


Labour-use and productivity of arable crops among rural farming households in Kwara State, Nigeria



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ABSTRACT

This study examined labour use and productivity of arable crops among rural farming households in Kwara State, Nigeria. Some of the specific objectives of this research were to; identify the cropping patterns among rural farming households in the study area; examine the extent of labour use for the various cropping enterprises among rural farming households in the study area; identify effect of labour use on production of arable crops among rural farming households in the study area. Data obtained were within the areas randomly selected of arable crop farmers. The data were analysed using descriptive statistics, regression analysis, Partial Factor productivity and Likert type scale. The results revealed that most of the sampled arable farmers were between the ages of 46-55 years old (46.3 %). Analysis on the cropping patterns practiced revealed that mixed cropping was the common practice in the study area. Maize cropping was almost planted by all respondents. 32 % of the crop combination had cassava plantation and yam, maize and cassava were intercropped. The extent of labour use was examined in line in the study area, which shown that family, hired and communal labour were used to carry out different activities. The effect of labour use on production was determined by regression analyses and the labour use was 5 % significant on the farm output of arable crops with R^2 of 0.482. The most severe challenge faced by arable crop farmers was high wage rate by the labourers.

Keywords: Labour-Use, Productivity, Arable Crops.

INTRODUCTION

The agricultural sector has the potential to be industrially inclined and become economic catalyst from which a developing country such as Nigeria can concentrate more and thereby achieving an improve rural transformation, poverty alleviation and well-being of rural farmers. (Ibrahim *et al.*, 2019). In Nigeria, practically every family raises a crop of some kind (Onubuogu *et al.*, 2014). This is particularly true for the country's growing number of rural residents (Zamanti and Jaderka, 2016). These crops add to Nigeria's agricultural production totals for both domestic consumption and export, and they have a great deal of promise to help the nation overcome its economic woes (Mohammed and Isgin, 2016).

Arable crops, according to Marjanovic (2017), are a variety of crops grown throughout the course of a year, including grains, pulses, oil, pasture, fibre, and tuber crops. Corn, Guinea corn, rice, wheat, millet, lentils, soybeans, beans, cotton, groundnuts, sesame, potato, cassava, cocoyam, and yam are the most widely grown foods in Nigeria. In addition to being food crops, the majority of arable crops are now also produced in large quantities for commercial purposes, thus making farm labour highly sought after (Oluwatusin *et al.*, 2020). According to Ogundari and Ojo (2015), labour utilisation is still a valuable resource for production, and it is a necessary input for practically all agricultural operations. To generate outputs, labour is used in conjunction with other components of production including land, capital, and entrepreneurs. It is the second-most crucial resource in agricultural productivity and may be very significant input-limiting output availability. The amount of labour available for production and utilisation depends on who is included in the labour force and how many hours or days they are able and willing to work in relation to their productivity (Sadiq *et al.*, 2021). Growing agricultural productivity is essential to attaining economic development in Nigeria because it helps policymakers work toward increasing agricultural production, which might result in better family food security and higher farm revenue.

In Nigeria, farmers who grow arable crops often aim to lower production risks, produce revenue, and maintain and attain food security. However, they encounter a number of labor-use and productivity-related challenges, which are subsequently focused on rural-urban migration in the rural regions of agricultural labourers' origin and may take three different forms: As most homes are led by older persons who are physically frail or impaired, rural-urban labourers firstly cause a labour shortage by shrinking farms, which

lowers agricultural output. Second, there is a loss of knowledge transfer in carrying out different agricultural operations since these rural-urban labourers are highly trained in farming activities including ridging, planting, weeding, and chemical application that they have acquired through years of experience. Thirdly, inefficient labour allocation has hindered productivity and the effective use of scarce resources, which prevents the majority of farmers from operating at their peak capacity even though keeping accurate farm records and conducting a thorough analysis of gross margin alone cannot reveal the efficacy of the farm. This research aims to evaluate the productivity of arable crops and labour utilisation among rural farming households in Kwara State, Nigeria. The specific objectives were to: identify cropping patterns among rural farming households in the study area; examine the level of labour use for different cropping enterprises among rural farming households in the study area; identify the impact of labour productivity on the production of arable crops among rural farming households in the study area; and examine the constraints facing labour use among rural farming households in the study area.

MATERIALS AND METHODS

This study was conducted in Kwara State of Nigeria. The State is located in the North-Central geographical zone, and has a land mass of about 32,500 square kilometers (Km²). It is situated between the coordinates 6.50 and 11.50 North latitude of the Equator and Longitude 2.80 and 7.50 East. The average temperature varies between 27°C to 35°C. The rainfall pattern follows a tropical type, with mean annual rainfall varying between 1000mm and 1500mm. The agro-climatic conditions of the state favours production of a variety of arable crops like yam, cowpea, soybean, maize, millet, melon, groundnut, sorghum, and vegetables (Adewumi *et al.*, 2020).

Sampling Size and Sampling Techniques:

The needed sample for the investigation was chosen using a three-stage sampling method. Firstly, two of the four Agricultural Development Zones (C and D) were chosen due to preponderance of arable crops in these two zones. Secondly, four local government areas Moro, Asa, Ifelodun, and Irepodun were specifically chosen because they utilise a majority of the different types of labour from the aforementioned zones. Finally, two (2) communities from each local government areas that made a total of eight communities were chosen by simple random sampling. These communities were: Shao, Eiyekonrin, Jeunkunu, Alapa, Share, Omupo, Ajase, and Oro, respectively. Purposive sampling and proportionate random sampling method (a proportionate of 30% of farmers) was used to select a sample size of one hundred and twenty (160) from the sample frame.

Table 1. Sample size of arable crop farmers in the study area

S/N	Zones	Local Government Areas	Communities	Sample Frame	Proportion	Sample Size (30%)
1	C	Moro	Shao	67	0.13	20
2		Moro	Jeunkunu	54	0.10	16
3		Asa	Alapa	44	0.08	13
4		Asa	Eiyekorin	57	0.11	17
5	D	Ifelodun	Share	87	0.16	26
6		Ifelodun	Omupo	69	0.14	23
7		Irepodun	Oro	70	0.13	21
8		Irepodun	Ajase	79	0.15	24
Total	2	4	8	527	1	160

Source: Author, 2022

Methods of Data Collection:

Data from primary source were utilised in this study. A structured questionnaire was used to gather the necessary primary data. The structured questionnaire was used to gather data on the socioeconomic characteristics of arable crop farmers' cropping practices, the amount of labour employed, the productivity impact of labour usage, and the challenges encountered by farmers of arable crops. The researcher, working under the guidance of a qualified enumerator, conducted the interview schedule at their group meeting.

The analytical tools that were used in this study to achieve stated objectives include the following: **Descriptive Statistics:** These include measures of central tendencies such as frequency distribution, mean, mode, ratio, and percentages were used to ascertain the socioeconomic characteristics of farmers of specific objective one.

Partial Factor Productivity:

Partial factor productivity according to (Sara and Scandizzo, 2017) is the ratio of output to particular inputs used in the manufacturing process (labor, land, capital, etc.). It sheds light on the effectiveness of inputs throughout the production process. When there is no way to increase output without raising costs or sacrificing some other products, production efficiency is reached. To accomplish the second specific objective, PFP was employed.

The Partial Factor Productivity is implicitly stated as:

$$\text{Partial Factor Productivity (PFP); } Qi^* = Qi / \sum Xi$$

Where: Qi^* is Partial Factor Productivity (PFP) for the i th farmer,

Qi = Output of Arable Crops (Naira)

$$Qi = P \times Q,$$

Where P = Price of the Arable Crops (Naira)

Q = Quantity of Arable Crops Produced (Kg)

Xi = Labour Use (Mandays)

Regression Model:

This statistical tool determines how strongly different variables are correlated. Dependent and independent variables are included here. The production of farm produce (measured in kilogrammes) is the dependent variable, while the labour force, farm size, household size, educational level, farming experience, and monthly off-farm income are the independent factors. The purpose of this technique, which was utilised to address the third study aim, is to understand the relative strengths of the factors indicated above.

The regression model is implicitly stated as: $Y = f(X_1, X_2, X_3, X_4, X_5, X_6, U_i)$ where,

Y = Farm Output of Arable Crops Produced (Naira)

X_1 = Labour Use (Mandays)

X_2 = Farm Size (Hectares)

X_3 = Household Size (Numbers)

X_4 = Educational Status (Number of Years)

X_5 = Farming Experience (Years)

X_6 = Off Farm Monthly Income (Naira)

U_i = Random Error Term/Disturbance Error Term.

Explicitly, the functions are stated as:

$\text{Log } Y = a + b \text{Log}X_1 + c\text{Log}X_2 + d\text{Log}X_3 + e\text{Log}X_4 + f\text{Log}X_5 + g\text{Log}X_6U_i$ (Double-Log). This was used to achieve objective three.

Likert Type Scale:

This is a scale ranging from Very Severe (5), Severe (4), Mildly Severe (3), Not Severe (2), and Not a Problem (1). Likert scale is a psychometric response scale primarily used in questionnaires to obtain participant's degree of agreement with a statement or set of statements. This was used to achieve objective four.

RESULTS

The socioeconomic characteristics of farmers producing arable crops in the study area are presented with respect to age distribution of the farmers, farmers' gender, marital status, household size of the respondents, highest level of education, years of farming experience and monthly income from off farm jobs.

Table 2. Socio-economic characteristics of farmers

Characteristics	Sub-variables	Frequency	Percentage (%)	Mean
Gender	Male	134	83.8	
	Female	26	16.2	
Age	26-35	7	4.4	
	36-45	40	25.0	
	46-55	74	46.3	49.6
	56-65	36	22.5	
	≥66	3	1.9	
Marital Status	Single	3	1.9	
	Married	144	90.0	
	Widow	11	6.9	
	Widower	2	1.3	
Educational Level	Quranic Education	47	29.4	
	No Formal Education	13	8.1	
	Adult Education	5	3.1	
	Primary Education	24	15.0	
	Secondary Education	40	25.0	
	Post-Secondary Education	11	6.9	
	Tertiary Education	20	12.5	
Household Size	≤ 3.0	7	4.4	
	4.0-6.0	61	38.1	
	7.0-9.0	75	46.9	6.9
	10.0-12.0	16	10.0	
	≥ 13.0	1	0.6	
Years of Farming Experience	≤ 5.0	7	23.75	
	6.0-10.0	31	35.63	
	11.0-15.0	27	18.13	
	16.0-20.0	29	16.25	
	21.0-25.0	12	7.5	
	26.0-30.0	17	10.6	
	31.0-35.0	12	7.5	
	36.0-40.0	14	8.8	21.55
	41.0-45.0	2	1.3	
	46.0-50.0	4	2.5	
≥ 51.0	5	3.1		
Monthly Off Farm Income (N)	≤ 20,000	55	34.38	
	20,000-40,000	21	13.13	
	40,000-60,000	29	18.13	30,668.00
	60,000-80,000	6	3.75	
	>80,000	2	1.25	
	None	47	29.38	
Farm Size	≤ 2.5	119	74.4	
	2.6-5.0	29	18.1	
	5.1-7.5	4	2.5	21.56
	7.6-10.0	5	3.1	
	> 10.0	3	1.8	
Labour Source	Family	16	10.6	
	Hired	49	31.9	
	Communal	4	2.5	
	Hired and Family	89	56.7	
	Hired + Family + Communal	2	1.3	

Source: Field Survey, 2022

Table 3 shows the frequency distribution of farmers according to crop mixtures practiced. The table shows that mixed cropping is the common cropping system practiced in the study area. Maize was almost included in all the crop mixtures practiced, 22% of the crop combinations had cassava, while 5 % had Cowpea for mixed cropping respectively. According to (Aderinoye-Abdulwahab and Abdalbaki, 2021), these crops dominate most crop combinations because they are staple foods for most households.

Table 3. Cropping Patterns among Rural Farming Households in the Study Area

Crop Mixtures	Frequency	Percentage
Mono Cropping		
Maize Only	9	5.6
Cowpea Only	5	3.1
Soybean Only	5	3.1
Rice Only	8	5.0
Cassava Only	5	3.1
Mixed Cropping		
Maize + Cassava	22	13.8
Maize + Sorghum	19	11.9
Maize + Cowpea	4	2.5
Sorghum + Cassava	2	1.3
Soybean + Cowpea	1	0.6
Polyculture Maize + Sorghum + Cassava	15	9.4
Maize + Sorghum + Cassava + Yam	14	8.8
Maize + Sorghum + Cowpea	19	11.9
Sorghum + Cassava + Rice	8	5.0
Maize + Cassava + Yam	7	4.4
Others	17	10.6

Source: Field Survey, 2022

Table 4 shows the extent of various cropping enterprises engaged in the study area. Labour use (Manday/Ha) and Labour productivity (Naira/Manday) for mixed cropping shows that for every manday used, they were getting #8.51 Kobo as against mono cropping and polyculture. This shows that mixed cropping was more efficient and helps in diversification which aids labour productivity.

Table 4. Extent of Labour Use for the Various Cropping Enterprises among Rural Farming Households in the Study Area

Cropping Enterprises	Labour Use (Manday/ Ha)	Labour Productivity (Naira/ Manday)
Mono Cropping	58.42	5.36
Mixed Cropping	34.08	8.51
Polyculture	41.99	6.57

Source: Field Survey, 2022

Table 5 shows different farming operations that hired, family and communal labourers were used in the study area. Land clearing (2.78 Manday/Ha), planting (4.34 Manday/Ha) and ridging (0.50 Manday/Ha) were dominantly used by hired labourers compare to family and communal labour. This suggests that there were inadequate and low use of family and communal labour, therefore, farmers hire labourers to carry out these farming operations in the study area.

Table 5. Extent of Labour Use for the Various Management Practices among Rural Farming Households in the Study Area

Farming Operations	Hired Labour Use (Manday/Ha)	Family Labour Use (Manday/ Ha)	Communal Labour Use (Manday/Ha)
Land Clearing	2.78	1.37	0.11
Planting	4.34	1.34	0.33
Ridging	0.50	0.44	0
Weeding	3.48	2.35	5.97
Herbicides Application	1.16	0.69	0.73
Insecticides Application	0.79	0.38	1.86
Fertilizer Application	1.34	1.16	2.79
Harvesting	6.96	3.92	11.92

Source: Field Survey, 2022

Table 6 shows that Labour use, farm size, farming experience and off farm monthly income were all significant at various levels.

Table 6. Effects of Labour Use on Arable Crop Production in the Study Area Regression Analysis (Double log)

Variables	Regression Coefficient	Standard Error	t – value
Constant	14.299	0.930	15.379
X ₁ (Labour Use)	0.133	0.067	1.985**
X ₂ (Farm Size)	0.123	0.51	2.419***
X ₃ (Household Size)	-0.26	0.71	-3.844
X ₄ (Educational Status)	-0.50	0.63	-0.797
X ₅ (Farming Experience)	0.47	0.12	3.844***
X ₆ (Off Farm Monthly Income)	-0.56	0.29	-1.930**
R ²	0.482		
Adjusted R ² Value	0.439		
F-Value	4.181		

Source: Field Survey, 2022

** 5 % level of Significance

*** 1 % Level of Significance

Table 7 shows that High wage rates of the labourers, Schooling of the children and Availability of the off farm jobs for the labourers were the three frontliners of the constraints facing the arable crop farmers in the study area.

Table 7. Constraints Facing Labour Use among Rural Farming Households in the Study Area.

Constraints	Very Severe Freq (%)	Severe Freq (%)	Mildly Severe Freq (%)	Not Severe Freq (%)	Not Problem Freq (%)	Mean Freq (%)	Rank Freq (%)
High Wage Rate of the Labourers	35 (21.9)	91 (56.9)	31 (19.4)	3 (1.8)	0 (0)	3.98	1
Schooling of the Children	30 (18.8)	62 (38.8)	60 (37.5)	6 (3.6)	2 (1.3)	3.70	2
Availability of the off-Farm Jobs for the Labourers	14 (8.8)	89 (55.6)	21 (13.1)	24 (15.0)	12 (7.5)	3.43	3
Lackadaisical Attitude of the Labourers	10 (6.3)	51 (31.7)	68 (42.5)	29 (18.1)	2 (1.3)	3.23	4
Inadequate Skill Among Labourers	0 (0)	32 (20.0)	79 (49.4)	32 (20.0)	17 (10.6)	2.78	5
Non-Availability of the Labourers	0 (0)	31 (19.4)	64 (40.0)	45 (28.1)	20 (12.5)	2.66	6
Poor Network of Roads for the Labourers	3 (1.9)	24 (15.0)	61 (38.1)	51 (31.9)	21 (13.1)	2.60	7

Source: Field Survey, 2022

DISCUSSION

Table 2 shows that the gender distribution of arable crop farmers in the study area was male dominated (83.8%), as against women of (16.2%). This corroborates the findings of Oluwatusin *et al.* (2020), that arable crop farming is more attractive to male. With respect to the age, a vital factor in farming activities as younger farmers (youths) are believed to commit more energy into production as well as having the potential to cope with challenges encountered by farmers. The modal age bracket of 46-55 years with the mean age being 49 years which takes (72%) of major percentage. According to Adeniji *et al.* (2013) this indicates that arable crop farmers in the research region were becoming older, becoming less productive, and becoming less nimble, which hampered their potential to generate more income from the production of arable crops. The findings of the respondents' marital status reveal that there were more married respondents among farmers of arable crops in the research region than there was single, married, and widowers combined (16%). This implies that they have the chance to engage family labour for additional work brought on by the responses (Joseph, 2014). The educational qualification shows that a sizeable number (47%) of the sampled respondents has no formal education. This is a criterion for human development index as a basic requirement in improving welfare of households as the cumulative frequency has formal education (62.5%) although a large percentage has only secondary education (40%). This conclusion implies that since the farmers have a high percentage of literacy, they are more receptive to absorbing new technologies and farming techniques (Okezie, Ovharhe and Chukwuji, 2023). Additionally, the average household size is 6.9 members, with a range of 7.0-9.0 members (46.9%). This indicates that most responders likely have big families. This has two implications. First, it makes it possible for the farm to have a large pool of labourers available to supply other farms even during times of high demand. Second, as suggested by Oluyole *et al.* (2013) it gives the suppliers access to enough labour providers to handle any circumstance on the farm, particularly when planting fails or there are too many weeds to eradicate).

In terms of farming experience, farmers were quite experienced with (6.0-10.0) years, which takes the larger percentage of (35.63%) with a mean of 21.55. The usage of improved varieties has been observed to increase, which is anticipated to have a good influence on the arable farming experience (Taphee, 2015). In terms of monthly revenue from non-farming activities, 34.4 percent of farmers who grow crops for food had sources of income in addition to those from growing crops for food; the average amount of this non-farm income per month that was documented was N30, 668. In addition, it's important to note that 70% of those who had other sources of income did so via artisanal work, commerce, clergy salaries, and motorcycling. This may be explained by the fact that most farmers of arable crops had to take care of a lot of obligations in a short amount of time before obtaining additional agricultural revenue.

The maximum farm size recorded for the study area was above 10 hectares and less than two and half hectares of the respondents had seventy-four percent with the mean farm size of 21.56 hectares. This simply means that arable crop farmers in the study area were dominated by small-scale farmers (World Bank, 2003). Furthermore, the minimum farm size of arable crop farmers in the study area was less than two and half hectares with 74 percent of the majority. This suggests that most arable crop farmers were on small-scale level of production

Furthermore, the minimum farm size of arable crop farmers in the study area was less than two and half hectares with 74 percent of the majority. This suggests that most arable crop farmers were on small-scale level of production. Family and hired labour had highest contribution to the production of arable crops in the study area with 89 percent. This suggests that agricultural production of arable crops in the study area is more of low technology and crude way of operation.

Table 3 above shows that major nutritional composition of carbohydrate, they also contain substantial quantity of protein, some fats and vitamins. Sorghum, cowpea and maize combinations were identified as the major (11.9 %) crop combination practiced by farmers in the study area in terms of polyculture. This could be attributed to the relative importance of the crops involved. Cowpea is a major source of cheap calories and can be processed and consumed in various forms. Its usage as a source of feed (pods), energy in animal feeds and protein for industry is increasing (IITA, 1990).

Maize is a source of carbohydrate and protein. It also serves as feed for animals. Yam is a good source of carbohydrate. The above findings were in line with Aderinoye-Abdulwahab and Abdulbaki, (2021) who found that sorghum/maize/cowpea intercrop was the most dominant crop mixture due to its importance in diversification.

In Table 4 above, mono cropping and polyculture shows that labour productivity were at # 5.36 Kobo and # 6.57 Kobo respectively. These results are consistent with those of Kurdyś-Kujawska *et al.* (2021), who claimed that diversification helps small farms become less vulnerable to production losses as a result, generates growth or revenue by raising labour productivity as young people are encouraged to move back to

rural areas, support entrepreneurship, and emphasize the promotion of regionally specific goods (Kurdyś-Kujawska *et al.* 2021).

In addition to Table 5, gathering of few people, who come together for weeding various farm lands in exchange of cash or kinds were abundantly used. These communal labourers used (5.97 Manday/Ha) in the study area, implies that, people of this nature prefer weeding to other operations due to less tedious that is characterized of compare to land clearing.

Herbicides application from the table 4 shows that hired labourers (1.16 Manday/Ha) were engaged in killing the plants were dominantly used. This indicates that, the hired labourers had better skills and techniques in applying the chemical effectively and efficiently without causing any hazards to the environments in the study area.

The table further shows that insecticides application, fertilizer application and harvesting (manually) were used to a large extent of 1.86 manday/ Ha, 2.79 manday/ Ha and 11.92 manday/ Ha by communal labourers compare to hired and family labourers. This implies that communal labourers were adequately available and ready to work in the study area.

In Table 6, the effect of labour use on Production of arable crops produced in the study area was expressed in the econometric regression analysis Table 6. The variable examined in the model include; labour use (Mandays) X_1 ; Farm Size (Hectares) X_2 ; Household Size (Numbers) X_3 ; Educational Status (Years) X_4 ; Farming Experience (Years) X_5 and Off Farm Monthly Income (Naira) X_6 Double-log functional form was selected. Labour use (X_1) was significant at 5% probability level. The coefficient of multiple determinations (R^2) is 0.482. This implies that 48.2 of variations in the dependent variable explained by variations in the explanatory variables included in the model. An estimate obtained from the double-log functional form is direct elasticities. For instance, the estimated coefficient for labour use is 0.133. This implies that if labour use is increased by 5% holding other variable constant, the farm output of arable crops produced will increase by 0.133. Also, some of the estimated regression coefficients are positive. The multiple regression coefficients are positive. This is consonance with the work of Obasi *et al.* (2013) where their findings showed that if labour is utilized at levels above what they are now, arable crop productivity will also be increased.

The results in the table 7 shows that the most serious challenges encountered in assessing labourers were high wage rate demanded by the labourers, schooling of the children, availability of off farm jobs, lackadaisical attitudes of the labourers among others. A high wage rate of the labourers reduces the quantity of labour demanders can bargain for and increases the quantity of labourers in the marketplace as well as off farm jobs. This commemorates with the findings of Job and Adeola (2015).

Schooling of the children stands as the second and dreadful challenge of the respondents in the study area. This can be attributed to the advocacy and encouragement to reduce child labour use and therefore reduces the availability of family labour used for various farming activities, which invariably hinders the expansion of farmlands to increase farm production for those who were not capable financially to hire labourers. This is contrary with Food and Agriculture Organization (2020), which opined that using children for various farm work is unsafe and occurs under harmful conditions that could result in a child being killed, or injured and/or made ill as a result of poor health and safety standards and working arrangements.

The essence of working in a place is to be better off or increase the welfare of individual and cater for family needs. In agriculture, off farm jobs destabilize the labour supply on the farm, which can reduce production and therefore reduce the chance of improving and sustaining the farm operations. In addition, the drudgery nature of farm jobs especially in rural areas make some youths believed that off farm jobs give more satisfaction and more income in short time, mostly at the end of the month.

Lackadaisical attitudes of the employed labourers especially at rainy season, when the farmland is mostly bushy and heavy making clearing and weeding an unending task and very difficult to carry out increases the chance of laziness and unconcerned approach for various farming operations.

Inadequate skill among labourers might be because of lack of extension agents in rural areas who are saddled with the responsibility of educating and enlightening the farmers on how various farming equipment is used and applied such as herbicides and fertilizer application that enhances their productions.

Non-availability of the labourers as at when needed increases the shortage of labourers in the community has negative impact on the farm because farm activities are timely and done as at when due to weather and climatic factors that hinder operations. Furthermore, non-availability of the labourers can reduce the yield of the output since the farmland size had been decreased due to few labourers available as the time of operation on the farm.

Poor network of roads in accessing various localities in terms of long distance from one area to another may discourage labourers because farmlands are scattered in various rural areas as basic

infrastructures such as good network of roads are not in place, therefore, stand as an obstacle in carrying out farming operations.

CONCLUSION



According to the study, it is possible to produce maize, yam, cassava, rice, sorghum and soybean in the study area with the right investments. It was also established that family, hired, and communal family labourers were all important factors in determining the productivity of arable crops among rural farming households in Kwara state. Land clearing, planting, and ridging were the main uses of hired labour. In the research region, mixed cropping systems were a key practise that supported food security and crop diversity. This success led to expansion and subsequently development in the cultivation of arable crops. Because labour is recognised as a component of production and an input resource that contributes to the well-being and quality of living of farmers in the research region, there is also a direct and positive link between labour usage and productivity of arable crops cultivated by farmers. Recommendations made include:

- i. To control market pricing and avoid a sharp rise in inputs like hired labour, which might have a severe impact on production and productivity, the government should establish a monitoring and assessment board; a comprehensive policy at the state and federal levels should be implemented to boost resource diversity and encourage mixed cropping.
- ii. Financial incentives should also be provided; to enlist financial help, marketing data, and other inputs from the government (both local and federal) and nongovernmental organisations, there should be the construction of arable crop farmer's cooperative associations in diverse localities.
- iii. There should also be an extension agent carrying out visits and training scheme to educate the arable crop farmers on improved technologies and solve their problem faced on the farm, this will prevent future risks and therefore, enhance their productivity;
- iv. Government laws on land tenure systems should be examined by establishing a committee with representation from both farmers and government officials via a participatory approach in order to offer farmers access to farmland to support the growth of their different farms.

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