

**CHILDREN'S PARTICIPATION IN AGRICULTURAL ACTIVITIES IN  
THE ADOPTED VILLAGES OF THE INSTITUTE OF  
AGRICULTURAL RESEARCH AND TRAINING, NIGERIA\***

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**ABSTRACT**

Children represent a critical social-economic group in the farm family set up and can play a myriad of roles in achieving sustainable development, especially in agriculture. This study examined children's participation in agriculture with a view of identifying their training needs in agriculture and their career aspirations. A two-stage random sampling technique was used to select 100 children (50 each) from two adopted villages of the Institute of Agricultural Research and Training that represent two agro-ecological zones in southwest Nigeria. Data were analyzed using descriptive statistics such as frequency distribution, mean and percentages, while participation in agricultural activities was ranked on a Likert point scale of 0 to 3. The total score of participation in all agricultural activities was determined and compared with the total attainable score. Findings from the study show children participated in nearly all kinds of farm operations ranging from planting (96%), harvesting (92%), processing (80%), weeding (76%), marketing (76%) and packing of trash (60%). Although participation in all the activities was higher for male children (10.36) than female children (8.74), only (18%) of the children interviewed were prepared to take up farming as a career in the future. The children, however, indicated their need for training on snail rearing (70%), grass cutter rearing (60%), and compost preparation (60%), among other activities.

The production of various agricultural outputs employs different combinations of the production resources such as land, capital, labor and entrepreneurship of which labor is very important and is supplied by men, women and children. This is especially the case in developing countries, where family units have been and still are the major source of farm labor whereby family members, including children, are involved in one way or the other in agricultural production (Adisa and Adekunle 2007). The roles of children and potential for growth of the agricultural sector have

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also been noted to be inherent in their contribution as a critical socioeconomic group in the farm family set up. In addition, children comprise more than half the population in many countries and have a formidable numerical strength for playing a myriad of roles in both rural and urban agricultural settings as a contribution to their family's income and overall productivity (Adedoyin 2005; CIDA 2008).

In Nigeria, like most developing economies, agriculture is still in the hands of the rural poor farmer who cannot afford mechanized farming but depends on manual labor from their family (their children inclusive). Many children actively participate in agriculture as a contribution to their family income level or overall productivity and this is invariably considered as child's work. However, welfare economists have placed a demarcation between what constitute "child work" and "child labor." Adedoyin (2005) defined child work as constituting those activities performed by a child that contribute positively either to the output of a family or a firm or to the family's public goods and that the child considers as involving some sacrifice. Output means not only output in the national accounting sense, but also the necessary input to the family's consumption and maintenance of its infrastructure. 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 or their future income earning capabilities, either by shrinking their future external choice sets or by reducing their own future individual productive capabilities.

The view expressed above obviously underscores the importance of the need for conscious effort at constantly weighing the exposure of children to inimical stress (both mental and physical) against opportunities for learning and the stimulation of interest in agriculture through their involvement in agriculture. This becomes pertinent in the Nigerian situation as it has been noted (Adisa and Adekunle 2007) that most farm families in Nigeria begin to introduce their wards to farm work at as early as age of five years, an age that they are expected to begin schooling. Alongside the possibility of creating avenues for unconsciously engaging the children in strenuous activities, the inimical competition between farm work and their need for education could create an unhealthy tilt from child work to child labor.

The direction of such tilt undoubtedly has enormous potential in determining the sustainability of the child's interest and significant contribution to agriculture without leading to an irreversible apathy against the vocation or a buildup of low quality or "spent" labor force that might undermine virile agricultural growth in the

future. This is in consideration to ensure that the need to meet the present need does not jeopardize the potential of the children to meet their own needs in the future in line with the concept of sustainable development. An indication of possible negative fallout of such unconscious effort has been pointed out in the increasing negative attitude of children (Olujide and Akinbile 1998) toward agriculture as a profession. Nevertheless, the role that children can play in achieving sustainable development in agriculture cannot be overemphasized; they represent a critical socioeconomic group, especially in the farm family setup. Their numerical strength, and their attributes as fast adopters of improved technology and their future leadership potential make it important to mobilize them for increased productivity.

This study therefore examines children's participation in agriculture with a view of knowing their career aspiration with the aim of identifying the farm activities that children are involved in and their relative level of involvement. Similarly, the study aims at identifying gender influence on the involvement of the children in the activities alongside measuring their disposition toward taking agriculture as a career. To identify possible strong points for stimulating their interest in agriculture, the study also is aimed at identifying the training needs of the children.

## METHODOLOGY

Data for this study were generated from a farm household survey involving 100 children selected by a two-stage random sampling technique. The study was carried out in two adopted villages of the Institute of Agricultural Research and Training (I.A.R&T) which represent two agro-ecological zones in southwest Nigeria. Moloko-Ashipa village is located in Obafemi Owode Local Government Area (LGA) of Ogun State in the rain forest belt with characteristic bimodal rainfall with annual average in the range 1500-2000mm and a temperature of 30°C, respectively, while Oniyo village is located in Oriire Local Government Area in the derived savanna enclave of Oyo State with average annual rainfall that varies from 1100mm to 1250mm and daily temperature of range 25°C and 35°C almost throughout the year. Predominant food crops grown in the two villages include maize, cassava, and yam, while rice is exclusively grown in Moloko-Ashipa and soybean and cowpea, tomatoes and pepper, sorghum are exclusively grown in Oniyo.

The first stage of the sampling involved random selection of 25 households from the list of households obtained from the village head and finally random selection of 50 children of age 7 to 16 years from the list of children obtained from

the selected households in each village. A pre-tested structured interview guide was used to obtain information from the children, notably on farm activities they engaged in and their level of participation. Data were also collected on other personal characteristics such as gender, age, level of education and training needs in agricultural production and career aspiration.

Data were analyzed using descriptive statistics like frequency distribution, mean and percentages, while level of participation in agricultural activities was ranked on a 4-point scale (Non-participation = 0, Occasionally = 1, Frequently = 2, Very Frequently = 3). In addition, a total score of participation in all agricultural activities was determined and compared with the total attainable score assuming that all children participated in all activities very frequently to determine the overall level of participation in farm activities by children in the study areas. These participation scores were then compared between gender, level of education and agro-ecology (village), respectively, using t-statistics.

#### *Hypotheses Tested*

The hypotheses tested in the study are stated in the null form as:

- H<sub>1</sub>: There is no significant difference in the level of children participation in various agricultural activities.
- H<sub>2</sub>: There is no significant difference in level of participation of male and female children in agricultural activity.
- H<sub>3</sub>: There is no significant difference in participation of children in agriculture across educational level and agro-ecology

## RESULTS AND DISCUSSION

### *Personal Characteristics of Children*

Table 1 shows the percentage distribution of children based on their personal characteristics. The results show that more than half (58%) of the children were between the ages of 11 and 14 years. The majority (58%) of the children are male and 42% are female, while there were more Christians (58%) than Muslims (42%). All the children were going to school with 64% attending primary schools and 36% were in the secondary schools. The age distribution implies that most of the children could have the ability and capacity to be involved in practical farming activities to some extent (excluding the very rigorous activities), while the fact that all the children are in school give an indication of harnessable potential for

enhanced consciousness about improved agricultural technologies and consequently adoption of the technologies.

TABLE 1: DISTRIBUTION OF CHILDREN BY PERSONAL CHARACTERISTICS (N=100)

PERSONAL CHARACTERISTICS	PERCENTAGE
Sex	
Male. ....	58
Female. ....	42
Age (years)	
7 – 10. ....	23
11 – 14. ....	58
> 14. ....	19
Educational level	
Primary education. ....	64
Secondary education. ....	36
Religion	
Christianity. ....	58
Islam. ....	42

#### *Children's Involvement in Agricultural Activities*

The study also revealed that the children participated in nearly all kinds of farm operations, although the incidence of participation varies across activities (Table 2). Similar studies conducted by Lawal and Akintayo (2007) showed that children's participation in vegetable production activities covered nearly all aspect of production although the study did not indicate level of participation in each activity. This study has however shown that children are more involved in harvesting of crops (96%), planting (92%), processing of crops (80%), weeding (76%), feeding of livestock (76%), marketing of farm produce (76%), trash gathering and burning (60%), treatment of livestock (60%), storage of farm produce (56%), transplanting (52%), and thinning(52%) respectively. However, children's participation was expectedly low for more demanding operations like uprooting of trees (6%), chemical spraying (8%), ridge making (32%), staking (36%) and mulching (42%). The low level of participation of children in these latter activities is obviously due to the high demand of the activities in terms of strength, skill and safety.

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TABLE 2: DISTRIBUTION OF CHILDREN ACCORDING TO THEIR INVOLVEMENT IN AGRICULTURAL ACTIVITIES

AGRICULTURAL ACTIVITIES	PERCENTAGE
Bush clearing. . . . .	30
Uprooting of trees. . . . .	6
Trash gathering and burning. . . . .	60
Ridge / mound making. . . . .	32
Planting. . . . .	92
Transplanting of seedlings. . . . .	52
Thinning. . . . .	52
Weeding. . . . .	76
Mulching. . . . .	42
Staking. . . . .	36
Chemical spraying. . . . .	8
Harvesting of crops. . . . .	96
Processing of crop. . . . .	80
Storage of farm produce. . . . .	56
Marketing of farm produce. . . . .	76
Feeding of livestock. . . . .	76
Treatment of livestock. . . . .	60

\*Multiple responses given

*Gender Differential in Level of Participation in Agricultural Activities*

The results of the comparison of participation in various agricultural activities by gender are shown in Table 3. Participation differs between male and female children for farm land preparation and post-establishment crop management activities like weeding and staking. The results show higher levels of participation for male children than female children in activities like bush clearing, trash gathering, ridge making, weeding and staking, while there is no significant difference in participation for other activities. In addition, participation in all activities generally (Table 4) was higher for male children (10.36) than female children (8.74), corroborating earlier findings by Adedokun, Oladoja, and Soyemi (2006).

However, participation in agricultural activities by both sexes was average with total participation scores averaging 56.94% of the total maximum attainable participation score, although the male children's participation of about 61% was significantly higher than that of female children (51.4%). These results indicate that among those activities substantively participated in by children, male children are usually involved in those that are more laborious (e.g., bush clearing, ridge making,

TABLE 3: LEVEL OF PARTICIPATION IN AGRICULTURAL ACTIVITIES BETWEEN GENDERS

ACTIVITY	MALE	FEMALE	TOTAL	t-STAT
Bush clearing. . . . .	0.45 (0.35)	0.41 (0.51)	0.32 (0.47)	3.38*
Uprooting of tree. . . . .	0.10 (0.31)	0.10 (0.30)	0.10 (0.30)	0.13
Trash gathering. . . . .	0.81 (0.40)	0.57 (0.50)	0.71 (0.47)	2.60*
Ridge making. . . . .	0.57 (0.50)	0.21 (0.42)	0.42 (0.50)	3.76*
Planting. . . . .	0.90 (0.31)	0.95 (0.22)	0.92 (0.27)	1.01
Transplanting. . . . .	0.59 (0.50)	0.43 (0.50)	0.52 (0.50)	1.56
Thinning. . . . .	0.62 (0.49)	0.50 (0.51)	0.57 (0.50)	1.20
Weeding. . . . .	0.81 (0.40)	0.40 (0.50)	0.64 (0.48)	4.54*
Mulching. . . . .	0.41 (0.50)	0.43 (0.50)	0.42 (0.50)	0.15
Staking. . . . .	0.62 (0.49)	0.43 (0.50)	0.54 (0.50)	1.92***
Chemical Application. . . . .	0.09 (0.28)	0.07 (0.26)	0.08 (0.27)	0.27
Harvesting. . . . .	0.97 (0.18)	0.98 (0.15)	0.97 (0.17)	0.31
Processing. . . . .	0.79 (0.41)	0.79 (0.41)	0.79 (0.41)	0.09
Storage. . . . .	0.55 (0.50)	0.57 (0.50)	0.56 (0.50)	0.19
Marketing. . . . .	0.79 (0.41)	0.71 (0.46)	0.76 (0.43)	0.9
Livestock feeding. . . . .	0.76 (0.43)	0.76 (0.43)	0.76 (0.43)	0.04
Livestock Treatment. . . . .	0.53 (0.50)	0.69 (0.47)	0.60 (0.49)	1.58

NOTE: \*p ≤ 0.01, \*\*\*p ≤ 0.10

TABLE 4: TOTAL LEVEL OF PARTICIPATION IN AGRICULTURAL ACTIVITIES BETWEEN GENDERS

GENDER	AVERAGE SCORE		PERCENTAGE OF MAXIMUM SCORE	
	Score	t-statistic	Score	t-statistic
Male. . . . .	10.36 (2.08)	3.69*	60.95 (12.26)	3.69*
Female. . . . .	8.74 (2.30)		51.40 (13.50)	
Combined. . . . .	9.68 (2.31)		56.94 (13.58)	

NOTE: \*Significant at p≤0.01

weeding) or demanding in terms of skill (e.g., staking) than female children, while the significantly higher level of participation of male children points to the fact of the age-long domineering role of male over female in agriculture (Onemlease and Alakpa 2009; Taj et al. 2009) represents a manifestation of the buildup from childhood.

*Educational and Agro-ecological Influence on Children's Participation in Agricultural Activities*

Beyond the gender influence shown earlier, this study also revealed that the overall level of participation in agricultural activities differs between children in different educational and agro-ecological categories (Tables 5 and 6). While children in the primary school group have a higher level of participation (59%) than children in the secondary school category (53.27%), children in the rain forest belt get more involved in agricultural activities (59.35%) than those in the derived savanna agro-ecology (54.35%). Ordinarily, children would be expected to get more involved in farm work as they advance in age and this is expected to enhance the participation of secondary school children in agriculture. However, the higher participation of primary school children as revealed by this study could have arisen from the greater challenges faced by their older colleagues in the secondary school who are known to spend more hours in the school during week days and are likely to be allowed to devote more time to their studies than those in the primary school category.

TABLE 5: TOTAL LEVEL OF PARTICIPATION IN AGRICULTURAL ACTIVITIES BETWEEN LEVELS OF EDUCATION

EDUCATIONAL LEVEL	AVERAGE SCORE		PERCENTAGE OF MAXIMUM SCORE	
	Score	t-statistic	Score	t-statistic
Primary school. . . . .	10.03 (2.42)	2.06**	59.00 (14.22)	2.06**
Secondary school. . . . .	9.06 (1.99)		53.27 (11.68)	
Combined. . . . .	9.68 (2.31)		56.94 (13.58)	

NOTE: \*\*Significant at  $p \leq 0.05$

*Career Aspirations of Children*

Results presented in Table 7 shows that only 18% of the children interviewed were prepared to take up farming as a career in the future. Forty-six percent indicated their intention to go into trading/business, while only 26% preferred white collar jobs. These results indicate that children are not willing to take up agriculture as a career or profession and this may have a negative impact on the

overall agricultural production system since only the aged will be left in the occupation.

TABLE 6: TOTAL LEVEL OF PARTICIPATION IN AGRICULTURAL ACTIVITIES BETWEEN AGRO-ECOLOGIES

AGRO-ECOLOGY	AVERAGE SCORE		PERCENTAGE OF MAXIMUM SCORE	
	Score	t-statistic	Score	t-statistic
Derived Savanna. . . . .	9.24 (1.95)	1.93***	54.35 (11.50)	1.93***
Forest. . . . .	10.12 (2.56)		53.27 (11.68)	
Combined. . . . .	9.68 (2.31)		56.94 (13.58)	

NOTE: \*\*\*Significant at  $p \leq 0.1$

TABLE 7: DISTRIBUTION OF CHILDREN BY CAREER ASPIRATION

CAREER ASPIRATION	PERCENTAGE
Trading/business. . . . .	46
White collar jobs. . . . .	26
Farming. . . . .	18
Artisan. . . . .	06
Yet to decide. . . . .	04

#### *Training Needs of Children*

Table 8 shows the distribution of children according to their training needs. Most of the children (70%, 60%, and 60%) indicated that they want training on snail rearing, grass cutter rearing, and compost making, respectively. About half and 40 percent of the children showed interest in soil fertility management and fish farming, respectively, while one-third of the children indicated that they need training in other areas like dry season vegetable production, food crop processing, poultry keeping, food preservation methods and chemical weeding.

TABLE 8: DISTRIBUTION OF CHILDREN ACCORDING TO THEIR TRAINING NEEDS.

AREA OF TRAINING NEED	PERCENTAGE
Snail rearing.....	70
Grasscutter rearing.....	60
Compost preparation.....	60
Soil fertility / conservation. ....	46
Fish farming.....	40
Dry season vegetable. ....	38
Food crop production. ....	30
Poultry keeping. ....	30
Food preservation. ....	30
Crop processing.....	28
Chemical weeding. ....	22

\*Multiple responses given

## CONCLUSIONS

The study has shown that children participate in all kinds of farming activities ranging from planting through processing and marketing though their level of participation differs with their sex. Only one-fifth of the children interviewed indicated their preference for farming as a career and this is a pointer to the challenges ahead of the country effort at ensuring food self sufficiency and sustainable growth in the agricultural sector as a whole.

It is therefore recommended that agricultural development planners should include children in programs that will stimulate their interest and broaden their knowledge of agricultural activities. Children should also be encouraged to develop interest in agriculture through training programs that accommodate micro-livestock rearing and soil fertility management through organic-based fertilizer as these ranked higher in the training preference of the children.

## AUTHOR BIOGRAPHIES

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