can be attributed to inadequate and improper integration

the nation. For agricultural extension to have more positive impact on the agrarian society, the interest of rural children should be aroused and sustained such that they can become future farmers with a view to improving agricultural production in Nigeria.

Participation of Children in agricultural activities

Children play vital roles in agricultural development. This was attested to by the available data on various agricultural activities engaged in by the children as indicated in Table 3. Eight major activities were identified as the most frequent agricultural activities being carried out by the farmers in the study area. The data showed that children participated more in 4 of the activities: Processing of agricultural produce (85.7%), marketing of agricultural produce (64.2%), livestock rearing and management (61.6%) and harvesting of agricultural produce (57.1%). This finding justifies the findings of Partminos and Psacharopoulus (1997) who opined that in developing countries, children contribute as high as 33 percent of the total agricultural labor force. Justifying this further, Ekwu (2004) asserts that in the rural areas where farming is the major occupation, children who are under-aged and at times adolescents are such as tillage, planting, harvesting and marketing of farm products. The ILO (2009) observed that in Nigeria, an estimated 12 million children participate in various categories of work including agriculture. Confirming further, children participation in agricultural activities, Jobowa (1999) inferred that for decades in south-western Nigeria, fathers used to give their children a small portion of land to practice his own independent farming and that will be the period when the child has attained the age between 10-18 years. Participation of children was however low in activities such as land preparation (33.9%), weeding (46.2%), planting (53.5) and spraying (37.5). The low participation in such activities might be attributed to the drudgery associated with them.

Constraints associated with children's participation in agricultural activities

In Table 4, most (91.07%) of the children indicated tiredness after returning from school as the foremost constraint to their participation in agricultural activities. The drudgery associated with farming was ranked as the second constraint (82.14%) while lack of interest was ranked third with (53.57%). Other identified constraint as operational hazards (30.35%) lack of modern farm equipment (19.64%) and lack of rural

infrastructures with 10.07 percent. By implication, all the constraints reduced the children's participation in agricultural activities and consequently reduction in agricultural production.

CONCLUSION AND RECOMMENDATIONS

The study assessed the participation of farmers' children in agricultural activities. It was established that the children were involved in different agricultural activities with their parents but they participated more in some activities than in others as a result of the inherent constraints associated with each of the activities. Many of the children were not interested in farming. It was found that there are significant relationships between the children's participation in agricultural activities and sex as well as education. These two variables therefore played significant roles in the children's participation in agricultural activities. An inverse relationship was established between the constraints experienced by the children and their participation in agricultural activities.

Based on the findings of the study, the following recommendations were made:

i. Farmers' children should be encouraged to use more hours participation in farm activities
ii. Modern farm machineries/equipments should be made available to the farmers' children to remove the drudgery associated with farming in order to encourage them.
iii. Rural infrastructure should be provided to arouse the interest of farmers' children in agriculture.

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Table 1: Personal characteristics of the farmers' children.

Variable	Frequency	Percentage	Mean	SD
Age(Years)				
6 – 10	10	9.0		
11 – 14	30	26.78		
15 – 18	66	58.9	14.29 years	2.95
Above 18	6	5.36		
Sex				
Male	47	42.0		
Female	65	58.0		

Religion				
Christianity	73	65.2		
Islam	37	33.0		
Others	01	0.9		
Education				
Primary 1 -3	26	23.10		
Primary 4 – 6	21	18.75		
Junior Secondary	34	30.35		
Senior Secondary	31	27.67		
Number of days spent on agricultural activities/week				
1-2	62	55.36		
3-4	77	68.75	5.21days	2.34
5-6	58	51.78		
7	2	1.78		
Number of hours used on agricultural activities/day				
1-2	87	77.67		
3-4	62	55.35	3.79 hours	1.14
5-6	14	12.5		
Farming Experience (Years)				
1-3	28	25.0		
4-6	62	55.36	5.05 years	2.42
7-9	14	12.5		
10-12	8	7.14		

Source: Field Survey, 2011

Table 2: Interest of children in agricultural activities

Interest	Frequency	Percentage
High Interest	18	16.07
Low Interest	89	79.47
No Interest	05	4.46

Source: Field Survey, 2011

Table 3: Participation of Children in agricultural activities

Activity	Frequency	Percentage	Rank
Processing of agricultural produce	96	85.7	1
Marketing of agricultural produce	72	64.2	2
Livestock rearing and management	69	61.6	3
Harvesting of agricultural produce	64	57.1	4
Planting of crops	60	53.5	5
Weeding	52	46.2	6
Spraying	42	37.5	7
Land preparation			

(Bush Clearing, stumping etc)	38	33.9	8

Source: Field Survey, 2011

Table 4: Constraint associated with children's' participation in agricultural activities

Constraint	Frequency	Percentage	Rank
Tiredness after returning from School	102	91.07	1
Drudgery associated with farming	92	82.14	2
Lack of interest in Agriculture	60	53.57	3
Operational hazards	34	30.35	4
Lack of modern farm equipments	22	19.64	5
Lack of rural infrastructures	18	16.07	6

Source: Field Survey, 2011

Table 5: Results of correlation test showing the relationship between the personal characteristics of the children and their participation in agricultural activities.

Variable	r	p	Decision
Age	0.32	0.75	NS
Farming Experience	0.005	0.90	NS

Source: Field Survey, 2011

Table 6: Chi – square result of the relationship between the personal characteristics of the children and their participation in agricultural activities

Variable	X^2	df	p	Decision
Sex	11.83	2	0.00	S
Religion	10.92	4	0.13	NS
Education	6.12	6	0.00	S

Source: Field Survey, 2011

S= Significant, NS= Not Significant

Table 7: Result of the correlation test of relationship between the constraints experienced by the farmers' children and their participation in agricultural activities

Variable	rho	p	Decision
Constraints experienced by the children	-0.20	0.00	S

Source: Field Survey, 2011 S=Significant

AFRICAN RURAL HOUSEHOLD FACTORS INFLUENCING THE PARTICIPATION OF CHILDREN IN FARMING ACTIVITIES IN OYO STATE, NIGERIA

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This study investigated the African rural household related factors that influenced the participation of rural children in farming activities. The study was conducted in rural communities of Oyo State in southwestern Nigeria. A validated interview schedule was used to source information from four hundred and fifty eight children in their homes. Primary data were collected on selected household characteristics and rural children's level of participation in farming activities. Descriptive statistics such as frequency count and percentage were used to summarize the data. Pearson's correlation and regression analyses were used to determine the relationships between selected household variables and the participation of rural children in farming activities. Factor analysis was used to identify the factors influencing the participation of rural children in farming. The study revealed that ten household related factors, each had Eigen values greater than one, influenced the participation of rural children in farming activities. The factors identified include household's farm characteristics, labour need on household farm, household composition, parent's influence on a child's decision, cropping systems practiced on the farm, transport facilities, exposure of the household to extension contact and education, nature of household farmland and communication facilities.

Key words: ***Household, children, farming activities, factors.***

INTRODUCTION

Many rural households in Africa depend on farming as the main source of livelihood. For rural dwellers, farming is both a vocation and a way of life. In most cases, people become farmers without any formal training. They venture into farming through socialization process. This view is supported by the assertions of Odetola and Ademola (1985) who stressed that children can be socialized into norms, culture, tradition and profession. In rural Africa, many children are socialized into farming. Torimiro and Lawal (1998) identified various

steps involved in child socialization into farming. The distinct steps identified include merely accompanying parents to farm; observing farming activities; taking on independent farming assignments and fully participating in farming activities. The idea of involving children in farming activities as a socialization process in Africa plays an important role in the sustainability of food production.

However, the recent trend of exposing children to long hours of work such that it interferes with their schooling, recreation and the rest is described as destructive and exploitative. UNICEF (1997) referred to the trend as child labour process.

The International Labour Organization ILO, (2003) however, submitted that children's involvement in agriculture might indeed be a normal and useful part of their socialization and development of work skills in many countries. In essence, the view of ILO established children's participation in farming as a form of socialization process and not mere child labour or abuse. Similarly, Ajayi and Torimiro (2004) found that parents everywhere would naturally encourage their children to be trained to participate in their vocation.

The foregoing indicates divergent views about children's participation in farming activities. This study does not intend to map the controversial intellectual landscape. The study's focus is however on the reality that children in rural settings in Africa did participate in farming activities.

Previous studies on participation of children in agriculture lend themselves to either investigate the contribution of children or specifically farmers' children. (Ajetomobi *et al* 1998; Adewale *et al* 1997; Joda 1998; Adewale and Adekunle 1998; Akinbile and Olujide 1998). These studies reaffirmed that children did participate in farming activities. Also, it was established that less than 10% of the children studied own farms and earn little income from their farming activities. Some of the authors also suggested that majority of the children were not motivated to take farming as a career due to non-commensurate returns from investment in farming. Other scholars suggested that lack of respect given to farmers in developing nations of Africa dissuades children from participating in farming. They, thus, argued that the introduction of improved technology to the farming population would reduce drudgery and motivate children's acceptance of farming as a

worthy profession. In general, the previous studies did not investigate the various African household factors that influenced the participation of rural children in farming activities. This study therefore sought to this gap in the literature.

Objectives

The main objective of this study is to identify the various household factors that influence the participation of children in farming activities while the specific objectives set were to:

i. describe the household characteristics of the children participating in farming in the study area;
ii. quantify and categorize the participation of the rural children in farming activities; and
iii. determine and identify the household factors that influenced the participation of rural children in farming.

Theoretical Framework

Many social theories have been advanced to explain human behaviour and activities in social, economic and cultural processes. System theory was adopted to describe individuals and households in this study. System is a group of interacting components that conserves some identifiable set of relations with the sum of the components plus their relations (i.e., the system itself) (Laszo & Krippner , 1998). A social system is invariably a special order in that it is composed of persons or groups of persons who interact and influence each other's behavior and activities. Families, organizations, communities, societies and cultures could be included within this order. In simple words, man could be studied as part of a group in a given system. An individual in a family system affects the social system and he or she is in turn affected by the system.

The family is the single social unit in human society and could inter-relate with all other systems. Family assumes primary responsibility for socialization of children into the culture and thus is charged with major responsibility to ensure the survival and growth of human at every stage of life. (Ekong, 2010)

Children in rural Africa are members of families. The families influenced their participation in various family activities which include professions such as farming, waving fishing and hunting among others. While family constitutes the unit of study from which respondents were drawn in this research, it is important to state that most rural families extends beyond father, mother and children to include relatives, hence, the use of households.

The systems theory is applicable in this study so as to demonstrate that the participation of children in farm activities is affected by selected household characteristics. And that this could in turn also affect the community as a whole. The purpose here is to articulate some of the household factors, which presumably influence the participation of children in farming activities.

METHODOLOGY

The study was conducted in Oyo State, Nigeria. The State had thirty-three Local Government Areas (LGAs) and four geopolitical zones, which was adopted by the Agricultural Development Project (ADP) as agricultural zones. The zones are Oyo, Saki, Ogbomoso, and Ibadan/Ibarapa zones. Each of the zones was demarcated into Blocks in accordance to the LGAs as required for the training and visit system of extension adopted for use ADP. Twenty percent of the blocks were purposively sampled. This was done to allow for good dispersion by avoiding adjoining LGAs in order to ensure the coverage of predominantly rural LGAs identified by Awujoola (2000).

From each of the six blocks sampled, two rural communities having between two and three villages were randomly selected to make twelve communities in all. The communities sampled were Ile-Aje, Solo-Ayetoro, Oyanyan, Alaguntan, Akingbesa, Isale Alubata, Onire, Olorunda-Abaa, Alaropo, Oniyo Farm Settlement and Oja Tuntun. The lists of households living in the sampled communities were collected from the community development officers of the respective Local Government Areas or the Village Level Extension Agents where applicable. Twenty percent of the households were randomly selected for the study. The eldest child in the age range between six and eighteen years was selected and interviewed per household. A total of four hundred and fifty eight (458) children were thereby interviewed.

Instrumentation: A structured and validated interview schedule with a reliability correlation coefficient of 0.86 was developed to elicit information on characteristics of the households to which the selected rural children belong. In addition, information on respondents' participation in thirty selected farming activities was collected.

Measurement of variables: Selected variables like household size, distance of farm, number of farm machine, number of non-Farm Economic skill, number of reasons for going into farming were measured with absolute weight while

others were measured by using inferences from responses to selected probing statements. Participation of rural children in farming activities was measured by their responses to questions on participation, and how regularly or otherwise. The total score per respondent was calculated while the means score and standard deviation of the respondents scores were used to categorize participations in farming to include no participation (0), low (1 – 16 point), moderate (17 – 44 points) and high (45 – 92 points). One standard deviation was added to the mean so as to get the high cut off point. One standard deviation was subtracted from the mean to get the low cut off point score. The scores between low and high cut off points were used as medium as did Farinde (1995).

Descriptive statistics such as frequency count and percentage were used to summarize the data collected. Pearson's correlation coefficient (r) and regression analyses were used to establish the relationships between dependent and independent variables. Factor analysis was used to identify the household factors influencing the participation of rural children in farming activities.

RESULTS AND DISCUSSION

Rural Household Characteristics

Data in Table1 revealed that 13.32 percent of the respondents' households had less than six people while 31.0 percent had more than eleven people. About 56 percent had 7 – 11 persons in their households. The average household size in the study area was 10.90 with a standard deviation of 4.63. About 52 percent of the households were monogamous while 47.82 percent of the households were polygamous. These findings suggest that the household size in the study area was still high while the marriage of one man to many women is still popular. About 94.76 percent of the households had crop farms while 94.32 percent raised livestock. This is an indication that rural households in Africa basically eke their living from farming. The reasons for production on household farms include consumption (88.65%), sales (77.07%) and philanthropic (42.14%).

Only about 34.94 percent of the households were visited by extension agents while others were not visited. This means that despite the fact that farming remains a very important means of livelihood, majority of the households have not benefited from extension service which is very

important to their productivity enhancement.

Data in Table 1 showed that 49.31percent had less than one-kilometer distance between their residence and farm, about 29.95 percent had between 1 to 2 kilometers just as 20.97 percent 17.51 percent had 3 to 5km and 6 to 10 kilometers, respectively. This implies that most of the households were closely located to their farms. About 1.31% had no mechanized means of transportation while 32.31% had access to motor vehicles which may not be absolutely owned. Other means of transportation owned by the households were motorcycle (67.47%) and bicycle (40.46%). So the most popular means of transport owned by majority in the study area was motorcycle.

Various sources of farm labour used by the respondents' households were family/household members (82.72%), hired migrant laborers (74.19%), and hired community members (52.99%), friends or relatives (16.36%) and others like cooperative labour used by 2.02% of the respondents. About 42.86 percent of the respondents' households had farm size between 1 and 5 hectares, some (40.78%) had between 6 and 10 hectares. Majority of the respondents' households (61.79%) had experienced labour shortage at one time or the other. The operations affected by the shortage included weeding (84.45%), bush clearing (70.32%), ridge making (64.31%) and cassava planting (43.82%) among others. About 60% of the respondents' households had used farm machines before on their farms. The most prominently mentioned machine was plough (91.24%) while the least was palm oil presser (6.93%). A majority (54.38%) of the respondents' households did hire implements from cooperative societies while about 26.64 percent hired various machines from individual operators. A few (21.16%) hired machines from government agencies. These findings suggest that cooperative societies were the most popular source of farm implements. The societies, thus, were one of the dependable stakeholders with respect to farm mechanization in the study area. A majority (96.08%) of the respondents' households produced maize, few (33.18%) cowpea, many (73.50%) millet, and more than halves (54.06%) and (59.68%) pepper and Okra, respectively.

More than one crop is being cultivated on a given plot of their farms. Mixed cropping and crop rotation is therefore, a common practice on the household farms. On

livestock production, goat is being raised by 76.16% of the households.

Children's participation in farming activities Data in Table 2 revealed that children participated mainly in grains planting (86.27%), cassava planting (69.64%), maize harvesting (82.77%), hand weeding (83.17%) and fertilizer applications (63.15%). With respect to the overall participation of the children in the 30 farming activities, a majority (89.87%) participated at moderate level while 15.85% had high participation just as about 10.48 percent and 4.80 percent had low and none participation, respectively. These findings support that of Ajayi and Torimiro (2003), which declared that the reality in Africa remained that children were active participants in farming activities.

Relationships between selected household characteristics and participation of rural children in farming activities

Results of regression and correlation analyses were presented in Table 3. At 0.05 level of significance, rural children's participation in farming activities had positive and significant relationships with marriage type in the household (r = 0.2330), number of non-farming economic skill of household head (r =0.4238), number of reasons for farm production (r = 0.3748), number of crops grown (r = 0.1484), number of non-family farm labour (r = 0.3660) and number of operations in which labour shortage was experienced (r 0.3348). These emergent relationships revealed that marriage type in a typical African household could be directly linked with children's participation in farming. Polygamy could result in raising many children for farm work, as argued by Ekong (2003). The number of non-farming Economic skill could also result in the household head sending their children to work more on farm while they engaged in other sources of income to be used in augmenting the income from the farm. Also, the number of reasons for production on household farm could promote children's participation in farming because this could serve as a means of motivation if the child knows that products are for consumption, sale and philanthropic purposes. The number of crops grown increases the participation of children because more attention will be required for the different types of cops on the farm also because many more operations will attract the attention of household members and children also for active participation. This would consequently require the participation of children in the various operations on the farm. The higher the number of non-family farm labour, the more

children participates in farming could be due to the fact that children would be required to do some other relevant things on the farm to complement the work of non-family farm labour. The number of operations in which labour shortage were experienced would definitely promote the participation of children such that the occurrence and impact of labour shortage could be reduced and or prevented. The household composition had a negative but significant correlation with participation of children in farming activities (r = - 0.2679). This could mean that in households having children of relatives, the participation of children in farming was more than their counterparts in the nuclear family types of household. This could be true because there would likely be more children in extended as well as polygynous families and the tendency would be for children to participate more in the company of their mates.

Results of the regression analysis in Table 3 showed that the regression coefficient of household size (b = -0.3138), number of Non-farming economic skill (b = -1.854), number of transport means possessed (b = -0.6130), number of electronic media possessed (b = 0.8968), number of contacts with extension agents (b = -2.5732), number of crops grown (b = -1.4389), distance of farm from home (b = -0.3677), number of farm machine used (b = -0.5907) significantly contributes to the unit change in the children's participation in farming activities as established by the various corresponding T – values.

In addition, the value of F was 4.1051 at 0.05 significance level which indicates that the various household variables pull together contribute significantly to change in the participation of rural children in farming activities. About 61percent of the variations in the children's participation in farming was explained by the household variables ($R^2 = 0.6072$).

Results of Factor Analysis

Data presented in Tables 4 and 5 showed the results of Factor analysis. Ten factors, whose Eigen's values were greater than one, as stipulated by Kaiser's rule (Bryman and Cramer 1997), were identified. The cumulative percentage of the variance was 67.3% for the ten factors. The principal component approach was used to isolate the ten factors. The loadings of each variable in the ten factors were presented in Table 5. However, in order to present a less cumbersome result, values of variables whose loading were less than 0.4 in each of the factors identified were not displayed in the Table. This was

done without hiding the important information relevant to the study. The factors were named using any of the following criteria as suggested by Farinde (1995):

i. Picking synonyms of the higher loaded variables on each factor;
ii. Joint explanation or interpretation of the meaning of the high loaded variables on each factor and/or;
iii. Retaining the name, based on the similarity of the features reposed in the variables contributive to the factors.

The factors identified and named include the following:

Household's farm characteristics: This is the characteristic of the household's farm. Loading in the characteristics are reasons for farming (λ=0.688), livestock ownership (λ=0.4812), farm size (λ =0.4489), crop system (λ=0.4270, availability of farm machine (λ=0.54402) and availability of non-family farm labour (λ=0.554018). Others are possession of Non Farming Economic Skill (λ=0.4542) and labour shortage experience on the household or family farms (λ=0.4585).

Labour needs on farm: This factor is loaded by availability of farm machine (λ=0.5606), labour shortage experience (λ=-0.5078), use of farm machine (λ=0.56066), availability of Non Family Farm labour (λ=-4384), livestock size (λ=0.5744) and contacts with extension agents (λ=0.4938) which will reveal more things to be done on the household's farm in which children could participate.

Household composition is the third factor, which had loaded in it, family or household size (λ =-0.7792), marriage system (λ =-0.7442), and household composition (λ=0.7803). This factor could be described as important because more children in the household will mean a need for more food and larger farm in which children's participation would be relevant and important.

Possession of Non-Farming Economic Skill by household head: The variables, which contribute more to the factor are participation of children in farming (λ=-0.4758), possession of non-farming economic skills (λ=-0.5637), livestock ownership (λ=-0.4021), and farm size (λ=0.5109).

Parents influence on child's decision. This is the extent to which the parents had grip on child's decision and activities. Loaded in the factor is parents grip on child's decision (λ =-0.4887) and ownership of crop farm (λ=0.4001).

The cropping system practiced: The cropping system being practiced has in it the loading variables such as

cropping system (λ=-0.4299) and ownership of crop farm (λ =0.4112).

Transport facilities of the household. This factor relates to possession of means of transport facilities (λ=0.49761). Ease of movements to and from farm also impacts on children's participation in farming activities. Availability or other wise of transport means may necessitate more hands in moving good to and from farm which is a way of involving children in farming. Ease of transport to farms located at a distance from residence would therefore promote children's participation.

Exposure of the household to Extension education: The variables loading in this factor include contact with extension agents (λ=0.4620), parent's influence on child's decision (λ=0.4780), and distance of farm from residence (λ=0.40544). This factor could be explained on the basis that extension education could direct household's attention to new innovations, where children could be relevant in lending a helping hand or learn to be better future farmers.

Nature of farmland: This is the way farm sites could be best described which if they were plain would be more conducive to children's participation because they pose less danger and consequently enhances their interest. The variable, mostly loading in the factor is topography of the farmland (λ=0.5329).

Communication facilities: This factor is explained on the basis that communication with and information from outside community could either promote or reduce the participation of children in farming activities. The variables loadings in the factor are possession of transport means (λ=0.4226) and possession of electronic media (λ=0.41052).

CONCLUSIONS AND RECOMMENDATIONS

Emerging evidence from the study revealed that children's participation in farming activities is affected by some selected household variables, which explained 60 percent of the variations in the participation. The variables were possession of non-farm economic skill by household head, parents influence on children's decision, exposure of the household to extension education, communication facilities and household composition. Other factors that influenced the participation were farm characteristics, labour need on farm, cropping system practiced, transport facility and nature of farmland. Also access to means of transportation had strong influence on children's participation in farming activities.

It is, therefore, recommended that the household factors identified be given attention in any future study and action on the participation of rural children in farming activities in African nations. If the issue relating to child labour and abuse in a typical rural African community is to be addressed adequately, the households and the related factor should be used as the basis. Moreover, stakeholders should facilitate rural households' access to farm machinery to reduce labour shortage and farm drudgery. It will also promote children interest in farming, which is necessary for successful socialization and sustainable food security.

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Table 1: Frequency distribution of respondent according to selected household characteristics

Characteristics	Frequency	Percentage
Household Size		
< 6	61	13.32
7 – 11	255	55.68
>11	142	31.00
Marriage type		
Monogamy	239	52.18
Polygamy	219	47.82
Household Composition		
Nuclear	236	51.53
Extended	222	48.47
Ownership of Crop farms		
Owned a farm	434	94.76
No farm	24	5.24
Ownership of Livestock		
Owned Livestock	432	94.32
No Livestock	26	5.68
Reasons for Farm Production		
Consumption	406	88.65
Sale	353	77.07
Philanthropic	193	42.14
Visited by Extension Agents		
Yes	160	34.94
No	298	65.06
Ownership of Means of Transport		
None	6	1.31
Bicycle	186	40.46
Motorcycle	309	67.47
Motor Vehicle	148	32.31
Distance of Farm from House		
1km	214	49.31
1 – 2km	130	29.95
3 – 5km	91	20.97
6 – 10km	76	17.51
Sources of Farm Labour		
Family Members	359	82.72
Hired Migrant Labourers	322	74.19
Hired Relative	230	52.99
Friends Relative	71	16.36
Others (Owe etc)	9	2.07
Farm size (hectares)		
1 – 5	186	42.86
6 – 10	177	40.78
11 and above	71	16.36

Source: Field Survey *Multiple Responses possible.

Table 2: Distribution of respondents by participation in farming activities

Variables	Frequency	Percentage
Ever Experienced labour shortage		
Yes	283	61.79
No	175	38.21
Operations affected by labour shortage		
Tree Uprooting	120	42.40
Bush cleaning	199	70.32
Ridge Making	182	64.31
Grain Planting	97	34.28
Yam Planting	98	34.63
Cassava Planting	124	43.82
Weeding	239	84.45
Fertilizer Application	117	41.34
Cassava Processing	107	37.81
Others	7	2.47
Used Farm Machines on farm		
Yes	274	59.83
No	184	40.17
Machines ever used		
Tractor – Plough	250	91.24
Ridge	69	25.18
Trailer	106	38.69
Oil Palm presser	19	6.93
Pump Sprayer	140	51.09
Corn Thresher	133	48.54
Cowpea Thresher	60	21.90
Cassava Grater	154	56.20
Sources of Farm Machine		
Owned personally	70	25.55
Hired from cooperative society	149	54.38
Hired from Individual Operators	73	26.64
Hired from Outside Community	24	8.76
Hired from Government Agency	58	21.16
Participation of Rural Children in farming		
No participation (0)	22	4.80
Low participation score (1 – 16)	48	10.48
Medium participation score (17 – 44)	320	69.87
High Participation score (45 – 92)	68	14.85

Source: Field Survey

Table 3: **Results of correlation and regression analyses showing the relationships between selected household related variables and children's participation in farming activities**

Variables	Correlation Coefficient	Regression Coefficient B	T-Value
Household Size	0.0209	-0.3138	-0.848*
Marriage System	0.2330*	0.9944	0.255
Parent's influence on Childs decision	-0.0147	0.0414	-0.051
Number of Non-farming Economic Skill	0.4238*	0.6619	1.854*
Number of transport means possessed	0.0645	-0.6130	-1.035*
Number of electronic media	0.0401	0.8968	0.723*
Number of contacts with extension	-0.0575	-2.5732	-0.882*
Number of reasons for farm production	0.3748*	0.3149	0.507
Farm size	0.1336	-0.1268	0.443
Livestock size	0.0738	4.02E-04	0.032
Number of Crops grown	0.1484*	-1.4389	-1.262*
Distance of farm from home	0.0201	-0.3677	-1.293*
Number of farm machines used	-0.0723	-0.3550	-1.111*
Number of farm machines available	0.1269	0.0684	0.123
Number of Non-family farm labour	0.3660*	0.5907	1.389*
Number of operations in which labour Shortage was experienced	0.3348*	0.1489	0.707
Household Composition	-0.2679*	-6.763	-1.705*

Source: Field Survey
Multiple R = 0.7793 0.05 = 0.138 R Square = 0.6072 Degree of Freedom = 458 – 2 = 456
F-Statistic = 4.1051

Table 4: Result of principal component analysis of family related factors determining children's participation in farming activities.

Factors	Communities	Eigen Value	Proportion	Cumulative Percentage Variance
Y	0.7375	4.2202	14.1	14.1
1	0.7465	2.8163	9.4	23.5
2	0.8144	2.6539	8.8	32.3
3	0.7428	2.0643	6.9	39.2
4	0.6802	1.7084	5.7	44.9
5	0.7992	1.6165	5.4	50.3
6	0.6174	1.4190	4.7	55.0
7	0.6177	1.2946	4.3	59.3
8	0.6821	1.2239	4.1	63.4
9	0.6644	1.2036	3.9	67.3
Others		Less than 1	32.7	100.0

Source: Field Survey

Table 5: Result of factor analysis showing the variables and their loading on the identified factors.

Variables	Factor I	Factor II	Factor III	Factor IV	Factor V	Factor VI	Factor VII	Factor VIII	Factor IX	Factor X
Participation in farming	0.6232			-0.47587						
Family/Household size			-0.77919							
Marriage System			-0.74423							
Parents Influence on Child's decision	0.45425			-0.56370	0.4887			0.4780		
Possession of Non Farming Econ Skill					6		0.49761			0.42258
Possession of Transport Means	0.68862	0.49385						0.4620		0.41052
Possession of Electronic Media						0.4112				
Contact of family with Extension	0.48129			-0.40216						
Reasons for Farming	0.44895	0.57440		0.51091	0.4001					
Religion Affliation	0.42700					-0.4299				
Ownership of crop farm								0.4054		
Livestock Ownership		0.56066								
Farm Size (Crop)	0.54402	0.52303								
Livestock size	0.54018	-0.43844								
Cropping System	0.45855	-0.50786								
Distance of Farm from residence			0.78033						0.5329	
Use of farm Machine										
Availability of Farm Machine										
Availability of Non-Family Farm labour										
Labour shortage experience of family										
Household composition										
Topography of the family farmland										

Note : The loading values of less than 0.4000 were not listed.

FARMING HAZARDS AMONG CHILDREN IN ODEDA LOCAL GOVERNMENT AREA OF OGUN STATE, NIGERIA

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Children are regarded as unpaid labor source especially in agriculture; hence they participate in activities which contribute to livelihood of the family as well as societal development. Children's involvement in agricultural activities is seen as contributory and means of socialization. This study therefore explores the hazards to which children who participate in farming are exposed. Simple random sampling technique was used to select 120 children between the ages of 10 and 18 years. Primary data were collected through a structured questionnaire. Data collected were subjected to both descriptive and inferential statistics. The findings of the study revealed that the modal age group was between 13-15 years, with (56.7%) still in secondary school. Also, the study found out that, the children are more involved in land preparation activities ($\bar{x}$ =2.47). Most common farm hazards experienced by these children includes stings by harmful insects ($\bar{x}$ =2.48) and injuries sustained from farm tools ($\bar{x}$ =2.28). The study therefore recommends that safety measures and safety materials should be provided for the children in order to reduce the farm hazards experienced by them.

Keywords: Farming, Hazards, Involvement, Children

INTRODUCTION

Agriculture plays a vital role in the economy of many nations, especially in sub-Saharan Africa. Apart from the fact that agriculture feeds the nation, it also interacts with all other sector and sub-sectors of the economy. It provides employment for a significant proportion of the population through on-farm and agro-related enterprises and ensures sustainable food security (Projects Coordinating Unit-National Fadama Development Office (PCU-NFDO), (2005).

The Nigerian agricultural sector since independence has been an important economic sector especially in terms of its contribution to the Gross Domestic Product (GDP), after oil. Labor supply for the agricultural

sector therefore comes from different sources with children being one of the major sources that are not paid.

According to Adisa and Adekunle (2007), family units in developing countries have been and still the major source of farm labor whereby family members including children are involved in agricultural production. The roles and potential of children for the growth of the agricultural sector have also been noted as a critical socio-economic contribution in the farm family setup. In the same vein, adults see the involvement of children in farm work as a way of socializing them into the farming business. Children in many rural households participate in farming activities as a way of contributing to family income, sustainability of rural livelihood system and overall improvement of agricultural productivity and as a means of socialization. It is also a way of training the young ones to take over from their parents when they are old. However, what can be a good practice and discipline is sometimes abused to the detriment of the children's development.

Children's involvement in employment activities especially agriculture have continue to generate interest as the scope of their involvement could be classified as child work (light work) or child labor. Adedoyin (2005) defines child work as constituting those activities performed by a child that contributes positively to the output of a family's public good. However, child labor means work performed by children who are too young for the task in the sense that by performing it they unduly reduce their present economic welfare on their future earning capabilities, either by shrinking the future external choice sets or by reducing their own future individual. The International Labor Organization (ILO) defines child labor based on child's age, hours and conditions of work and activities performed. Also, child labor interferes with the child's education and is damaging for a child's health and development. However, the participation of children in productive activities that do not affect their health, schooling or personal development can be regarded as acceptable and thus contributes to inter-generational transfer of skills. The ILO minimum age for employment convention 1973 set the minimum age for children at 15 in general, 13 for light work and 18 for hazardous work. In the case of developing nations general minimum age is set at 14 and 12 for light work. Children are in some cases made to participate in farming activities handling dangerous farm tools and chemicals and undertaking work which is beyond what they can manage.

According to WHO (2013), girls are at special risk because they often begin work at a younger age and have a double work burden (home and farm). Thus, this hazards have effect on their health status not only in the short term but also in the long the term.

International Labor Organization (2013), reported that 60% (129 million) children are involved in agriculture with 67.5% been unpaid family members and enter into work early between 5-7 years of age and thus making agriculture one of the three most dangerous sectors in terms of work related fatalities. Nwaru (2011), identified poverty as the main cause of child labor in agriculture, together with limited access to quality education, inadequate agricultural technology and access to adult labor. Also, the worsening economic fortunes of many families have continued to encourage the use of children as of labor. Farinde *in Ajayi and Jibowo (2004)* advanced that children are naturally endowed to take over farm responsibilities from the adult men and women who are the present farmers. Studies from some Nigerian communities showed that, cuts from sharp objects, insect bites and injuries from animals are the common accidents known among children on the farm. In some communities, some of the children engaged in farm activities at the expense of their education and physical development. However, the preponderance of children involvement in farming is felt in African and Asian countries. According to Lipton (2005), farming activities are crucial to poverty reduction. Whether it is the raising of animals or crop, children participates in all production, processing and distribution phase (Fadayomi 1988). Even though children mostly carryout 'light' farm task such as planting, thinning, picking and transplanting, these tasks are not regarded as heavy tasks such as land clearing, ridge making, weeding and harvesting.

"Child" has no generally accepted definition as it varies from geographical areas, customs, environment and legislations but the African Charter on the Rights and Welfare of the Child (1990) defines a child as a person who has not attained the age of 18 years. The Nigerian Labour Act of 1990 also considers a child as a person less than 15 years of age while the Child Welfare Policy (1989) defines a child as anybody who is twelve years of age and below. Also, Owolabi (2012) in his contribution refers to "Child" as a minor under any prevailing condition as set by the customs and laws of the area. The emphasis in this study is that a person who is regarded younger than the age of maturity is a child.

Koohafkan (2006) reported that when it comes to subsistence and family agriculture, children's participation in family farm activities helps them learn valuable skills, build self-esteem and contribute to the generation of household income, which has a positive impact on their own livelihoods. It is however clear that in spite of its wide prevalence and other benefits, children's participation in farming brings along with it some grave consequences. Chief among these consequences is its interference with farm children's enrolment in school. Webster and Mariger (1999) wrote that under age children constitute 20 percent of farm fatalities and that farm children are twice as likely to die in an accident as urban children.

Studies by Adisa (2005) and Laogun *et al* (2000) have shown that many rural children cultivate personal plots on which they often carry out all farm tasks on their own. Reasons adduced for children involvement on family farms include factors such as the absence of family head and able-bodied male adult as well as an ageing parent population. (stloukal, 2004).

With the great involvement of children in agricultural activities, there is therefore need for assessment of farming hazards associated with rural children participating in agricultural activities. It is against this background that the study seeks to achieve the following objectives:

i. Identify the socio-economic characteristics of children participating in farming activities.
ii. Evaluate the farming activities that children are involved.
iii. Assess the major hazards the children are exposed to.
iv. Determine children's perception of their involvement in farming.

METHODOLOGY

The study was carried out in Odeda Local Government Area of Ogun State. Divided into eleven wards under which several villages are grouped. The people are predominantly farmers, practicing mixed cropping system. The area is inhabited predominantly by the Yoruba speaking people with small population of the Igede's, settled Fulani agro pastoralists and other tribes.

The population for this study comprised children involved in farming activities in the study area. Simple random sampling technique was employed to select six villages (Odeda, Sokan, Kila, Ilugun, Olodo and Olugbo) from the six wards that make up the local government area. From the six villages selected, twenty rural children between the ages of 10 and 18 years were randomly selected, making a total of 120 children. A

well structured interview guide was designed and used to elicit information from the respondents. The data collected were subjected to both descriptive and inferential analysis. Frequency counts, mean and percentages were used to categorize and describe the socio economic characteristics of the children; while PPMC and Chi-square were used to determine the relationship between the children perception of farming and farming activities and the relationship between their socio-economic characteristics and their involvement in farming.

Measurement of Variables

The dependent variable measured was the involvement of children in hazardous work. This was measured by using a 3 point rating scale of frequently = 3 points, sometimes = 2 points and never = 1 point. Hence, the total scores of each respondent on the hazards they are exposed to due to their involvement in farming activities were expressed in categories using the mean value for each respondent. Independent variables measured included the socio-economic characteristics of the respondents such as age, sex, household size, religion, parent's occupation and their level of education. The level of involvement in farming activities was measured on a 3 point rating scale of frequent = 3 points, sometimes = 2 points and never = 1 point. Hence the levels of involvement were expressed in ranks using their mean values.

RESULTS AND DISCUSSION

Socio-economic characteristics of respondents

The data in Table 1 reveal that (51.7%), of the respondents were female with the dominant age ranging between 13 and 15 years. This shows that the respondents are still very young and shows some traces of child labor by involving them in farming activities at this age. According to ILO-IPEC (2006), the minimum age for employment of children was set at 15 years. It also stipulates 13 years for light work and 18 years for hazardous work. The study also supports the position of WHO which states that girls are more involved in farm work and often begin at a very tender age. The educational level of the children shows that (57%) of the respondents are in the secondary school, while (33%) are in primary schools. Christianity and Islamic religion were the common religion practiced among the children with (53.3%) of them practicing Islamic religion, (43.3%) are Christians and (3.3%) practicing African Traditional religion. Most (68.3%) of the children came from households whose sizes ranged between 7-10 persons. This implies that the rural family still has large family sizes.

The data as shown in table 2 reveals that land preparation (46.7%),

planting (45.0%) and weeding (43.3%) are the most frequently performed farm operation involved in by the children while harvesting and wetting of crops are done occasionally by (71.7%) and (60.0%) of the children respectively. In using the mean scores to rank the children's level of involvement in farming activities, it can be deduced that the children are mostly involved in land preparation and planting of crops. Processing and spraying are least involved in these children. This data establishes the fact that the children are involved in hazardous work as the work is physically challenging and strenuous in relation to their ages. It could also be established that there is some form of child labor in the process of involving the children in farming activities based on ILO-IPEC (2006) ILO recommendation, that the minimum age for employment of children was set at 15 years. The recommendation also stipulates 13 years for light work and 18 years for hazardous work.

Analysis of major farm hazards exposed to by the rural children

The data shows that contact with harmful insects (58.3%), injuries due to cutlass and hoe cuts (38.3%), exposure to harsh weather conditions (36.7%) and skin rashes (41.7%) are the major hazards which the children are often exposed to while injuries from the operation of heavy machineries (3.3%), scorpion stings (10.0%) and snake bites (13.3%) occurred occasionally. The level of exposure to farming hazards are ranked by using the mean scores computed from the farm hazards the children are exposed to. Hazards due to farm injuries from farming tools ($\bar{x}$ = 2.28) and exposure to harsh weather conditions ($\bar{x}$ = 2.15) are the major hazards faced by the children while hazards through operation of heavy farm machines ($\bar{x}$ = 1.03), bite from harmful insects and animals like scorpion ($\bar{x}$ =1.10) and snakes ($\bar{x}$ = 1.13) shows very low level of occurrences.

The low mean recorded for injuries sustained from operating heavy farm machineries may be as a result of the fact that many of the farm work are done through manual means. This is also evidenced from by the high mean value recorded for injuries sustained from cutlass and hoe cut. Thus, it can be concluded that the level of hazard is a function of level and type of mechanization utilized on the farm.

Respondents' perception of farming

Data in table 4 revealed that (55%) of the respondents disagreed that farming is lucrative, while (65%) agrees that involvement in farming is time consuming and tedious. Also, (23.3%) of the respondents strongly agreed that participation in farming activities makes someone weak and tired always, while another (23.3%)

strongly agreed that farming activities exposes someone to extremely harsh weather condition and (31.7%) strongly agreed that farming activities exposes someone to attack by dangerous animals. However, (28.3%) of the respondents strongly agreed that farming is the only way we can provide food for all Nigerians and by implication, children participation in farming is perceived as contributing to food security at the micro and macro level.

Relationship between socio-economic characteristics of children participating in farming and the hazards associated with it.

Chi-square and PPMC analyses were employed in testing the relationship that exists between the Socio-economic Characteristics of Children Participating in Farming and the Hazards Associated with it. The data showed that age ($r = 6.514$, $p = 0.003$) and parental household size ($r = 14.55$, $p = 0.042$) were significantly related to the hazards associated with farming at 0.05 significant level. This implies that their age and household size influences the kind of hazards they faced as the younger ones are less experienced and prone to more hazards while respondents from homes with small household size are prone to more hazards as they have to do more work which exposes them to hazards. Also their sex does not have any association involvement. This means being a male or female does not have anything to do but as far as they are involved, young and are from household with small size they are predisposed to the hazards associated with farming.

CONCLUSION AND RECOMMENDATIONS

It is evident from the findings of the study that children who participate in agricultural activities are vulnerable to farm hazards. Also, the study concluded that major activities undertaken by these children are land preparation activities, planting operations and weeding while processing and spraying were less performed by the children. Contacts with harmful insects, injuries related to the use of farm tools and exposure to harsh weather condition were the major hazards they are exposed to while falling from heights and burns from activities were less recorded. It can also be deduced that the level and type of hazard recorded during farming activities is a function of the level and type of mechanization employed. The study revealed that the major hazards experienced by these children are from the manually based tools because they are the prevailing tools used in most rural farming households. Furthermore the perception of their involvement in farming was indifferent as they noted that their involvement in farming

have to be involved for some reasons which were out of their own control; such as the need to contribute to family income and as a means of socialization.

While the participation of children in farming could not be avoided, it is important to ensure safety while on farm. The emerging facts from this study culminated in the recommendation that children must be adequately supervised and instructed on farm activities in order to reduce hazards. It is also important to provide safety measures and safety materials for the children in order to reduce the farm hazards experienced by them. Since most of these rural children attend formal schools, safety and occupational health education should be included in the curriculum of their schools.

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Table 1: Distribution of respondents according to their Social-economic characteristics (n = 120)

Social-economic Characteristics	Frequency	Percentage
Sex		
Male	58	48.3
Female	62	51.7
Age (Years)		
Less than 12	8	6.7
13-15	62	51.7
16-18	50	41.7
Educational background		
No formal education	12	10.0
Primary education	40	33.3
Secondary education	68	56.7
Religion		
Christianity	52	43.3
Islam	64	53.3
Others	4	3.3
Household size of Parents		
1-6	20	16.7
7-10	82	68.3
12 above	18	15.0

Source: Field Survey, 2012.

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Table 2: Distribution according to level of involvement of the respondents

Activities	Always Participate		Occasionally Participate		Do not participate		Mean Scores	Rank
	Freq.	%	Freq.	%	Freq.	%		
Land preparation	56	46.7	64	53.3	0	0.0	2.47	1st
Planting	54	45.0	62	51.7	4	3.3	2.42	2nd
Weeding	52	43.3	56	46.7	12	10.0	2.33	3rd
Spraying	30	25.0	46	38.3	44	36.7	1.88	6th
Harvesting	30	25.0	86	71.7	4	3.3	2.22	4th
Processing	16	13.3	48	40.0	56	46.7	1.67	7th
Wetting of crops	22	18.3	72	60.0	26	21.7	1.97	5th

Source: Field Survey, 2012.

Table 3: Distribution of Respondents According to the Hazards they are Exposed in Farming

Hazards	Frequently		Sometimes		Never		Mean	Rank
	Freq.	%	Freq.	%	Freq.	%		
Injuries due to the use of farm tools like cutlass, hoes etc.	46	38.3	62	51.7	12	10.0	2.28	2nd
Contacts with chemicals e.g. pesticides, herbicides, fertilizers etc.	0	0.0	78	65.0	62	35.0	1.82	5th
Snake bite	0	0.0	16	13.3	104	86.7	1.13	13th
Scorpion stings	0	0.0	12	10.0	108	90.0	1.10	14th
Hazards through heavy machineries e.g. tractors, bulldozers etc	0	0.0	4	3.3	116	96.7	1.03	15th
Bee sting	4	3.3	80	66.7	36	30.0	1.73	7th
Falling into traps set for bush rats, rodent etc.	4	3.3	36	30.0	80	66.7	1.37	10th
Bacterial infection from farming activities	22	18.3	46	38.3	52	43.3	1.75	6th
Burns from certain farming activities e.g. bush burning	0	0.0	24	20.0	96	80.0	1.20	11th
Fall from certain heights e.g falling from top of trees during cutting of trees for various activities e.g. farm shed construction	0	0.0	20	16.7	100	83.3	1.17	12th
Contacts with harmful insects e.g. termites and soldier ants	70	58.3	38	31.7	12	10.0	2.48	1st
Exposure to harsh weather conditions	44	36.7	50	41.7	26	21.7	2.15	3rd
Chronic body pain due to hard farming activities	8	6.7	50	41.7	62	51.7	1.55	8th
Eye defect due to hard farming activities	4	3.3	32	26.7	84	70.0	1.33	9th

Source: Field Survey, 2012.

Table 4: Distribution of Respondents According to their Perception of Farming

Perception	SA		A		U		D		SD		Mean (x̄)
	Freq	%	Freq	%	Freq	%	Fre.	%	Freq	%	
Farming is not lucrative	12	10.0	26	21.7	16	13.3	18	15.0	48	40.0	3.53
Involvement in farming is time consuming and tedious	42	35.0	36	30.0	8	6.7	32	26.7	2	1.7	2.30
Farming is a dirty profession	28	23.3	36	30.0	8	6.7	22	18.3	26	21.7	2.85
Farming requires no training skill	16	13.3	4	3.3	16	13.3	48	40.0	36	30.0	3.70
Farming is the only way we can provide food for all Nigerians	34	28.3	30	25.0	8	6.7	26	21.7	22	18.3	3.23
Participation in farming activities makes someone week and tired always	28	23.3	60	50.0	10	8.3	8	6.7	14	11.7	3.67
Participation in farming activities affects children's school performances.	26	21.7	22	18.3	32	26.7	20	16.7	20	16.7	2.88
Frequent participation in farming activities reduces one's intelligence quotient (IQ)	8	6.7	14	11.7	22	18.3	34	28.3	42	35.0	3.73
Participating in farming activities reduces one's health	18	15.0	36	30.0	12	10.0	40	33.3	14	11.7	2.97
I do not encourage children to participate in farming activities	8	6.7	36	30.0	36	30.0	28	23.3	12	10.0	3.00
Farming activities exposes someone to extreme harsh weather condition	28	23.3	62	51.7	0	0	4	3.3	26	21.7	3.52
Farming activities exposes someone to dangerous animal e.g. snakes and scorpions	38	31.7	36	30.0	16	13.3	12	10.0	18	15.0	3.53
Farming activities exposes someone to certain diseases e.g. bacterial infection	22	18.3	42	35.0	34	28.3	14	11.7	8	6.7	3.47
Farming activities exposes someone to various harmful insects e.g. bees, termites, soldier ants etc.	50	41.7	40	33.3	12	10.0	8	6.7	10	8.3	3.93
Farming activities eposes someone to various injuries e.g. burns burning	26	21.7	36	30.0	0	0.0	34	28.3	24	20.0	3.05

Source: Field Survey, 2012

Table 5: Chi Square Analysis Result of Socio-economic Characteristics of Children Participating in Farming and the Hazards Associated with it.

Variable	x^2 value	Df	p-value	Decision
Sex	2.112	1	0.324	Not significant
Level of education	8.878	2	0.645	Not Significant
Religion	1.587	2	0.452	Not significant
Parent occupation	5.520	3	0.137	Not significant

Source: Field Survey 2012

Table 6: PPMC Analysis Result of Socio-economic Characteristics of Children Participating in Farming and the Hazards Associated with it.

Variables	r-value	p-value	Decision
Age	6.514	0.003	Significant
Household size	14.55	0.042	Significant

Source: Field Survey 2012

CHILD LABOUR INVOLVEMENT IN ARABLE CROP PRODUCTION IN IWO AGRICULTURAL DEVELOPMENT PROGRAMME ZONE OF OSUN STATE, NIGERIA

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This study analyzes child labour involvement in arable crop production in Iwo agricultural development zone, Osun State, Nigeria. The study utilizes a cross-sectional survey to obtain information from one hundred arable crop farmers from the study population. A probit regression was used to identify those factors that influence child labour participation in agriculture while the multiple linear regression was used to determine the effects of hours spent on different farm operations on the total hours of child labour. Results showed that sex of household head, age of household head, farming experience, number of children in the household and number of children in farm work was significant variables determining child involvement in farming. Hours spent on land preparation, planting and weeding respectively significantly influenced total hours of child labour. The study recommended that farming household should acquire labour saving machines that would reduce child involvement on farms.

Keywords: Child labour, Arable crop, Production, Involvement

INTRODUCTION

International Labour Organization (ILO) (1998) and Human right publication (2000) define child labour as some types of work performed by a child below age 18 years. This type of work impedes their ability to sufficiently attend school or skill training, thereby trading off their ability to escape poverty in the future. Child labour is different from child work. While some social scientists agree that "child work" is not objectionable,"child labour" is objectionable, exploitative and oppressive. Therefore, child work's primary emphasis is on learning, training or socialization (Hodges: 2001). Therefore, the work schedule is flexible, tends to be responsive to the developing capacity of the child.

Sub-Saharan Africa has a large number of working children. United Nations Children's Emergency Fund (UNICEF) estimates approximately 37 percent of children 5 to 14 years are actively involved in the labour market (UNICEF, 2007). The proportion of children working has continued to rise in the region. Child labour participation rates is highest in East Africa, followed by Central Africa and West Africa (Admassie, 2002; Bass, 2004). If concerted efforts are not made towards addressing this menace, it is predicted that the number of child labourers in Africa could surge from 80 million to over 100 million by the year 2015, arising from demographic explosion of impoverished people and inadequate levels of economic growth across Africa (ILO, 1998).

The global phenomenon of child labour can be attributed to several factors which include; rapid population growth of many less developed countries, high rates of unemployment, inflation and low wages have contributed to the occurrence and necessity for children to engage in economic activity (Lopez- Calva, 2001). The growing number of working children in sub-Saharan Africa had been linked to many factors including, economic stagnation, poverty, war, famine, orphanhood, and the rapid spread of HIV/AIDS (Admassie, 2002; Andvig et al., 2001; Bass, 2004; Bhalotra, 2003; Manda et al., 2003). Many researchers argue that poverty is the main reason for child labour (Admassie, 2002; Andvig et al., 2001; Grootaert and Patrinos, 1999; Jensen and Nielsen, 1997). World Bank (1988) described child labor as "one of the most devastating consequences of persistent poverty" (Fallon and Tzannatos, 1998). Others blame deficient economic and educational policies for child labour (Hiraoka, 1997; Post, 2002; Weiner, 1991). The worst form of child labour and abuse are seen where children are forced into prostitution, sex work and drug peddling.

Sixty percent of the world's child labourers are agricultural workers while many of them work in hazardous occupations. About 129 million girls and boys aged 5 to 17 years old work in crop and livestock production, as well as in forestry, fisheries and aquaculture, helping to supply some of the food and drink we consume and the fibres and raw materials we use to make other products (FAO, 2011).

Child labour is overwhelmingly a rural and agricultural phenomenon. In the rural sector employment, where agricultural activities prevail, some children work on family farms while others are employed on farms outside familial household. In both cases, child labour has been found to have negative consequences for the children. The heavy and intensive

labour that children undergo in the fields may lead to lack of pay, long hours on the job, physical exhaustion, physical abuse, and exposure to toxic pesticides and herbicides (Arat, 2002; Gill, 1994; Longford, 1995; Sancho-Liao, 1994). In addition, studies that are particularly focused on child agricultural workers in Africa have recognized a high incidence of injury, inferior living conditions resulting from substandard housing, poor access to clean water and food, poor sanitation, and low wages (Anyanwu, 1993; Francavilla and Lyon, 2002; Manda et al., 2003). It has also been noted that children employed in the agricultural sector experience mental and social consequences. Furthermore, in the region of Africa, particularly in rural Nigeria, it has been observed that child workers engaged in farming have lower school attendance compared to their urban working peers (Robson, 2004).

A lot of studies have been carried out on child labour in Nigeria; an interesting example is the study by Chukwudi et al (2011) which examined the determinants of child labour among rural and urban farm households in Abia State, using the probit regression model. Results from the analysis indicated that the age of the child, education of the child, sex of the child, education of the household head, and worth of contribution of the child to household finances were significant determinants of child labour participation for the rural households. For urban households, age of the child, sex of household head, age of household hold, sex of child, education of household head and worth of contribution of child were significant determinants of child labour. The present study builds on Chukwudi and colleagues' work to unpack the factors influencing child labour status of agricultural households and identify how child labour hours can be reduced in the major agricultural farm activities in Iwo Agricultural Development Zone of Osun State

Objectives

i. Identify the factors influencing child labour participation in arable crop farming, and
ii. Determine the effect of total hours of child's labour on the hours spent on different farming activities in the study area.

METHODOLOGY

The study was carried out in Iwo Agricultural Development Zone of Osun State. The Local Government Areas in the zone were Ayedaade, Aiyedire, Ejigbo, Irewole, Isokan, Iwo, and Ola Oluwa. A multistage sampling technique was employed. The first stage was the selection of four LGA out of seven Local Government Areas in Iwo Zone. The second stage was the random

selection of a representative village from each L.G.A, while the third stage involved the random sampling of 25 households per village to give a total of 100 households. Data collection took place in January 2012. Data were obtained from primary sources with the aid of personal interview and structured questionnaire administered on household heads. Information was obtained on the socio-economic variables such as age of household head, sex of household head, educational level of household head, sex of the child, age of the child etc. The researcher relied on verbal information supplied by the respondents from their response to the compiled questions.

A probit model was used to identify factors that influenced child labour participation on arable crop farms in the study area. The model has been widely used to capture decision making on problems with binary outcomes of the dependent variable (Awoniyi et. al, 2009). The probit regression model is given as; $Y(\beta X_i) = \int_{-\infty}^{\beta x i} 1/\sqrt{2t}\ \exp\left(-t^2/t\right)^2 dt$

Where t is the random variable, which is distributed as a standard normal deviate and β is a vector of unknown coefficients. $Y(\beta X_i)$ is the probability that the i^{th} farming household will engage a child labourer. Thus, the probability of a farming household engaging a child labourer is the area under the standard normal curve between $-\infty$ and βX_i. The larger the value of βX_i the more likelihood the household will engage a child labourer. An iterative maximum likelihood algorithm was used to estimate the empirical model in order to obtain asymptotically efficient parameter estimate. Y is Child labour participation in farm work; Y is 1 if child participates in farm labour and Y is 0 if otherwise. X_{is} is the vector of characteristics of the i^{th} individual and is the independent variables, which are defined as follows. X_1 is sex of household head (X_1 =1 if male, X_1 = 0 if female); X_2 is years of farming experience of household head; X_3 is age of household head (in years); X_4 is household head farm income (Naira); X_5 is number of children in each household; X_6 is number of children in farm work; X_7 is educational level of the household head (in years); X_8 is farm size (hectares).

Furthermore, the least square regression model was used to determine the relationship between farm labour and the hours spent on farming activities by the child labourer.

$H= \beta_0 + \beta_1 Z_1 + \beta_2 Z_2 + \beta_3 Z_3 + \beta_4 Z_4 + \beta_5 Z_5 + e_i$

Where, H is total hours spent on farm activities by the child; Z_1 is hours spent on land preparation

annually; Z_2 is hours spent on planting annually; Z_3 is Hours spent on weeding annually; Z_4 is Hours spent on fertilizer application annually; Z_5 is Hours spent on harvesting annually and β_0 = regression coefficient.

RESULTS AND DISCUSSION

Socio-economic Characteristics of the Household heads and Child Labourers

On the average majority of the sampled household are female headed, between ages 41 – 60 years; have no formal education and have between 5 – 15 years farming experience (Table 1). While Data in Table 2 showed that 78 percent of the household engage their children as child labourers, 53 percent are male; majority have secondary school education; 43 percent spend between 3 -5 hours/week on the farm and 46 percent between less than 2 day in the week on the farm.

Factors influencing child labour participation in arable crop production

The probit regression results in Table 3 revealed that sex of household head (HHSEX), age of household head (HHAGE), and number of children in farm work (NOCIFW) were significant at 5%, 5%, and 1% probability levels, respectively. The log likelihood statistics is -9.3682 and confirms the significance of the variables used in the model while a Chi square statistics 89.1188 and is significant at 1% which indicates a good fit for the estimated model.

HHSEX negatively influences the probability of child labour that is there is higher probability that female headed household encourage the use of child labour and may need this to augment family income. HHAGE negatively influences the probability of using child labour which implies that child labour is common among younger farmers. HHFMEX is positive and significantly influences the probability of child labour involvement. This suggests that household heads with more farming experience have higher probability of engaging children in farm labour than those with lower years of farming experience. This is expected because a household head with longer years of experience in farming would require more labour in crop production. Furthermore, NOCHIL is significant and negatively influences the probability of child labour involvement. This implies that as number of children in the household increases the probability of child labour involvement decreases, expectedly NOCIFW is positive and increases the probability of child labour. Households having more number of children already trained in

farm work have a higher probability of child's participation in farm activities than households with less number of children.

Effects of hours spent on selected farming activities on total hours of child labour

The Ordinary Least Square result reveals that hours spent on land preparation (HHSOLPA), hours spent on planting (HSOPA) and hours spent on weeding (HSOWA) all significantly and negatively influenced total hours of child labour (Table 5).

The coefficient of HHSOLPA is significant at 5%. This implies that a unit increase in the hours spent on land preparation decreases the total hours spent on farming activities by the child by 0.015 hour. This suggests that time spent on land preparation contributes negatively to total hours of child labour involvement on the farm. The coefficient of HSOPA is negative and statistically significant at 5%. This means that as time spent on planting by the child labourer increase by 1 hour the total hours spent on farming activities decreases by 0.025 hour. Likewise, the coefficient of HSOWA is negative and significant at 5%, which implies that as the hours spent on weeding increases by 1 hour the total hours spent on farming activities by the child by decreases by 0.068 hour. The result suggests that land preparation, planting and weeding are activities that are likely to be mainly borne by adults than children because they are highly physically tasking. This may justify the negative relationships shown in the result. However, these activities still consume the child labourer's time and may suggest the need for farmers to utilize labour saving equipment to augment physical labour.

CONCLUSION

The study analysed child labour involvement in arable crop production. Certain demographic and socioeconomic factors that influenced the probability of child labour participation in the study area were identified. Child labour is pronounced among female headed household, in young families; among more experienced farmers and in large farming households. Any intervention to reduce child labour must target these groups. It can therefore be concluded that poverty is a common factor connecting these groups. Therefore appropriate interventions by government, non-governmental organizations and farmers groups should target poverty alleviation. Also, there was no convincing evidence to conclude that selected major farming activities positively influenced total hours of child labour committed to farming. However, farmers should be encouraged by relevant children

advocacy groups on the need to utilize labour saving equipment to drastically reduce child labour on their farms.

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Table 1: Distribution of the socio-economic characteristics of household heads

Variable	Frequency	Percentage
Sex		
Male	34	34
Female	66	66
Total	**100**	**100**
Age of Household head		
18 - 40	18	18
41 – 60	74	74
61 - 80	8	8
Total	**100**	**100**
Level of Education of Household head		
No formal education	47	47
Primary education	41	41
Secondary education	10	10
Tertiary education	2	2
Total	**100**	**100**
Household size		
0 – 4 persons	24	24
5 – 9 persons	71	71
10 – 14 persons	5	5
Total	**100**	**100**
Years of farming experience		
5 – 15	40	40
16 – 26	33	33
27 – 37	27	27
Total	**100**	**100**

Source: Field survey, 2012

Table 2: Socio economic characteristics of child labourers

Variable	Frequency	Percentage
Participation in farm work		
Number of household with children in farm work	78	78
Number of household with children not in farm work	22	22
Total	**100**	**100**
Sex of children in farm work		
Male	53	67.9
Female	25	32.1
Total	**78**	**100**
Age distribution of children in farm work		
4 - 10	12	12
11 – 14	29	29
15 - 17	37	37
Total	**100**	**100**
Education status of child labourers		
No formal education	20	25.6
Primary education	17	21.8
Secondary school education	38	48.8
Post secondary education	3	3.8
Duration of farm work by child labourers (Hours/day)		
0 – 2	17	21.8
3 – 5	43	55.1
6 – 8	18	23.1
Total	**78**	**100.0**
Number of day spent per week by child labourers		
0 – 2	46	59.0
3 – 5	20	25.6
> 6	12	15.4
Total	**78**	**100.0**

Source: Field survey, 2012

Table 3: Result of the probit regression to determine the factors that influence child labour participation in arable crop production in Iwo zone area of Osun State.

Variable	Coefficient	S/Error	T value	P value
CONSTANT	8.3802	4.0852	2.051	0.040
HHSEX	-2.614	1.254	-2.084	0.037**
HHAGE	-0.285	0.129	-2.216	0.027**
HHEDUC	0.232	0.104	0.022	0.982
HHFMEX	0.254	0.131	1.952	0.052*
HHFMIN	-0.406	0.000	-0.748	0.455
NOCHIL	-0.514	0.029	-1.726	0.084
NOCIFW	3.342	1.033	3.234	0.001***
FMSIZE	0.125	0.352	0.354	0.723
Log likelihood	-9.368			
Restricted log likelihood	-53.928			
Chi-Squared	89.119			
Significance	0.000			

Source: Field survey, 2012
**Significant at 5% and ***Significant at 1%

Table 4: Dependent variable component of the regression model

Dependent variable (Yi)	Population of farmers
Farmers that did not engage child labourers	23
Farmers that engaged child labourers	77
Total	100

Table 5: Result of the least square regression to determine effects of hours spent on selected farming activities on total hours of child labour in the study area

Variable	Coefficient	S/Error	T value	P value
CONSTANT	6.046	0.206	29.311	0.000
HSOLPA	-0.016	0.008	-1.968	0.052**
HSOPA	-0.025	0.013	-1.978	0.051**
HSOWA	-0.069	0.030	-2.254	0.026**
HSOFAA	-0.012	0.028	-0.424	0.672
HSOHA	0.015	0.012	1.279	0.204
Adjusted R^2	0.6871			
F Value	44.48			0.000

Source: field survey 2012
****Significant at 5%**

ROLE OF SOCIAL INSTITUTIONS IN PROMOTING YOUTH INVOLVEMENT IN AGRICULTURE IN OSUN STATE, NIGERIA

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This study assessed the level of involvement of youths in agriculture and identified the roles played by social institutions. It aimed at arousing the interest of youths as major participants in agricultural processes. Ex-trainees of Osun State Agricultural Youth Empowerment Programme (OSSAYEP) were interviewed for the study. Thirty-five respondents were randomly selected from six of the nine training centers in the state to give a total of two hundred and ten participants used for the study. Structured interview schedule was used to collect relevant data from the respondents. Descriptive statistics were used to summarize the data. The results showed that the mean age of the respondents was 30.47 ± 5.87 years, 60.5 percent were males, 60.5 percent were Christians, 55.7 percent had secondary school education, and 68.1 percent were married. Only 38.6 percent received assistance from their families and 11.9 percent from their religious organization. Fertilizer application was identified as the most taught relevant technology during OSSAYEP training and 59.0 percent stated that they were visited by extension officers. About 11.9 percent reported that they had follow-up from government after their training. Total output in monetary unit from farming in 2009, 2010 and 2011 was used as measuring index of involvement. The average total output from farming activities of the ex-trainees in 2009, 2010, 2012 was ₦ 502 950 ± ₦ 321 996. About thirteen percent of the trained youths were classified as high earners for earning a total farm output above ₦ 824 946; while 35.71 percent were grouped as average earners for earning between ₦ 180 954 and ₦ 824 946. Furthermore, 61.45 percent were classified as low earners for earning below ₦ 180 954. In conclusion, few youth practiced farming and those that did practice, do so on a small scale. The levels of involvement of youth in agriculture reflect the level of support and training they had enjoyed from social institutions around them.

Keywords: Role, Social Institution, Youth involvement

INTRODUCTION

A growing consensus amongst experts and policy-makers suggests that both agricultural and youth developments are interrelated, especially within the context of

developing economies. According to Mbeine (2012), to improve the involvement of youths in agriculture, the social institution – a body saddled with the responsibility of organizing systems of social relationships that embody certain values, practices and procedures that meet specific societal needs, must change the mindset and perceptions of the youths about agriculture. Though widely seen as a low-income, high-risk occupation, the public notion of the farm industry must be improved upon to achieve more youthful interest in choosing agriculture as a career. To achieve this, many institutions should endeavor to provide, strengthen and maintain extension services, research and innovation, credit, agro-processing and marketing in order to enhance efficiency and effectiveness of farming enterprises.

The term 'institution' is commonly applied to customs and behavioral patterns considered of essence to the society, even to particular formal organizations of government and public services (Wikipedia, 2012). According to Ekong (2003) social institutions constitute the more stable aspects of culture devised to meet basic needs relevant to the very survival of the society. Thus, in providing for the basic physiological need of man – food, shelter and clothing, the society creates the economic institution of farming and industry; to carter for integral areas of need such as love, protection and affiliation. The society by extension constructs the family institution; to impart knowledge, skills and acceptable moral codes. It creates the educational institution; to enhance law and order; governmental institution - to account for the explanation of the unknown and to mitigate human suffering on earth. The religious institution is not an exception in this regard.

The aforementioned institution must collaborate to educate the youths about recent changes in agricultural practices. Farmers are now educated, business-savvy entrepreneurs, with commensurate extensive training and knowledge. Presently, many employed persons abandon their lucrative jobs to venture into farming. The positive aspects in farming being emphasized include; owning one's own business, choosing one's work hours and having a variety of daily responsibilities (Mbeine 2012). This study assessed the influence level of specific social institutions on young people in Osun state, with special emphasis on the beneficiaries from OSSAYEP, venture.

Objectives of the study

The specific objectives set for the study were to

i. describe the socio-demographic characteristics of trained youths

involvement in agricultural activities.

ii. determine the level of involvement of youths in agriculture in Osun state in general.

ii. identify the roles of institutions in promoting the involvement of youths in agriculture within the study area.

METHODOLOGY

The study was carried out in Osun state. Youths who had passed through training in OSSAYEP were selected and interviewed for the study. OSSAYEP is a training program that was established with the aim of equipping young school leavers annually with modern skills and techniques in agricultural practices. The program was designed for male and female of post primary schools category in Osun State. Thirty-five respondents were randomly selected from six of the nine training centers in the State to give a total of two hundred and ten ex-trainees used for the study. Structured interview schedule was used to collect relevant data from the respondents. Descriptive statistics were used to summarize the data collected.

Youth involvement in agriculture was determined by adding outputs in monetary unit from farming operations within years 2011, to 2009. Outputs from all farming activities were converted into monetary unit in Naira (₦). The mean of the total output and the standard deviation were calculated and these were used to group respondents as having high, medium and low levels of involvement in agriculture. High level was defined as units ≥ mean + standard deviation. Average level was defined as units < mean + std. dev., but > mean – std.dev. Low level was defined as ≤ less than mean – std.dev.

Lack of involvement was scored zero, low level of involvement was scored 1, average level was scored 2 and high level was scored 3.

RESULTS AND DISCUSSION

Socio-economic characteristics

Data in Table 1 revealed that 36.2 percent of the respondents were between ages 26 and 30 years while 24.3 percent and 21.4 percent were between 36 and 40 years, respectively. About 17.1 percent of them were between 31 and 36 years of age. The mean age of the respondents was 30.47 years ± 5.87. The trainees were youths who were expected to be very active and later replace the aged farming population. About 60.5 percent of the respondents were male while 39.5 percent were female. This implies that the male to female ratio of 3:2 for the training program and it confirmed that the male gender is

more involved in farming than their female counterpart.

More than half (55.7%) of the ex-trainees of OSSAYEP had secondary education while 19.5 percent of them had National Certificate in Education. About 9.5 percent and 8.6 percent of them were B.Sc/B.A, HND or OHD holders respectively. Also, 4.8 percent of the respondents had primary education while 1.9 percent of them had postgraduate qualification. This showed that all the youth that participated in the training program had at least primary education.

Many (60.5%) of the respondents were Christians while 37.6 percent were Muslims. Only 1.9 percent of the ex-trainees of OSSAYEP practiced traditional religion. Also more than half (52.4%) of the ex-trainees had family size between 6 and 10 while 42.9 percent of them had family size up to 5. Only 4.8 percent of the respondents had family size of 11 and above. The mean family size of the ex-trainee was 6 ± 2. About (68.1%) of the respondents were married, 28.6 percent of them were single, 1.9 percent of them were separated while 1.4 percent were widowed. This revealed that marriage institution is still highly valued in the culture of the respondents.

The mean year of farming experience was 9.3 years ± 5.7. The table also revealed that almost half (49.5%) of the respondents had less than or equal to 5 years of farm experience, while only 1.9 percent of the respondents had 21 years and above of farming experience. The implication of this is that youths that were involved in farming before their exposure to OSSAYEP training were more likely to appreciate the training than those who had no farming experience before the training.

Respondents' sources of agricultural assistance

Data in Table 2 show that only 38.6 percent of the respondents reported that they received a form of agricultural assistance from their family members while more than half (61.4%) of them reported that they received no form of agricultural assistance from their family members. Among those who received agricultural assistance, 34.8 percent reported that they received land for farming activities while 11.0 percent reported that they received market information. Also, 9.5 percent and 8.6 percent of the ex-trainees who received assistance from family members reported financial assistance and advisory services, respectively. This low level of support from family members is an indication of the low level of performance of the youth in farming.

Data in Table 2 showed further that only 11.9 percent of the ex-trainees of OSSAYEP reported ever receiving assistance from any religious group/s. While majority (88.1%) of them reported that there was no assistance from their groups. A few people that received assistance about 10.0 percent reported that the assistance was in form of cooperative association, while 3.3 and 2.9 percent reported the assistance was access to inputs and information respectively. Only 11.9 percent of the ex-trainees reported that there were follow up activities by the government after their training while majority (88.1%) report showed no follow up activity. Only 15.2 percent of the ex-trainees reported that they received loan from the re-settlement and credit unit of the program after their graduation. All recipient got ₦22 000 each after their graduation. The poor follow-up by government after the program and lack of credit facilities provided for the ex-trainees reduced their level of involvement in agriculture after the training.

Majority (94.8%) of the ex-trainees reported receiving inputs from the government during their training, while only 4.8 percent reported on the contrary. It can therefore be deduced that the training aspect of OSSAYEP was worthwhile and well provided for by the government. Continuity of the supply of these inputs will increase the level of involvement of these youth in farming; thus making the program more effective. More than half (59.0%) of the ex-trainees reported they were never visited by extension agents while 41.0 percent report showed they were visited. Of those visited, 54.7 percent reported that the extension agent's visit was very often while 26.7 percent report showed the visits were not regular. Also, 18.6 percent reported in this wise.

Furthermore, almost all (95.3%) of the ex-trainees visited by extension agents opined that the information given by extension agents was useful to them as farmers while only 4.7 percent gave a contradictory report. Regular visits by extension agents to the farms of youths will encourage them to be more involved in farming and improve their production, thus increasing their income.

Role of educational institution (OSSAYEP)

Data in Table 3 showed that new technologies taught during the training at OSSAYEP impacted on the respondents positively. Again, its' relevance to their involvement in farming was shown. Fertilizer application was indicated by 63.9 percent of the respondents as the new technology they were exposed to and 61.9 percent of these respondents felt

that it was adequately taught and relevant, while 1.9 percent felt that the teaching was grossly inadequate. Crop production was positively indorsed by 48.6 percent of the respondents and 45.2 percent of these respondents felt that it was adequately taught and relevant, 0.5 percent felt that the teaching was not adequate and 2.9 percent felt that it was grossly inadequate. Animal production practices was indicated by 30 percent of the respondents and 26.7 percent of these respondents felt that it was adequately taught and relevant, 1.9 percent felt that the teaching was not adequate, while 1.4 percent felt that the teaching was grossly inadequate. Beekeeping practices was listed in the fourth place by 8.1 percent with 3.8 percent of these respondents asserting it was adequately taught and relevant, 3.3 percent felt that the teaching was not adequate, while 1.0 percent felt that the teaching was grossly inadequate. Crop processing and farm management practices were listed in the fifth place by 4.3 percent of the respondent where 3.8 percent of them rated it as adequately taught and relevant and 0.5 percent as not adequately taught.

It can be deduced that ex-trainees were more likely to practice certain technologies they consider relevant and adequately taught and this may increase their interest and level of involvement in farming. Maize, cassava and vegetable production which the ex-trainees rated highest indicated that there is high likelihood of cultivation of these crops in the state after training.

Level of involvement of respondents in agriculture

Data in Table 4 revealed that more than half (59.5%) of the ex-trainees interviewed were currently involved in agricultural production while 40.5 percent of the ex-trainees were no longer involved in agricultural production. The table further shows that 68.8 percent of the ex-trainees involved in agriculture (41.0% of the total respondents), practiced agriculture as their major occupation while 31.2 percent (18.6% of the total respondents) practiced agriculture as their minor occupation. This revealed that the program succeeded in encouraging some of the trainees to practice agriculture.

The total output from farming of the ex-trainees for three years was used as index of involvement in agriculture. The mean of total output of the three years was ₦ 502 950 ± ₦ 321 996. Further analysis was used to classify the total output into three groups. About thirteen percent of the ex-trainees were classified as high earners for having a total output of above ₦ 824 946 while 35.71 percent are grouped as medium earners

earning between ₦ 180 954 and ₦ 824 946. Furthermore, 61.45 percent were classified as low earners for earning below ₦ 180 954. From the analysis, 40.5 percent from the low earners did not practice agriculture, whether full time or part time. This implied that ex-trainees of OSSAYEP were involved in agriculture after the completion of their training; however, they practiced on a small scale

CONCLUSION AND RECOMMENDATIONS

In conclusion, youths contributed to food security and rural development on a small scale and this can be improved if their potentials are properly harnessed and their attitudes favorably disposed to agriculture. Families and religious groups can start to present agricultural practice as a lucrative and prestigious career early during childhood and lend as much support as can be afforded to the young. Educational institutions should incorporate practical approach into the curriculum with the addition of fun filled activities to attract the attention of young people. Government should contribute through effective policies and programs that encourage youth participation in agriculture (for instance provision of machineries, credit facilities, land and other supports) and ensure proper follow-up plans to ensure effectiveness and facilitate continuity.

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Table 1: Distribution of respondents by selected socio-economic characteristics. n = 210

Socio-economic characteristics	Frequency	Percentage	Central tendency
Age (Years)			
≤ 25	45	21.4	
26 – 30	76	36.2	Mean = 30.48
31 – 36	36	17.1	Standard deviation =5.87
36 – 40	51	24.3	
≥41	2	1.0	
Sex			
Male	127	60.5	
Female	83	39.5	
Educational level			
Primary education	10	4.8	
Secondary education	117	55.7	
NCE	41	19.5	
OND	18	8.6	
B.Sc./HND	20	9.5	
Postgraduate	4	1.9	
Religion			
Christianity	127	60.5	
Islam	79	37.6	
Traditional	4	1.9	
Family Size			
≤ 5	90	42.9	
6 – 10	110	52.4	Mean = 6.00
≥11	10	4.8	Std. dev = 2.00
Marital Status			
Single	60	28.6	
Married	143	68.1	
Widowed	3	1.4	
Separated/Divorced	4	1.9	
Years of farming experience			
≤ 5	87	47.5	
6 -10	66	36.1	Mean = 9.31
11- 15	22	10.5	Std. dev. = 5.69
16 – 20	28	13.3	
≥ 21	4	1.9	

Source: Field survey, 2012

Table 2: Distribution of respondents by assistance received from family, religious group, extension and government n=210

Agricultural assistance received	Frequency	Percentage
Family		
No	129	61.4
Yes	81	38.6
***Types of assistance**		
Land provision	73	34.8
Market information	23	11.0
Finance	20	9.5
Advisory	18	8.6
Information	16	7.6
Planting materials	3	1.4
Agrochemicals	1	0.5
Religious group		
No	185	88.1
Yes	25	11.9
***Types of assistance**		
Group association	21	10.9
Access to input	7	3.3
Access to information	6	2.9
Market for produce	4	1.9
Social stability	4	1.9
Cultural support	4	1.9
Advisory services	3	1.4
Visit by Extension Agents		
No	124	59.0
Yes	86	41.0
Frequency of visits		
Very often	47	54.7
Often	23	26.7
Not often	16	18.6
Usefulness of information		
Yes	82	95.3
No	4	4.7
Follow up activities by government after training		
No	185	88.1
Yes	25	11.9
Loans from resettlement and credit units of OSSAYEP		
No	178	84.8
Yes	32	15.2
Inputs received from government during training		
Yes	199	94.8
No	11	5.2

Source: Field survey, 2012 * Multiple responses

Table 3: Distribution of respondents by perceived adequacy and relevance of new technologies n=210

Technologies	Adequate		Inadequate		Grossly inadequate	
	F	%	F	%	F	%
Planting/spacing/ fertilizer application	130	61.9	-	-	4	1.9
Crop production	95	45.2	1	0.5	6	2.9
Animal production	56	26.7	4	1.9	3	1.4
Beekeeping	8	3.8	7	3.3	2	1.0
Crop processing	8	3.8	1	0.5	-	-
Farm management	8	3.8	1	0.5	-	-

Source: Field survey, 2012

Table 4: Distribution of respondents by total output from agriculture n=210

Total Output in Naira	Frequency	%	Level of involvement
Below ₦ 180 954	108	51.42	Low
₦ 180 954 – ₦ 824 946	75	35.71	Moderate
Above ₦ 824 946	27	12.85	High
Mean of total income = ₦ 5.03×10^5			
Standard deviation = ₦ 3.22×10^5			

Source: Field survey, 2012

Vol. 4 (1), pp. 77 - 88

EFFECT OF AGRICULTURAL EDUCATION ON IN-SCHOOL RURAL YOUTHS' DISPOSITION TOWARDS AGRICULTURE AS MEANS OF LIVELIHOOD IN OGUN STATE, NIGERIA

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This study assessed the effect of agricultural education on in-school rural youths' disposition towards agriculture as a means of livelihood in Ogun State. Simple random sampling technique was used to select 254 students from 26 rural secondary schools in the State. A validated and structured questionnaire was used to elicit information from the respondents. Data were subjected to descriptive and inferential statistics such as frequency count, percentage, Chi-square and regression analyses. Findings showed that 52 percent of the in-school rural youths were female. Many (71.3%) of the respondents were between the ages of 14 and 16 years, some (12.6%) were members of young farmers' club while 52 percent had personal farms. A majority (78.0%) of the respondents had favourable judgement about the quality of agricultural instructions offered by their teachers but had mixed feelings towards agriculture as means of livelihood. Chi-square results showed significant associations between the in-school rural youths' class ($\chi^2 = 2.72$, $df = 2$, $p \leq 0.05$), farm ownership ($\chi^2 = 22.70$, $df = 4$, $p \leq 0.05$) and their disposition towards agriculture as means of livelihood. Regression result also showed a significant relationship between the in-school rural youths' judgement of quality of agricultural education received in schools and their disposition to agriculture as means of livelihood ($\beta = 0.20$, $p \leq 0.01$). The study concluded that the in-school rural youths favourably judged the quality of agricultural instructions given to them in the schools but still they had indifferent disposition towards agriculture as means of livelihood. The study thus recommended that the quality of agricultural science taught in the schools should be increased while farming should be mechanized in order to attract and retain the in-school rural youths in the agricultural sector.

Keywords: agricultural education, in-school rural youths, farming

INTRODUCTION

Agricultural production has consistently been on decline since the advent of oil boom in Nigeria. Consequently, food and fibre production levels have become abysmally low, making it impossible for many farmers to feed themselves let alone feeding others and also preventing industrial development. (Torimiro *et al* 2008). The precarious situation of agriculture is worsen by the sector's over dependence on non-lettered, smallholder, aged farmers for labour and managerial skills. Scholars and policy-makers have indicated that revamping the sector requires, among others, the stimulation of youths' interest in agriculture as means of livelihood through agricultural education. (Akinsorotan *et al* 2007; Ajayi *et al* 2008; Farinde *et al* 2008).

The rationality of this view is predicated on the fact that young educated minds, relative to non-lettered and aged, possess the energy, zest and zeal as well as the innovation proneness needed to revamp our agricultural sector and harness its entire value-chain.

This perspective perhaps informed the integration of agricultural science into the curriculum at secondary education level and its subsequent designation as a vocational subject. The policy thrust made agricultural science a compulsory subject for all students in the Junior Secondary Schools and for the science students in the Senior Secondary Schools at the advent of 6-3-3-4 educational system in the Nigeria.

Therefore a number of in-school youths have been taught agricultural science at various secondary education levels. But then, less is known about the extent to which such education has influenced the youths' disposition towards agriculture as a means of livelihood. Although attempts have been made to understand the impact of Internship Programme on undergraduate students' attitude towards agriculture (Ajayi et al 2008), the literature still waits for information on the influence of secondary school's agricultural education on youths' disposition towards agriculture as a means of livelihood, especially in Ogun State. This study therefore seeks to fill this gap. It examined the effects of teaching agricultural science on in-school youths' disposition to agriculture as means of livelihood in Ogun State.

Objectives

i. describe the personal characteristics of in-school rural

youths taking agricultural science in the study area;

ii. examine the availability of teaching facilities for practical in agricultural science in the secondary schools;

iii. determine the students' perception about the quality of agricultural instruction offered by their agricultural science teachers;

iv. ascertain the in-school rural students' disposition to farming as occupation

Hypotheses

i. There is no significant relationship between the in-school rural youths' personal characteristics and their disposition to farming as future occupation.

ii. There is no association between the in-school rural youths' judgement about the quality of agricultural education and their disposition to farming as future occupation.

METHODOLOGY

Description of the Study area

The study was carried out in Ogun State, Nigeria. Ogun State was created in February 1976. It lies on latitudes 6.2^0 and 7.8^0 North and longitudes 3^0 and 5^0 East. The State is bounded in the West by Republic of Benin, in the South by Lagos State, in the North both by Oyo and Osun States and in the East by Ondo State. It covers a land mass of about 16,409.2[illegible] square kilometres and a population of about 3,728,098 people (National Population Commission, 2006). It is presently made up of 20 Local Government Areas. The State has a tropical climate with mean annual rainfall of about 1,500 millimetre and temperature range of about 25^0C- 35^0C. The raining season, which runs between April and November, is characterised by two distinct rainy seasons brought about by temporary cease of rain in August. The traditional occupation of the people is agriculture, which is well favoured by the climatic condition of the State. Commonly cultivated crops are maize, yam, plantain, beans, cocoa, rubber, palm tree, sugar cane, and cassava. The commonly reared livestock in the State include sheep, goats, cattle and local chickens.

Population of the Study

The study population were students who offered agricultural science as a subject at the senior secondary school level in the rural public secondary schools of Ogun State. There are Four (4) Educational Zones and Twenty (20) Local Government Areas in Ogun State. Sixty- five percent (65%) of the Local Government Areas were randomly selected to give a total of 13 Local Government Areas. Two (2) schools which were located in rural areas were purposively selected from each Local Government Areas which gave

the agricultural science students were randomly selected from a sampling frame of 635 agricultural science students, using the official class register to give a total of 254 respondents. A validated questionnaire was used to collect data from the respondents. Descriptive statistics such as percentages, mean, frequency distribution were used to summarize the data while inferential statistics such as Chi-square and simple linear regression were used to test the hypotheses.

RESULTS AND DISCUSSION

Personal Characteristics of In-school Rural Youths

Data in Table1 showed that 48 percent of the in-school rural youths were male while 52 percent were female. The observed ratio of female to male students suggests that female agricultural students in the selected rural secondary schools had as much opportunity and interest for learning and acquiring agricultural knowledge as their male counterparts. With 71.3 percent of the students within the age range of 15 to 16 years, it implies that most of the students were at the prime age at which their attitudes and thinking could be moulded and stimulated for interest in agriculture as a profession as postulated by Adeokun (2005) that youths' interest in farming could be better stimulated between childhood and 18 years of age. The students though had faith, their enrolment in agricultural science class suggests that none of the religious beliefs was against agricultural education or its learning. Fathers of 38.2percent and mothers of 10.2percent had farming as their major occupation. This finding suggested that the acquired knowledge of agricultural science by the students could be integrated in their parents' farming activities for better performance. This goes in line with Akubuilo (2005) position that agricultural science students would take what was learnt in school to their parents, who are mostly farmers, for application in their farming activities. As part of opportunity to demonstrate interest in agriculture, about 13percent of the students were members of Young Farmers Club, an age-group established for the purpose of encouraging and stimulating the interest of young ones in agriculture as a profession. The low level of young farmers club membership could imply less promotion of agricultural development programmes among the rural students. About half (52.0%) of the respondents had personal farms while the remaining 48.0percent with no personal farms did engaged in agricultural practices on their parents' farms or school farm during practical session. This observation was in line with FAO (1999) indications that the traditional role of

youths consists of farm work though, usually as unpaid family workers rather than farmers on their own account.

Instructional facilities for practical agricultural education in the selected secondary schools

Data in Table 2 showed that about 3.1percent of the respondents indicated availability of tractor for practical training on mechanised farming. This suggests the likelihood of less training on farm mechanisation during agricultural practical sessions. Many (78.%) of the respondents indicated that local seeds were mainly used for practical training while only 13 percent said that improved varieties were used. This suggested that the students might not internalize the value of improved cultivar in agricultural production, which can influence their future farm enterprise. The use of organic fertilizer for practical training, as indicated by 55.9 percent of the students, suggests that training on soil fertility replenishment were taught to the students. This implies that the respondents were likely exposed to knowledge about the correct type and right quantity of fertilizer. Such knowledge can bring about 30 to 50% yield increase in crop production (News and Views 2002), while its absence may cause intensive use of fertilizer, which can lead to drastic reduction in yield (Matsumoto and Yamano 2010). Therefore the practical sessions of the respondents were somewhat conducted in a good environment, which according to Adeogun and Osifila (2006) enriches learning experiences.

In-School Rural Youths' Judgement of the Quality of Agricultural Instruction Offered by Agricultural Science Teachers

Data in Table 3 showed students' judgement about the quality of agricultural instruction given by their agricultural teachers. Average rank score of their *teachers' preparation for classes* was $\bar{X} = 4.33$ with SD of 1.14; *preparation of clear and understandable notes for revision of taught lessons had* 4.43 with SD of 0.93 and *comprehensiveness of the lessons' score was* $\bar{X} = 4.01$, SD with SD of 1.09. Similarly, *agricultural science teachers...made efforts to teach well had a score of* $\bar{X} = 4.41$ with SD=1.08). These average rank scores suggested that the students had favourable judgement about their agricultural science teachers' abilities and commitment. The findings imply that the agricultural science teachers were diligent in teaching and their attitude towards teaching of agricultural science could stimulate the students' interest in agriculture as a career. (Young 1990; Afe 2001; Agharuwhe and Ugborugbo 2009; Information Technology Association

of America, 1998; Adu and Olatundun, 2007).

In-school rural youths' disposition to agriculture as means of livelihood

Data in Table 4 showed the respondents' disposition towards agriculture as a means of livelihood. On a scale of maximum score of 5, the respondents gave 4.46 and 4.42 scores to the statements *agriculture is worth being studied in the higher institution* and *with mechanised farming, agriculture would be encouraging to take up,* respectively. These scores suggest that the respondents have a favourable attitude towards agriculture as means of livelihood, which would improve if farming is mechanised. Notwithstanding the students' favourable disposition, they were mindful of the fact that *the present state of agriculture in Nigeria is highly discouraging* ($\bar{X}$ = 4.12; SD=1.51); considered *those who study related agricultural courses in higher institutions are usually not successful in life* ($\bar{X}$ = 4.33; SD=1.13) and as such were of the opinion that *studying agriculture gives no hope for survival in the future* ($\bar{X}$ = 4.03; SD=1.33).

Comparison of this observation with the students' earlier favourable disposition to agriculture as means of livelihood suggests that they did not trust agriculture as a profession to be able to provide for their needs. That is, with the present state of agricultural practice in Nigeria and with several trainees of agriculture not taking up agriculture as profession, and for operating on a small scale production by those who took it up, the in-school youths may not develop *a strong sense of taking up agriculture as a profession in the future.* This submission was equally affirmed by the students indication that *never should one dream of taking up agriculture as a profession in Nigeria* ($\bar{X}$ = 3.75; SD=1.42) especially where farming is done with the use of crude implements. This was reflected in their disagreement the statement that *not minding the use of crude implements for farming agriculture should be taken up as a profession* ($\bar{X}$ = 1.98; SD=1.50). These findings corroborated those of Ayanwale and Laagye (2007) and Kochung and Quinter (2011) which posited that priority needed to be given to our agricultural sector through adequate budgetary allocation and mechanization in the country.

Test of Hypotheses

Data in Table 5 showed the results of Chi-square test of the relationship between selected personal characteristics of the respondents and their r judgement of farming as means of livelihood. There were significant strong associations between the class status of the

students (χ^2= 2.724; *df* = 2); ownership of farms (χ^2= 22.70; *df* = 3) and their judgement of agriculture as a means of livelihood at $p < 0.05$ level. The observed significant association of the students' class in school could be as a result of the agricultural knowledge and skills acquired over the years, though mostly theoretical. Furthermore, the significant influence of farm ownership by the students could be as a result of the passion they had for farming and the belief that invested energy and skill in farming could yield good returns, guaranteed subsistent food availability and income generation, where there is left over for sales. This is in line with the submission of Bandura *et al.* (2001), that the choice of career by rural youths can be influenced by factors such as personal attitudes and educational attainment.

Data in Table 6 showed the results of linear regression test of relationship between the rural youths' judgement of quality of the offered agricultural instruction and their disposition to farming as means of livelihood. Rural youths' judgement of quality of the offered agricultural training (β = 0.209, $p \leq 0.01$) had significant relationship with their disposition to farming as a means of livelihood. This implies that good and quality agricultural education is crucial to stimulating the interest of the in-school rural youths in agriculture as a career choice. In essence, the in-school youths' favourable disposition to agriculture was probably motivated by the agriculture lessons received in schools.

CONCLUSION AND RECOMMENDATIONS

Based on the findings of the study, it was concluded that the in-school rural students favourably judged the quality of the agricultural instructions offered by their teachers but did not see agriculture as capable of providing adequate means of livelihood. Their negative disposition might not be unconnected with the present state of agriculture in Nigeria, which made the respondents to believe that those who study related agricultural courses in higher institutions are usually not successful in life. Their opinion that, studying agriculture gives no hope for survival in the future; and that never should one dream of taking up agriculture as a profession in Nigeria, especially where farming is done with the use of crude implements could be traced to the students' real life experiences of the farming situation in their environment. However, the students' disposition could be influenced positively by introducing high quality classroom instruction. Therefore it was recommended that agricultural science education at the secondary school level should go beyond theoretical teachings to include practical and experiential learning

anchored in hands-on-the-tool training. Also efforts should be made, to revamp and mechanize the nations' agricultural system, which will attract the in-school youths.

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Table 1: Personal characteristics of in-school rural youth (n= 254)

Variable	Frequency	Percentage
Sex		
Male	122	48.0
Female	132	52.0
Age (years)		
13-14	63	24.8
15 –16	181	71.3
≥17	10	3.9
Religion		
Christian	190	74.8
Islam	64	25.2
Class of Study		
SSS 1	131	51.6
SSS 2	123	48.4
Primary occupation of father		
Teaching	30	11.8
Farming	97	38.2
Civil servant	20	7.9
Trading	57	22.4
Agro processing	0	0.0

Primary occupation of mother		
Teaching	19	7.5
Farming	26	10.2
Civil servant	14	5.5
Trading	179	70.5
Agro processing	1	0.4
Membership of association		
Young farmers' club	32	12.6
Non-agricultural association	57	22.4
Ownership of personal farm	132	52.0

Source: Field Survey, 2011.

Table 2: Instructional Facilities for Practical Agricultural Science Education (n=254)

Variables	*Frequency	Percentage
Availability of tractors for farm practical in schools	8	3.1
Quality of seeds available in school for farm practical		
Local	198	78.0
Improved	33	13.0
Local and improved	10	3.9
Availability of farm animals for farm practical in schools		
Ruminants	1	0.4
Availability of fertilizers for farm practical in schools		
Organic	142	55.9
Inorganic	36	14.2
Organic and inorganic	12	4.7
Availability of agrochemicals for farm practical in schools		
Insecticides	36	14.2
Herbicides	35	13.8
Fungicides	10	3.9
Insecticides and herbicides	2	0.8

Source: Field Survey, 2011
* Multiple responses recorded

Table 3: In-School Rural Youths' Judgment of the Quality of Agricultural Instruction offered by their Agricultural Science Teachers (n=254)

Items	Mean	SD
The available library in my school is adequately equipped with up-to-date agricultural science textbooks	2.26	1.42
What we are taught is not different from things we already know	3.32	1.49
Lessons taught on agricultural science are comprehensive	4.01	1.09
The agricultural science teachers in my school make effort to teach well	4.41	1.08
The agricultural textbooks used by teachers are up-to-date editions	3.98	1.30
Instructional delivery of the teachers shows that they come to class prepared	4.33	1.14
The agricultural science teachers have good knowledge of practical Agriculture	4.32	1.00
The agricultural science teachers have good teaching skills.	4.35	0.93
The teachers ensures that all the taught lessons are clearly understood by the students	4.33	1.02

taught lessons.		
The available classrooms are large enough for comfortable sitting	4.43	0.93
	3.24	1.62

Source: Field Survey, 2011.
Unfavourable = 1-2.4, Slightly Favourable = 2.5-3.9, Favourable = ≥ 4.0 (Positive Statement).

Table 4: In-School Rural Youths' Disposition of Agriculture as means of livelihood (n = 254)

Items	Mean	SD
Agriculture is worth being studied in the higher institution	4.46	0.83
On leaving the school, it is better for one to go into commercial farming	3.40	1.38
With secondary school knowledge in agriculture, one should be able to go into farming business without further studies in the higher institution	2.95	1.50
The study of agriculture gives no hope for survival in the future	4.03	1.33
On graduation, one should endeavour to work in a formal agricultural sector like agricultural research institute	3.89	1.23
Having gained enough skill and knowledge in agriculture, it is better for one to go into farming business	4.12	1.03
People who study agricultural related courses in higher institution are usually not successful in life	4.33	1.13
Agriculture constitues a viable venture	4.20	1.04
Agriculture is highly valued as a profession	4.14	1.08
The present state of Agriculture in Nigeria is highly discouraging	4.12	1.51
My parents would highly support my taking up agriculture as a profession	3.40	1.41
Not minding the use of crude implements for farming should be taking up as a profession	1.98	1.50
With mechanized farming, agriculture would be encouraging to take up.	4.42	0.95
Never should one dream of taking up agriculture as a profession in Nigeria.	3.75	1.42

Source: Field Survey, 2011.
Unfavourable = 1-2.4, Slightly Favourable = 2.5-3.9, Favourable = ≥ 4.0

Table 5: Chi square test of the relationship between the in-school rural youths' personal characteristics and their disposition to farming as future occupation

	X^2	*df*	P	Decision
Age	2.477	4	0.649	NS
Religion	0.266	2	0.875	NS
Class in school	2.724	2	0.025	S
Primary occupation of father	4.568	10	0.918	NS
Primary occupation of mother	8.010	12	0.784	NS
Ownership of farm	22.700	4	0.030	S

Source: Field Survey, 2011. NS = Not Significant S = Significant

Table 6: Linear Regression of the Relationship between the Rural Youths' Judgement of Quality of the Offered Agricultural Training and their Disposition to Farming as Means of Livelihood

Variable	β	t	p>0.05	Decision
Quality of Agricultural Training/Disposition to farming as means of livelihood	0.209	3.342	0.001	S

Source: Field Survey, 2011
S = Significant

FACTORS ASSOCIATED WITH IN-SCHOOL YOUTHS PARTICIPATION IN AGRICULTURAL ACTIVITIES IN OGUN STATE, NIGERIA

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The study investigated factors associated with in-school youth participation in agricultural activities in Ogun State, Nigeria. Multi stage sampling procedure was used in selecting 210 Senior Secondary School students involved in the study. Data were gathered through structured questionnaire from the respondents. Data collected were analyzed using descriptive statistical tools such as frequency count, percentage, mean and standard deviation while inferential statistics such as correlation analysis was used to test the hypothesis. The mean age of the respondents was 16.9 ± 1.9 years and had average farming experience of 8.6 ± 2.8 years. Majority of the respondents were indigenes (70.5%) and belong to one association or the other (71.4%). The result also indicated that vast majority (88.6%) of the respondents participated in both crop and livestock production activities. Factors associated with participation of respondents in agricultural activities identified in the study include parent, teacher, school, community and peer group factors. There was negative and significant relationship between respondents' participation in agricultural activities and their attitude ($r=-0.578$; $\rho \leq 0.01$). Based on the findings of the study, it was concluded that participation of in-school youth in agricultural activities should be encouraged in order to maximize their potential towards food security. It was recommended that adequate resources should be made available in the secondary schools; parents should motivate and encourage the in-school youths towards participation in agricultural activities.

Keywords: Participation, In-school youth, Agricultural activities

INTRODUCTION

Youths are regarded as the potent and latent resources of any community and society at large because they possess strength and initiatives that could be channeled to agricultural development, if given the right orientation. In America as far back as the first decade of 19th century, the youths were formed into clubs such as the 4-H clubs and the Future Farmers of America (FFA) which

succeeded in the injection of new and zealous energetic youths into agricultural enterprises such that agriculture was transformed and the country not only had enough to feed the nation but could also export (Adeyemi, 1998). In the same vein, Nigeria can use the "catch them young" approach in transforming the agricultural sector to bring about development.

In his views, Okorie (1974) opinioned that agriculture was generally looked down upon; hence the youth had negative impression or no inclination to associate them with farming. In many schools, agricultural science teachers were made the labour masters, thus, clearing of bush, felling of trees, cutting of bamboo, weeding among others are used as punishment for erring students in schools. The practice impacted negatively on the minds of many students, making them to misconstrue agriculture as a subject meant for punishment (Jibowo, 1989).

Food and Agriculture Organization (1995) argued that the aged farmers cannot respond creditably to modernization in agriculture when compared with children and youth. This is because, young farmers are more energetic, better educated and so could interact positively with the extension agents. They could also imbibe higher level of technical guidance than the older farmers (Umeh 1998; Ayanlaja, 2010). Research in Nigeria has shown that the farmers who are relatively old are more risk averse in adoption of innovations, and they take longer time, relative to their younger counterparts in adopting new practices (Torimiro and Lawal, 1998). Therefore, as the strength and interest of the adult begin to wane, decline in agricultural production activities and food insecurity set in.

From the foregoing, it is pertinent that the future of Nigerian farming should be vested in the children and youth. If youth must take over agriculture from their tender age, they need to be stimulated to be made more interested in the vocation. They must be motivated and equipped with the will and the resources to delve into it and cope with its drudgery. This necessitated this study which investigated the factors associated with in-school youth participation in agricultural activities in Ogun State, Nigeria.

Objectives

i. described the personal characteristics of the in-school youths in the study area;
ii. examined the attitude of in-school youths towards participation in agricultural activities; and

iii. identified the factors associated with the in-school youth participation in agricultural activities.

Hypothesis

There is no significant relationship between the attitude of in-school youths towards agricultural activities and their participation in agricultural activities.

METHODOLOGY

The study was conducted among the in-school rural youth of ages between 16 and 24 years in Ogun State, Nigeria. Multi-stage sampling procedure was used in selecting the 210 respondents used in the study. At first stage, one Local Government Area was randomly selected from each of the four (4) administrative zones in the state, that is, Ilaro from Yewa zone, Ijebu North from Ijebu zone, Sagamu from Remo zone, and Ifo from Egba zone. The number of secondary schools in the selected Local Government Areas was as follow: Ilaro (13); Ifo (9); Ijebu North (18); and Sagamu (16) . Twenty percent of the total number of secondary school in the selected Local Government Area was purposively selected based on their rurality. The total number of rural secondary schools sampled for the study was 3 from Ilaro, 2 from Ifo, 4 from Ijebu North, and 3 from Sagamu with population of 54,206 students. Five percent of the student population was proportionately selected totaling 210 senior secondary school students. A validated and pretested structural interview schedule was used to elicit information from the respondents. Data were summarized using percentage, frequency count, means and standard deviation, while correlation analysis was used to draw inferences.

Measurement of variables

Participation of in-school youth in agricultural activities was the dependent variable of the study. This refers to the frequency at which the in-school youths participate in a number of specified agricultural production activities. This was measured against a four (4) point participation scale namely, seldom participation (1), occasional participation (2), regular participation (3), and very regular participation (4). Each of the agricultural activities was scored one (1). An activity that was done more than five times a week was regarded very regular, between 3 and 4 as regular, 1 and 2 as occasionally. Possible maximum score that a respondent can have was 4 and were calculated by multiplying the number of the agricultural production activities, which was thirty-five (35) by the higher point of the participation scale which was four (4). Therefore, a respondent who did not carry out any of the activities mentioned scored zero while a

respondent who carried out all the activities very regularly had a maximum score of 140. The level of activities carried out was determined by grouping the respondents into three: High level of participation, medium level and low level using mean added to and subtracted from standard deviation as the cut off marks.

Moreover, attitude of the in-school youth towards participation in agricultural activities was measured through their perception/ feelings toward 16 declarative statements about agricultural activities. These statements were structured into five-point Likert Scale of Strongly Agreed (SA), Agreed (A), Undecided (U), Disagreed (D), and Strongly Disagreed (SD). Every positive statement attracts to itself a score of 5,4,3,2, and 1 respectively and vice versa for negative statements. The maximum and minimum score are 80 and 16, respectively. The total attitude score per respondent was further classified into two categories: favourable and unfavourable using mean score as cut off mark.

RESULTS AND DISCUSSION

Personal characteristics of the respondents

Data in Table 1 revealed that many (57.6 %) of the youth were above 16 years, and the mean age was 16.6 years with standard deviation (SD) of 1.9. This implied that they were energetic and adventurous in their outlook; this could boost their participation in agricultural activities. This result is in consonance with that of Jibowo and Sotomi (1996) which reported that youths between the ages of 12 and 24 years are creative, energetic, and innovative and are always ready for productive activities. There is little disparity between the number of boys and girls among the respondents interviewed. Majority (71.4%) of the youth belonged to social group(s). This could promote a wider range of sources of information on agricultural activities available to them. The average year of farming experience of the youth was 8.6 (SD= 2.8). The youths indicated that they were ready source of farm labour to their parents. This finding is in agreement with that of Adisa (2001) and Adeloye (2004) which reported that rural youth are ready and cheap source of farm labour to their parents. Majority (88.7%) of the youth participated in agricultural activities of both crop and livestock production.

Attitude of the respondents towards participation in agricultural activities

Data in Table 3 showed that many (69.4%) of the respondents had unfavourable attitude towards participation in agricultural activities while 30.6 percent had favourable attitude towards participation in agricultural activities. The attitude

means score was 50.5 with standard deviation of 1.8. This implies that many of the in-school youths had unfavourable disposition towards agricultural activities. This finding agrees with that of Zhiri (1998) and Adisa (2008) who reported that the attitude of in-school youths towards agriculture is negative and very discouraging.

Factors associated with participation of respondents in agricultural activities

In order to decide which factor to exclude, Kaiser's criterion was employed which according to Koutsoyannis (1979) was to select those factors which have Eigen value of greater than 0.3. as showed in the results of factor analysis presented in Table 4. Factors associated with the participation of respondents in agricultural activities were labeled as parent related factor (λ= 1.8202), teacher related factor (λ=1.3797), school related factor (λ=0.9813), community related factor (λ=0.6051) and peer group related factor (λ=0.4212) among others. These findings are in agreement with that of Omonleknomhen (2003) and Adisa (2008), which reported that peer group and parents were major factors in decision-making of youths. The results in Table 5 revealed that the factors loaded explained 83.60 percent of variance, while unknown factors explained the remaining 15.40 percent of variance.

Level of participation in agricultural activities

Data in Table 6 revealed that majority (86.2%) had low level of participation while 7.1 and 6.7 percent had high and medium levels of participation respectively. Computed mean score of participation was 40.7 with standard deviation of 25.4. This finding indicates that the respondents did not participate in many of the essential agricultural activities. This could be as a result of parent, teacher, school, and peer group factors identified in the study. This finding also agreed with those of Ijere (1998) and Adisa (2008) who observed that potentials of rural youth have not been explored and exploited to great advantage as pertaining to agricultural activities.

Hypothesis testing

Hypothesis one:

There is no significant relationship between the attitude of in-school youths towards agricultural activities and their participation in agricultural activities.

In order to test this hypothesis, bivariate correlation analysis was used. Data in Table 7 showed that there was negative and significant relationship (r= -0.578; $P \leq 0.01$) between participation of the respondents in agricultural activities and attitude of the respondents toward agricultural activities. The

contribution of respondents' attitude towards participation in agricultural activities was 43.4 percent (r^2=0.3341). This implies that the more unfavourable the respondents' attitude towards agricultural activities, the lower their participation in agricultural activities. This result is an indication that the unfavourable attitude of the in-school youth towards agricultural activities negatively affects their participation in essential agricultural activities.

CONCLUSION

Youths have been found to contribute greatly to agricultural activities most especially in the rural communities. Parental influence, school related factor, peer group influence, community related and teacher related variables are found to be associated with rural in-school youth participation in agricultural activities. Based on the findings of the study, it was suggested that adequate resources should be made available in the secondary schools, while parents should motivate and encourage their in-school youths to participate in agricultural activities.

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Table 1: Distribution of respondents by selected personal characteristics n= 210

Variables	Frequency	Percentage	Mean	Standard deviation
Age (years)				
<13	2	1.0		
13-16	87	41.4	16.9	1.9
>16	121	57.6		
Gender				
Male	109	51.9		
Female	101	48.1		
Nativity				
Indigene	148	70.5		
Non- indigene	64	29.5		
Membership of social group				
Yes	150	71.4		
No	60	28.6		
Years of experience in farming				
<5	22	10.5		
5-10	124	59.0	8.6	2.8
>10	64	30.5		
***Agric. activities participated in**				
Crop production only	173	72.0		
Livestock production only	167	74.7		
Crop and livestock production	196	88.7		

Source: Field survey, 2010 * Multiple responses

Table 2: Distribution of respondents by their attitude towards participation in agricultural activities

	Attitudinal Statements	SA (%)	A (%)	U (%)	D ()	SD)
1	Agricultural activities are very interesting	7.0	5.0	14.9	36.8	36.3
2	Agricultural activities like land tilling and weeding are easy	14.5	26.6	15.0	30.0	14.0
3	Agricultural activities are labour intensive	11.8	34.0	13.3	30.5	10.3
4	Agricultural activities can lead to the nation's economic growth	8.9	4.5	23.5	28.2	34.7
5	Participation in agricultural activities is a waste of time	12.8	20.2	19.2	30.0	17.7
6	Agricultural activities are for aged and local people	9.4	32.0	15.8	26.6	16.3
7	Agricultural activities is a good venture/ business	28.1	36.9	16.7	12.3	5.9
8	Agricultural activities is a high risk venture/ business	32.7	16.8	23.3	15.8	11.4
9	I can take agricultural activities as my major occupation	28.8	28.8	18.5	18.5	5.4
10	Agricultural activities not respected in society.	29.6	19.9	29.1	10.7	10.7
11	Agricultural activities are for punishment to erring students	19.1	24.0	19.1	25.5	12.3
12	Agricultural activities are for poor people	21.0	33.8	11.8	20.0	13.3
13	Agricultural activities are tedious and dirty job	25.4	20.9	18.4	15.4	19.9
14	My parents being farmers are relegated people in society	26.1	23.6	22.1	14.6	13.6
15	Agricultural activities could enhance food security	24.7	43.9	12.6	15.2	3.5
16	Non- agricultural activities is better than agricultural activities	25.0	20.3	20.8	16.7	17.2

Strongly Agree= SA, Agree= A, Undecided= U, Disagree, Strongly Disagree= SD
Source: Field survey, 2010

Table 3: Distribution of the respondents according to level of attitude towards participation in agricultural activities

Categories	Scores	Frequency	Percentage
Unfavourable	<50.5	136	69.4
Favourable	>50.5	64	30.6

Mean = 50.5
Standard deviation = 1.8

Source: Field survey, 2010

Table 4: Factor analysis showing variables associated with participation of respondents in agricultural activities

Factors and contributing variables	L	L^2	λ
1. Parent related factor			
Parents' age	0.545	0.2970	
Parents' level of education	0.561	0.3147	1.8202
Parents' interest in agriculture	0.621	0.3654	
Parents' membership of social group	0.723	0.5227	
Parents' external orientation	0.566	0.3204	
2. Teachers' related factor			
Teachers' integrity	0.582	0.3387	
Teachers' commitment	0.393	0.1544	
Desired technical skills	0.602	0.3624	
Communication skills	0.440	0.1936	1.3797
Organization skills	0.575	0.3306	
3. School related factor			
Adequate resources for agric. practical	0.440	0.1936	
Punishment always served on school farm	0.618	0.3819	
School farm converted to playing ground	0.637	0.4058	0.9813
4. Community related factor			
Community's value of farmers	0.551	0.3036	
Social status of farmers in the community	0.550	0.3025	0.6051
5. Peer group related factor			
My friends' disposition to agriculture	0.649	0.4212	0.4212

Source: Field survey, 2012
Significantly contributing at 0.05 percent
L= Loading for factor,
L^2= The square of loading factor
λ= Latent root for the factor (□L^2)

Table 5: Factor names and percentage variation accounted for by each factor associated with participation of respondents in agricultural activities

Factors	Name	% variance	Cumm.% var.
1	Parents' related	23.80	23.80
2	Teachers' related	20.20	44.00
3	School's related	13.20	57.20
4	Community related	10.30	67.50
5	Peer group related	17.10	84.60
6	Others	15.40	100.00

Source: Field survey, 2012

Table 6: Distribution of respondents by level of participation in agricultural activities

Participation	Scores	Frequency	Percentage
Low	<86	181	86.2
Medium	68-124	14	6.7
High	>124	15	7.1
Mean = 40.7			
Standard deviation = 25.4			

Source: Field survey, 2010

Table 7: Correlation analysis showing the relationship between participation in agricultural activities of respondents and their attitude towards agricultural activities

Variable	Correlation coefficient(r)	Coefficient of determinationr
Attitude	- 0.578**	0.4341

Source: Field survey, 2010
****Significant at the 0.01 level**

ATTITUDE OF YOUTHS TOWARDS MINI-LIVESTOCK FARMING AS INCOME GENERATING ACTIVITIES IN SOUTH-WESTERN NIGERIA

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The study investigated youths' attitude towards mini-livestock farming in south-western Nigeria. It described the socio-economic characteristics of youths involved in min-livestock farming, determined their level of involvement, attitude towards involvement along with the constraint associated with mini-livestock farming within the study area. Ninety respondents were interviewed through the use of structured questionnaire. Data analysis was carried out using frequency count, percentage, mean, standard deviation and correlation. The results of the study showed that more males were involved in mini-livestock rearing than females, while the mean age of the youth was 23.5±8.2 years. Majority were literate and their most common and reliable source of information include friends and other farmers. Problems confronting the respondents include, but not limited to, inadequate credit facilities, untimely supply of inputs, improper management skill and low extension contacts. Youth had neutral attitude to mini-livestock farming, hence show low level of involvement in the production. In conclusion, there is need to arouse the interest of youth through training and re-training in the management practices of these mini-livestock. A little motivation from change agents, research institutes and government policy makers could boost production of mini-livestock and reduce unemployment.

Key words: Attitude, Youth, Mini-livestock, Management practices, Food security, Employment generation

INRODUCTION

Agriculture is the backbone of any dynamic and progress conscious economy, especially in sub-Saharan Africa. It plays an important role in socio-economic development by ensuring food security, providing raw materials for foreign and local industries, generating foreign exchange and providing employment.

in the development of both Brazil and South Africa. (Olatoye, 2012). Such feats can also be achieved in Nigeria if youths are mobilized towards agricultural revolution.

A growing consensus among scholars is that agricultural sector in Nigeria can be transformed and unemployment in the economy reduced if the youths are adequately motivated and mobilized (National Bureau Statistics 2010; Akpan 2010). There is also ample evidence that mini-livestock (micro-livestock) production has become a goldmine, where youths can realize their dreams. Research works have shown the ever growing market demand, driven by upsurge in population, for mini-livestock products (Akinnusi, 1998; Adekunle, et al. 2009; Centre for Biodiversity Utilization and Development 2004; Jori 2006), yet less is known about internal and external dynamics that influence youths' stake in the emergent sub-sector. This study therefore assessed the attitude of youths towards involvement in mini-livestock production as a means of income generation with a view to enhancing employment opportunity among young people.

Objectives

The main objective of the study was to assess the attitude of youths towards selected mini-livestock and their management practices in rural and semi-urban areas of south-

objectives include:

i. To describe the personal socio-economic characteristics of youth in the study area
ii. To examine the constraint associated with their involvement.
iii. To determine youth farmers'' attitude towards selected mini-livestock and their management practices in the study areas.

METHODOLOGY

The target population of this study was youths trained by extension agents on mini-livestock production such as grass-cutter and snail farmers. Two states, namely, Osun and Oyo were purposively sampled in south-western Nigeria because extension agents had disseminated improved management practices on mini livestock to the youths in these states. Multi-stage sampling procedure was used to select respondents from the two states. In the first stage, two Local Government Areas (LGAs) were randomly selected from each state making a total of 4 LGAs in the two states. These LGAs include Ife East and Ife Central in Osun State and Ibadan North-East and Egbeda in Oyo State. At the second stage, a list of communities where mini-livestock have been introduced were collected from the officers in the state ministry of agriculture and three semi-urban

from each of the LGAs. This gave a total of 12 communities. At the third stage, 10 percent of youths trained on rearing of grass-cutter and snail farming in each of the 12 sampled communities using simple random sampling technique. A total of 90 trained youths were selected and interviewed for the study.

Structured interview schedule was used to collect relevant quantitative data while Focus Group Discussions (FGDs) was used to elicit qualitative data. The data collected were edited and coded. Statistical Package for Social Sciences (SPSS) was used for data analysis. Descriptive statistics such as frequency count, percentage, mean and standard deviation were used to summarize the data. Pearson Moment Correlation was used to assess relationships between dependent and independent variables.

Measurement of Variables

To measure attitude of youths towards mini-livestock production in this study, respondents were given twelve statements of opinion structured on likert–type scale following Farinde (1991). One statement reflected a favourable attitude and the other, an unfavourable attitude. All the favourable statements were placed in the odd-numbered position, while the unfavourable ones were even numbered. Pair of favourable and unfavourable statements relating to not allowed to follow one-another consecutively, nor were they designed to be exactly equal or opposite in meaning.

The youth attitude was measured through the use of likert scale such as strongly agreed, agreed, undecided, disagreed and strongly disagreed. Given a five point likert type scale, youths were asked to indicate one of the five response alternatives according to how best the statements characterize their feelings about mini-livestock farming. The five points response categories were- strongly agree scored 5; agree scored 4; undecided, scored 3; disagree, scored 2; and strongly disagree, scored 1. Possible total score was 60 each as most favourable attitude and a minimum of 12 scores for the most unfavourable attitude. To determine the attitude of youths, total score for each respondent was grouped into 3 categories viz: The neutral attitude was placed within the range, attitude mean score ± standard deviation; unfavourable attitude was below mean score ± standard deviation; while favourable attitude was placed above mean score ± standard deviation.

In order to measure constraint associated with mini-livestock farming, youths were asked to indicate their opinions about problems militating against involvement in mini-livestock

high (VH) (5), high (H) (4), Moderate (M) (3), Low (L) (2), or Very Low (VL) (1). The minimum score was 1 and the maximum score was 44. Mean score was used to rank the severity of the constraints in descending order.

RESULTS AND DISCUSSION

Data in Table 1 showed that over half (51.1%) of the respondents were between the ages of 21 and 25 years. This indicates that majority of the youth in Oyo and Osun States were young, able bodied and within productive age range. Many (63.3%) of the respondents were male, while 33.7 percent were female. The finding corroborates the findings of Ogunjimi et.al, (2012), that majority of farmers engaged in mini-livestock farming in south-western Nigeria were male. More than half (51.1 %) of the farmers were Christians while 43.3 percent were Muslims. This finding is an indication that Christianity and Islam were the common religious practices in the study area. Unlike some bush meat which may not be killed or touched because of religious dictates, traditional taboos or prejudices (Vos, 1978), the grass cutter meat transcends religious prohibitions and even Muslims who do not consume guinea pig are known to consume grass cutter (Adoun, 1993 and Annor and Kusi, 2008).

were literate. This indicates that youths can easily comprehend whatever they learnt and can read instructions and manuals about feeding, breeding materials and other management practices. Almost average (58.9%) claimed to have attended training organised by the local and state ministry of agriculture, while 42.2 percent have attended training and workshop organised by University and Research institutes.

Results indicate that all the youths had attended seminar workshop and training from research institution such as Forestry Research Institute of Nigeria, Ibadan; Department of Agricultural Extension of Obafemi Awolowo University, Local Government and State Ministry of Agriculture. Moreso, 51.1 and 48.9 percent attended training less than 5 times within a year. The implication of this is that youths in the states attended training that could assist in raising their economic status and empower them to use their locally available resources in improving their livelihood. However, lack of follow-up of such training programmes would not help consolidate the gains of organising such training programmes.

It also shows that almost average (48.9 %) of the respondents had contact with extension agents to discuss issues concerning selected

mini-livestock production and their management practices less than five times in a year, while 30.0 percent had no contact with extension agents. The implication of low extension contact is that farmers may not be well exposed to requisite training on the management practices which may subsequently affect production of the mini-livestock in the study area. Majority (71.1%) of the respondents as shown in Table 2 indicated they sourced information related to snailery and grass-cutter farming from other farmers while 46.7 percent source information from extension agents. Also, 42.2 percent of grass-cutter farmers claimed sourcing information from research institutes. Information sourced from other farmers was thus most common and reliable source of information among the respondents. Agricultural Development Programme (ADP) and Research Institutes need to always be on ground to give reliable information to farmers on the technical skill required to assist the youths on the management practices.

Constraint associated with mini-livestock farming:

Most of the problems confronting youths involved in mini-livestock include inadequate credit facilities (mean=3.79), untimely supply of inputs (mean=3.46), inadequate management skill (mean=3.38), inadequate information (mean=3.19), low extension contact (mean=3.19), high cost of production materials and inadequate processing technology (mean=2.67).

Rank-order of statement of opinion on youth's attitude towards involvement in mini-livestock farming

Table 3 shows that the grand mean attitudinal score of the respondents toward involvement in selected livestock production was 3.42 with standard deviation of1.27 ±0.50. The statement of attitude that "involvement in selected livestock production (such as grass cutter, and snail farming) is a worthwhile venture, hence, farmers should be encouraged to go into it" was ranked best with mean score of 4.35. "Livestock production mentioned increase income of farmers, hence, involvement is necessary" was ranked second (2^{nd}) with mean score of 4.29.

Other statements were ranked in the following order: "livestock production makes mini-livestock farmers busy all the year round" (mean = 4.18), "market value of some of these mini-livestock production mentioned are commensurate with the cost of production" (mean= 3.90), most of these activities are environmental friendly (mean = 3.87). Research–extension–farmers linkage encouraged farmers involvement in the activities mentioned (mean = 3.58), production technologies for

this activities are inadequate, hence discourage investment in it (mean = 3.54), activities mentioned required a lot of technical know-how (skill) which is very difficult to acquire (mean 3.50), mini-livestock production is a waste of time, hence, involvement is not encouraged (mean = 3.35); cultural taboos in my community discourage farmers from going into these activities (mean = 3.27); most of these mini-livestock mentioned are vulnerable to pests and diseases, hence discourage involvement in these activities (mean = 3.19); and inadequate infrastructural facilities are responsible for not being involved in these activities mentioned came last with mean score of 3.00.

The mini-livestock mentioned are worthwhile ventures, hence farmers should being encouraged to venture into them was highly ranked, which is an indication that peri-urban and urban farmers perceived involvement in the activities as a necessity which could bring additional sources of income especially during the off season.

The finding revealed that 61.7 percent of the total respondents had neutral attitude towards mini-livestock farming, while 20.3 and 18.0 percent had favourable and unfavourable attitude respectively as shown in Table 6. On attitudinal statement score, youth had neutral attitude about involvement in selected mini-livestock. It could be deduced that there is need to arouse the interest of youths through training and re-training in the management practices of these mini-livestock. A little motivation from change agents, research institutes and government policy makers could boost production of selected mini-livestock.

During an FGD session at Basorun community in Ibadan North West LGA of Oyo State, members indicated their interest towards these activities and their readiness to expand their scope of involvement if given required training. A discussant said *our involvement in these activities is at minimal level; we want to expand but we have little knowledge about most of these activities and we believe it is a worthwhile venture, where we can make more money to feed our family.* The statement indicate that peri-urban and urban farmers were not fully involved because they had little knowledge and also acquired little skill on the management practices of the mentioned coping strategies. If these young farmers could be trained, they may likely be more involved.

Testing of hypotheses

Data in Table 5 reveal positive and significant relationship between farmers' attitude towards mini-livestock farming and participation in social organizations ($r = 0.225; P \leq 0.01$). The higher the youth participation in social organization,

the more they were exposed to information through other members of the organisation about these activities, which might in turn increase their feeling towards it. Moreover, characteristics of selected mini-livestock (r=0.242 P≤ 0.01) had positive and significant relationship with farmers' attitude towards mini-livestock production. The correlation data in Table 7 show that characteristics of mini-livestock such as compatibility (r = 0.178; P≤ 0.01); availability (r=0.250; P≤ 0.01); visibility (r =0.274; P≤ 0.01); and openness (r = 0.246; P ≤ 0.01) had positive and significant relationship with the youth' perception towards mini-livestock farming.

This shows that the available mini-livestock production and their management practices were compatible with existing practices, visible on the income of farmers and open in terms of discussion on management practices, the more favourable attitude the youths would have about mini-livestock farming. This could imply that when the technology involved in the production of the activities was made available, compatible, openness and economically desirable, there is every tendency for the youths to be more committed and positively change their attitude towards mini-livestock production.

However, complexity of the management practices (r=-0.178) had negative but significant relationship with the attitude of youth towards mini-livestock farming. As long as production technology and other management practices were simple and easy to handle, farmers would be more involved in these activities. This indicated that the higher the complexity of mini-livestock management practices, the more the youths would have unfavourable attitude towards livestock farming.

CONCLUSION AND RECOMMENDATIONS

Based on the findings of the study the following conclusions were made. Majority of youths (85.5%) were males and within the age bracket of 21 and above. Also majority were literate, and have attended training organised by local and state ministry of agriculture, university and research institutes, but there is no follow up from the trainers. 'Other farmers' were the most common and reliable source of information and there was low extension contact. Majority of the youths were engaged in snail farming whereas, minority were practicing grass cutter farming. Majority of the youths involved in snailery and grass-cutter farming had inadequate knowledge of management practices. Problems confronting respondents in rearing mini-livestock include inadequate credit facilities, untimely supply of inputs, inadequate information, improper management skill, low extension contact and inadequate

processing technology. The finding revealed that majority of peri-urban youths had indifferent attitude towards mini-livestock production.

Since attitude of youth towards mini-livestock farming was indifferent, there is need to arouse their interest through training and re-training in the management practices such as production, packaging, processing, storage and marketing to be organized by the extension agents. There should be follow-up visits to ensure the desired result among peri-urban farmers. Youths should be encouraged to join a functional cooperative society in order to access credit facilities from government and other relevant financial institutions. If these recommendations are adhered to, more youths will be encouraged participating in mini-livestock farming which will, consequently, lead to increase in production of the selected mini-livestock, enhance sustainable livelihoods and alleviate poverty among the populace. Rearing of grass-cutter for local consumption will decrease importation of frozen meat, chicken and turkey into the country and promote export duties with enhanced economic potential.

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Table 1 Distribution of youths by socio-economic characteristics

Variables	Frequency	Percentage
Age		
Below 20	13	14.4
21-25	46	51.1
26 and above	31	34.4
Mean	24.6	
Standard deviation	6.8	
Sex		
Male	57	63.3
Female	33	36.7
Marital status		
Single	58	64.4
Married	26	28.9
Divorced	6	6.7
Level of education		
Never	1	1.1
Primary school	18	20.0
Secondary school	46	51.1
Tertiary	25	27.8
Extension contact in the last one year		
No contact	27	30.0
1-4	44	48.9

5 and above	19	21.1
Training attended in the last one year		
Never attend training	46	51.1
1-4	35	38.9
5 and above	9	10.0
Source of training		
Extension agents	40	44.4
Research institutes	27	30.0
Cooperative society	13	14.4
NGO	10	11.1
Contact farmers	10	11.1
***Source of information**		
Other farmers	64	71.1
Extension agents	42	46.7
Cooperative society	35	38.9
Research institutes	38	42.2
Mass media	40	44.4
NGO	22	24.4

Source: Field Survey 2011

Table 2: Distribution of respondents by problems encountered on involvement in mini livestock

Problems	Mean	Rank
Inadequate credit facilities	3.79	1st
Credit facilities are not timely	3.74	2nd
Untimely supply of inputs by government	3.46	3rd
Inadequate management skill method	3.38	4th
Inadequate information on production	3.19	5th
Low extension contract	3.19	5th
High cost of production materials	2.83	7th
Inadequate processing technology	2.67	9th
Inadequate labour supply	2.78	8th
Unavailability of market	2.50	10th
Inadequate storage facilities	2.23	11th
Inadequate farmland	2.04	12th
Bad weather	1.94	13th
Inadequate infrastructural facilities	1.89	14th

Source: Field survey, 2011

Table 3: Rank–order of statement of opinion on attitude of youths about mini-livestock production

	Statement of opinion	Mean	Ranking
1.	Livestock production is worthwhile venture hence farmers should	4.35	1st

	be encourage to go into it		
2.	Mini-livestock mentioned is good source of the income generating activities of farmers.	4.29	2nd
3.	Cost of production is high compared to market values of some activities mentioned.	4.18	3rd
4.	Most of the activities are environmental friendly	3.90	4th
5.	Selected mini-livestock make farmers not profitable compared the other activities.	3.87	5th
6.	Research extension farmers linkage encourage farmer's involvement in these activities	3.58	6th
7.	Production technologies for these activities are inadequate hence discourage involvement.	3.54	7th
8.	Activities mentioned required a lot of technical skill, which is very difficult to acquire.	3.50	8th
9	Income from other occupations is enough to spend throughout the	3.35	9th
10	year hence involvement is a waste of time Selected mini-livestock farming is a waste of time venture hence involvement is not necessary	3.27	10th
11.	Cultural taboos in my community have no effective on involvement in most of these activities	3.27	11th
12	Most of these activities mentioned are vulnerable to pest hence discourage Farmers from going into it	3.19	12th
13.	Inadequate infrastructural facilities are responsible for not involved in these mini-livestock mentioned	3.00	13th
	Grand mean	3.73	
	Standard deviation	0.54	

Source: Field survey, 2011

Table4: Categorization of attitude of youths' involvement in mini-livestock farming

Attitudinal score	Frequency	Percentage
High	61	20.6
Neutral	185	61.7
Low	54	18.0

Source: Field survey 2011

Table 5: Correlation analysis between characteristics of mini-livestock management practices and youths' perception of mini-livestock farming

Variables	Correlation(r)
Participation in social organization	0.225**
Characteristics of mini- livestock	0.242**
Availability of production materials	0,250**
Compatibility with existing management practices	0.229**
Economic desirability of mini-livestock	0.274**
Openness terms of discussion on management practices	0.246**
Complexity of management practices	-0.178**

Source: Field survey, 2011
**Significant at p≤0.01

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WHITHER YOUTHS' INVOLVEMENT IN CLIMATE-SMART-AGRICULTURE? EXPLORING ENVIRONMENTAL RESPONSIBILITY AND ECONOMIC PROSPERITY AMONG FARM YOUTHS IN OSUN STATE

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Abstract

This study was designed to analyse the prospect of youths' involvement in climate-smart-agriculture practices among farm youths in Osun State, Nigeria. It examined youths' perception about climate-smart-agricultural practices, determined their level of involvement in the practices and identified constraints limiting their involvement. A validated interview schedule was used to collect information from 120 farm youths who were selected from three agricultural zones in the State through multistage sampling procedure. Descriptive statistics such as frequency count, mean, percentage, and standard deviation were used to describe the data while Chi square analysis (X^2) and Pearson's correlation (r) were used to make deductions. Average farm size was 6.1 acres while mean income was ₦340, 125 with Standard Deviation of 60,000. Mulching and planting of trees were the most and the least climate-smart-agricultural practices in which the youths were involved in. Inadequate extension service delivery and tenure insecurity were the main constraints limiting youths' involvement in climate-smart-agriculture. Form of land ownership(X^2 = 34.56, $p \leq 0.05$) and religion (X^2= 96.364, ≤ 0.05) were strongly associated with farm youths' involvement in climate-smart-agriculture. Income ($r = 0.486$, $p \leq 0.01$), perception about climate-smart-agriculture ($r = 0.37$, $p \leq 0.01$), number of assistance ($r = 0.531$, $p \leq 0.01$) and household size ($r = 0.612$, $p \leq 0.01$) were positively and significantly related to farm youths' level of involvement in climate smart agricultural practices. The study concluded that the involvement of youths in climate-smart-agricultural practices, which are a form of environmental responsibility, guaranteed substantial farm income, which is a form of economic prosperity.

Keywords: Youth, Climate-Smart Agriculture, Perception

INTRODUCTION

Narratives of economic growth and environmental responsibility are

discourses present environmental responsibility as an antithesis of increase in farm income (Jacobs 2012). For farmers, especially smallholder farm youths, both environmental responsibility and increase in farm income are not only desirable but indispensable. The former ensures that farm production does not decline in the future while the latter represents the monetary value of farm production. There is, therefore, a strong relationship between the economic prosperity (farm income) and environmental responsibility. But then, both empirical and theoretical evidence articulating this form of mutually reinforcing relationship are not only fraught with controversy but are relatively scarce in the literature (FAO 2012). This paper therefore seeks to fill this gap. It draws from the involvement of Nigerian farm youths in climate-smart-agriculture (CSA) to demonstrate a genuine synergetic relationship between economic prosperity and environmental responsibility.

Climate-smart-agriculture, according to Darryl (2012), is an innovative concept that will facilitate the reduction of green house emission generated in the agricultural sector as well as ensure sustainable food production. It comprises planting of trees and shrubs; integrated nutrient management; proper management of leguminous cover crop; intercropping of cereals with legumes; and stopping indiscriminate cutting and burning of bush. Three main perspectives about these practices exist in literature. The first school of thought compares CSA with conventional agriculture, and concludes that although the former is highly important, it is relatively less profitable. The second indicates that CSA is better than conventional only at the long run while the third suggests that CSA is better than the conventional both in the short and long runs, especially amongst small holder farmers (Jacobs 2012).

A common thread that runs through these schools of thought is that CSA is highly important. This paper, therefore, focuses on the extent to which climate-smart agricultural practices are carried out by farm youths, who are reputed to have higher innovation proneness among farm families. The youths also have low risk aversion and high preference for adventurous investment (Onuekwusi and Effiong 2002; Torimiro 2013). And more importantly, they are the bridge between today and tomorrow's agricultural practices (Farinde *et al.*2008; Okorie *et al.* 2009). Hence the involvement of farm youths in CSA certainly has immediate and long run effects on the 14 percent of global greenhouse gas emissions contributed by agricultural sector.

investigates the farm youths' level of involvement in CSAP in Osun State.

Objectives

The specific objectives of the study include:

i. described socio-demographic characteristics of farm youths involved in CSA in Osun State;
ii. examined their perception about climate-smart-agricultural practices;
iii. determined their level of involvement in climate-smart-agricultural practices;
iv. identified constraints limiting their involvement in climate-smart-agricultural practices; and
v. established the correlates of their involvement.

Theoretical framework

The central argument of this paper is that involvement of farm youths in climate-smart-agricultural practices is an investment to be leveraged and not a cost to be justified. This perspective is developed further by ideas from green growth theory, which states that environment or natural capital, such as soil fertility, fisheries, forest, and habitat, is a factor of production (Jacobs 2012). As such, it provides resources, assimilates wastes, and performs various environmental services that sustain life, including climate change mitigation and ecosystem regulation (Jacobs 2012). Accordingly, just as investing in productivity of labor so also would right investment in natural capital increase farm productivity (Jacobs 2012).

Consistent with the green growth perspective, the study conceptualizes youths' involvement in climate-smart-agricultural-practices as a form of investment in the development of natural capital, which includes, but not limited to, soil fertility. The contribution of natural capital's investment to agricultural sector is enormous. It includes increase in farm output as well as increase in public goods, whose value is beyond the boundaries of any economic calculus and algorithm. Climate-smart-agricultural practices emphasize, among other issues, the greening of agricultural sector through intensifying transformational landscape interventions (UNEP2011). For instance, planting trees and shrubs can diminish the effects of extreme weather events, such as heavy rains, droughts and windy storms. They prevent erosion, stabilize soils, raise infiltration rates and halt land degradation. They can enrich biodiversity in the landscape and increase ecosystem stability (FAO 2010). Improved land management practices can improve soil fertility and structure, adding high amounts of biomass to the soil, causing minimal soil disturbance, conserving soil and water, enhancing activity and diversity of soil fauna,

elemental cycling (FAO 2010).

Also integrated nutrient management deals with the maintenance of soil fertility and of plant nutrient supply at an optimum level for sustaining the desired productivity through optimization of the benefits from all possible sources of organic, inorganic and biological components in an integrated manner. Moreover, proper management of organic soils can reduce nitrous oxide and methane emissions just as leguminous plants have nodules on their roots containing bacteria which can fix nitrogen contained in the air in the soil. Intercropping of cereals with leguminous crops, besides nitrogen fixation, increases farm heterogeneity index (FAO 2012).

More importantly, Climate-Smart-Agricultural Practices (CSAP) have the potential of contributing immensely to the reduction of 14 percent of global greenhouse gas emissions which is traceable to agricultural sector (FAO 2012). Deforestation and land degradation, which account for an additional 17 percent of emissions would drastically reduced if CSAP become a commonplace practice globally. All these contributions ultimately lead to increase food production, economic prosperity and environmental protection.

in CSAP is an important part of the solution to the challenges of climate change and food insecurity. Their involvement entrenches and leverages on synergies existing among farm activities to develop more sustainable, productive food systems and improve natural resource management. Understanding ways of encouraging the involvement of entire farm family, especially the youths, remains crucial to sustainable food production.

METHODOLOGY

The study was conducted in Osun State which lies within the rainforest region of southwestern Nigeria. Farming is the predominant occupation of the people living in the State. Osun State has thirty Local Government Areas. Multistage sampling procedure was used to select the respondents. At the first stage, three agricultural zones in the State were selected. At the second stage, two Local Government Areas were randomly selected from each of the zones making-up to a total of six LGAs, which comprised of Ifelodun and Ede South under Osogbo zone, Ife Central and Ibokun under Ife-Ijesha zone, and Irewole and Ayedaade under Iwo zone. At the third stage, two communities were purposively selected from each of the selected LGAs to ensure that agrarian communities were represented. Ten self-identified farm youths were

selected twelve communities thereby summing up to a total of 120 respondents. A validated interview schedule was used to collect information from the selected farm youth who were within the age range of 13 and 30 years.

Measurement of variables

The dependent variable, that is, level of farm youths' involvement, was measured by frequency at which the youths were involved in ten climate-smart agricultural practices. The practices included, but not limited to, planting of trees and shrubs, integrated nutrient management, planting of leguminous cover crop, and intercropping of cereals with legumes. The youths were asked to indicate their level of involvement on a 4-point Likert scale of never, rarely, often and always. Their involvement scores were generated by the summation of the frequencies of involvement in the ten climate-smart agricultural practices. Thus, the minimum and maximum involvement scores were 10 and 40, respectively. Some of the measured independent variables were total farm size, measured in term of acreage of land used for the practice of CSAP; youths' farm income was measure in terms of annual income generated from CSAP, respondents' perception about CSAP was measured via seven positive perceptional statements placed on a 5- point Likert scale of undecided (3), disagree (2) and strongly disagree (1). Hence, the minimum and maximum perceptional scores were 7 and 35, respectively. Statistical Package for Social Scientists Version 16 was used to analyze the data. Descriptive statistics such as frequency, count, mean, percentage, and standard deviation were used to describe the data while inferential statistics such as Chi-square analysis (^{2}) and Pearson's correlation (r) analysis were used to make deductions about the relationship between the dependent variable and the independent variables.

RESULTS AND DISCUSSION

Demographic characteristics of the respondents Data in Table 1 showed that many (41.7%) of the respondents were between 22 and 30 years while a few (7.5%) was less than 22 years. The average age of the respondents was 26.4 years with the standard deviation of 2.8 years. About 80.8 percent of the respondents were male while 19.2 percent were female, which implied that more male youths were involved in climate-smart-agriculture. More than half (56.7%) of the respondents were married. About 60 percent were Christian while 37.5 percent and 2.5 percent were Islamic and traditionalist, respectively.

50 percent of the respondents got their land through inheritance. About 20.8 percent of the respondents got theirs through lease, while 11.7 percent and 7.5 percent got land through rent and purchase, respectively. Only 10 percent got land as a gift. This implies that half of the respondents got their land through inheritance while few people got their land from purchase. The average farm size was about 6.1 acres with a standard deviation of 5.4. This implies that land is unequally distributed among the respondents. For instance, about 44.2 percent of the respondents had 4 acres or less while only 0.8 percent had 26 acres and above. Some (41.2%) of the respondents had between 5 and 11 acres just as 10 percent and 3.3 percent had between 12 and 18 and between 19 and 25 acres of land, respectively. The distribution of farm income had a similar pattern with the distribution of farm size. About 90.8 percent of the respondents had less than or equal to ₦ 773,000 per year while a few (0.8%) had ₦3, 182,601 and above. About 3.3 percent of the respondents had farm income in the range of ₦ 773,001 to ₦ 1,375,400 per year, 2.5 percent had income in the range of ₦ 2,580,201 and ₦ 3,182,600 per year, 1.7 percent of the respondents had theirs in the range of ₦ 1,375,401 and ₦ 2,580,200 per year. These findings are similar to those reported by earlier authors and sex of farm youths in Osun State (Torimiro *et al* 2008; Okorie *et al* 2009). The finding about the respondents' average farm income however varied significantly from those reported by previous authors on youths in OSun State. (Torimiro *et al* 2008; Okorie *et al* 2009).

Respondents' perception about climate-smart-agricultural practices Data in Table 2 showed that 22.5 percent and 36.7 percent of the respondents strongly agreed and agreed respectively that land management practices can be improved through zero tillage. This implies that a majority of the respondents had a positive perception about zero tillage. About 43.3 percent of the respondents strongly agreed that "making of mulching increases water retention capacity of the soil" just as 37.5% agreed to the statement. Similarly some (30.8.5%) of the respondents agreed that planting of leguminous cover crop reduces soil erosion while 35 percent agreed to the same statement. Many (50.7%) of the respondents agreed that "intercropping of cereals with legumes prevents depletion of soil nutrients.

The respondents' level of perception about climate-smart-agricultural practices was presented in Figure 1. Data in Figure 1 indicated that a

had favorable perception about climate-smart-agriculture, while 25 percent and 10 percent had indifferent and unfavorable perceptions, respectively. These findings suggested that the farm youths had more favourable perception about climate-smart-agricultural practices relative to other income generating activities, such as okada riding business and car washing activities in Osun State as reported by earlier authors (Torimiro *et al.* 2008; Okorie *et al.* 2009). The youths' more favourable perception about climate-smart-agricultural practices relative to other economic activities, such as cashing activities and Okada riding business, may not be unconnected with the fact that the agricultural practices generated more income for the youths than those other activities.

Constraints associated with farm youths' involvement in climate-smart-agricultural practices

Data in Table 3 showed the rank order of constraints associated farm youths' involvement in climate-smart-agriculture. Respondents ranked "scarcity of information and limited access to extension services" and "extra cost associated with climate smart-agricultural practices" as the first and the second constraints, respectively. "Tenure insecurity in formal and informal tenure system" was ranked third while "limited availability of input in local market, absence of credit/insurance" was ranked fourth. "Prohibitive cultural factors such as community norms and rules were ranked fifth. While these constraints are not new in agricultural production, the emergence of "scarcity of information and limited access to extension services" as the chief of the constraints indicated newly emergent realities and paradox in the political economy of Nigeria agricultural sector. Nigeria has more access to information facilities, more than ever, yet scarcity of information plagued the agricultural sector. This paradox may not be unconnected with the continued dwindling fund for agricultural extension services.

Respondents' level of involvement in climate smart agricultural practices Data in Table 4 showed that more than half (55%) of the respondents were always involved in making mulching just as some (20%) were often involved in the practice. Only 12.5 percent of the respondents were rarely involved in making of mulching. "Making mulching" had the highest mean weighted mean score of 3.2 which indicated that the practice was most popular among the farm youths. Similarly "planting of leguminous crop cover" had a weighted mean score of 3.0 while

the respondents were always and often involved in the practice, respectively. About 33.3 percent of the respondents were often involved in proper management of organic soil while 29.2 percent was always involved in the practice. The weighted mean score for the practice was 2.9 making it the third popular practice among the youths. Moreover, about 31.7 percent of the respondents were always involved in stopping indiscriminate burning and cutting of the bush just as 8.3 percent was often involved in it. Stopping indiscriminate burning and cutting of bush has a weighted mean score of 2.8 making it the fourth popular practice amongst the respondents.

About 16.7 percent and 37.5 percent of the respondents were always and often involved in integrated nutrient management, respectively. The weighted mean score for "integrated nutrient management" was 2.6. Some (21.7%) of the respondents were always involved in intercropping of cereals and legumes while 15.8 percent and 13.3 percent were often and rarely involved in the practice, respectively. The weighted mean score for intercropping of cereals with leguminous crops was 2.4. Some (35%) of the respondents were often involved in improved land management while 21.7 percent and 30 percent were always and rarely involved in the practice. The Planting of resistance varieties had a weighted mean score 2.2 while irrigation and planting tree and shrubs had 2.0 and 1.9, respectively. This implies that planting of tree and shrubs was the least popular among the youths.

The level of youths' involvement in climate-smart-agricultural practices was presented in Figure 2. Data in Figure 2 showed that many (54%) of the respondents had moderate involvement while 31 percent and 15 percent had high and low involvement, respectively, in climate-smart-agricultural practices.

Correlates of farm youths' involvement in climate-smart agriculture Data in Table 4 showed that at 5.0% confidence level, sex (X^2=38.062), marital status (X^2=27.610), form of land ownership(X^2 = 34.56), and religion (X^2= 96.364) were strongly associated with farm youths' involvement in climate-smart-agriculture. Similarly, data in Table 5 showed that annual income ($r = 0.486$, $p \leq 0.01$), perception about climate-smart-agriculture ($r = 0.371$ $p \leq 0.01$), number of assistance ($r = 0.531$ $p \leq 0.01$) and household size ($r = 0.612$, $p \leq 0.01$) were positively and significantly related to farm youths' level of involvement in climate smart agricultural practices. These findings confirm earlier reports

about the potentials of CSA to generate income and create employment. (UNEP 2011). Therefore, youths' involvement in CSAP to large extent represents a sure way of investing in the natural capital while simultaneously increasing farm income and creating what World Bank called "green job" in the both immediate and long run (UNEP 2011).

CONCLUSION

The study concluded that majority of the respondents were involved in mulching and intercropping of cereals with leguminous crops. The paper showed that many of the youths had moderate level of involvement. Farm income and number of helpers in the farm were significant positive correlates of youths' involvement in climate-smart-agriculture. It, therefore, argued that youths' involvement in climate-smart-agricultural practices was a great investment since it guaranteed both economic prosperity (increased farm income) and environmental responsibility.

Accordingly, the paper recommended that stakeholders should invest in climate-smart-agriculture by increasing funding for extension services and by shifting subsidy from inorganic to organic fertilizers and other inputs that guarantee better soil management and sustainable food production.

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Table 1: Distribution of respondents by socio-economic characteristics

Variables	Frequency	Percentage	central tendency
Age			
21	9	7.5	X = 26.4
22 – 24	16	13.3	
25 – 27	45	37.5	SD = 2.8
28 – 30	50	41.7	
Sex			
Male	97	80.8	
Female	23	19.2	
Religion			
Christian	72	60	
Islamic	45	37.5	
Traditionalist	3	2.5	
Marital status			
Single	52	43.3	
Married	68	56.7	
Income per year			
≤ 773000	109	90.8	X = ₦340,125
773001 – 1375400	4	3.3	
1375401 – 2580200	2	1.7	SD = 60,000
2580201 – 3182600	3	2.5	
3182601 +1	1	0.8	
Total farm land			
≤ 4	53	44.2	X = 6.1
5 – 11	50	41.2	
12 – 18	12	10	SD = 5.4
19 – 25	4	3.3	
26 +	1	0.8	
Total	120	100	

Source: Field survey, 2012; X=Mean, sd=Standard deviation

Table 2: Respondents' perception about climate smart agricultural practices

Perceptional statements	SA(P)	A(P)	U(P)	D(P)	SD(P)
Planting of trees and shrubs are expensive	28(23.3)	62(51.7)	19(15.8)	11(9.2)	0(0)
Land management practices can be improved through zero tillage	27(22.5)	44(36.7)	35(29.2)	10(8.3)	4(3.3)
Integrated nutrient management reclaims soil productivity	41(34.2)	38(31.7)	37(30.8)	1(0.8)	3(2.5)
Proper management of organic soil can reduce nitrous oxide and methane emission	16(13.3)	32(26.7)	63(52.5)	4(3.3)	5(4.2)
Planting of resistance varieties	23(19.2)	36(30)	45(37.5)	5(4.2)	11(9.3)
Making of mulching increases water retention capacity of soil	52(43.3)	45(37.5)	19(15.8)	1(0.8)	3(2.5)
Planting of leguminous cover crop reduces erosion	37(30.8)	42(35)	36(30)	4(3.3)	1(0.8)
Intercropping of cereals with legumes prevent depletion of soil nutrient	28(23.3)	41(34.2)	49(40.8)	2(1.7)	0(0)
Indiscriminating cutting and burning of bush reduces soil fertility	29(24.2)	32(26.7)	35(29.2)	16(13.3)	8(6.7)
Irrigation improve soil fertility	28(23.3)	42(35)	40(33.3)	7(5.8)	3(2.5)

Source: Field survey, 2012

Figure 1: The level of respondents' perception of climate-smart-agricultural practices

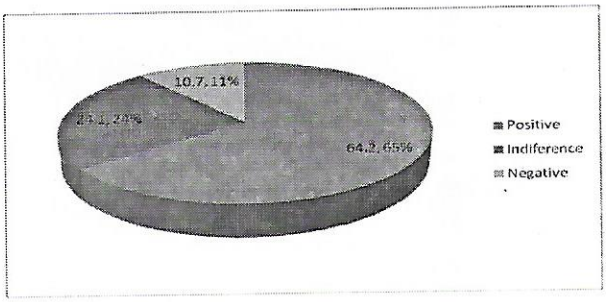

Table 3: Constraints affecting their involvement in climate-smart-agricultural practices

Constraints	Rank order
Scarcity of information and limited access to extension services	1st
Additional cost in the beginning	2nd
Tenure insecurity in formal and informal tenure system	3rd
Limited availability of input in local market, absence of credit/insurance markets	4th
Prohibitive cultural factors such as community norms and rules	5th

Source: Field survey, 2012

Table 4: Level of involvement in climate-smart-agricultural practices

Variables	Not at all	Rarely	Often	Always
Planting of trees and shrubs	62 (51.7)	27 (22.5)	16 (13.3)	15 (12.5)
Improved land management practices	16 (13.3)	36 (30)	42 (35)	26 (21.7)
Integrated nutrient management	22 (18.3)	33 (27.5)	45 (37.5)	20 (16.7)
Proper management of organic soil	19 (15.8)	26 (21.7)	40 (33.3)	35 (29.2)
Planting of resistance varieties	51 (42.5)	17 (14.2)	21 (17.5)	31 (25.8)
Making of mulching	15 (12.5)	15 (12.5)	24 (20)	66 (55)
Planting of leguminous cover crop	21 (17.5)	20 (16.7)	37 (30.8)	42 (35)

Intercropping of cereals with legumes	59	16	19	26
	(49.2)	(13.3)	(15.8)	(21.7)
Stop indiscriminating cutting and burning of bush	51	21	10	38
	(42.5)	(17.5)	(8.3)	(31.7)
Irrigation	39	28	28	25
	(32.5)	(23.3)	(23.3)	(20.8)

Source: Field survey 2012, Percentage in parenthesis

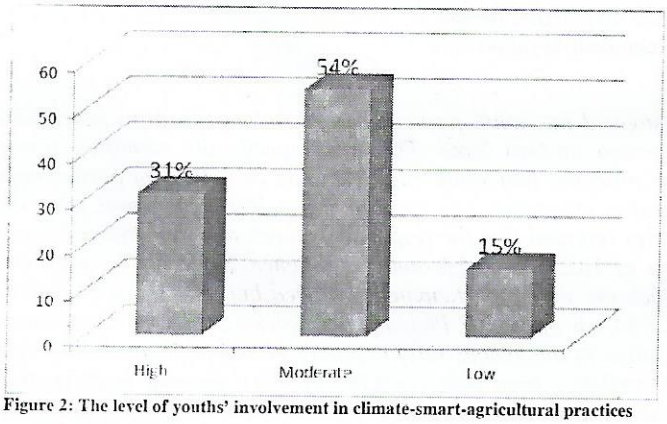

Figure 2: The level of youths' involvement in climate-smart-agricultural practices

Table 4: Chi – square analysis showing association between some of their socio – economic characteristics and their level of involvement

Variables	X^2	DF	Asymp. Sig	decision
Sex	38.062	24	0.034	S
Marital status	27.610	24	0.277	NS
Form of land ownership	96.364	48	0.000	S

Source: Field survey, 212, * significant at P≤0.05 level, DF is the degree of freedom.

Table 5: Results of Pearson's Correlation Analysis showing relationship between youths' level of involvement and some selected independent variables

Variables	Pearson's Correlation(r)	Coefficient determination(r^2)
Age	-0.081	0.006561
Total farm land	-0.064	0.004096
Income per year	0.486**	0.2362
Perception of climate smart agricultural practices	0.371**	0.1376
Number of people assisting in the farm	0.531**	0.2820
Household size	0.612**	0.3745

Source: Field survey, 2012, ** p≤0. *p ≤ 0.05 .

AN ASSESSMENT OF YOUTHS' PARTICIPATION IN INDIGENOUS FARM PRACTICES IN VEGETABLE PRODUCTION IN OYO STATE, NIGERIA

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The study investigated the youth participation in indigenous farm practices in vegetable production in Oyo State. The study specifically identified various indigenous farm practices that youth engage in and their level of participation. Multistage sampling procedure was used to select 160 respondents from Oyo State. The findings revealed that the respondents mean age was 28.6 ± 3.8years with an average of 18.2 years of farming experience. Some of the indigenous practices in which the youths participated, included but not limited to, manure application (82.2%), use of ash (67.1%), and hand picking (87.8%). Correlates of youths' participation in indigenous farm practices in vegetable production were age (r= -0.04, p≤0.05), farm size (r=0.18, P≤0.01), income level (r=0.15, p≤0.05), and external orientation (r= 0.04, p≤0.01) while the determinants were year of formal schooling (b=0.30, p≤0.01), farm size (b=0.41, p≤0.01) and sources of information (b=0.40, p≤0.01). The study concludes that the respondents were still in their productive age, and thus constitute a dependable source of labor for energy-demanding indigenous practices as well as a powerful medium for the transmission of the practices to next generation. Also their participation could be improved upon by providing the youths with credible information about the practices.

Keywords: Indigenous farming practices, youth and vegetable production.

INTRODUCTION

There is a wide varieties of vegetable plants found in Africa which are sources of food and medicine. Edible portions of the vegetables have been reported to be rich in protein, carbohydrates, fibres, vitamins, minerals and oxidants. Some of the medicinal plants were used to treat children and adults suffering from anaemia (Eifedeyi *et al.,* 2008). Some local vegetable farmers are wont to indigenous practices such as composting, crop rotation, mulching, fallowing, minimum tillage, selective seasonal planting, use of cover crops,

and use of ashes for pest control and soil fertility (Adekunle, 2012).

These practices have sustained indigenous vegetable farmers' production of basic food needs. Agboola (2006) reported that ever before the introduction of western technologies, local farmers had their own body of knowledge which drove production system of vegetables and other farm produce. Eifedeyi *et al.,* (2008) pointed out that the cultivation and use of vegetable is part of African cultural heritage. Despite the numerous advantages of this heritage,

youths rarely participate in them. For instance, the rate of adoption of organically grown vegetable products is still low among farm youths. This study therefore examined the participation of youth in some indigenous farming practices with respect to the production of vegetables in Oyo State.

Objectives

The objectives were to:

i. describe socio-economic characteristics of youths participating in vegetable production in the study area;
ii. analyze the indigenous practices used by the youths in their vegetable production;
iii. examine constraints associated with their participation; and
iv. identify correlates and determinants of youths' participation in indigenous farming practices in vegetable production.

METHODOLOGY

The study was carried out in four agricultural zones of Oyo State also known as Agricultural Development Programmes Zones. The four agricultural zones are Saki, Oyo, Ogbomoso and Ibadan/Ibarapa zones consisting of 8, 6, 5 and14 Local government areas/Blocks respectively. One local government was randomly selected from each of the zones and four villages/ communities were purposively selected from each the selected local government with the aim of selecting areas with high number of vegetable growers. Ten self-identified farm youth vegetable growers were randomly selected within each of the selected community to make a total of 160 respondents.

Primary data were collected from the respondents using structured interview schedule. The information collected in the survey was on youth vegetable farmers' socio-economic characteristics and factors associated with the organic farming practices in vegetable production. Qualitative data was also collected using Focus Group Discussions (FGDs). Descriptive statistical techniques

such as frequency, percentages, mean and weighted mean scores were used to analyze the data collected. The relationship between the level of youth participation in indigenous practices in vegetable production and related factors were determined by the use of correlation analysis and coefficient of determination. Also, Chi-square and coefficient of contingency were used to determine the strength of associations that exist between dependent and independent variables in the data. While factor analysis was used to isolate important factors associated with the use of the indigenous farm practices.

RESULTS AND DISCUSSION

Data in Table 1 showed that many (65%) of the respondents were below 30 years. The mean age of youth vegetable farmers in Oyo State was 28.6 years with standard deviation of ±3.8. Most of these young people were actively involved in vegetable farming using indigenous farm practices especially during the dry seasons. This age could make them be in better position to have easy access to training and skill acquisition in indigenous farming practices, processing activities and even marketing of the products. A majority (70%) of the vegetable farmers were male. This implies that males were more involved in indigenous farm practices on vegetable production than females in the study area. However, it was further revealed that 80 percent of the females were involved in hawking or marketing of these vegetable products, which indicated the division of labor along gender. Many (75%) of the respondents had spent between 1-6 years in school. These findings showed that majority were literate, attendance of formal schools and high level of literate provide opportunity for enlightenment and exposure in various area of life which encourages understanding and adoption of an innovation among youths farmers. This high ability to read and write could be of help to high agricultural productivity (Farinde, 1995).

Many (80%) of the respondents were farmland owners. The high percentage of the respondents who were farmland owners had advantage of gaining access to land easily where they could practise indigenous farm practices at any seasons compare to those who rented the land for agricultural purposes. The implication of this findings is that there was limitation to the type of activities that farmer could be involved in as tenant. A majority (70%) of the respondents had a farm size of less than 1hectare. The mean farm size of the respondents was 0.8hectare with Standard deviation of ±0.2. Many (60%) of the respondents had been in farming business between 1-10 years while some (40%) had over 10 years of

farming experience. The mean year of farming experience was 10 years, with standard deviation of ±0.5. It implies that a majority of the respondents had been involved in indigenous farm practices with respect to vegetables business. A majority (80%) of the respondents realized an annual income less than N100, 000 exclusively from their vegetable production. The level of income of the vegetable farmers can influence their level of interest on some of indigenous farm practices in their respective vegetable farms. More than three-quarter (98%) of the respondents had travelled out of their village or areas. This implies that the respondents might have had access to information about vegetable farming from other communities.

Indigenous practices used by the youths in vegetable production

Data in Table 2 revealed various organic farming practices used by the youths in vegetable production as follow: crop rotation (87%), zero tillage (83%), composting (82%), handpicking (81%), mulching (69%), selective seasonal planting (68%), fallowing (60%), the use of cover crops (58%), slashing using cutlasses (54%), the application of green manure (53%), traditional irrigation system (50%), use of natural pesticides (37%), natural selection of planting materials (34%), hawking (78%), farm sanitation (32%), package commercial organic fertilizers (30%), use of ashes (26%), the use of scare crow (22%), companion planting (17%), contouring (16%) and the use of vermicompost (10%). The most practiced of the practices are more culturally compatible with the existing indigenous practices. Also they depend mainly on local materials and less training is required to use them. (Adekunle, 2012; Eifediyi et al 2008).The practices included but not limited to crop rotation, zero tillage methods, composting, mulching, hand picking, fallowing, cover cropping, the use of green manure and traditional irrigation system. A majority (99%) of the respondents rated these practices as being User's friendliness, many (97%) said they were compatible with their culture, and some (88%) claimed they were cost effective. About 91 percent of the respondents said the practices had high degree of openness, while 78 percent and 80 percent claimed that they were ecological friendly and less complexity, respectively. These characteristics have been variously discussed by scholars as the vital features that can influence the adoption or rejection of particular farming practices (Agrawal 1995; Warren1996; Osunade 1996; Agbulu *et al* 2008).

Youth farmers' perception about the appropriateness of indigenous farm practices

Data in Table 4 showed respondents' perception about indigenous farm practices. The respondents ranked the statement –"indigenous farm practices was culturally compatible and in line with traditional belief system" 4.26 on five-point scale. The mean score for the statement "indigenous farm practices was environmentally friendly" was 4.23. Statements "indigenous farm practices was an effective agricultural practices" and "indigenous farm practices encourages safety to food and improving health" had mean scores of 4.04 and 3.92, respectively. The grand mean score was 3.8, which suggests that though the respondents' overall perception seemed to lean towards favorable, there still remains a dire need to arouse the interest of youths with respect to indigenous farming practices.

Constraints associated with indigenous farm practices

Data in Table 5 showed the constraints associated with the use of indigenous farm practices. Over three-quarter (78%) of the respondents indicated inadequate inputs and training were major constraints while over half (74%) said that the practices were time consuming. Many (65%) of the respondents considered the nauseating and irritating odour of some organic farm inputs, like compost, as a constraint, some (55%) indicated that organic farming practices were labour intensive just as half (50%) complained about the bulkiness of organic farm inputs. These findings indicate aspects of indigenous farming practices that require modification. Certainly addressing these constraints would be favorably received among the respondents while the usage would rise appreciably in the study area.

Correlates and determinants of youths' participation in indigenous farm practices in vegetable production

Data in Table 6 showed significant associations between selected socio-economic characteristics such as sex (χ^2=121.34; $p \leq 0.01$), religion (χ^2=99.37, $p \leq 0.01$), marital status (χ^2=277.51, $p \leq 0.01$) and their participation in indigenous farm practices in vegetable production. The contingency coefficient further revealed strong association with religion (c= 0.53, $p \leq 0.01$), sex(c=0.57, $p \leq 0.01$), and level of participation of youth towards indigenous farm practices in vegetable production. According to Kerlinger (1986) contingency value (C) of 0.28 was described as moderate relationship or association while greater values were described as higher association. This indicates that sex, religion and marital status had higher association with level of participation of youth towards indigenous farm practices in vegetable production in the study

relationships between youth vegetable farmers' age (r= -0.04, p≤0.05), farm size (r=0.18, P≤0.01), income level (r=0.15, p≤0.05), external orientation (r= 0.04, p≤0.01) and their level of participation in indigenous farm practices in vegetable production. Moreover, year of formal schooling (b=0.30, p≤0.01), farm size (b=0.41, p≤0.01) and sources of information (b=0.40, p≤0.01) were the main determinants of youths' participation in indigenous farm practices in vegetable production in the study area.

CONCLUSION AND RECOMMENDATIONS

The paper concludes that the respondents were still in their productive age, and thus constitute a dependable source of labor for energy-demanding indigenous practices as well as a powerful medium for the transmission of the practices to next generation. Some of the practices in which the respondents participated include, but not limited, to crop rotation, manure application, use of ash, and hand picking. The respondents perceived the practices to be cost effective, compatible with the culture and friendly to the environment. The respondents, however, identified inadequate inputs and training and the nauseating and irritating odour of some organic farm inputs, among others, as the constraints to youths' participation in the practices. Year of formal schooling, farm size and sources of information were the main determinants of youths' participation in indigenous farm practices in vegetable production in the study area. The study, therefore, recommended that efforts should be geared toward removing the identified constraints while provision of credible information about the practices should be vigorously pursued through agricultural extension

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Variables	Frequency	Percentage
Age		
Less than 30	104	65
Above 30	56	35
Sex		
Male	112	70
Female	48	30
Religion		
Islam	96	60
Christianity	61	38
Traditional	3	2
Ethnicity		
Yoruba	144	90
Others	16	10
Years of schooling		
1-6	120	75
7-12	32	20
Above 12	8	5
Major occupation		
Farming	96	60
Waged/Salaried work	48	30
Artisan	16	10
Land acquisition		
Farmland owner	128	80
Tenant	32	20
Farm size (acre)		
Below 2.6	142	70
Above 2.6	48	30
Farming experience (Years)		
Less than 10	96	60
10-20	48	30
21-30	16	10
Income (annually)		
Less than ₦100000	128	80
More than ₦100000	32	20
Cosmopoliteness*		
Never travelled	3	2
Outside their LGAs	96	60
Outside the state	48	30
Outside the country	13	8

Source: Field survey 2012

Table 2: **Distribution of respondents by indigenous farm practices identified**

*Indigenous Farming Practices	Complete usage of	indigenous farm practices
	Frequency	**Percentage (%)**
Handpicking	141	87.8
Hawking	140	87.2
Hoeing	139	86.7
Manure application	132	82.2
Planting	115	71.7
Harvesting	114	71.4
Ridge making	109	68.3
Use of ash	107	67.1
Land clearing	102	63.4
Watering	101	63.3

Source: Field survey, 2012 *Multiple responses

Table 3; **Distribution of respondents by characteristics of the indigenous farm practices**

*Variables	Frequency	Percentages
Users' friendliness	158	99
Compatibility	155	97
Cost profitability	141	88
Openness	146	91
Ecological friendliness	125	78
Durability	45	28
Complexity	32	20

*Multiple responses **Source;** Field survey, 2012

Statements	S.D		D		U		A		SA		Mean
	F	%	F	%	F	%	F	%	F	%	
1)indigenous farming is much more culturally compatible with traditional farming system.	2	2	4	4.0	6	6.0	38	38	48	48	4.26
2)Most of the activities in indigenous farming are environmentally friendly.	1	1	5	5	9	9	34	34	48	48	4.23
3)Farmers are never apprehensive of new ideas perceived beneficial like indigenous farming	1	1	2	2	16	16	48	48	30	30	4.04
4)Farmers are more believed in what they produced and what would improved their health	1	1	6	6.0	16	16	48	48	26	26	3.92
5)Production technology and inputs availability encourages farmers practicing indigenous farming	2	2	14	14	18	18	34	34	31	31	3.78
6)indigenous farming for vegetables production are in line with the community value.	3	3	9	9	25	25	32	32	30	30	3.75
7)Proven traditional knowledge will not be compromise for foreign knowledge.	4	4	11	11	19	19	39	39	24	24	3.67
8)Organic wholesome products are a good course to health and should be promoted.	4	4	12	12	24	24	37	37	22	22	3.60
9)indigenous farming are too stressful and labour intensive.	3	3	24	24	7	7	40	40	24	24	3.58
10)Research extension linkage encourage farmers of indigenous farming practices.	6	6	28	28	25	25	19	19	20	20	3.16

Source; Field survey, 2011. Grand mean=3.8

Table 5; Distribution of respondents by constraints associated with indigenous farm practices

*Variables	Frequency	Percentage
Inadequate inputs/training	125	78
Time consuming	118	74
Irritating odour/nauseating	104	65
Stressful/labour intensive	88	55
Bulkiness	83	52

Source; Field survey, 2012 *Multiple responses.

Table 6: Result of correlation analysis of the relationship between youth participation in indigenous farm practices in vegetable production and socio-economic characteristics of respondents.

Variables	r	P-value
Age	- 0.042*	0.050
Farm size	0.177**	0.005
Income on vegetables	0.151*	0.017
Number membership of associations	0.266*	0.026
Sources of organic farming knowledge	0.150*	0.018
Cosmopoliteness	0.208**	0.001

** Significant at p ≤0.01 * Significant at p≤0.05

Source; Field survey, 2012

Table 7: Multiple regression showing the relationship between respondents' socio-economic characteristics and level of participation of youth on indigenous farm practices

Variables	Regression coefficient (b)	t-value	P-value
Age	0.105	1.517	0.092
Household size	0.140**	2.656	0.008
Years of schooling	0.298**	5.286	0.000
Farm size	0.408**	4.615	0.000
Farming experience	0.108	1.519	0.130
Sources of information	0.396**	7.538	0.000
Income	0.065	0.766	0.444
Number of membership association	0.132**	4.215	0.012

**Significant at≤0.01 *Significant at ≤0.05

Source: Field survey, 2012 R^2=0.429, R=0.655, F=22.628, p≤0.01

Table 8: Chi-square (χ^2) analysis showing association between youth participation in indigenous farm practices and selected nominal socio-economic variables of respondents

Socio-economic variables	χ^2	C C	P-value
Sex	121.335**	0.572	0.000
Marital status	277.514**	0.725	0.000
Religion	99.370**	0.533	0.006
Sources of labour	288.222	0.691	0.963

**Significant at≤0.01 *Significant at≤0.05

Source; Field survey, 2012

CHALLENGES OF INDIGENOUS KNOWLEDGE TRANSFER AMONG RURAL YOUTH IN ILA LOCAL GOVERNMENT AREA OF OSUN STATE

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The study examined the challenges of indigenous knowledge transfer among rural youths in Ila Local Government Area of Osun state. Structured interview schedule was used in collecting data from 120 farm youths randomly selected from four villages in the study area. Frequency counts, percentage, mean and standard deviation were used to describe data collected, while correlation, chi-square and regression analyses were used to make inferential deductions. Available data showed that mean age of respondents was 23.6 years, majority (75.0 %) of whom were unmarried. It further revealed that story telling (70.8 %) and oral tradition (69.2 %) were major sources of information on indigenous knowledge transfer among rural youths. Although, higher proportions of the respondents were aware about indigenous knowledge practices included in the study, a fewer proportion put the practices to use. Challenges militating against indigenous knowledge transfer include non formal means of recording and documentation, lack of scientific validation, weak collaboration between indigenous knowledge and conventional extension practitioners and lack of systematic communication channel in place that could reinforce the transfer of indigenous knowledge systems. The study therefore recommended the need for the establishment of national indigenous knowledge resource centers in each state to ensure proper recording, documentation and storage of IKS in retrievable repositories thereby, facilitating IKS dissemination to wider communities for sustainable development and enhancement of food security.

Keywords: knowledge transfer, IKS, Challenges, Rural youth.

INTRODUCTION

Indigenous Knowledge (IK) is the systematic body of knowledge acquired by local people through the accumulation of experiences, informal experiments, and intimate understanding of the environment in a given culture (Sillitoe, 2002; Gorjestni, 2005 and Dan *et al*., 2010). Aggrawal (1995) defined indigenous knowledge as the actual knowledge of a given population that reflects the experiences based on traditions and includes more recent experiences with modern technologies. Local people including farmers, landless laborers, women, rural artisans and cattle herdsmen are the custodians of indigenous knowledge systems. These people are well informed about their own resources, what works and doesn't work and how one change impacts other parts of the local system.

Indigenous knowledge is dynamic, changing through indigenous mechanisms of creativity and innovativeness as well as through contact with the other local and international knowledge systems. Indigenous knowledge systems are often elaborate and are adapted to local people quality and quantity of available resources (Flavier, 1995).

It uses the strategies and techniques developed by local people to cope with the changes in the socio-cultural and environmental conditions. It involves trial and error problem-solving approaches by groups of people, with an objective to meet the challenges they face in their local environments and the decision making skills of local people are drawn upon the resources they have at hand (Melchias, 2001).

Indigenous knowledge provides the basis for problem solving strategies for local communities especially, the poor. It is of relevance to the poor in the area of agriculture, animal husbandry and ethno veterinary medicine, use and management of natural resources, primary health care, preventive medicine and psycho social care, saving and lending, communities development and poverty alleviation (Mondal, 2009). It represents an important component of global knowledge on development issues and it is an underutilized resource in the development process. Learning from indigenous knowledge, by investigating first what local communities know and have, can improve understanding of local conditions and provide a productive context for activities designed to help the communities. Sharing indigenous knowledge within and across communities can help enhance cross cultural understanding and also promote the socio-cultural dimension of development.

However, most of the indigenous knowledge and practices are now going into extinction through the death of the originators or those who know more about them, due to their non documentation and as a result of binary tension between Western science and indigenous knowledge systems. It is against this background that this study examined the challenges of indigenous knowledge transfer amongst the rural youths in Ila Local Government Area of Osun state.

Objectives of the study

The general objective of the study was to examine the challenges of indigenous knowledge transfer to the rural youths in Ila Local Government Area of Osun state. The specific objectives are to:

i. describe the personal characteristics of rural youth in the area;
ii. examine the sources of indigenous knowledge transfer to the rural youth;
iii. determine the perception of the rural youth to the use of indigenous knowledge in the area; and
iv. identify the constraints to the effective transfer of indigenous knowledge to the rural farm youth in the area.

METHODOLOGY

The study was conducted in Ila local government area of Osun state. The Local Government Area (LGA) comprises more than twenty towns and villages with its headquarter in Ila Orangun. Two stage sampling procedure was used to sample respondents for the study. Firstly, four villages (Edemosi, Faje, Idi Odan and Olope meje) were selected from the LGA using random sampling technique. Thereafter, 30 rural youths were selected from each village, making a total of 120 respondents used for the study.

The dependent variable of the study was constraints to effective transfer of indigenous knowledge. Respondents were asked to react to some statements expressing constraints to indigenous knowledge transfer on a on a 4 point scale: 'Very Severe, Severe, Less Severe and Not Severe, and the options were scored 3, 2, 1 and 0, respectively. Weighted mean score was obtained for each statement by multiplying the frequencies of each option by its respective score (point) and dividing the summation by total number of respondents. Based on weighted mean values obtained, the statements were then ranked indicating the extent of severity attached to each by the respondents.

The independent variables such as awareness and utilization about IK practices were measured on a 2 points scale. Respondents were asked to indicate whether they were aware

(scored 1 point) the IK practices listed. Respondents that were neither aware and had not utilized them were scored 0 point, respectively.

Other independent variables such as age and farm size were measured on ratio level by recording their absolute values given, while others such as sex, marital status, religion, etc, were measured at nominal level.

The data were analyzed using frequency counts, percentage and mean score for descriptive analysis. Also, correlation and chi square analyses were used to test relationship between constraint to IK transfer (dependent) and independent variables measured at ratio level and nominal level, respectively, while regression analysis was used to determine variables that significantly contributed towards constraint to IK transfer among rural youth.

RESULTS AND DISCUSSION

Personal characteristics of respondents

Data in Table 1 show that majority (61.7 %) of the respondents were within the age range of 21 to 30 years, while about 32 percent were aged between 11 and 20 years old.. Mean age was 23.6 years with a standard deviation of 4.5 years. 56.7 percent of the respondents sampled were male while 43.3 percent were female.

Over half (53.3%) of the respondents had secondary school education, 21.7 percent had tertiary education, while very few (5.0 %) had no formal education. This implies that majority of the farm youth in the area are educated and this may have effect on their use or disuse of indigenous knowledge practices. Majority (68.3% and 65.8%) belonged to religious organizations, and age grade association, respectively. About half of the respondents (52.5%) had travelled about three to four times within the state in a month while majority (89.2%) had travelled less than twice outside the state in a month.

The farm size of the respondents ranged from one to five acres of land. Majority of the respondents (70.0%) cultivates between one to two acres of land and relied on the use of traditional implements. The finding is consistent with Olagunju and Ogunniyi (2006) that majority of farmers in Southwest Nigeria had relatively small cultivated land. The system of land acquisition for agriculture in the area is inheritance and also affects the availability of land for farming.

Sources of information about Indigenous Knowledge

Data in Table 2 show that story telling (70.8 %) and oral tradition (69.2%) ranked highest as source of information about indigenous

While information passed on through friends (60.8 %) ranked third, while radio, video and television ranked lowest. This finding is in support of Nwokeabia (2006) and Ossai (2010), who found out that indigenous knowledge are passed from generation to generation through storytelling, songs, laws and oral tradition. The low proportion in radio, video and television might be an indication that indigenous knowledge has not been adequately documented.

Awareness about and utilization of selected indigenous knowledge practices

Data in Table 3 show that all the respondents (100%) were aware of 'putting vegetable on roof overnight for preservation' and the use of incantation to remove venoms from snake bite. Majority (96.7%) were aware of 'using soil texture and color to depict the fertility of the soil' while 88.3 percent were also aware of erecting of scare crow to ward off pests such as birds and monkeys from crop field. However, fewer proportions of respondents were aware of the traditional use of neem bio pesticide as immunity against locust (29.2 %) and the use of unripe pawpaw to treat jaundice (45 %).

The Table further displayed the rate of utilization of some selected indigenous practices known to the respondents. About 25.5 percent of the respondents utilized soaking of seeds in water before planting, although about 72.5 percent were aware of the act. Also 29 percent made use of cockcrow to depict time of the day as against 81.7 percent that were aware of this practice. Few (15.8%) made use of shadow to depict time of the day in the afternoon compared to 81.7 percent that were aware of the practice. Conversely, most of the respondents were using wrist watches to determine the time of the day because of its accuracy and affordability. Only 15.8 percent made use of 'trigger trap to kill fish' compared to 65.8 percent that were aware of the technique. Again, only one fifth (20%) of the respondents utilized bitter leave and local gin in treating measles as against 66.7 percent that were aware of such practice.

Perception about use of indigenous knowledge practices

Data in Table 4 shows that a total of 100 percent agreed that indigenous knowledge can provide cures for diseases which effective treatment does not yet exist while majority (a total of 99.1 %) agreed that IK is place and location specific, dynamic and based on innovation, adaptation and experimentation. Also, a total of 81.6 percent, agreed that IK enhances crop and livestock production for improved human nutrition and income generation and 80.9% opined

that IK has low investment costs and increased productivity.

These results are in consonance with Allen (2001), who found that, the use of indigenous knowledge and innovation is cost effective, sustainable and locally manageable, deployment and mobilization is not expensive. Furthermore, 73.3 percent agreed that IK is not properly documented. The finding is in agreement with Kolawole (2001) that indigenous knowledge systems and contents in Africa are not adequately researched and documented.

Constraints to effective transfer of indigenous knowledge practices

Major constraints to effective transfer of indigenous knowledge as shown by data in Table 5 were 'no systematic communication channel in place that could reinforce indigenous knowledge transfer' (with mean score of 2.44), 'failure to respect indigenous intellectual property rights as during the process of technology development farmers informal experimentation are not considered as a source of innovation' (2.15), 'rural urban migration by youth in search for greener pastures and showing less interest to indigenous knowledge thus causing erosion of indigenous knowledge' (2.05), 'weak collaboration between indigenous and conventional extension practitioners' (1.96), not properly documented (1.94) and codifying it may lead to loss of some properties (1.94) as it is orally transmitted.

Data showing level of regression analysis in Table 7 show that none of the variable included in the analysis had significant relationship with the dependent variable of the study (constraint to effective indigenous knowledge transfer). Also, the overall data summary indicates that F value of 1.036 obtained in the regression analysis was not significant at 0.05. The implication is that none of these variables significantly contributed to change in constraints to effective indigenous knowledge transfer.

CONCLUSION AND RECOMMENDATIONS

The following conclusion emanated from the findings of the study

i. Mean age of respondent was 23.6, whom were mostly singles and literates.
ii. Storytelling and oral transmission of IK were most prominent sources of IK transfer amongst rural youth.
iii. The rate of utilization of selected IK practices were lower compared to rate of awareness about these practices.
iv. Respondents had favorable perception about IK practices.
v. Major constraints to effective transfer of IK practices among

rural youth include lack of systematic communication channel and documentation, disregard for intellectual property rights for IK practices during technology development, lack of scientific validation and rural urban migration by youth in search of greener pasture.

Based on the findings of the study, the following recommendations were made:

i. Indigenous knowledge should be given recognition and used during technology development to provide a sustainable technological options rather than fixed options.
ii. It must be constantly validated to ascertain its relevance, reliability, functionality and effectiveness in order to empower the knowledge of local people and increase their productivity.
iii. Storage in retrievable repositories should be encouraged and this should not be limited to text document or electronic format but include the use of tapes, films and storytelling.
iv. Adequate communication channels and ICT tools such as radio, television and video should be used in disseminating indigenous knowledge to a wider community to facilitate knowledge transfer and exchange of knowledge.
v. Farmer to farmer extension strategies should be used to increase the rate of dissemination and utilization of technologies that are built on indigenous knowledge.
vi. Agencies, organizations and academic community should collaborate with farmers to study indigenous knowledge and further develop it.
vii. Establishment of national indigenous knowledge resource centers in each state to strengthen the capacities of agricultural research and extension systems.

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Table 1: Personal characteristics of respondents

variable	Frequency	Percentage
Age (years)		
11 – 20	38	31.7
21 – 30	74	61.7
31- 40	8	6.7
Mean age = 23.6 Standard deviation = 4.5		
Sex		
Male	68	56.7
Female	52	43.3
Religion		
Christianity	47	39.2
Islam	60	50.0
Traditionalist	13	10.8
Marital Status		
Single	90	75.0
Married	30	25.0
Divorced	0	0.0
Widowed	0	0.0
Educational level		
No formal education	6	5.0
Adult education	8	6.7
Primary school	16	13.3
Secondary school	64	53.3
Tertiary	26	21.7
Farm size		
< 2 acre	90	75.0
2.0 – 4.0	26	21.67
> 4.0	4	3.33
Cosmopoliteness		
No of time travelled within state in a month		
≤ 2	50	41.7
3 – 4	63	52.5
5 – 6	3	2.5
7 or more	4	3.3
No of time travelled outside the state in a month		
≤ 2	107	89.2
3 – 4	11	9.2
5 and above	2	1.7
Membership of association*		
Age grade	79	65.8
Young farmers club	12	10.0
Tree planting club	1	0.8
Religious club	82	68.3

Source: Field survey, 2012.

Table 2: Sources of information on indigenous knowledge transfer to the youth

variable	Frequency	Percentage	Rank
Oral	83	69.2	2nd
Story telling	85	70.8	1st
Songs/Praise	22	18.3	5th
Television	0	0.0	8th
Video	2	1.7	7th
Radio	11	9.2	6th
Friends	73	60.8	3rd
Proverbs	45	37.5	4th

*Multiple responses
Source: Field survey, 2012.

Table 3: Awareness and utilisation of some selected indigenous knowledge practices

	Indigenous knowledge practices*	Awareness		Utilisation	
		Freq	%	Freq	%
1	Erecting of scare crow to ward off pests such as birds and monkeys e.g. suspended bottle and stone, dressing of tree stumps.	106	88.3	63	52.5
2	Soaking of seeds in water before planting e.g. maize	87	72.5	34	28.3
3	The use of the presence of some fauna and flora such as siam weed and earthworm cast to depict the fertility of the soil	80	66.7	57	47.5
4	The use of soil texture and colour to depict the fertility of the soil	116	96.7	79	65.8
5	Determination of soil moisture content through the use of feeling and the deposition of river sediments	57	47.5	41	34.2
6	The use of ash and other organic manuring methods	101	84.2	79	65.8
7	The use of friends (*Aro/Owe*) to work on the farm	63	52.5	57	47.5
8	Setting of big traps (*Ebiti*) in a place very close to the soil that has been soaked with urine to kill cane rat/ grass cutter.	99	82.5	64	53.3
9	Multiple cropping to serve as an insurance against crop failure	79	65.8	76	63.3
10	The use of cattle egret to depict the commencement of dry season	57	47.5	44	36.7
11	The use of cockcrow to depict the time of the day e,g. first cockcrow 3am,second cockcrow 4am to 4.30am, and third cockcrow 5.00am.	98	81.7	35	29.2
12	Use of shadow to depict time of the day in the afternoon	98	81.7	19	15.8
13	Early planting to avoid damage of crop by pests and diseases	100	83.3	77	64.2
14	Hanging of stubborn weed on tree trunk	57	47.5	41	34.2
15	Traditional use of neem bio-pesticide (India lilac) as immunity against desert locust	35	29.2	20	16.7
16	The use of traditional bush fallow system for soil to regain its fertility	101	84.2	40	33.3
17	The use of secretion from earthworm as a bait to trap the fish and not the earthworm itself	99	82.5	46	38.3
18	The use of trigger trap *(Igere)* to kill the fish	79	65.8	19	15.8

*Multiple responses apply.
Source: Field survey 2012

Table 3 Continued

S/n	Indigenous knowledge practices*	Awareness		Utilisation	
		Freq	%	Freq	%
20	Use of indigenous knowledge to differentiate between pasture and wilderness for grazing and hunting	67	55.8	23	19.2
21	Putting vegetable on roof overnight for preservation	120	100	120	100
22	Using of shea-butter oil to treat dislocation and rashes	100	83.3	64	53.3
23	Unripe pawpaw to treat jaundice	54	45.0	35	29.2
24	Bitter leave and local gin for treating measles	80	66.7	24	20.0
25	Tiger fat (*Ora-ekun*) to treat keloid and hypertrophic scar.	76	63.3	35	29.2
26	Incantations to remove venoms from snake bite	120	100	19	15.8
27	Hanging of dried maize in the kitchen to preserve it for the next planting season	56	46.7	34	28.3
28	Storing cowpea with dried pepper to prevent storage insect.	79	65.8	42	35.0
29	Storing of yam underground	75	62.5	57	47.5
30	Establishment of tree and vegetable nursery besides a permanent source of water.	101	84.2	23	19.2

*Multiple responses apply.
Source: Field survey 2012

Table 4: Perception of rural youth about the use of indigenous knowledge

S/n	Perceptional Statements	S. A		A		U		D		S. D		Mean
		F	%	F	%	F	%	F	%	F	%	
1	Farmers are now using local remedies which are relatively cheaper than modern drugs	22	18.3	31	25.8	25	20.8	23	19.2	19	15.8	3.12
2	The use of indigenous knowledge brings low investment costs and increased productivity	41	34.2	56	46.7	23	19.2	-	-	-	-	4.15
3	Indigenous medicinal plants that grows in wild are being identified and conserved	23	19.2	42	35.0	55	45.8	-	-	-	-	3.73
4	Enhances crop and livestock production for improved human nutrition and income generation	19	15.8	79	65.8	22	18.3	-	-	-	-	3.98
5	Indigenous knowledge is methodologically weak and unproven	22	18.3	10	8.3	6	5.0	34	28.3	48	40.0	2.36
6	It is location and place specific	19	15.8	100	83.3	-	-	1	0.8	-	-	4.14
7	It is not properly documented	40	33.3	48	40.0	10	8.3	22	18.3	-	-	3.88
8	It is dynamic and based on innovation, adaptation and experimentation	64	53.3	55	45.8	1	0.8	-	-	-	-	4.53
9	It concerns critical issues in human and animal life, primary production and natural resources management	56	46.7	40	33.3	23	19.2	-	-	1	0.8	4.25
10	might be discovered for diseases for which ive treatments do not yet exist	46	38.3	74	61.7	-	-	-	-	-	-	4.38

Source: Field survey 2012.

Table 5: Distribution of respondents by constraints to effective transfer of indigenous knowledge

	Constraint	Degree of constraint								Mean	Rank
		VS		S		LS		NS			
		Freq	%	Freq	%	Freq	%	Freq	%		
1	Most of the indigenous knowledge have not yet been scientifically validated	55	45.8	19	15.8	24	20.0	22	18.3	1.89	7th
2	There is a weak collaboration between indigenous knowledge and conventional extension practitioners	41	34.2	56	46.7	-	-	23	19.2	1.96	4th
3	Information is orally transmitted so it takes a long time to get full details on procedures for diagnosing and treating of diseases	19	15.8	77	64.2	1	0.8	23	19.2	1.77	8th
4	There is lack of appreciation of indigenous knowledge on the part of the extension workers	-	-	41	34.2	22	18.3	57	47.5	0.87	15th
5	Failure to respect indigenous intellectual property rights as during the process of technology development farmers informal experimentation are not considered as a source of innovation	41	34.2	56	46.7	23	19.2	-	-	2.15	2nd
6	Indigenous knowledge systems are not formerly recorded and documented	43	5.8	48	40.0	8	6.7	21	17.5	1.94	5th
7	Each individuals possesses only a part of the communities indigenous knowledge	34	28.3	23	19.2	40	33.3	23	19.2	1.57	10th
8	Farmers rarely recall information on qualitative data pertaining to their I.K.	21	17.5	22	18.3	35	29.2	42	35.0	1.18	13th
9	Indigenous knowledge is too place specific to be of much theoretical use	19	15.8	34	28.3	43	35.8	24	20.0	1.40	11th
10	Indigenous knowledge is methodologically weak or unproven as there are usually conflict between western science and indigenous knowledge	19	15.8	42	35.0	23	19.2	46	38.3	1.37	12th
11	Rural urban migration by youths in search of greener pastures and showing less interest into indigenous practices causing erosion of indigenous knowledge	62	61.7	24	20.0	12	10.0	22	18.3	2.05	3rd
12	No systematic communication channel in place that could reinforce indigenous knowledge transfer as English is the medium of instruction and places less emphasis on indigenous knowledge	53	44.2	67	55.8	-	-	-	-	2.44	1st
13	Language barriers to transfer others to our own language	1	0.8	43	35.8	34	28.3	42	35.0	1.03	14th
14	It is transmitted orally or through imitation and demonstration codifying it may lead to loss of some property	55	45.8	22	18.3	24	20.0	19	15.8	1.94	5th
15	Indigenous knowledge own by people or community often slip away as a result of threats of assimilation into the mainstream of the society	-	-	101	84.2	-	-	19	15.8	1.68	9th

Source: Field survey, 2012

Table 6: Results of Chi-square analysis

Variables	χ	r	p
Sex	10.64*	-	0.059
Religion	11.37	-	0.327
Marital status	5.389	-	0.370
Educational level	35.504**	-0.0177**	0.018
Age	-	-0.111	0.054
Information sources	-	-0.068	0.228
Awareness about IK	-		0.459

Source: Field survey 2012

***sig at 0.10; **sig at 0.05;** χ^2 – chi square value; r – correlation value

Table 7: Result of regression analysis establishing relationship between selected variables and constraints to effective indigenous knowledge transfer

Variable	B	t	sig
Age	0.063	0.662	0.509
Highest educational attainment	-0.019	-0.199	0.843
Information sources	0.081	0.875	0.384
Awareness	0.064	0.545	0.587
Utilisation	-0.207	-1.782	0.077
Perception	-0.020	-0.199	0.843

b = standardized beta coefficient

Summary: $F = 1.036$; $sig = 0.406$; $R^2 = 0.052$

Source: Field survey, 2012

NOTES FOR CONTRIBUTORS

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