FARMERS’ PERCEPTION OF DRY SEASON RICE FARMING IN EDU LOCAL GOVERNMENT AREA OF KWARA STATE, NIGERIA

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ABSTRACT

The study assessed farmers’ perception and knowledge level on dry season rice farming. Identified constraints to its practice. A two-stage random sampling procedure was used to select 131 respondents on which an interview schedule was administered. Data were analysed using descriptive statistics and the Pearson’s Product Moment Correlation. Results reveal that the respondents were poorly schooled, mostly full-time rice farmers with a mean age of 49 years. Averagely annual income from rice farming was about ₦400,000 ($1,111). Respondents had a slightly high positive perception (MS=3.08) but low knowledge of dry season rice farming. Absence of irrigation facilities was identified as the major constraint to dry season rice farming. At p<0.01, knowledge level of farmers (r=0.241), and their farm sizes (r=0.268) had significant relationship with farmers’ perception of dry season rice farming. The study concluded that although rice farmers in the study area had a slightly high positive perception of dry season rice farming, their knowledge of it was low. It recommends training of farmers on the agronomic practices involved in dry season rice farming.

Key words: Irrigation, Knowledge, Perception, Rice farming

INTRODUCTION

Agriculture remains an important sector in the Nigeria economy despite the oil boom (Akanbi et al., 2011). It basically provides employment opportunities for the teeming population, eradicates poverty and contributes to the growth of the economy (Izuchukwu, 2011). Also, agriculture is the main source of food and raw materials used in processing industries as well as foreign exchange earnings for the country (Mohammed-Lawal and Atte, 2006). The Nigeria soil and climatic conditions are very suitable for the production of wide varieties of crops. There are over a hundred food crops produced by farmers in Nigeria. They include; yam, maize, millet, sorghum, beans, potatoes, onions, garbage, carrot, pear, cocoa, cocoa yam, okra, vegetables and rice.

Rice (Oryza sativa) is a staple in most countries of Africa as well as in other parts of the world. This is the most important staple food for about half of the human race (Imolehim and Wada, 2000). Saka and Lawal (2009) classified rice as the most important food depended upon by over 50 percent of the World population for about 80 percent of their food need. The people depend on rice for food calories and protein, especially in developing countries (IRRI, 2004). One-fifth of the world’s population or more than a billion household in Asia, Africa and America rely on rice for their main sources of employment and livelihoods. Due to the growing importance of rice, Food and Agricultural Organization FAO (2001) estimated that yearly rice production needs to be increased from 586 million metric tons in 2001 to the projected global demand of 756 million metric tonnes by 2030. The consumption rate has risen to 7 million Metric Tons with only 2.7
million metric tons produced by Nigerian farmers. According to the Nigeria rice production statistics, the imports have started to make up 50% of the local consumption rates (Erenstein et al., 2002).

Rice is an increasingly important food crop in Nigeria. It is relatively easy to produce and grown for sale and home consumption. Rice is produced in all agro-ecological zones of Nigeria with the middle belt being the highest producer and enjoys a comparative advantage in production over other parts of Nigeria (FAO, 2013). Efforts to make the country become rice self-sufficient was renewed in 2010 which led to the formal lunch of the rice transformation strategy under the agricultural transformation agenda (ATA). The strategy was to produce more paddy, and industrial grade milled rice that could compete with imported rice in the market since Nigeria has two production seasons; the raining season and the dry season. To this end, 268,000 farmers were given leverage through subsidies in seeds, fertilizers, provision of watering pumps for irrigation farming in ten (10) states of the north namely: Niger, Kebbi, Sokoto, Kano, Zamfara, Bauchi Jigawa Katsina, Kogi and Gombe. Most of the increase in local production has been attributed to irrigation farming embarked on in the ten pilot states. Considering that Nigeria is endowed with water and resources for irrigation farming, utilization of these resources can close the demand-supply gap of rice in the country. A considerable increase in production is essential for Nigeria to meet up with the growing demand considering its fast-growing population. An upgrade to irrigation will increase production significantly since it offers an opportunity for intensity in production of two to three times production in a year.

Nigeria with a population of over 140 million people and a land area of 923,768 square kilometres has a total of over 79 million hectares of cultivable land. Out of this, between 4.6 million hectares are suitable for rice production. Meanwhile, only about 1.8 million hectares or 39% is currently utilized for rice cultivation (Coalition for African Rice Development, 2009). Demand for rice has been increasing at a faster rate in Nigeria than in other West African countries since the mid-1970s. Rice domestic production in Nigeria has never been able to meet the demand; Erenstein et al. (2003) and FAO (2006) observed that the demand and supply gap in rice production is widening, resulting in huge import bill on rice. One of the most severe long-term challenges to achieving sustainable growth in rice production is flood. Flood is the cause of widespread rice yield losses in Nigeria, and the expected increase in incidences of flood due to climate change would further add to rice production losses in the future (Ayinde et al., 2013). To reduce loss to flooding, dry season rice farming was introduced since Nigeria has two production seasons; the raining season and the dry season. Though dry season rice farming has been in practice among farmers in some other parts of the country, rice farmers in Kwara State started its practice about 2-3 years ago. Also, many of the farmers still engage in rainfed paddy production and continue to record huge losses due to flood. It is, therefore, important to examine farmers’ perception of dry season rice farming.

To do this adequately, knowledge level, as well as attitudes of farmers to dry season rice farming is important. An investigation into the relationship between socio-economic characteristics of farmers and their attitudes will also provide information that will be helpful in driving dry season rice farming among the respondents. It is also possible that rice farmers face some challenges in practicing dry season rice farming. It is based on this background that the study set out to examine farmers’ perception of dry season rice farming in Edu Local Government Area of Kwara State, Nigeria. The specific objectives were to:

1. Describe the socio-economic characteristics of rice farmers in Edu LGA;
2. Determine the knowledge level of the
farmers on dry season rice farming;
3. Examine farmers perception of dry sea-
son rice farming; and
4. Identify the constraints to dry season rice farming in the study area.

Hypotheses of the Study
The hypotheses of this study were stated in
the null form as follows:

$H_01$: there is no significant relationship
between some selected socio-economic characteristics of farmers(Age, educational
level, rice farming experience, farm size, an-
nual income from rice farming, household
size, and frequency of extension contact)and
their perception on dry season rice farming.

$H_02$: there is no significant relationship
between knowledge and perception of farmers
on dry season rice farming.

MATERIALS AND METHOD
The study was carried out in Edu Local Gov-
ernment Area, Kwara State, Nigeria. Edu is
one of the sixteen Local Governments Area of
Kwara State with its headquarters in Lafiagi. It
has three (3) districts namely; Lafiagi, Tsaragi and Shonga. It has an area of
2,542km$^2$ and a population of 201,469 as of
the 2006 census. Rice Production is
prominent in this part of the state. The geogra-
phical location of this rice producing area falls within the latitudes $8^\circ30'-9^\circ00'N$ and lon-
gitudes $5^\circ00'-6^\circ20'E$. Rice production is much
favoured in the study area because of the nat-
ural fertile land of the floodplains of the River
Niger that stretches from Jebu/ Bacita through
Shonga in Edu Local Government. The vege-
tation in the northern parts of Kwara State, of
which Edu Local Government Areas is one, is
Savannah grassland. There exist in the study
area an intermingling of loamy, clay and
sandy soil. All these edaphic characteristics
allied with good climate conditions and farm-
ers experience have combined to place Kwara
State in a very much competitive position and
advantage in rice production with other rice-
producing states in the country (Kwara State
Ministry of Agriculture 2004).

A two-stage random sampling procedure was
used to select respondents for the study. The
first stage involved the random selection of 30
percent of the 16 villages that are prominent
in rice production in Edu Local Government
Area by dip hat method to give five villages.
The five randomly selected villages were Tada, Lalagi, Bacita, Shonga and Kpandaragi.
The second stage was the random selection of
30 percent of rice farmers in each of the se-
lected villages. The list of registered rice
farmers obtained from the Kwara State
Agricultural Development Project for each of
the villages was the sampling frame. A total
sample size of 131 respondents was used for
the study. The procedure is summarised in
Table 1.

Data collection was done by employing a pre-
tested interview schedule. The interview
schedule was sectioned A - D to elicit
information on the socio-economic
characteristics of the respondents, their
knowledge level on dry season rice
farming, their perception of dry season rice
farming and the constraints to dry season rice
farming. Data obtained from the field survey

| Total Number of Villages | Randomly Selected 30% | Registered No of Farmers | Randomly Selected 30% | Sample Size |
|--------------------------|-----------------------|--------------------------|-----------------------|-------------|
| 16                       | Shonga                | 120                      | 36                    | 131         |
|                          | Tada                  | 90                       | 27                    |             |
|                          | Lalagi                | 80                       | 24                    |             |
|                          | Bacita                | 77                       | 23                    |             |
|                          | Kpandaragi            | 70                       | 21                    |             |
were analysed by using both descriptive and inferential statistical analysis. Descriptive statistics used include frequency counts, percentages, mean scores and standard deviation. A four-point Likert scale was used to measure the constraints to dry season rice farming. A list of possible constraints to dry season rice farming was drawn and respondents were required to indicate their level of severity. The scale was graduated as follows; Not a constraint (1), Not severe (2), Severe (3), Very severe (4)

The scores awarded each constraint by all the respondents were aggregated and divided by the total number of respondents to give mean scores which were taken as a measure of the level of severity of each constraint. The mean score was used to rank the constraints in order of severity.

Farmers’ perception of dry season rice farming was measured using a 4-point Likert scale. A list of statements which when pooled together adequately assesses farmers’ perception on dry season rice farming was drawn, Respondents were asked to indicate the extent to which they agreed or disagreed with the statements. The scale was graduated as follows; Strongly disagreed (1), Disagreed (2), Agreed (3), Strongly disagreed (4).

The scores were aggregated and converted to means for individual respondents. The means score was adopted as a measure of the respondents’ positive perception towards dry season rice farming. For the purpose of this study, the following benchmark was adopted; mean scores less than 2 indicated a low level of positive perception while mean score between 2 and 3 indicated an average positive perception level. Mean score greater than three was taken as an indication of high positive perception of farmers towards dry season rice farming. The knowledge level of farmers on dry season rice farming was measured using a “Teacher-Made Test” or knowledge test. A total of 15 questions were posed to the farmers to assess their knowledge level. For the purpose of the study, ascore of 11 out of 15 (75%) was adopted as the cut-off point for the possession of a good level of knowledge on dry season rice farming. Scores of between 7.5 and 10.75 (50-69%) were categorized as fair while any score below 7.5 (<50%) was categorized as poor. The Pearson’s Product Moment Correlation was used to test the hypothesis of the study.

RESULTS AND DISCUSSION
Socio-economic Characteristics of the Respondents

The result also indicated that most (53.4%) of the respondents were above 40 years of age. The implication of this is that the farmers were middle-aged, energetic and still in their productive age which is good for the labour-intensive and energy-sapping nature of rice farming in Nigeria. This finding agrees with that of Mustapha et al., (2012) and Matanmi et al., (2011). The result also shows that there were more (97.7%) males than females that were engaged in rice farming. This suggests that male farmers dominate rice farming in the area probably due to its nature of intense and time-consuming activities or because women are more engaged in non-farm activities and domestic chores than their male counterpart (Mustapha et al., 2012). Ayoola et al., (2011) however opined that women could be more involved in the processing and marketing aspects of rice production. Majority (89%) of the respondents were married, while the mean household size of the respondents was about five members. Having more married people involved in rice farming may provide more hands to work on the farm and may also indicate that families may consume major part of their produce realized on the farm with little for sale to earn income. Though it could be said that majority of the respondents had formal education and could, therefore, read or write, it is worth noting that most of the
Table 2: Socio-economic Characteristics of the Respondents  

| Variables                              | Frequency | Percentages | Mean   | S.D.  |
|----------------------------------------|-----------|-------------|--------|-------|
| **Age (in years)**                     |           |             |        |       |
| ≤ 30                                   | 6         | 4.6         |        |       |
| 31-40                                  | 55        | 42          | 49.05  | 6.5   |
| 41-50                                  | 67        | 51.1        |        |       |
| ≥ 51                                   | 3         | 2.3         |        |       |
| **Sex**                                |           |             |        |       |
| Male                                   | 128       | 97.7        |        |       |
| Female                                 | 3         | 2.3         |        |       |
| **Marital status**                     |           |             |        |       |
| Married                                | 116       | 88.5        |        |       |
| Otherwise                              | 15        | 11.5        |        |       |
| **Level of Education**                 |           |             |        |       |
| No formal education                    | 8         | 6.1         |        |       |
| Primary education                      | 92        | 70.2        |        |       |
| Secondary education                    | 27        | 20.6        |        |       |
| Tertiary education                     | 4         | 3.1         |        |       |
| **Primary Occupation**                 |           |             |        |       |
| Rice farming                           | 92        | 70.2        |        |       |
| Otherwise                              | 39        | 29.8        |        |       |
| **Annual Farm Income (N) ($1=N 360)**  |           |             |        |       |
| < 200,000                              | 4         | 3.1         |        |       |
| 200,000-700,000                        | 125       | 95.4        |        |       |
| >700,000                               | 2         | 1.5         | 401,303.44 | 1.88 |
| **Rice Farming Experience (Years)**    |           |             |        |       |
| ≤ 5                                    | 3         | 2.3         |        |       |
| 6-15                                   | 29        | 22.1        | 23.7   | 5.9   |
| 16-25                                  | 88        | 67.2        |        |       |
| >25                                    | 11        | 8.4         |        |       |
| **Farm Size (Acre)**                   |           |             |        |       |
| 0.5-1.50                               | 10        | 7.6         |        |       |
| 1.51-2.50                              | 111       | 84.7        | 2.09   | 0.35  |
| >2.50                                  | 10        | 7.6         |        |       |
| **Mode of land acquisition**           |           |             |        |       |
| Owned                                  | 129       | 98.5        |        |       |
| Rented                                 | 2         | 1.5         |        |       |
| **Household size (No of persons)**     |           |             |        |       |
| ≤ 2                                    | 35        | 26.7        |        |       |
| 3-7                                    | 80        | 61.1        | 5.27   | 2.73  |
| 8-12                                   | 15        | 11.5        |        |       |
| ≥ 13                                   | 1         | 0.8         |        |       |
| **Frequency of Extension contacts**    |           |             |        |       |
| 1-2                                    | 4         | 3.1         | 3.01   | 0.26  |
| >2                                     | 127       | 96.9        |        |       |
| **Cosmopoliteness**                    |           |             |        |       |
| Yes                                    | 131       | 100         |        |       |
| No                                     | 0         | 0           |        |       |
formally educated rice farmers were poorly schooled with most (70.2%) having only primary education. The literacy level of farmers could enhance their level of understanding and desirability of adopting innovation and farm technologies or interacting with extension agents. This result conforms to the findings of Mustapha et al., (2011) and Olumba (2014) who jointly reported a low level of education of rice farmers. With an average rice farming experience of about 24 years, the result implies that rice farming is a long age profession of the respondents. Despite the result revealing that majority (98.5%) of the respondents owned their farmland, the result also reveals that most of the respondents were small-scale rice farmers with an average farm size of 2 acres and an average annual income of the respondents was ₦401,303 (1USD=₦360). It is commendable that in the past 6 months prior to data collection for the study, all of the respondents had contact with extension agents with majority of the respondents (96.9%) being contacted more than two (2) times by extension agents. The average number of extension visit was three (3) times within the six month period.

**Knowledge Level of the Respondents on Dry Season Rice Farming**

Result reveals that the respondents knew that there is no risk of flooding in dry season rice farming. They also knew that a good irrigation system ensures successful dry season rice farming. This corroborates with the findings of Ugalahi et al., (2016) who reported the same of dry season rice farming. Most of the respondents (79%) also knew that planting of rice in dry season should be done very early in the morning or late in the evening. The result also reveals that the respondents had low knowledge level on planting spacing and distance in dry season rice farming. This is evident in Table 2 as it shows that very few (2.3%) of the respondents were knowledgeable that planting distance should be wide enough to avoid competition. Also, 17.6 percent knew

| Knowledge Item                                                                 | Frequency | Knowledge (%) |
|--------------------------------------------------------------------------------|-----------|---------------|
| There is no risk of flooding in dry season rice farming                        | 121       | 92.4          |
| A good irrigation system ensures successful dry season rice farming           | 111       | 84.7          |
| Planting of rice in dry season should be done very early in the morning or in the evening | 104       | 79.4          |
| There is high occurrence of pest and disease in dry season rice farming       | 101       | 77.1          |
| There is high demand of fertilizer in dry season rice farming than rainy season period | 98       | 74.8          |
| Mulching is highly required during dry season rice farming                    | 94        | 71.8          |
| Weeding is minimal during dry season rice farming                             | 93        | 70.9          |
| The method of land preparation for dry season rice farming is different from that of wet season farming | 83       | 63.4          |
| Transplanting is preferable to direct planting during dry season rice farming | 70        | 53.4          |
| There is no specific rice variety attached to dry season rice farming         | 55        | 41.9          |
| Dry season rice farming need not be done in swamps                            | 46        | 35.1          |
| Rice plants need to be evenly watered daily during dry season rice farming    | 42        | 32.1          |
| Plant the seedlings closer during the dry season, when solar radiation is higher, than during the rainy or wet season | 23       | 17.6          |
| During the dry season, spacing should be 25x25cm in relatively poor soil and 30x30cm in fertile soil. | 3        | 2.3           |

| Knowledge Item                                                                 | Frequency | Knowledge (%) |
|--------------------------------------------------------------------------------|-----------|---------------|
| Planting distance should be wide enough to avoid competition                    | 3         | 2.3           |
that the spacing during dry season rice farming should be 25x25cm in relatively poor soil and 30x30cm in fertile soil. Result also reveals that about 26 percent of the respondents had poor knowledge level about dry season rice farming. Very few (5.3%) of the respondents had a good level of knowledge on dry season rice farming. With a mean knowledge score of 10.6, the result indicates that rice farmers in the area of study had a fair knowledge level on dry season rice farming. This could contribute to low productivity of rice farmers, and Nigeria’s inability to meet her rice consumption needs through local production hereby resulting in high cash outlays for rice importation (Fakayode, 2009).

Farmers’ Perception of Dry Season Rice Farming

Table 4 shows that most of the respondents (75.6%) strongly agreed that dry season rice farming would enhance price stability of rice all year round. 73.3 percent also agreed strongly that dry season rice farming could help combat food insecurity. About 70 percent also agreed that farming rice during dry season would ensure rice availability all year round. Ugalahi et al., (2016), also reported that dry season rice farming could afford the country the opportunity to attain rice self-sufficiency. About half (50%) of the respondents strongly disagreed that there is higher yield in dry season rice farming than wet season farming. The result also reported that more than half of the respondents (53.4%) strongly disagreed that seed wastage is high in dry season rice farming. 74 percent of the rice farmers also disagree that dry season rice farming is highly susceptible to diseases. The least identified perception of the farmers is that practicing dry season rice farming is capital intensive (M.S=1.39). This is in contrast with Ugalahi et al., 2016 who reported that the cost of practicing dry season rice farming through irrigation is very high. In addition, analysis reveal that the perception level of rice farmers on dry season rice farming. Result reveals that while few (19.1%) of the respondents had low positive perception, very few (4.6%) had high positive perception. Majority (76.3%) had a moderate level of positive perception of farming rice in dry season. The mean perception was slightly high (MS=3.08). This implies that rice farmers in study had a slightly high positive perception of dry season rice farming. What farmer feels about an innovation might affect their adoption of such innovation. This is in accordance with Agbam (2006) who stated that psychological factor such as perception of farmers influence the adoption and use of an innovation or idea.

Constraints to Dry Season Rice Farming

Table 5 shows that the most severe constraint to dry season rice farming was unavailability of irrigation facilities (M.S=3.47). The result also reveals that inadequate funding by government (M.S=3.45) and high cost of planting materials (M.S=3.12) were major constraints to dry season rice farming. The inadequacy of funds could deprive the rice farmers the privilege to capitalise their farm enterprises as also reported (Fakayode, 2009; Osanyinlusi and Adenegan, 2016). Other constraints in order of severity include poor pricing of produce (M.S=3.02), high technical skills requirement for dry season rice farming (M.S=2.95), high requirements for fertilizer (M.S=2.63), poor marketing information (M.S=2.60) and low demand for local rice (M.S=2.58). This finding agrees with Okoruwa et al., (2006) who also reported that rice farmers in Nigeria are not getting maximum returns from the resources committed to their enterprises leading to a decline in per capita food production in Nigeria. High prevalence of pests and diseases (M.S=2.36), lack of awareness/knowledge on dry season rice farming (M.S=2.24) were also identified as constraints to dry season rice farming. The least identified constraint was scarcity of water for irrigation (M.S=1.84). This implies that water availability is not a challenge to dry season rice farming but the unavailability of irrigation infrastructures.
This agrees with the findings of Takeshima and Adesugba, 2014; FAO, 2015 who reported that the country has very rich and abundant water resources.

The first hypothesis of the study states that there is no significant relationship between knowledge and perception of rice farmers towards dry season rice farming. Correlation analysis between knowledge level and farmers perception of dry season rice farming was done to test the first hypothesis.

### Table 4: Perception of Farmers on Dry Season Rice Farming

| Likert items                                                                 | SA F(%) | A F(%) | D F(%) | SD F(%) | Score | MS  |
|------------------------------------------------------------------------------|---------|--------|--------|---------|-------|-----|
| Dry season rice farming will enhance price stability of rice all year round  | 99(75.6)| 32(24.4)| 0(0)   | 0(0)    | 492   | 3.76|
| Dry season rice farming can help combat food insecurity                      | 96(73.3)| 34(26) | 0(0)   | 1(0.8)  | 487   | 3.72|
| Dry season rice farming ensures rice availability all year round              | 91(69.5)| 39(29.8)| 1(0.8) | 0(0)    | 483   | 3.69|
| Importation of rice can be reduced if all farmers engage in dry season rice farming | 89(67.9)| 40(30.5)| 1(0.8) | 1(0.8)  | 479   | 3.66|
| Dry season rice farming helps to combat unemployment                          | 87(66.4)| 44(33.6)| 0(0)   | 0(0)    | 480   | 3.66|
| Dry season rice farming ensures income stability for farmers all year round   | 83(63.4)| 47(35.9)| 1(0.8) | 0(0)    | 475   | 3.63|
| Poverty status of farmers can be achieved through engagement in dry season rice farming | 81(61.8)| 49(37.4)| 0(0)   | 1(0.8)  | 472   | 3.60|
| Harvesting of dry season rice is easy                                         | 78(59.5)| 53(40.5)| 0(0)   | 0(0)    | 471   | 3.59|
| Dry season rice farming will meet the huge demand of rice by the populace    | 69(52.7)| 60(45.8)| 1(0.8) | 1(0.8)  | 459   | 3.50|
| The effect of flooding is overcome during dry season rice farming             | 78(59.5)| 42(32.1)| 10(7.6)| 1(0.8)  | 459   | 3.50|
| Seed wastage is high in dry season rice farming                              | 5(3.8) | 7(5.3) | 49(37.4)| 70(53.4)| 446   | 3.40|
| Dry season rice farming can increase farmers livelihood status               | 58(44.3)| 63(48.1)| 8(6.1) | 2(1.5)  | 439   | 3.35|
| Dry season rice farming requires less weeding                                 | 57(43.5)| 61(46.6)| 8(6.1) | 5(3.8)  | 432   | 3.29|
| Dry season rice farming is highly susceptible to pests                       | 6(4.6) | 6(4.6) | 97(74) | 22(16.8)| 397   | 3.03|
| Dry season rice farming is highly susceptible to diseases                    | 5(3.8) | 8(6.1) | 97(74) | 21(16)  | 396   | 3.02|
| There is high demand for fertilizer for dry season rice farming              | 38(29) | 38(29) | 35(26.7)| 20(15.3)| 299   | 2.28|
| There is higher yield in dry season rice farming than wet season farming     | 5(3.8) | 9(6.9) | 54(41.2)| 63(48.1)| 218   | 1.66|
| Dry season rice farming is technically difficult to practice                 | 67(51.1)| 64(48.9)| 0(0)   | 0(0)    | 195   | 1.49|
| Dry season rice farming is stressful                                         | 79(60.3)| 49(37.4)| 3(2.3) | 0(0)    | 186   | 1.42|
| Practicing dry season rice farming is capital intensive                      | 80(61.1)| 51(38.9)| 0(0)   | 0(0)    | 182   | 1.39|

SD=Strongly Disagreed, D=Disagreed, A=Agreed, SA=Strongly Agreed
Result reveals that farmer’s perception towards dry season rice farming was significantly related to their knowledge of dry season rice farming ($r=0.241$, $p=0.01$). The positive relationship that exists between knowledge and perception of rice farmers towards dry season rice farming implies that positive perception of farmers increases with their knowledge of dry season rice farming. This is in accordance to a priori expectation that higher knowledge level will increase the positive perception of farmers on dry season rice farming.

The second hypothesis of the study states that there is no significant relationship between some selected socio-economic characteristics of the rice farmers and their perception of dry season rice farming. Table 7 shows the result of correlation analysis of the relationship between selected socio-economic characteristics of farmers and their perception of dry season rice farming. Result in Table 7 shows the correlation analysis between socio-economic characteristics and perception of rice farmers of dry season rice farming. Result reveals that farm size ($r=0.268$, $p<0.01$) had significant relationship with farmers positive perception towards dry season rice farming. The positive relationship between farm size and farmers’ perception towards dry season rice farming implies that farmers with larger farm size had higher positive attitude towards farming rice in dry season than those with smaller farm size. This suggests that the bigger a rice farm, the higher the productivity. This is in line with the results of Ajibefun et al., (2002) which showed that large farm size enhanced productivity among farmers in the dry savannah and humid forest agro-ecological zones of Nigeria.

**CONCLUSION**

The study concluded that though rice farmers in Edu Local Government Area of Kwara

| Table 5: Distribution of Respondents’ According to Constraints to Dry Season Rice Farming |
|----------------------------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Constraints                            | V.S F(%)        | S F(%)          | N.S F(%)        | N.C F(%)        | Score           | MS              | Rank            |
| Unavailability of irrigation facilities | 74(56.5)        | 46(35.1)        | 10(7.6)         | 1(0.8)          | 455             | 3.47            | 1st             |
| Inadequate funding by government        | 71(54.2)        | 50(38.2)        | 9(6.9)          | 1(0.8)          | 453             | 3.45            | 2nd             |
| High cost of planting materials         | 53(40.5)        | 42(32.1)        | 35(26.7)        | 1(0.8)          | 409             | 3.12            | 3rd             |
| Poor pricing of produce                 | 48(36.6)        | 50(38.2)        | 21(16)          | 12(9.2)         | 396             | 3.02            | 4th             |
| High technical skills requirement for dry season rice farming | 28(21.4)        | 70(53.4)        | 32(24.4)        | 1(0.8)          | 387             | 2.95            | 5th             |
| High requirements for fertilizer        | 42(32.1)        | 32(24.4)        | 24(18.3)        | 33(25.2)        | 345             | 2.63            | 6th             |
| Poor marketing information              | 25(19.1)        | 35(26.7)        | 65(49.6)        | 6(4.6)          | 341             | 2.60            | 7th             |
| Low demand for local rice               | 24(18.3)        | 32(24.4)        | 71(54.2)        | 4(3.1)          | 338             | 2.58            | 8th             |
| High prevalence of pests and diseases   | 9(6.9)          | 41(31.3)        | 69(52.7)        | 12(9.2)         | 309             | 2.36            | 9th             |
| Lack of awareness/knowledge on dry season rice farming | 2(1.5)          | 54(41.2)        | 48(36.6)        | 27(20.6)        | 293             | 2.24            | 10th            |
| Scarcity of water for irrigation        | 32(24.4)        | 2(1.5)          | 10(7.6)         | 87(66.4)        | 241             | 1.84            | 11th            |

NC=Not a constraint, NS=Not severe, S=Severe, VS=Very Severe
State, Nigeria had a slightly high positive perception towards dry season rice farming, their knowledge of its practices was low. Farmers’ perception was influenced by their farm sizes. Inadequacy of irrigation facilities and poor government funding were identified as the major constraints farmers encounter in dry season farming in the study area. Based on the findings of the study, it recommends that the National Cereals Research Institute (NCRI), Agricultural Development Programme (ADP) and other stakeholders in agriculture should organize training for farmers on the agronomic practices involved in dry season rice farming. Also, research institutes such as National Centre for Agricultural Mechanization (NCAM), and government extension service delivery should ensure availability of affordable irrigation facilities to rice farmers.

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**Table 6: Result of the Correlation Analysis between Knowledge Level and Perception towards Dry Season Rice Farming**

| Knowledge Level | Perception towards dry season rice farming |
|-----------------|-------------------------------------------|
| Knowledge Level | 0.241***                                  |
| Perception towards dry season rice farming | 1  

(p-value=0.006)

***. correlation is significant at the .01 level (2-tailed)

**Table 7: Result of Correlation Analysis Showing the Relationship between selected socio-economic Characteristics of farmers and their Perception of Dry Season Rice Farming**

| Socio-economic characteristics | r-value | p-value |
|--------------------------------|---------|---------|
| Age                            | -0.110  | 0.210   |
| Level of Education             | -0.098  | 0.265   |
| Rice farming experience        | -0.028  | 0.750   |
| Farm Size                      | 0.268***| 0.002   |
| Annual Income from Rice Farming| 0.061   | 0.488   |
| Household Size                 | 0.052   | 0.554   |
| Frequency of Extension Contact | 0.116   | 0.188   |

Source: Field survey, 2018.

***. Correlation is significant at the 0.01 level (2-tailed).
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