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ASSESMENT OF IRRIGATION SYSTEM ON CROP PRODUCTION AND FARMERS' ECONOMY IN LAGOS STATE, NIGERIA

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Abstract: Irrigation farming is very key to food security and sufficiency. Increase in food production through irrigation system will cut down poverty rate, generate employment opportunities, boost the economy of the farmers and increase the GDP of the country. Nigeria is blessed with enough water resources that gave her an irrigation potential of about 3 million hectares (ha) which is about 10% of the 30 million hectares (ha) cultivated annually. The study attempted to assess how irrigation system has impacted on the crop production and socioeconomic lives of the farmer. Well–arranged questionnaire was employed to get data from the farmers in the selected areas of Lagos state. Demography of the respondents showed that most of the farmers (75.53%) were male while the remaining 20.45% were female. The data also showed that all the respondents have at least primary education. Majority of the respondents in the study area agreed that irrigation system has increase their cultivated land for crop production, increased their yields, reduced stress in crop production, extend production period and improve their income. However, farmer's norm and value, little or no training and capital are the major challenges towards effective irrigation usage in the area under study. The research is expected to be useful to policy makers and players in the irrigation sub sector of agriculture.
Keywords: irrigation; rainfall; food production; farmers; impacts; income; farm land; water; crops

1. INTRODUCTION

The artificial application of water to the soil to supply moisture that is needed for plant to grow is called irrigation. It is a means of having insurance against drought, cooling off the soil and atmosphere, and sometimes application of fertilizers. Irrigation also provides a conducive environment for plant growth; dissolves and wash away salt available in the soil, minimize the hazard of piping and soften the tillage pans. If the rainfall distribution is sufficient for crop production, there is no need for irrigation (Baba, 1993). According to Ogedengbe, (2002) Nigeria has about 98 million hectares of land of which 73 million hectares are cultivable. Although 0.9 million hectares of the cultivable area is under irrigation yet irrigated agriculture accounts for around 20–25 percent of the value of the nation's agricultural output as shown in Table 1. Out of the total areas under modern irrigation in Nigeria, 4,333 ha (4.32%) is located in the southern part of the country.

Table 1: Features of Irrigated Agriculture in Nigeria

Total land Area	98.3 million
Cultivable Area	73 million ha (74% of total land area)
Crop Coverage	25 million ha (34% of cultivable crop)
Cereal Crop Coverage	13 million ha (52% of crop area)
Rice Coverage	1 million ha (8% of cereal cover)
Irrigated Area	0.9 million ha (6% of cereal crop cover)
Area under modern irrigation	100,300ha (15% of irrigated area)
Area under informal irrigation	1000,000 ha (14% of irrigated area)
Tradition irrigation	755,000 ha (71% of irrigated area)

Source: Musa (2001)

In every part of around the world, agricultural production is central to the overall wellbeing of the populace because of its importance in the provision of foods, income for farmers, raw materials for industries, employment and foreign exchange for the nation. National Bureau of Statistics/Central Bank of Nigeria (2006) stated that agricultural production remains the source of incomes for 2/3 of Nigerians who are low income earners and it is presently one of the world largest producers of food and raw materials for its major enterprise. Despite the fact that agriculture is important in the creation of employment and economic growth, the potential of agriculture is not yet fully exploited in Nigeria (USAID, 2005). For example in 1960, 1970 and 1980, its contribution was only 55.20%, 40.70 and 18% to GDP respectively, while its contribution to the GDP in 1996, 1997 and 1999 only stood at 39%, 39.4 a%, and 40% and the first quarter of 2012 stood at 34.47% (NBS, 2012).

2. AREA OF STUDY

The area of the study is Lagos state in the southwestern part of Nigeria which has 20 local government areas as depicted in Figure 1. The area is situated in the tropical rain forest zone of Nigeria and the upper part is derived or guinea savanna vegetation. The state lie on coordinate 6° 35′ N and 3° 45′ E with a population of about 9,013,534 and 3,577 Km^2 land

mass (NPC, 2006). Lagos state is unarguably the most economically viable state of the country, having the biggest urban settlement.

If Lagos state were to be a country in Africa, her economy would have been the fifth largest economy in Africa because is a major financial centre in the country and the continent (Lagos, 2018). Out of the 3, 577 Km^2 land mass, 22% are lagoons and creeks, notable crops grown in the state are: maize, cassava, plantain, rice, yam, coconut, vegetables, oil palm etc. The state has a tropical climate; the summers are much rainier than the winter with average minimum temperature of 27 °C with average rainfall of 1,693 mm (Lagos, 2018). The least minimum rainfall was recorded in December while the highest precipitation is recorded in June (Table 2).

Figure 1: Nigeria Map showing Lagos State and the Study Area

Tables 2: Average Temperature and Rainfall of Lagos State

Months	Average Temperature (°C)		Average Rainfall (mm)
	Minimum	Maximum	
January	22.3	32.2	14.3
February	23.5	33.1	42
March	23.8	32.7	77.1
April	23.6	32.1	142.4
May	23.1	30.9	204.8
June	22.6	29.2	312.2
July	22.1	28.1	256.9
August	21.7	28.1	112.4
September	21.9	28.9	167.1
October	22.3	30.4	135.8
November	22.6	31.0	54.0
December	22.4	31.9	19.0

Source: Climate data (2019)

Lagos state residents consume 3billion naira (about $8.3 million) worth of food daily and produce only about 10% of the food consumed (Ambode, 2016). This implies that about 90% of the food the state consumed daily is imported from another state and this have negative impact on the economy of the state. The occupational distribution of people in Lagos state economic sector was 3, 800, 531 and 99, 832 (2.6%) of them were into agriculture, farming and forestry (NBS, 2010). Therefore, it is important to increase food production in the state in order to depend less on food importation to the state and one of the key area to do this is irrigation development in the state. The precipitation in some months of the year (table 2) is not sufficient to meet–up the depth (quantity) of water required to replace the water loss as a result of evapotranspiration and the water required to grow optimally (Table 3).

Table 3: Crop Water Required and Responsiveness to Drought

Crop	Crop Water Required (mm/total growing period)	Responsiveness to Drought
Banana	1,200 – 2,200	High
Beans	300 – 500	High
Maize	500 – 800	Medium – High
Melon	400 – 600	Medium – High
Pepper	600 – 900	Medium – High
Rice (paddy)	450 – 700	High
Tomato	400 – 800	Medium – High

Source: Brouwer and Heibloem (1996)

The crop water needed (ET_{crop}) depends mainly on the climate, type of crop and the growing stage of the plant. The use of irrigation in Lagos state of Nigeria to complement the rainfall of the state will help the state to increase her food production and boost the economy of the state. The need to ascertain the level of irrigation usage, acceptance, economic benefits and shortcoming of the system necessitated this research. Agricultural revolution in Nigeria is not complete until the socio–economic importance of irrigation farming is recognized. The socio–economic level shows the situation of an individual in relation to their social and economic states in both their respective and absolute terms at a glance. According to Idowu (1996), socio–economic level of the farmers is the situation of individual, family or group with respect to others in the society. He emphasized further that individual's social status is a factor of who you are and who you were compared

with. Also, he defined economic status as the situation an individual, family or group attains with respect to the current average quality of cultural situation, possessions, effectual income, materials in custody and involvement in the group happenings in the community. Therefore, there is an pressing need to appraise the aftermath of irrigation farming in connection with the economy, reduction on food importation, extermination of hunger and poverty from Lagos state and Nigeria at large. This study will provide baseline information for governments, development agencies and prospective farmers who are concerned with irrigation farming. Specifically, the objectives of this study were to report the socioeconomic attributes of irrigation farmers; to identify problems that hinder irrigation farming in the study area; to determine the profitability of irrigation farming and to determine factors that affect profit and consequently estimate a profit basis.

3. METHODOLOGY

— Sampling and data collection

Data utilized for this research were collected from a farm survey of four hundred and fifty (450) irrigation farmers selected from 3 major local government areas that are majorly agrarian areas. The farmers were chosen through a multi–phase sampling method as used by Rahjiand Rahji, (2008). The first phase was the random selection of three local government areas (Badagry, Ikorodu and Epe) that are noted for agriculture from the list of the twenty local government areas in the state.The second phase includes the purposive selection of communities that are famous in irrigation farming activities from each of the three selectedlocal governments. From the list of irrigation farmers in the selected communities, respondents were selected at random. A total number of one hundred and fifty (150) respondents were evaluated in each of the three local government areas and this equal to a total of four hundred and fifty (450) irrigation farmers. Well–structured questionnaire drafted to extract information on socio–economic features, irrigation variables and economic viability of irrigation activities were used to collect data. The responses for socio–economic viability were of five–point scale that ranges from strongly agreed to undecided (i.e. Strongly Agreed, Agreed, Disagreed, Strongly Disagreed and Undecided). Four hundred and fourteen (414) questionnaires were returned and were subjected to preliminary method of data validation, (Reynolds and Dimantopoulos, 1998). This was employed to fine–tune the content of the questionnaire and transformed the data to its percentage form.

— Analysis of Data – Descriptive statistics

The sets data extracted were then transformed to descriptive and inferential statistics which includes frequency tables and percentage in order to show brief background informationas regards the socioeconomic features of the population under study. Statistical Package for Social Science (SPSS) 2017 version was the software utilized in analyzing the results. Chi–Square (equation 1) was employed to check the null hypothesis at 0.05 significant level, where significant (P) was less than 0.05, the relationship or influence is significant otherwise it is not significant. In other word, when P value is equal or greater than 0.05, the null hypothesis was retained otherwise it was rejected.

$$X_2 = \frac{(O-E)}{E} \quad (1)$$

where: X_2 = Chi–square, O = Observed Frequency; E = Expected Frequency; d.f. = (r – 1) (c – 1), a = 0.05 (95%)

4. RESULTS AND DISCUSSIONS

— Socio–economic features of respondents

Socio–economic features of farmers' plays an important role in the adoption process and participation of farmers in any agricultural technology, this is because it determines the readiness to welcome changes that will contribute appreciably to increase in production and eventually improve their living standard. Some of the socio–economic variables that are frequently in used as shown in table 4include age, sex, marital status, level of education, farm size, household size etc. Most of the respondents (79.55%) were males and the remaining 20.45% were females. This is in agreement with Adeoti (2006) and Ayandiji and Adeniyi (2011) observations, they observed that more men were involved in farming activities when compared with women. This may be due to the fact that agricultural venturesis perceived in the western part of Nigeria as labour intensive, and hence the male dominance.

The same cannot be said of some part of the country such as the eastern part of Nigeria where the female farmers outnumbered the male farmers. The result shows that 6.67% of the farmers were between 18 and 25 years of age. Age range of 26–35 years accounted for 8.89%, 33.3% of the respondents fall into 36–45 years of age while those that are 46 years and above accounted for 51.11%. The highest percentage (51.11%) of the farmers falls within the age of 36 years and above. The inference of these results is that most of the respondents fits–in to the young and middle aged category. This is a benefit since they are presumed to be physically skillful and more mentally vigilant in learning new technologies compared to the older farmers. This also agreed with Ayandiji and Adeniyi (2011) who reported that age bracket of 30–40 years is an indicator of good supply of agile workforce in farming.

The result of the marital status established it that most of the farmers were married (80.43%), 15.22% were single while 4.35% are divorced. This could have an implication on irrigation practices; married farmers are presumed to enjoy family labour for farming activities. Household size of the majority of the respondents spanned from those that can boast of

Table 4: Gender, age, marital status, education levels, family sizes, investment sources, irrigation farm sizes and farming experience in Lagos state Nigeria

Variables	Respondents (%)
Gender	
Male	79.55*
Female	20.45
Age of respondents (years)	
18 – 25	6.67
26 – 35	8.89
36 – 45	33.30
Above 46	51.11*
Marital Status	
Single	15.22
Married	80.43*
Divorced	4.35
Widowed	0
Educational Background	
No Formal Education	0
Primary	11.63
Secondary	53.49*
Tertiary	34.88
Post Tertiary	0
Family Sizes	
Less than 3	19.51
4 – 6	56.10*
7 – 9	19.51
10 – 12	0
13 and above	4.88
Investment Sources	
Contributions	10.26
Salary	0
Cooperatives	46.15*
Others	43.59
Irrigation farm sizes (ha)	
Less than 1	2.5
1 – 5	90*
6 – 10	7.5
Above 10	0
Farming Experience (years)	
Less than 5	44.19*
5 – 15	39.53
16 – 25	4.65
Above 25	11.63

*Highest percentage of response

average 5 members (56.10%) to 19.51% for average members of 3 and 8members; and 4.88% for the rest household. It is envisaged that members of the household will serve as a means of affordable labour on the farm. The range of household size is lesser when compared with what is obtainable in the Northern part of Nigeria (Salisu, 2001). One of the predominant factors that control the level of output and efficiency of the farmers are the composition and number of the family members. Therefore, the relatively number of family size of the farmer is a clear edge, since it may probably allow the farmers to utilize family labor, thereby minimize labour cost needed for production (Yakubu, 2015). This agrees with Haruna*et al.* (2012) who found out that 6–10 and 1–5 family size ranges accounted for 46% and 32% respectively, and 14% and 8% recorded for family size of 11–15 and 16 above respectively. Both household size and number of family members influences the output since they affect consumption and productivity (Randela, 2005). None of the respondents is illiterate, 11.63% had primary school education, 53.49% had secondary school education and the remaining 34.88% had tertiary education. Education has appeared to influence the acceptance of modern farming practices. The lower number of illiterates in the respondents' group suggested that most of them are in a better position to comprehend and embrace better agricultural practices. This agrees with Mohiudden *et al.* (2007) who observed that in Patiya, the literacy had its unique advantages and contribution towards the process of modernization of agricultural revolution. Education has been identified as a catalyst in agricultural and other productive activities. It is therefore evident that the educational levels of the respondents were not as low as other parts of the country especially the northern part of Nigeria (Akinsanmi and Doppler, 2005). This reasonably higher educational level may motivate the adoption of innovation which may improve farm productivity and earnings. This result is also in conformity with the findings of Marther and Adelzadeh, (1998), who submitted that people with higher educational status are expected to scrutinize and clarify information when compared with those with lesser educational status or no education at all.

The result of the of years of farming experiences shows that 44.19% of them have an experience of 1– 5 years, 39.53% have between 5 and 15 years of experience, 4.65% have 16–25 years farming experience while the remaining 11.63% have 25 years and above farming experience. This result shows that the new entrants in the agriculture are the major ones practicing irrigation farming and this may be due to the late adoption of irrigation system in the southern part of the country (Salisu, 2001). In some cases, it becomes visible that at a certain number of years of farming, the farming experiences have positive effects on the adoption of new technologies whereas in some cases it becomes negative. This negative effect may be due to the aging or unwillingness to adjust from old and well known practices to the modern and improved practices. Factors limiting irrigation farming as delineated by the farmers are shortage of capital such as soft loans, inadequacy of agrochemicals as at when due, shortage of seeds, little or no irrigation training for the farmers and insufficient extension services. It was noted that some farmers highlighted more than one challenges. The average irrigation land size cultivated by the farmers was 1.25 ha (Fig. 2), 90% of the respondents practice irrigation on 1 – 5 ha, 7.5% are practicing it on 6 – 10 ha while 2.5% practice it on less than 1 ha. Comparing the irrigation farming in the area of the study with the one in the northern part of the country, it can be seen that respondents owned small sizes (Salisu, 2001). This may be because irrigation farming has been in existence for long in the northern part of Nigeria when juxtaposed with the southern part of Nigeria. Besides, land clearing and irrigation set–up is very easy in the northern part of the country because the vegetation there is mostly vegetated with divergent species of grasses that can be easily cleared and burnt when compared with the southern part where vegetation is thick and the terrain is marshy.

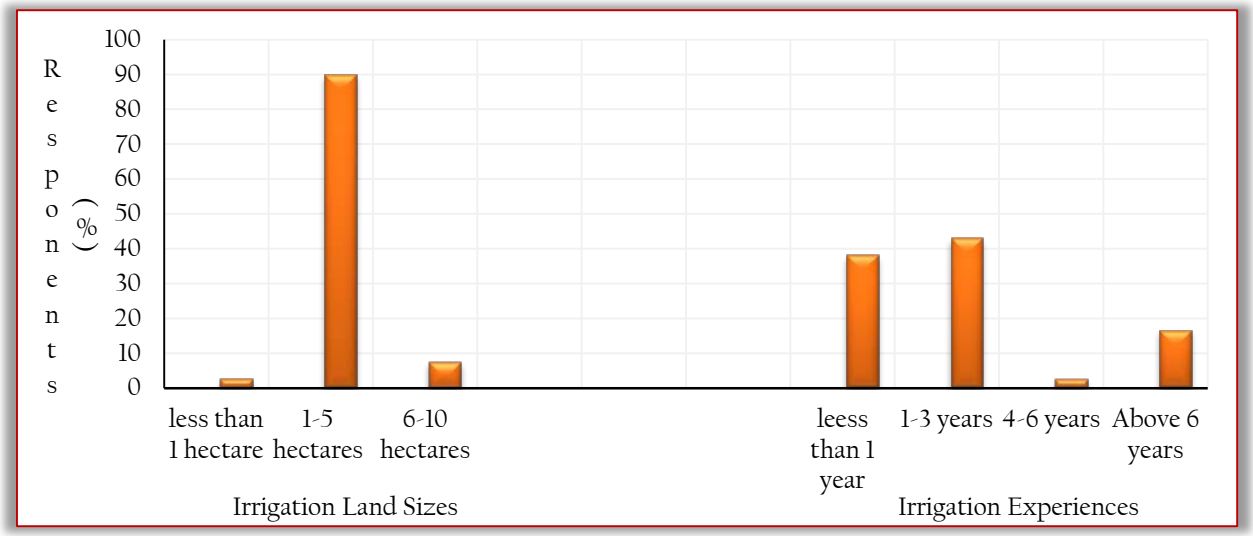

Figure 2: Irrigation landsizes and irrigation experiences

From the same Figure 2, it was shown that 42.86% of the respondents have been practicing irrigation for between 1–3 years, 38.10% are in the practice for less than a year, and 16.67% are practicing for above 6 years while the 2.38% of the respondents falls under 4–6 years of irrigation experience. These results show that most these irrigation farmers are new entrants because they are mostly less than five years in the usage of irrigation system. Figure 3 showed the groups different types of crops planted by the farmers on which irrigation was used for its growth. It was observed that the principal crops grown by the respondents are cereals (58.65%), this includes maize, rice, soya beans, beans and other form of cereals. This was followed by vegetables (31.58%), while the least irrigated crops by the respondents was root and tubers. It was noted that none of the respondents was using irrigation for tree crops despite the fact that some of them are into tree crops planting. This is in line with what Musa (2001) reported in a similar research.

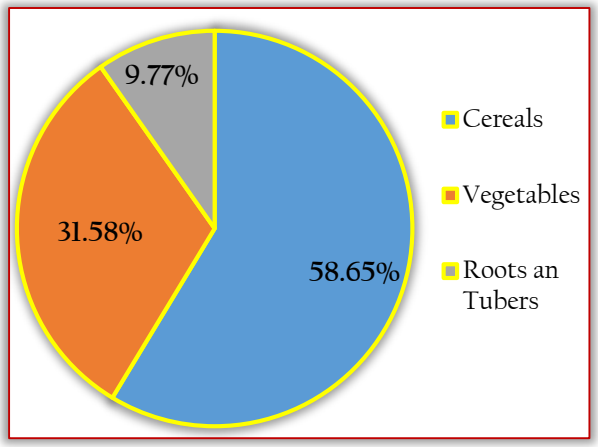

Figure 3: Crops Type Grown by Respondents

The response of the farmers as shown in Figure 4 shows that the irrigation system practiced majorly is sprinkler system (36.40%), while 27.03% were practicing basin irrigation system, 27.01% were using furrow irrigation and 9.67% were into border irrigation system. It can be seen that all the respondents were using surface irrigation systems. It can be assumed that majority of them knew little or nothing about drip irrigation system.

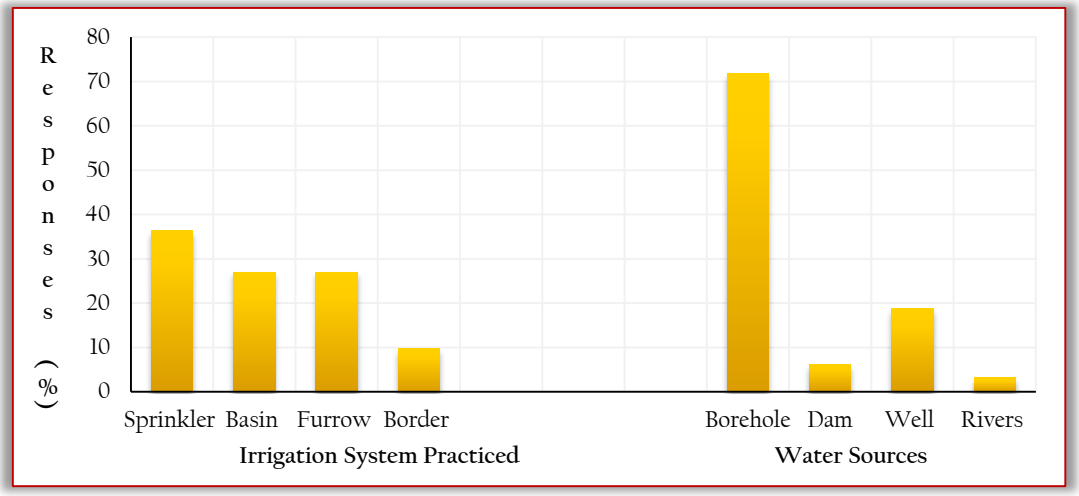

Figure 4: Irrigation system Practiced and Water Sources

The choice of the practicing these irrigation systems according to the farmers were associated the following benefits: (i) growth improvement, (ii) ease of adaptation and (iii) promotion of healthy plant growth. All these benefits listed by the

farmers were in agreement with what Alarcon *et al.,* (2014) reported in their research. This supports what Yidirim (2010); and Akinbile and Sangodoyin (2011) reported in a similar research conducted. Likewise, Akinbile and Ogedengbe, (2006) remarked that furrow irrigation is one the best practiced in this area of study due to the severity of rainfall experienced especially during wet season. This explained a reasonable high percentage of farmers using this type of irrigation for their farming. Furthermore, from the same Figure 4, there is information about the water sources for irrigation. Most of the respondent farmers (71.88%) depend on water from bore hole and this made it possible for them to practice irrigation anywhere without depending on the rivers or streams that are far from their farmland as water distance of above 50 meter may be stressful and not productive for the farmers. Depending on well water were 18.75% of the respondents, 6.25% depends on water from dams while only 3.13% of the respondents relied on water from river streams as their water source for irrigation.

Training which an important aspect of development is shows that only 54.06% of the respondents have been able to attend at least one training while 45.95% did not have the opportunity of attending any training. Further break down of those that have attended training shows that there is need for more training for the farmers in order to practice irrigation successively. The responses from the farmers showed that irrigation system has increased the size of land cultivated for crop production. Majority of the farmers (Agreed = 57.5% and strongly agreed 25%) were of this believe while only 5% disagreed, 10% strongly disagreed and 2.5% were undecided. These responses agreed with that of Turner, *et al.,* (2004) which stated that irrigation encourages the expansion of cultivable areas beyond what is achievable under rainfed situation. Majority of the farmers 65.2% agreed that all forms of irrigation methods increased the size of farm land cultivated. Only 26.1% of the respondents' disagreed with this believe while 8.7% of them are undecided. Turner *et al.,* (2004) corroborate this in his research that reported that irrigation gives room for expansion of cultivated areas when compared with rain fed conditions. As widely believed, most of the farmers (80.91%) agreed that the use of irrigation system has extended the planting season while 9.79% disagreed with this and 9.3% were undecided. The responses for the use of irrigation increases the crop yields was mostly agreed by the respondents, 83.72% of them ticked agreed box while only 6.98% disagreed and 9.3% were undecided. Lipton, *et al.,* (2005) reported that crop produced are consistently more in irrigated areas compared with rain fed area, likewise, Dowgert, *et al.*, (2010) reported that high efficiency of irrigated agriculture empowers fewer acres to cater for substantial proportion of the general population and Turner, *et al.,* (2004) also reported that irrigation leads to increase in farm productivity due to elimination of crop water stress.

Table 5: Perception of Farmers about Irrigation System

S/N	RESPONSES	MEAN	RANK
1	Irrigation system has increased the size of farm land cultivated for crop production	8	21
2	Size of farm land cultivated increases for all forms of irrigation methods	9.2	1
3	Use of irrigation system has extended the planting season	8.4	8
4	The use of irrigation increases the crop yields.	8.6	3
5	The use of irrigation has reduced the stress in crop production	8.2	18
6	Adoption of irrigation system encourages farm mechanization	8.6	3
7	Irrigation system has made fertilizer and other agrochemicals application easy.	8.4	8
8	Practicing irrigation system has increases my income and savings.	8.6	3
9	I was able to invest in other business as a result of adopting irrigation system	8.4	8
10	I was able to embark on capital projects like building a house, buying a car/motor cycle etc with the adoption of irrigation system	8.4	8
11	Income capability of the farmers is high before the adoption of irrigation system.	8.4	8
12	Family labour which is determined by the house hold size influences the adoption of irrigation system.	7	25
13	Farmers' norms and values affect the usage of modern irrigation equipment for crop production.	8.4	8
14	Income level of farmers influence purchase of modern implements needed for irrigation.	8.4	8
15	Group labour discourages the use of irrigation system	9	2
16	Farmers' farm size influences the use of irrigation system	8.4	8
17	Farmers' numbers of years of farming experience influence their usage of irrigation.	8	21
18	Irrigation system provides better nutrition to the farmers'	8.6	3
19	It leads to better health care.	8.2	18
20	Government policies encourage irrigation farming.	8.6	3
21	There is awareness and training on irrigation farming.	7.4	24
22	Government policies provide sufficient funding for irrigation.	8.4	8
23	Government provides irrigation equipment at a subsidized price.	8	21
24	There are equity and fairness in the distribution of fertilizes and other farming infrastructures among the farmers.	8.2	18
25	Crops raised with irrigation system are less vulnerable to disease and pests.	8.4	8

The question on if irrigation has reduced the stress in crop production was mostly agreed (73.17%), 17.07% disagreed and 9.76% were not decided. This is because the farmers do not relied solely on the rain for their crop production; the irrigation system enables the farmer to plant at their convenient time of the year since there is readily available means of water supply. Adoption of irrigation system encourages farm mechanization was mostly agreed by the farmers (81.39%), only 6.98% disagreed while 11.63% were undecided. Mechanization includes irrigation and it is a catalyst for mechanization,

Ghosh (2010) reported that 85% of the net cultivated area and 51% of the gross cultivate area were provided with irrigation. Since irrigation encourages more cultivation and production, there will be a serious need for mechanization for the farming activities. Irrigation system makes the application of fertilizer and other agrochemicals easy since theses inputs can be dissolved in the irrigation water instead of applying it separately. The respondents attest to that with 90.47% of them agreed while only 4.76% disagreed and 4.77% were undecided.

On the economy of the farmers, the respondents responded that practicing irrigation system has increase their income and savings. Most of them (83.72%) agreed on this assertion while very view (4.65%) disagreed and 11.63% were undecided. Irrigation system increased the size of land cultivated for crop production and increases the crop yields; these will have positive effect on the income of the farmers and help them to have more profits and savings. The ability to save more by the farmers will help the farmers to invest in other businesses. Majority of the farmers (71.43%) agreed that they were able to invest in other business (es) as a result of excess income from irrigation farming, 11.9% disagreed while 16.67% were undecided. In general, all the questions that were related to economy of the farmers showed that irrigation system has a positive influence on the economy of the farmers. One of the major problems of irrigation systems development is the farmer's norm and values. Majority of the respondents (69.04%) agreed that this subject matter is hindering the irrigation system development, 19.06% disagreed while 11.9% were not decided. Another important problem of irrigation development in this study according to the respondents is the farm size. According to the respondents, 73.81% said the size of their farm has major effect on irrigation system, 11.9disagreed while 14.29%. In terms of nutrition and health, the farmers responded that irrigation system has improved their healthy living through good nutrition. All year round farming through the help of irrigation system made some of the nutritious crops that are seasonal available unlike when they depend mainly on rainfall alone, and this provide balance diets for the farmer for better health care. Government policies in the area of subsidies, trainings, loans, and extension services are not encouraging irrigation development in the area under study. Responses from the selected farmers' shows that the government has not being doing enough in these areas that they were supposed to be of help. Majority of the farmers (64.29%) agreed that crops raised with irrigation systems are less vulnerable to diseases and pests while 21.42% disagreed and 14.29% were undecided. This may be due to the fact that some of these diseases and pests may not be in existence then because of the change in environment that does not favour their growth.

Table 6: showing N, mean score, standard deviation, d f, Asymp. Sig. x_c score and significance of the variables

	N	Sample mean (x^-)	Standard deviation	df	Asymp. Sig.	X_c score calculated	Decision
Q1	5	20.00	22.7074	4	1.00	0.000[a]	Significant
Q2	5	20.00	19.1148829	4	1.00	0.000[a]	Significant
Q3	5	20.00	19.0571024	4	1.00	0.000[a]	Significant
Q4	5	20.00	20.1799306	4	1.00	0.000[a]	Significant
Q5	5	20.00	16.57702	4	1.00	0.000[a]	Significant
Q6	5	20.00	19.6348084	4	1.00	0.000[a]	Significant
Q7	5	20.00	25.9483400	4	1.00	0.000[a]	Significant
Q8	5	20.00	25.1869430	4	1.00	0.000[a]	Significant
Q9	5	20.00	18.2580708	4	1.00	0.000[a]	Significant
Q10	5	20.00	12.4369852	4	1.00	0.000[a]	Significant
Q11	5	20.00	14.5877946	4	1.00	0.000[a]	Significant
Q12	5	20.00	16.90139	4	1.00	0.000[a]	Significant
Q13	5	20.00	24.4309394	4	1.00	0.000[a]	Significant
Q14	5	20.00	18.7922018	4	1.00	0.000[a]	Significant
Q15	5	20.00	12.4753096	4	1.00	0.000[a]	Significant
Q16	5	20.00	21.3348881	4	1.00	0.000[a]	Significant
Q17	5	20.00	22.5693	3	0.896	0.600[b]	Not Significant
Q18	5	20.00	19.8419732	3	0.896	0.600[b]	Not Significant
Q19	5	20.00	18.84340	3	0.896	0.600[b]	Not Significant
Q20	5	20.00	17.52200	3	0.896	0.600[b]	Not Significant
Q21	5	20.00	16.7296892	4	1.00	0.000[a]	Significant
Q22	5	20.00	17.3016459	3	0.896	0.600[b]	Not Significant
Q23	5	20.00	7.5000	2	0.819	0.400[c]	Not Significant
Q24	5	20.00	10.8229917	4	1.00	0.000[a]	Significant
Q25	5	20.00	15.1179992	5	1.00	0.000[a]	Significant

a. 5 cells (100.0%) have expected frequencies less than 5. The minimum expected cell frequency is 1.0.
b. 4 cells (100.0%) have expected frequencies less than 5. The minimum expected cell frequency is 1.3.
c. 3 cells (100.0%) have expected frequencies less than 5. The minimum expected cell frequency is 1.7.

Table 6 revealed the hypothesis of all the questions, the values of N, sample means, standard deviation (s.d.), df, Asymp. Sig., and x_c score. The correlation between dependent and independent variables for questions 1–16, questions 21, 24 and 25 are significant while the variables (dependent and independent) for questions 17–20 and 22–23 are not significant. Thus the relationship between most of the independent and independent variables is significantly viable for irrigation system in the agricultural sector of a country like Nigeria that wants to be self–sufficient in food production. This means that for irrigation development in the country, there is need for urgent attention of all the policy makers, government, researchers and academicians on how to make irrigation a household acceptance.

5. CONCLUSION

This study has shown that irrigation farming is a profit–making and sustainable enterprise for farmers most importantly during the dry season; this enables them to have all year round farming. Responses of the irrigation farmers showed that climate change, training, farmers' norms and values and government policies were some of the challenges that are impeding irrigation development of the study area. This may be because Lagos state is located where the wet and dry seasons are known. Irrigation system is a profitable venture of investment that can ameliorate the challenges of unemployment of both urban and rural areas, reduce poverty, hunger and shortage of some seasonal crops. Results from this study shows that there in need for more investment on irrigation equipment and training through soft loans, subsidies and extension services to farmers in order to increase food production, reduce poverty and unemployment in Lagos state of Nigeria.

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