

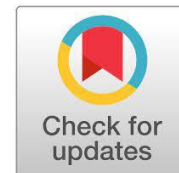
## Structure and Labor Use Pattern Among Cocoa Farmers in Ondo State, Nigeria

Kayode Akanni Oluyole<sup>1)</sup>, Ayodele Oladipo Akinpelu<sup>1)</sup>, and Yetunde Olasimbo Mary Oladokun<sup>1\*)</sup>

<sup>1)</sup>Economics Section, Cocoa Research Institute of Nigeria, PMB 5244, Ibadan, Nigeria

<sup>\*)</sup>Corresponding author: yetunde.oladokun@gmail.com

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### Abstract

Smallholder farmers contribute over 85% of domestic agricultural output in Nigeria, hence, human labor accounts for the domestic food supply in Nigeria. Therefore, the need to continue supplying food for the ever-growing Nigerian population anchors on human labor productivity. In view of the importance of labor in agricultural production, this study was designed to investigate the structure and use pattern of farm labor in the study area. The study was carried out in Ondo State, Nigeria. A multistage sampling technique was used to collect data from 160 farmers. After sorting for missing data, 144 cocoa farmers' data were used for analysis in this study. Seventy-five percent of the total respondents were above 50 years of age and about 25.0% of the total respondents were 50 years and below. The majority (79.2%) of the farmers were men. Also, 75.1% of the respondents had a formal level of education. In the study, contract type of labor is majorly used for most activities in cocoa farming while cooperative labor was seldomly used. Activities such as land clearing (75.0%), planting (83.3%), weeding (95.8%), application of chemicals (91.7%), removal of mistletoes (87.5%), harvesting of cocoa pods (87.5%), conveyance of cocoa pods to the pod breaking point (95.8%), breaking of cocoa pods (100%) and conveyance of cocoa beans to the point of fermentation (88.3%) were majorly carried out by contract labor. Male labor was mostly utilized for all the activities as indicated by most farmers. Female labor was sparingly utilized for some activities such as land clearing (8.3%), planting (0%), application of chemicals (8.3%), spraying of chemicals (4.2%), removal of mistletoes (0%) and harvesting of cocoa pods (12.5%). The study recommended that funds should be made available to farmers to engage in contract labor and also there should be the need to use equipment and machinery to reduce drudgery.

**Keywords:** Cocoa farmers, Ondo State, labor structure, labor pattern

### INTRODUCTION

The Nigerian agricultural sector is dominated by small-scale farmers whose farms vary between 0.10 and 5.99 hectares in size and constitute about 80.4% of all the 29,800 million farm holdings in Nigeria (Ayanwale, 2002; Saror *et al.*, 2021). Their farmers used traditional technologies called hoe-cutlass culture and their capital structure is in the form

of small tools and predominant usage of family labor (Oluyole *et al.*, 2009). Human labor is about the only main source of labor available to smallholder farmers in Nigeria. Smallholder farmers contribute over 85% of domestic agricultural output in Nigeria, hence, human labor accounts for domestic food supply in Nigeria. Therefore, the need to continue supplying food for the ever-growing Nigerian population anchors on human labor

productivity. In Nigerian agriculture, hired labor is predominantly used. In fact, it carries 88% of the total labor used on farms (Okuneye, 2000; Emmanuel & Oba, 2019). Apart from hired labor, the other types of labor that could be employed are family labor and cooperative labor. The availability of labor has been found to have an impact on planting precision, better weed control, timely harvesting and crop processing (Oluyole *et al.*, 2007). Therefore, labor is a major constraint in peasant production especially during planting, weeding and harvesting (Gocowski & Oduwole, 2003; Idiako-Ochei, 2019). Rapid growth in population which increases farm labor supply exerts so much pressure on land and reduces farm size per hectare (Adipala & Egeru, 2018). Empirical evidence has shown that available labor force comprised mostly of old people to the exclusion of young men and women within the active working age thus having a negative impact on agricultural productivity. This is because the role of youths in agricultural production cannot be over-emphasized.

Idiako-Ochei (2019) assessed farm labor constraints in Edo State, Nigeria. The study identified the labor types used for farming activities and considered the constraints farmers encountered in using labor. The authors purposely selected four villages and sampled one hundred and eight farmers in Edo State. Descriptive and inferential statistical analytical tools were used. The farm activities include clearing, weeding, planting, harvesting, and chemical spraying, processing, transportation, storage and fertilizer application. For clearing activity, 40.7% family labor and 31.5% of hired labor was used. Forty three percent of family labor and thirty one percent of hired labor was used for weeding activity. In chemical spraying 38.0% of family labor and 40.7% of hired labor was used. In all, most of the farmers used hired and family labor for most of their farming activities. The constraints

majorly encountered were high cost of labor and lack of finance. The study recommended that farmers should form cooperatives to assist each other in labor support.

Oluyole *et al.* (2013) examined the labor structure and its determinants among cocoa farmers in Nigeria. One hundred cocoa farmers were selected in the study area using stratified sampling technique. Eighty percent of the respondents are smallholder farmers having between 1-5 hectares of cocoa farm. Ninety four percent of the cocoa farmers used hired labor for farm clearing while 61.0% and 51% used family labor for harvesting and on farm cocoa processing, respectively. The major determinants of labor use among cocoa farmers were wage rate, farm size, farm income. The study recommended that infrastructural facilities should be provided in rural South-west to encourage youth involvement in agriculture.

With the foregoing, it could be observed that human labor plays a very significant role in agricultural development especially in the developing countries in which the level of technological development is still very low. In view of the importance of labor in agricultural production, this study was designed to investigate the structure and use pattern of farm labor in the study area.

## MATERIALS AND METHODS

### Study Area

The study was carried out among cocoa farmers in Ondo State. Ondo State is one of the southwestern states in Nigeria. The state is the highest cocoa producing state in Nigeria. Out of the local governments areas (LGAs) in Ondo State, Ondo East is one of the major cocoa producing LGAs in the state.



Figure 1. Map of Ondo State  
(Source: Akinsanmi *et al.*, 2016)

### Sampling Technique

Multistage random sampling was used to select cocoa farmers. Ondo East Local Government Area was purposively selected from the State and from the LGA, Laagba community was also purposively selected because cocoa farmers are mostly concentrated in the community. Simple random sampling technique was used to collect data from a total of 144 farmers randomly selected from the community. Data were collected from the respondents with the aid of structured questionnaires and the data obtained from the questionnaire were analyzed using descriptive analysis. Descriptive statistics was used to describe the socio-economic characteristics of the farmers as well as the structure and use of labor pattern in the study area.

### Analytical Procedure

Descriptive statistics was used to describe the socio-economic characteristics of the farmers as well as the structure and use of labor patterns in the study area.

## RESULTS AND DISCUSSION

The result of the socio-economic characteristics of the farmers is shown in Table 1. The table shows that 75.09% of the total respondents are above 50 years of age indicating that the proportion of old people among the respondents is very high. Meanwhile, only 25.0% of the total respondents were 50 years and below. The lowness in the proportion of the youths is a bad pointer to cocoa production efficiency as younger farmers are more active on farm work than the aged ones. Ifeoma (2019) and Oluyole *et al.* (2013) affirmed that the provision of infrastructure in rural areas would attract more youth to the rural areas. Table 1 also shows that 79.2% of the respondents were males. This is quite obvious in that farm work is a tedious work and is only men that could cope effectively with it. Apart from this, most of the farms were inherited and some traditional cultures permit only the male children to inherit farms. As regards the educational level of the respondents, the result of the analysis shows that 75.1% of the respondents were having formal education. This would improve the efficiency of the farmers in as much that literate farmers would find it easier to adopt new technologies on cocoa than the illiterate ones (Akinade *et al.*, 2020). The analysis on farm size shows that 66.7% of the respondents had a farm size of 5 hectares and below which shows that most of the farmers are small scale farmers. Table 1 also shows that 50.0% of the farmers had the age of their farms greater than 30 years showing that most of the farms are old and hence the farm's productivity would reduce, therefore such farms need to be rehabilitated. This is a good pointer to increased productivity. Table 1 also revealed that the majority (75.0%) of the farmers had purchased farms while just 12.5% inherited their farms.

Table 2 shows the structure of labor according to the different types of labor used for different activities in cocoa farming. The

Table 1. Socioeconomic characteristics of farmers in the study area

Variables	Frequency	Percentage
Age of farmers (years)		
≤ 30	6	4.2
31-40	6	4.2
41-50	24	16.7
51-60	48	33.3
>60	60	41.7
Total	144	100.0
Sex of farmers		
Male	114	79.2
Female	30	20.8
Total	144	100.0
Educational status		
No formal education	36	25.0
Primary education	36	25.0
Secondary education	54	37.5
Tertiary education	18	12.5
Total	144	100.0
Marital status		
Single	0	0.0
Married	126	87.5
Widow/widower	12	8.3
Divorced	6	4.2
Total	144	100.0
Farm size (ha)		
≤ 5	96	66.7
6-10	30	20.8
11-15	18	12.5
Total	144	100.0
Age of farm (years)		
≤ 10	6	4.2
11-20	24	16.7
21-30	42	29.2
31-40	36	25.0
41-50	18	12.5
>50	18	12.5
Total	144	100.0
Nature of ownership		
Inherited	18	12.5
Purchased	108	75.0
Rented	12	8.3
Sharecropping	6	4.2
Total	144	100.0

table shows that contract type of labor is majorly used for most activities in cocoa farming. However, cooperative labor was seldom used for any activity showing that cooperative labor is no more utilized in cocoa farming in the study area. Family labor is also utilized for all activities but at different magnitudes. Activities such as land clearing, planting, weeding, application of chemicals, removal of mistletoes, harvesting of cocoa pods, conveyance of cocoa pods to the pod breaking point, breaking of cocoa

Pods and conveyance of cocoa beans to the point of fermentation were majorly carried out by contract labor. However, activities such as drying of cocoa beans, parking of dried cocoa beans and preservation of cocoa beans were majorly carried out with family labor.

Table 3 shows the distribution of the labor used for cocoa farm activities based on the gender of the labor. The table shows that male labor was mostly utilized for all the activities as indicated by most respondents.

Table 2. Distribution of labor by types of labor used for different activities in cocoa farming

Activities	Types of labor					
	Family		Contract		Cooperative	
	Freq.	%	Freq.	%	Freq.	%
Land clearing	36	25.0	108	75.0	0	0.0
Planting	18	12.5	120	83.3	0	0.0
Weeding	6	4.2	138	95.8	0	0.0
Application of chemicals	24	16.7	132	91.7	0	0.0
Application of fertilizer	12	8.3	108	75.0	0	0.0
Removal of mistletoes	6	4.2	126	87.5	0	0.0
Harvesting of cocoa pods	30	20.8	126	87.5	0	0.0
Conveyance of cocoa pods to the point of pod breaking	24	16.7	138	95.8	0	0.0
Breaking of cocoa pods	42	29.2	144	100.0	0	0.0
Conveyance of cocoa beans to fermentation spot	42	29.2	120	88.3	0	0.0
Fermentation of cocoa beans	42	29.2	96	66.7	0	0.0
Conveyance of cocoa beans from the fermentation spot to the drying spot	38	25.0	108	75.0	0	0.0
Drying of cocoa beans	144	100.0	12	8.3	0	0.0
Parking of dried cocoa beans	144	100.0	6	4.2	0	0.0
Preservation of cocoa beans	144	100.0	0	0.0	0	0.0

Table 3. Distribution of labor by gender used for different activities in cocoa farming

Activities	Gender of labor			
	Male		Female	
	Freq.	%	Freq.	%
Land clearing	144	100.0	12	8.3
Planting	144	100.0	0	0.0
Weeding	126	87.5	12	8.3
Application of chemicals	126	87.5	6	4.2
Application of fertilizer	114	79.2	24	16.7
Removal of mistletoes	126	87.5	0	0.0
Harvesting of cocoa pods	114	79.2	18	12.5
Conveyance of cocoa pods to the point of pod breaking	120	83.3	126	87.5
Breaking of cocoa pods	126	87.5	132	91.7
Conveyance of cocoa beans to fermentation spot	144	100.0	138	95.8
Fermentation of cocoa beans	120	83.3	12	8.3
Conveyance of cocoa beans from the fermentation spot to the drying spot	120	83.3	132	91.7
Drying of cocoa beans	138	95.8	120	83.3
Parking of dried cocoa beans	126	87.5	30	20.8
Preservation of cocoa beans	132	91.7	24	16.7

On the other hand, female labor were sparingly utilized for some activities such as land clearing (8.3%), weeding (8.3%), application of chemicals (spraying of chemicals) (4.2%), application of fertilizer (16.7%) and harvesting of cocoa pods (12.5%). However, female labor was mostly used for conveyance of cocoa pods to the point of pod breaking (87.5%), breaking of cocoa pods (91.7%), conveyance of cocoa beans to the spot for fermentation and drying of cocoa beans (91.7%).

## CONCLUSIONS

The study was carried out on the structure and use pattern of labor among cocoa farmers. The study found out that labor could be structured according to the types of labor (family labor, contract/hired labor and cooperative labor) and according to the gender of the labor. The study further revealed that contract labor is mostly used for activities such as breaking of cocoa pods, conveyance of cocoa pods to the point of pod breaking, weeding, application

of chemicals, conveyance of cocoa beans to fermentation spot, removal of mistletoes, harvesting of cocoa pods and planting. Family labor is mostly used for drying of cocoa beans, parking of dried cocoa beans and preservation of cocoa beans. However, cooperative labor is no more used as a form of labor in the study area. The use of contract labor reduces the income of farmers as money that is supposed to be gotten as income has been expended on hiring labor. Funds should be made available to farmers to contract labor and also the need to use equipment and machineries to reduce drudgery. Technically farmers would be able to do more work and do it on time as contract labor is available. Economically, the cost of hired labor would eat into the income that farmers are supposed to earn from their farming business.

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