

An Assessment of Diverse Labour Sources used in Rice Production in Guma Local Government Area of Benue State

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Abstract

The study investigates the various sources of labour used for rice production in Guma Local Government Area of Benue State. The main purpose of the study was to find out the various sources of agricultural labour available for use in rice production, to ascertain the most preferred source of labour and the reasons for the preference and to also ascertain the relationship between the source of labour used and the size of rice farm cultivated. The study adopted a survey research design with a population of 5125 smallholder rice farmers, out of which 371 respondents were sampled using the multi-stage sampling strategy (Purposive and simple random sampling techniques). The instrument used for data collection was structured pre-tested questionnaire. Data collected was(were) analyzed using the Statistical Package for Social Sciences (SPSS 20.0) from which simple frequencies and percentages were presented in tables to answer the research questions, while chi-square was used to test the hypotheses at 0.05 level of significance. The findings showed that agricultural labour comes from six main sources: family, friends, hired, cooperative, rotational (Himbe) as well as mechanized labour. Out of these, family labour was preferred because it is readily available and affordable. The findings also revealed that there is a significant relationship between the source of labour used and the size of rice farm cultivated. Based on these findings, it was recommended that: mechanization is the best solution to ensure maximum productivity and increase in rice yield, thus farmers should make deliberate efforts to leverage on the assistance from the government and the International Fund for Agricultural Development (IFAD), to them to purchase farm machineries like tractors, planters, harvesters, threshers and mechanize their farms. The government and other stakeholders should also ensure the security of rural farmers to guarantee sustainable food production in the country

Keywords: Agricultural labour; IFAD; Rice production; Small holder rice farmers; Social Sciences.

Introduction

Agriculture has been the mainstay of the Nigerian economy; because over 80 per cent of the economically active population is involved in agricultural production. It is the second-largest earner of foreign exchange; next to the non-sustainable

petroleum sector, it also provides a ready market for industrial products (Oluyole & Lawal in Akinnagbe and Ayibiowu, 2020). The Nigerian agricultural sector is dominated by small-scale farmers whose farms vary from between 0.10 and 5.99 hectares in size and constitute about 80.35% of all the 29,800 million farm holdings in Nigeria. These farmers use traditional technologies called hoe-cutlass culture and their capital structure is in form of small tools and predominant usage of family labour (Oluyole, Dada, Oni, Adebisi, & Oduwole, 2013).

Human labour is about the main source of labour available to smallholder farmers in Nigeria. Smallholder farmers contribute over 85% of domestic agricultural output in Nigeria. Thus, human labour accounts for domestic food supply in Nigeria; hence the need to continue supplying food to the ever-growing Nigerian population anchored on human labour productivity. Labour is sourced from different places. According to Narasimha and Venkatanarayana (2013), there are four types of manual labour categories, these are: family labour, casual labour, attached labour and animal labour. Similarly, Oluyole, Dada Oni, Adebisi and Oduwole in their work on 'Farm Labour Structure and Its Determinants among Cocoa Farmers in Nigeria' (2013) also categorized manual labour into: family labour, hired labour, reciprocal labour, casual labour and sharecropping labour.

Categorizing manual labour in their work on Labour-use efficiency by smallholder yam farmers in Abia State Nigeria, Anyiro, Emerole, Osondu, Udah, and Ugorji, (2015) also identified five (5) types of manual labour categories, namely: household labour, hired labour, exchange labour, casual labour as well as share cropping labour. According to these authors, household labour is the same thing as family labour, where farm hands are also members of the family. Hired labour refers to all labour that is paid for whether the labourer is a family member, friend or accomplice or even a total stranger to the owner of the farm. Their explanation of casual labour is same as above. Exchange labour has to do with using labour to pay for work done. According to them exchange labour refers to a situation where farmers come together to concentrate their effort and work on one farm till a particular task is done and then move again in group to another farm in rotational manner till all the farm tasks of all the members of that particular group are done. Share cropping labour according to Anyiro, Emerole, Osondu, Udah and Ugorji (2015) refers to the type of human labour efforts whereby the labourer and the farmer have an agreement at the beginning of the farming season, the labourer supplies the required labor while the farmer supplies land and other inputs, then

the proceeds are shared according to the agreement terms earlier reached after harvest. Thus the labourer is paid with the farm produce and not necessarily in cash.

Globally, rice is a staple food to over 50% of people and the most important among all the cereal crops. It is mainly cultivated by small farmers (Akinagbe & Ayibiowu, 2020). Over 3.5 billion individuals depend on rice for more than 20% of their daily calories with Asia, South America and sub-Saharan Africa as the largest consuming regions. In sub-Saharan Africa, rice is the fastest growing staple food, with annual per capita consumption of 27kg/year (KPMG international, 2019). Approximately 480 million metric tons of milled rice is produced annually. In Nigeria, rice is one of the few food items whose consumption has no cultural, religious, ethnic or geographical boundary (Salami, Babatunde, Ayinde & Adeoti, 2017). However, the global demand for rice is continually increasing; (MohdHanafiah, Mispan, Lim, Baisakh, and Cheng in Akinagbe and Ayibiowu, 2020). It is consumed across all geo-political zones and socioeconomic classes in Nigeria. Only about 57% of the 6.7 million metric tonnes of rice consumed in Nigeria annually are locally produced (KPMG International, 2019).

Nigeria is the largest producer of rice in West Africa (second in Africa, after Egypt). The average yield in the country is approximately 1.8 metric tonnes per hectare. Over 70% of rice production in Nigeria is from rain fed lowlands and irrigated land systems. Rice is the third-most consumed staple food in Nigeria (after maize and cassava) and has become a food security crop due to its increased significance (KPMG International, 2019). Rice production occurs in all agro-ecological zones in Nigeria with the Middle Belt enjoying a comparative advantage in production over the other parts of the country. In the Middle Belt region of Nigeria, Benue State is the buckle that holds the belt. It is referred to as the 'food basket' of the nation. Several rice production activities take place in the State. Also within the State, Guma Local Government Area is the highest rice producing local government area (USAID., 2014).

Guma Local Government Area of Benue State alone has the capacity of producing rice that will go a long way to cater to the needs of North-Central Nigeria if well utilized. It is mainly popular for the vast availability of fertile lowlands (Fadama), accompanied by lush vegetation which is very essential for the production of rice locally. However, this fertile lowland perfect for rice production has been

underused for so many decades due to so many challenges such as Fulani herdsmen mayhem, lack of capital and inputs among others. One major factor which will be extensively discussed here is the availability or scarcity of labour for rice production. Whether labour is readily available for rice cultivation or not goes a very long way in determining the extent to which farmers will be willing to venture into rice farming due to the labour intensive nature of the processes.

From the foregoing, it can be observed that human labour plays a very significant role in agricultural development especially in developing countries where the level of technological development is still very low. Given the importance of labour in agricultural production in general, this study was designed with three specific objectives and a hypothesis as follows:

1. To assess the various sources of labour available for rice production in Guma local government area of Benue State.
2. To ascertain the most preferred source of labour by rice farmers in the study area and why
3. To determine the relationship between source of labour used and size of rice farm cultivated

Hypotheses: There is no significant relationship between the sources of labour used and size of rice farm in Guma Local Government of Benue State.

Materials and Methods

Study Area

Guma Local Government Area is one of the twenty-three (23) local government areas in Benue State, Nigeria. Its headquarters is Gbajimba. It has an estimated distance of about 37km from Makurdi, the Benue State headquarters, just about an hour's journey. The landmass area has been put at 2,882 km² with an estimated a population of 191,599 according to the 2006 census figures. The local government area was created in 1987 by the then military regime of the late Col. Fidelis A. Makka (Does a State Chief Executive have the constitutional power to create a local government area? I am not sure) It was named after 'River Guma' in Benue State. It shares boundaries with Logo and Makurdi Local Government Areas to the east and south, and Doma Local Government Area of Nassarawa State to the west. Though Guma local government is predominantly occupied by the Tiv people, other tribes live in Guma; there are Jukuns, Hausas, as well as Kabuwas. Guma Local Government Area has been politically divided into ten

council wards namely: Kaambe, Abinsi, Uvir, Saghev, Ndzorov, Nyiev, Mbabai, Mbayer or Ymanadev, Mbawa, and Mbasombo.

Like every other rural Nigerian community, the people of Guma Local government Area are predominantly farmers. Most of the Tiv speaking people especially, engage in the cultivation of various types of crops such as yams, cassava, rice, millet, sorghum, groundnuts and maize. They also cultivate vegetables like okra, garden egg, spinach, tomatoes and pepper. On the other hand, most of the non -Tiv speaking indigenes of Guma like the Jukuns and Hausas are predominantly fishermen and traders. The presence of the River Guma from which the local Government derived its name also serves as a means of livelihood for both the farmers and fishermen.

Population and Sampling Procedure

There were two hundred and sixty-six (266) rice farmer groups registered with the local and state government agencies in charge of cooperative registration and validated into the International Fund for Agricultural Development (IFAD) Value Chain Development Program (VCDP) in Guma Local Government Area for the 2018 farming season. Each of these farmer groups have between ten (10) to twenty-five (25) people. These sums up to a total of five thousand, one hundred and twenty-five (5125) small-holder rice farmers; segregated by sex with 3218 males and 1907 females in the study area. The area has the highest number of rice farmer groups in the whole of Benue State. This formed our total population for this study because it was more convenient to work with small holder farmers that are already organized into groups than taking the risk of going into interior villages in Guma at the peak of the herders-farmers clashes in the area. This study adopted the sample size determination formula given by Taro-Yamane in Emaikwu (2015) which is stated as follows:

$$n = \frac{N}{1 + N (E)^2}$$
 Where n= the sample size required; N= the population size and

E= the level of significance. Valuing E as a constant at 0.05, we determined the sample population thus:

$$n = \frac{5125}{1 + 5125(0.05)^2}, n = \frac{5125}{1 + 5125 \times 0.0025}, n = \frac{5125}{1 + 12.8125}, n = 371$$

Two-stage sampling technique was used to select smallholder rice farmers as respondents for the study. First was to purposively select five out of the ten political council wards that make up Guma local government area. The reason for purposive selection here was to ensure that every part of Guma is represented for inferences. The second stage was to randomly select seventy-four (74) smallholder farmers from at least ten (10) farmer groups in each of the selected council wards and seventy-five (75) from the last council ward visited to make up the sample size of three hundred and seventy-one (371) already determined. This was done to forestall any possibility of bias, by picking only farmers of her choice. A meeting of the farmers was called and the researcher and her assistant with the help of the group officials administered the pre-tested structured questionnaire to the sampled respondents.

Data Analysis

The analyses have been broadly divided into two sections. The first part of the survey has to do with the socio-demographic characteristics of respondents while the second part dealt with the research objectives. These have been presented in tables using simple frequencies and percentages, with the aid of the Statistical Package for Social Sciences (SPSS) tool. A descriptive analysis of what is presented in the tables has been given below to give a clearer picture of what the figures in the table represent. The hypothesis was tested using the chi-square statistical tool to ascertain the level of relationship between the variables as stated above at 0.05 level of significance.

Results and Discussion

3.1 Socio-Economic Characteristics of the Respondents

Table 1 below displays the variables used to describe the respondents' views, the frequency as well as the percentages as they relate to the entire number of sampled respondents. Explanations of the figures follow beneath each table.

Table 1: Socio-Demographic Characteristics of Respondents

| Variable | Frequency | Percentage (%) |
|--------------------------|-----------|----------------|
| Sex | | |
| Male | 223 | 60 |
| Female | 148 | 40 |
| Age (Years) | | |
| 15-25 | 64 | 17 |
| 26-35 | 66 | 18 |
| 36-45 | 146 | 39 |
| 45 and above | 95 | 26 |
| Family Size | | |
| 5 and below | 13 | 4 |
| 6-10 | 137 | 37 |
| 11-15 | 113 | 31 |
| 16-20 | 94 | 24 |
| 20 and above | 14 | 4 |
| Size of Rice Farm | | |
| Less than one Hectare | 139 | 38 |
| One to Two Hectares | 120 | 32 |
| Two to Four Hectares | 69 | 18 |
| Four to Five Hectares | 43 | 12 |

Source: Field work, 2019

From the figures in table 1 on the sex of farmers, it revealed that there are more males in rice production than females. This finding agrees with the findings of other authors like Shabu (2013) who reported in his work that because of access to land which is mostly owned by men and the fact that rice is perceived as a highly profitable cash crop, men more than women take part in the cultivation of rice in Guma Local Government Area of Benue State.

From the same table, the figures for the ages of respondents were displayed according to the categorization on the questionnaires. These figures simply show that there are fewer youths in the rice farming business and the bulk of the work is left in the hands of the fast ageing population. Other authors have also raised the red flag on this issue across Nigeria and the globe, in Nigeria. For instance, the findings of Nnamdu and Akintola (2015) revealed this sad reality which also agreed with the findings of Prabakara, Devia and Selvamb (2011) in India. So it

will be safe to say that agriculture is in the hands of the ageing population and this is more of a global phenomenon that must be taken very seriously.

The size of one's family is very essential especially in the rural areas where more members can also imply more hands to work on the farm. The family sizes were categorized into four groups. From the figures displayed in the table under reference, it is clear that the rural settings in Guma have large family sizes; this, of course, is due to the polygamous nature of some men, as well as the fact that the extended family system has been the tradition of the Tiv man since time immemorial. It was pertinent to ask for family sizes so we can see if there is a relationship between the number of people in the household and the size of rice farm cultivated.

From the figures in the table on size of rice farm cultivated, there is a clear relationship between the two variables as the households with smaller numbers of members also reported smaller sizes of farm plots and vice versa. This agrees with the findings of many other authors like Anyiro, Emerole, Osondu, Udah and Ugorji (2013) and Atagher, (2013) who asserted that the bulk of agriculture in Nigeria is in the hands of small-holder farmers.

3.2 The various sources of labour for Rice Production in Guma Local Government Area of Benue State

Table 2: Shows sources of Labour with their frequencies and percentages

| Source of Labour | Frequency | Percentage (%) |
|---------------------------|------------------|-----------------------|
| Family Labour | 190 | 52 |
| Friends Labour | 15 | 4 |
| Hired Labour | 98 | 26 |
| Cooperative Labour | 20 | 5 |
| Rotational (Himbe) Labour | 28 | 8 |
| Mechanized Labour | 20 | 5 |
| Total | 371 | 100 |

Source: Fieldwork, 2019

This study had set out to find out the various sources of agricultural labour available to rice farmers in Guma local government area of Benue State. The

findings have been tabulated and presented in table 2 above. The frequencies and percentages gave an idea about how some sources of labour are more readily available to some farmers than others. From the figures in the table above, family labour has the highest frequency of 190 (52%) of the total respondents. Next to family labour was hired labour with 98(26%) of the total respondents who said they had access to it. Then 28 (8%) of the respondents said they had access to rotational (Himbe) labour; while cooperative labour and mechanized labour shared the same percentage of 20 (5%). Friends labour was the least accessed source of labour with only 15 (4%) of the total respondents in this category. From the figures in the table, more than half of the total respondents used family labour as their source of labour as they are mainly small-scale farmers with farming as their usual way of life.

3.3 The most commonly Adopted source of Labour for Rice Production in Guma Local Government Area of Benue State

The study sought to determine the most commonly adopted source of agricultural labour for rice production as well as the reasons for the preference of that source of labour against the others. To effectively capture this data for analysis, a cross tabulation of the most commonly adopted source of labour and the reasons farmers gave for their actions was done, and the findings have been presented in table 3

Table 3: Most commonly adopted source of labour and Reasons for adoption Cross tabulation

| Most commonly adopted labour | Easily available | Reasons for adoption | | | | Usual way of life | Total |
|------------------------------|------------------|----------------------|---------------------------|-----------------------------------|----|-------------------|-------|
| | | Costs less | Scarcity of other sources | Requires little or no supervision | | | |
| Family Labour | 20 | 42 | 89 | 39 | 39 | 229 | |
| Friends Labour | 6 | 32 | 23 | 7 | 0 | 68 | |
| Hired Labour | 14 | 0 | 34 | 0 | 0 | 48 | |
| Mechanized Labour | 6 | 0 | 20 | 0 | 0 | 26 | |
| Total | 46 | 74 | 166 | 46 | 39 | 371 | |

Source: Field work, 2019

From the figures in table 3 above, it showed that the respondents preferred four sources of labour among the seven enumerated above. These are family labour, friends labour, hired labour and mechanized labour in order of preference. This

clearly showed that the most preferred source of labour for rice production in Guma Local Government Area of Benue State is family labour.

For the reasons for the choices, the findings revealed that, in order of most importance, scarcity of other sources of labour; cost of labour; availability of labour; amount of supervision required and the traditions of the people are all determining factors to a farmer's choice of the source of labour to use for rice production in Guma Local Government Area of Benue State.

These findings partly agree with the assertions of Nnamdu and Akintola (2015) in their own submission in Niger state, where they also identified the farmers most preferred source of labour to be family labour, however they did not give reasons as to why the farmers preferred family labour to other sources of labour.

3.4 Testing Hypothesis

There is no significant relationship between the sources of labour used and size of rice farm in Guma Local Government of Benue State.

Table 4: Chi-square test of the relationship between the sources of labour used and size of rice farm in Guma Local Government of Benue State

| | Value | df | Asymptotic Significance (2-sided) |
|------------------------------|----------------------|----|-----------------------------------|
| Pearson Chi-Square | 412.194 ^a | 30 | .000 |
| Likelihood Ratio | 433.363 | 30 | .000 |
| Linear-by-Linear Association | 30.368 | 1 | .000 |
| N of Valid Cases | 371 | | |

a. 25 cells (56.8%) have expected count less than 5. The minimum expected count is .12.

The result from Table 4 above revealed that there is significant relationship between the sources of labour used and size of rice farm in Guma Local Government of Benue State, this is because the P-value (Asymptotic Significance) 0.000 is less than the significant level 0.05 at 30 degree of freedom and X^2 412.192, [X^2 30412.194. P (.000) <0.05]. Most of the rice farmers cultivated rice on a small scale, this explains why they have preference for family labour, because it is sufficient for the processes, but for the few who had more

hectares, they had to hire labour to make up for the processes. It therefore implies that the null hypothesis which stated that there is no significant relationship between the sources of labour used and size of rice farm in Guma Local Government of Benue State has been rejected.

Summary, Conclusion and Recommendations

In summary, the study assessed the various sources of labour for rice production in Guma local government area of Benue State, and found six main sources of labour. These are: family labour; friends labour; hired labour; cooperative labour; rotational (Himbe) labour; and mechanized labour in their order of preference. Out of these the farmers in the study area preferred family labour to the other sources of labour because it is easily available, accessible and affordable. It was also found that there is a significant relationship between the type of labour used and the size of rice farm cultivated; the bigger the size of farm, the more the need for labour and thus the choice of hired labour; on the other hand the smaller the size, the less need for labour, and thus the use of family labour.

Based on the findings the study concluded that, Guma local government area is dominated by small holder rice farmers, and this explains their preference for family labour. However their reliance on family labour alone has been a problem as Nigeria cannot feed her ever-growing population from just these efforts, thus a need for mechanization for maximum output.

From the findings it has been recommended that for rural rice farmers in Guma local government area to maximize their potentials, there is great need for the following:

1. Mechanization to encourage large scale farming in order to increase productivity and yield.
2. Farmers should be encouraged to make deliberate efforts to leverage on the help from the government and the IFAD, to purchase farm machineries like tractors, planters, harvesters, threshers and mechanize their farms.
3. Where mechanization is not readily available, farmers should be encouraged by policy makers and stakeholders to work in their groups and reawaken the Tiv culture of rotational (Himbe) farming to encourage large scale rice production.

4. Government at federal and state levels in collaboration with all stakeholders must provide security in the rural areas and ensure the safety of rural farmers who work hard to feed the nation.

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