

Children Participation in Vegetable Production and Associated Hazards in Oyo State, Nigeria: Implications for Poverty Alleviation and Extension

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Abstract: Agriculture in developing countries relies heavily on child labour. This paper investigates the involvement of children in vegetable production in Oyo State, Nigeria. Pre-tested structured and unstructured interview schedules were used to elicit information from a total of one hundred children who were selected from vegetable producing locations in the selected Local Government Areas of the state. Simple random sampling technique was used to select the children. Descriptive statistics such as frequency counts and percentages were used to describe the findings while Pearson's correlation analysis was used to determine the significant relationship between the variables investigated in the study. The results show that most children producing vegetables fell between the ages of 14 and 17 and more male children were involved than females. Majority of the children were in their secondary school and produce various types of vegetables. Major reasons for venturing into vegetable production include income generation, family sustenance and supplementation of school fees. Hazards children were exposed to include physical, environmental, and educational hazards. Major constraints experienced by children were lack of storage facilities, spoilage of produce, lack of fund for farm work and seasonal variation. Significant relationships existed between the selected characteristics of children and the hazards they are exposed to. Assisting the problem of poverty through increase in family income and educational opportunities tailored towards improving children's activities in small-scale farming will assist in promoting occupational health safety of children in agriculture and ensuring sustainable food security.

Key words: vegetable production, children farmers, poverty alleviation, hazards, Oyo State Nigeria.

INTRODUCTION

Child labour is an overwhelming issue in developing countries although it is found in all regions of the world. For instance, in Africa, an approximate forty-one percent (41%) of all children between the ages of five and fourteen are involved in economic activity compared with twenty-one percent (21%) in Asia and seventeen percent (17%) in Latin America^[6]. According to Harsch^[5] there was an estimated eighty (80) million child workers across Africa in 2001 and this problem is closely associated with the continent's poverty.

Child labour in Nigeria is a complex phenomenon interwoven with culture and the economy. The fundamental cause of child labour has however been identified as poverty^[6]. It has been reported from projections of urban population growth that urban family units will come under increasing pressures^[8]. Many third world countries are experiencing economic crisis, and children being one of the vulnerable groups, suffer tremendously the impact of poverty. The circumstances in which these children find themselves form part of the explanation for their involvement in

economic activities. The participation of these children in informal activities such as vegetable production is thus an important issue for investigation. As pointed out by Morales-Gomez^[10], it is necessary to recognize children as an important part of the development process in order to provide them with the basic conditions necessary to achieve full human development and lead productive lives.

Agriculture throughout the world today is recognized as crucial to the survival of man and the improvement of the living standards of mankind. In Nigeria, agriculture still remains a family enterprise as children, women and men of all ages are involved in one way or the other in the agricultural production process. Children involvement in farming activities is currently attracting attention of researchers in Nigeria. Many parents have found solace in the involvement of their children in farming activities as a result of the high poverty level prevalence among the people. Poverty is a phenomenon, which has generated a lot of interest in recent times. It is a situation where one cannot generate sufficient income required for life sustenance^[2]. Children in most households have resulted into coping mechanisms out of the poverty web.

Children contribute in no small way to the production of food for household consumption. They are involved in farming activities such as land preparation, weeding, harvesting and processing. Studies have revealed that majority of these farm-children are socialized into farming activities right from age four^[1, 12]. Alugo^[3] in her study of farmers' children in Ife South Local Government in Osun State reported that 90% of the children were on farm after school hours and during the holidays, taking part in activities such as seed selection, planting, food preparation and harvesting. These children are noted to be very significant but neglected component of farm families. However, if the contribution of this farm-children component is withdrawn from crop production activities, it poses a negative implication for household survival in the country.

However, while the participation of children in farming activities are inevitable, there is need to have concern for them especially in the area of hazards associated with children participating in vegetable production. Hence, this paper examines children's participation in vegetable production and their associated hazards. It specifically determined the types of vegetables produced, identified the reasons for participation in vegetable production; identified the hazards children are exposed to and the frequency of exposure of such hazard. It also examined the relationships between the selected characteristics of children and the associated hazards.

MATERIALS AND METHODS

The Study Area: The study was conducted in Oyo State, which is one of the 36 states of Nigeria. The state is bounded in the West by the Republic of Benin, in the North by Kwara State, in the East by Osun State and in the South by Ogun State. There are two growing seasons because of the bimodal pattern of rainfall distribution. The rainy season starts in April and ends in October while the dry season starts in November and ends in March. The average rainfall varies from 1100mm to 1250 mm per annum. Major crops grown in the state include maize, cassava, vegetables, cowpea, soybean and pineapple. Tree crops grown include cocoa, kolanut, oil palm and citrus^[11]. Two-thirds of the crops are grown during the first rainfall cycle which is usually from March to June. The second rainfall cycle however is from July to October and is usually short. Mixed cropping system of farming is common in the state.

The study was restricted to Ibadan metropolis. Ibadan (7° 22. 73N, 3° 53. 72E -figure 1) comprises eleven Local Government Areas (LGAs). However, five

out of the eleven Local Government Areas constitute the metropolis. The five Local Government Areas in the metropolis are Ibadan North, Ibadan North East, Ibadan North West, Ibadan South East and Ibadan South West. These local Government Areas are located within Ibadan city and the people are more involved in agriculture. The average household size is put at 4. 49 while about 48 percent are single. The predominant population of the area is the Yoruba ethnic group with 1. 465 foreigners which are the Hausas, Ibos and Fulani. The metropolis falls in the rainforest vegetational region. Men, women youths and children are actively involved in urban farming. Food crops produced include yam, maize, cassava, cowpea, soybeans, cocoyam and melon. Livestock raised include sheep, goat, pig, rabbit, poultry and snails. Cattle are owned by the fulanis who migrate into the state during the dry season. Other occupations include civil service, teaching, trading, artisans, motor mechanics, tailoring and agricultural processing.

Sampling Procedure, Data Collection and Analysis:

From each of the five LGAs which make up the metropolis, two locations in each of the Local Government Areas in which children are actively involved in vegetable farming were purposively selected. Twenty children were selected from each of the LGAs (vegetable producing locations selected) through the use of random sampling technique. The children were selected from various households that were randomly selected in the study. They were identified as young children who are still under parental custody and control. In all, a total of one hundred (100) children farmers were selected and interviewed.

The data for the study were collected through the use of pre-tested structured interview schedule which was used to elicit information from the children farmers. The data were collected by the two authors-researchers and a trained enumerator between the month of April and June, 2005. The interview schedule was subjected to content validity by presenting it to three experts in agricultural extension for critical evaluation. Their comments and suggestions were incorporated into the final draft. Also, the test-retest method at an interval of two months was used to determine the consistency of the research instrument. The reliability coefficient of 0. 86 was obtained and this made the research instrument to be accepted as reliable. Data collected were analyzed using descriptive statistics while Pearson's correlation analysis was used to test the relationship between selected children farmers' characteristics and the number of hazards they experienced.

RESULTS AND DISCUSSIONS

Personal and Socio-economic Characteristics of Children:

The data in Table 1 indicated that more than half of the Children who were involved in vegetable production were between the ages of 14 and 17 years while those above 17 years were only 28%. Majority (66%) of the Children were male while 34% were female. The data on educational status of the sampled children show that majority (83%) were still in secondary schools while 15% were in primary schools. Only 2% were out of school (dropped out of school). The position of the children among mother’s children (birth order) show that 61% were in the birth order of between 5 and 8 while 34% were between 1 and 4. This is an indication of large family prevalence in most African households. Majority (69%) of the children had between 1-4 years of experience in vegetable production while 31% had between 5 – 8 years of experience. Majority of the children started vegetable production due to the poor economic situation prevalent in most homes in recent years.

Estimated income realized by children from vegetable production varies from N1, 000 and N4, 000 per month (1US dollar=N140). Majority (59%) of the children earned between N1, 000 and N4, 000 per month. Twenty six percent earned more than N4, 000 per month. Majority (66%) of the respondents sourced information from parents while 21% sourced information from friends and neighbours. Only 1% of the children obtained information from extension agents. This indicates the non-coverage of children by extension agents.

Data in Table 2 show the distribution of children according to types of vegetable produced. Majority (91%, 82%, 70% and 61%) of the children produced Amaranthus, cochorus, celosia and fluted pumpkin respectively. Only 36% produced solanum. Reasons for venturing into vegetable production include: to generate income (77%), family sustenance (58%), to supplement school fees (38%) and household food security (6%) (Table3).

The result in Table 4 shows that children in the area participated actively in most of the vegetable production activities. Majority of the farmers were involved in land clearing (78. 0%), ridge making (88. 0%), planting (87. 0%), weeding (89. 0%) and fertilizer/manure application (75. 0%). A little above average participated in spraying of chemicals (58%) probably because of the technical knowledge and skills

Table 1: Distribution of Respondents by Demographic Characteristics.

Variables	Frequency	Percentage
Age		
10 – 13	20	20.0
14 – 17	52	52.0
>17	28	28.0
Total	100	100.0
Sex		
Male	66	66.0
Female	34	34.0
Total	100	100.0
Educational Status		
Out of School	02	2.0
Primary education	15	15.0
Secondary education	83	83.0
Total	100	100.0
Birth Order		
1 – 4	34	34.0
5 – 8	61	61.0
>8	05	5.0
Total	100	100.0
Years of experience in vegetable production		
1 – 4	69	69.0
5 – 8	31	31.0
Total	100	100.0
*Estimated Income from vegetable production (month) (in naira)		
1,000 & below	15	15.0
1001 – 2,000	19	19.0
2,001 – 3, 000	19	19.0
3,001 – 4,000	21	21.0
>4,000	26	26.0
Total	100	100.0
Source of Information		
Parents	66	66.0
Friends & Neighbours	21	21.0
School	10	10.0
Mass Media	02	2.0
Extension Staff	01	1.0
Total	100	100.0

*1 US dollar=N128
Source: Field survey, 2005

Table 2: Distribution of Respondents by Types of Vegetable Produced.

Type of vegetable	Frequency	Percentage
Amaranthus	91	91.0
Cochorus	82	82.0
Celosia	70	70.0
Fluted Pumpkin	61	61.0
Solanum	36	36.0

Multiple responses were provided

involved which are lacking in the children Ninety five percent of the children were involved in watering of plants while 96% were involved in harvesting of vegetables.

The data on ownership of farm is shown in Table 5 and it revealed that 43% of the children worked in their parents’ farm, 32% worked on their personal farms while 15% worked on both parents and personal farms. Ten percent worked on other

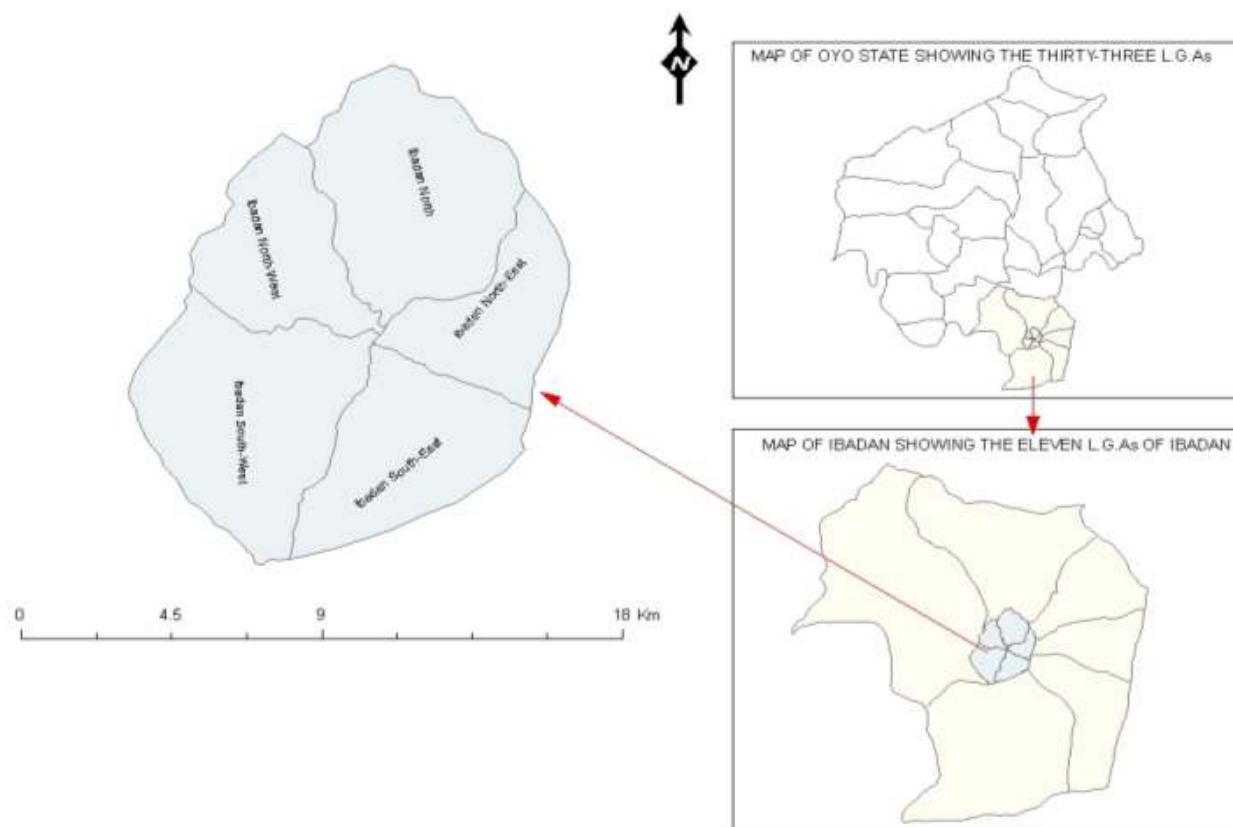


Fig. 1: Map of Oyo State, Nigeria showing the study area.

Table 3: Reasons for Venturing into Vegetable Production.

Reasons	Frequency	Percentage
To generate income	77	77.0
For family sustenance	58	58.0
To supplement school fees	38	38.0
For household security	06	6.0

Source: Field survey, 2005

Multiple responses were provided

Table 4: Distribution of Children According to their Participation in Vegetable Production Activities.

Vegetable Production activities (N=100)	Frequency	Percentage
Land clearing	78	78.0
Ridge making	88	88.0
Planting	87	87.0
Weeding	89	89.0
Fertilizer/Manure application	75	75.0
Spraying of chemicals	58	58.0
Watering of plants	95	95.0
Harvesting	96	96.0

Multiple responses were provided

Source: Field survey, 2005

Table 5: Distribution of Children by Farm Ownership.

Farm ownership	Frequency	Percentage
Parent	43	43.0
Personal	32	32.0
Family/personal	15	15.0
Others	10	10.0
Total	100	100.0

Table 6: Percentage Distribution of Children by Types and Frequency of Exposure to Hazards.

	Regularly	Occasionally	Never
Wounds	60	36	4
Insects/Snake bites	56	40	4
Attack from animals	14	25	61
Polluted water	35	19	46
Misapplication of chemicals	19	27	54
Farm accident	55	20	25
Consumption of toxic leaves	02	03	95
Infected soil	14	07	79
Truancy in school	42	28	30
Lateness to school	54	26	20

Source: Field survey, 2005

Multiple responses were provided

people's farms such as relatives, friends and guardians. This findings show that children assist their parents on the farm. However, they also acquire land on which they carry out their own independent farming operations. This finding corroborates Jibowo^[7] and Laogun *et al.* ^[9] who posited that children are given farm implements with which to work and are apportioned piece of land to work on.

Exposure of Children to Hazards: The data in Table 6 show children's experience of the hazards associated with vegetable production activities and the

frequency of such exposure. Majority (96% and 96%) of the children were exposed to wounds in form of stepping on sharp objects and insect/snake bites respectively. Also, 80% and 70% indicated exposure to educational hazards in form of lateness to school and not even going to school always (truancy). Seventy five percent experienced farm accidents in form of deep cuts while producing vegetables while 54% indicated hazards in form of exposure to polluted water. However, consumption of toxic leaves was least ranked of the hazards. The frequency of exposure to the hazards shows that the most regularly experienced by children include: wounds (60%), insect/snake bites (56%), farm accident (55%) and going late to school (54%). (Table 6). These indicate children's regular exposure to health, physical and educational hazards that could have negative effects on their health and performance in school.

The most prominent of the constraints experienced by children in vegetable production is lack of storage facilities (100%) as a result of lack of access to post harvest technology. Also, 99% and 90% of the children experienced problem of spoilage of produce and lack of fund respectively. Fifty percent and 44% of the children experienced seasonal variation and unavailability of labour for farm work respectively (Table 7). These constraints are however peculiar to problems of agricultural production in Nigeria.

Relationship between selected characteristics of children and the number of hazards they experienced: The data in Table 8 revealed a negative but significant correlation between the number of hazards children experienced and age ($r=-0.253$) and years of schooling ($r=-0.327$). Positive and significant relationship however existed between number of hazards and birth order ($r=0.198$) and number of vegetable production activities children are involved ($r=0.295$) at 0.05 level of significance. Also, positive and non-significant relationship existed between number of hazards and years of experience in vegetable production ($r=0.118$) and household size ($r=0.053$). The percentage contribution of each to the relationship, coefficient of determination revealed that years of schooling had 10.6%, followed by number of vegetable production activities involved in (0.8%); age (0.6%) and birth order (0.39%). The implication of these is that the higher the age and years of schooling of children the less the hazards they experienced. Conversely, the higher the birth order and number of vegetable production activities children are involved in, the more the hazards. This means increase in age and knowledge make these children more mature on the farm and less

Table 7: Distribution of Children by Constraints Experienced in Vegetable Production.

Constraints	Frequency	Percentage
Lack of storage facilities/postharvest tech	100	100.0
Spoilage of produce	99	99.0
Lack of fund	90	90.0
Seasonal variation	50	50.0
Unavailability of labour	44	44.0
Low demand	03	03.0

Multiple responses were provided

Table 8: Correlation Coefficient Showing Linear Relationship Between the Selected Characteristics of Children and the Number of Hazards Experienced.

X-variables	Correlation coefficient (r)	Coefficient of determination (r^2)
Age	-0.253*	0.064
Years of schooling	-0.327*	0.106
Birth order	0.198*	0.039
Number of vegetable production activities involved in	0.295*	0.087
Years of experience in vegetable production	0.118	0.013
Household size	0.053	0.002

*Significant at $p<0.05$ level

susceptible to hazards. However, the higher their position among mother's children (birth order), the more susceptible they are to these hazards probably because they are less catered for. Also, the more they participate in vegetable production activities, the more hazards they experienced.

Conclusion and Recommendations: Based on the major findings of the study, the following conclusions are made:

Majority of the children who were involved in vegetable production are between the ages of 14 and 17 years and still in secondary schools (High schools). Most of the children came from large families and had between 1-4 years of experience in vegetable production. They also sourced most information on vegetable production from parents and had little or no access to organized extension information. Major types of vegetable produced include amaranthus, cochorus, celosia and fluted pumpkin while major reasons for venturing into the production was to generate income and for family sustenance. Children participated actively in virtually all vegetable production activities such as land clearing, ridge making, planting, weeding, manure/fertilizer application, watering of plants, harvesting and spraying of chemicals. Problems encountered by children include lack of storage facilities, spoilage of produce, lack of fund, seasonal variation and unavailability of labour. Children indicated their susceptibility/exposure to some environmental, health and educational hazards as a

result of participation in vegetable production activities, which was however found to be significantly, correlated with birth order and number of vegetable production activities they are involved in. Also, number of hazards experienced was inversely correlated with age and years of schooling of children.

Based on the conclusions, the following recommendations are made:

The future of the agricultural sector in Nigeria belongs to the younger ones and cannot be stopped from participating in crop production activities most especially if farming will still remain Nigeria's traditional occupation. However, efforts should be made by agricultural development planners to design programmes tailored towards developing and improving children's activities in small-scale farming. The interest of the children should be nurtured and sustained to ensure continuity and sustainable food security. Efforts should however be made to organize these children into groups through which educational, socio-economic, environmental and psychological development programmes can reach them.

Extension workers should intensify their efforts to reach these children through dissemination of agricultural innovation for easy application. Children on farms should be provided with educational opportunities and resources to make farming less hazardous.

Children should be encouraged to further their education while parents should be educated on the effect of large family size. For sustainable development, it is crucial to break the continuous cycle of poverty through improved economic opportunities. Extension service can play significant role in poverty alleviation through provision of information on improved seeds and inputs and information on storage technologies. They can assist in forming children farmers into groups and provide education that will facilitate credit access and improved marketing techniques.

There is need for promotion of occupational health safety in agriculture through public awareness and understanding of the hazards to children on farms.

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