

## IRRIGATION FARMERS MOTIVATION FOR PARTICIPATING IN SOCIAL NETWORKING IN NORTH CENTRAL NIGERIA

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### Abstract

*The study focused on the motivation of farmers in participating in social networking on the use of irrigations in north central Nigeria. For the purpose of the study, social networking for this study consist of water users Association, Cooperative Societies, Agricultural Agency, Farmers Group, Family, Neighbourhood, Religious Group, Community Based Organizations, Non- Governmental Organization and Input Suppliers that are operating within the lower Niger River Basin Authority Irrigation sites at Shonga, Oke-oyi and Ejiba in North Central Nigeria. One hundred and ninety four irrigation farmers were randomly selected from three irrigation farming areas in two states of Kwara and Kogi in north central Nigeria. Data were obtained using a structured questionnaire. The Motivation for undertaking irrigation farming and their level of participation in social networking were measured through a 4-point likert scale while the data was analysed using descriptive statistics and Pearson product moment correlation. The findings showed that all the respondents (100%) were male, 94.6% were married and more than half (54.1%) of the respondents had no formal education, the result revealed family had the highest mean (3.86) based on their level of participation in social networking which was followed by water users association (3.82). Respondents ranked market information (2.47) as the most important contribution of social networking to the use of irrigation while Agricultural Extension Agency (2.85) was ranked as the most effective social networking in providing access to resource for irrigation farming. The result of Pearson product moment correlation revealed that there is significant relationship between their motivation for undertaking irrigation farming and their level of participation in social networking ( $r=0.159$ ;  $p < 0.05$ ). Based on the findings, it is therefore recommended among others that farmers involved in irrigation farming should come together to form functional groups that can access resources for irrigation farming.*

**Key Words:** *Farmers, Irrigation, Motivation, Social Networking*

### Introduction

Nigeria has a total land mass of about 923 768 km<sup>2</sup>, out of which an estimated 71 million hectares of cultivable land, only half is currently used for farming, while there is similar potential for expansion of irrigation, which now only covers 7 percent of irrigable land (IFAD, 2012). Irrigation and other inputs would substantially increase average

yields for major staple crops, which are below those in other developing countries.

The World Bank (2012) reported that Nigeria has estimated 50 million unemployed youths, who can gainfully be employed through irrigation farming. Nigerian government over time had instituted various programmes and policies to increase agricultural productivity Most of such programmes had been scrapped due to their

failure in achieving set objectives but out of the existing few programmes, the Agricultural Development Programme (ADP) and Lower Niger River Basin (Matanmi and Adesiji, 2009). There is need to provide irrigation facilities especially during the dry season in areas affected by flood during the rainy season, flood has become a major issue for Nigeria as a whole because it is one of the most frequent and most disastrous natural events. One of the goals of irrigation farming is the provision of right amount of water at the right time for plant growth and development. Consequently, it ensures sustainable agriculture with its economic benefits. Globally, massive investments have been made in the development of irrigation scheme. In Nigeria, according to NINCID (2009), recent survey suggest that 39% of the land mass is potentially suitable for agriculture and out of this between 4.0 and 4.5 million ha (approximately 4.5 to 5.0 % of the land) are suitable for irrigated agriculture but only 1.1 million ha can be supported fully by the water available, the remaining 3.4 million ha being Fadama project. The benefit of irrigation (which is the artificial supply of water for agricultural crop growth) in Nigeria is not limited to food supply alone but it also serves as a source of income and employment during the slack period of rain-fed agriculture.

In spite of the efforts of the River Basin and Rural Development Authorities (RBRDAs) and other stakeholder in harnessing the water bodies of the country, through construction of large dams, canal development, wash boring techniques and provision of irrigation schemes for increase food sufficiency level, one of the reasons attributed for the short coming is the low level of participation of farmers in the dry season irrigation crop production. However there are many organizations and institutions (social networking) that are working within the river basin in Nigeria such as the water

user association, cooperative societies, input suppliers, farmers group, Non-governmental organization, community based organization etc. it is therefore necessary to carry out a research in order to determine the motivation of irrigation farmers in participating in these organization and institution (social networks).

In the light of the above, the general objective of the study is to examine the motivation for undertaking irrigation farming by farmers participating in social networking in North Central Zone, Nigeria.

The specific objectives of the study are to;

- i. Identify the socio-economic characteristics of farmers using irrigation facilities in the study area.
- ii. Investigate the available social networks used in facilitating access to resources and services for irrigation purpose
- iii. Determine farmers level of participation in social networking
- iv. Determine the effectiveness of social networking in accessing resource for irrigation farming.
- v. Examine the motivation of respondents for undertaking irrigation.

#### ***Statement of Hypothesis***

The following null hypotheses were tested;

H<sub>01</sub>: there is no significant relationship between farmers' motivation for undertaking irrigation farming and their level of participation in social networking in irrigation farming.

H<sub>02</sub>: there is no significant relationship between the motivation for undertaking irrigation farming and their irrigation farming income.

#### **Methodology**

This study was carried out in two states of North Central Nigeria (Kwara and Kogi States) under the Lower Niger Irrigation Development Scheme. The respondents for the study were Lower Niger River basin irrigation farmers who used their facilities in

Kwara and Kogi States. The villages were Oke-oyi, Shonga and Ejiba of which 194 farmers were interviewed.

The population of the study comprises of all farmers using the irrigation scheme of Lower Niger River Basin in Kogi and Kwara State (North Central, Nigeria). These farmers were purposively selected for the study. The list of all the farmers at lower Niger River Basin Authority Irrigation sites were provided of which Simple Random Sampling technique was used to select 50% of the farmers in each irrigation sites (Oke-oyi 15 farmers, Shonga 25 farmers and Ejiba 154 farmers). A total of 194 respondents were interviewed for the study.

Table 1: Sampling Population

Irrigation site	Sample frame	Sample size
Oke-oyi	30	15
Shonga	50	25
Ejiba	308	154

## Results and Discussion

### *Demographic Characteristics of Respondents*

The results in Table 2 showed that majority of respondents were youths and were less than 40years of age. The average age is 35.80 years. Table 2 showed that 46.40 % of the respondents' age falls between 31-40 years, 40.20% of them are in the age bracket 20-30 years, 8.25 % of the respondents fall between 41-50 years of age while 5.1 % are within the age bracket 51-60 years of age. The result therefore indicates that a good proportion of the study respondents are youths based on African Union (2010) definition of youths to be every person between 15 – 35 years of age. The fact that most of the respondents are youths could imply that irrigation farming is viable and profitable, this is more so since youths would most likely undertake only paying jobs.

The findings in Table 2 showed that all the respondents 100% were male. This

suggests that irrigation farming is dominated by male farmers in the study area. This may be as a result of fact that operation of the irrigation farming may be cumbersome for females. The result is in line with what Salisu (2001) reported that irrigation was a male affair only in northern Nigeria. Table 2 results shows that 96.4% of respondents were married while 3.6% were single. Findings also showed that majority 94.8% of respondents were Muslim while 5.2% were Christians. This shows that there was no religious barrier to participation in irrigation farming.

Table 2 shows that 37.19% of the respondent's years of experience ranges between 6 –10 years, 30.9 % of them had their years of experience ranges between 11 - 15years, 14.9% between 1-5 years, 13.4% ranges between 16 - 20years while 3.61 % between 21- 25 years and the mean farmers' irrigation farming experience is 10.87 years. This implies that the farmers have considerable experience in irrigation farming which could be as result of their participation in social networks over the years. Results in table 2 showed that more than half (54.1%) of the respondents had no-formal education, 39.2% had primary education while 6.7 % had secondary education. The above result confirmed the findings of Fakayode *et al.* (2010) who reported that majority of the irrigation farmers have not had any form of formal education. Although, Adesiji, et al., (2013) had noted that Education is very crucial form any knowledge to be learnt, acquired and possibly the utilization of agricultural information.

Majority (73.19%) of respondents practiced irrigation based farming on a farm size that is less than 1hactare. This implies that all respondents are small scale irrigation farmers with little or no farm mechanization. The result is in line with what Dixon et al. (2003) reported that smallholder farmers usually cultivate less than one hectare of

land, which may increase up to 10 ha or more in sparsely populated semi-arid areas. The results in table 2 showed that most (64.43%) of respondents income from irrigation farming were less than ₦100000, 27.84% of respondents had between ₦100000- ₦200000 as their annual income from irrigation

farming. The mean farmers’ annual income is ₦116, 881.44. This implies that irrigation farmers are better off. Besides, irrigation farming had greatly reduced poverty level and improved the living standard of farmers in the study area.

Table 2: Demographic Characteristics of Respondents

<b>Demographic Characteristics</b>	<b>Frequency</b>	<b>Percentage</b>	<b>Mean</b>
<b>Age (years)</b>			
20 - 30	78	40.20	35.80
31 – 40	90	46.40	
41 – 50	16	8.25	
51 – 60	10	5.1	
Total	194	100	
<b>Gender</b>			
Male	194	100	
Female	0	0	
Total	194	100	
<b>Marital status</b>			
Married	187	96.4	
Single	7	3.6	
Total	194	194	
<b>Religion</b>			
Islam	184	94.8	
Christian	10	5.2	
Traditional religion	0	0	
Total	194	100	
<b>Farming experience (year)</b>			
1 – 5	29	14.9	10.87
6 – 10	72	37.19	
11 – 15	60	30.9	
16 – 20	26	13.4	
21 – 25	7	3.61	
Total	194	100	
<b>Educational level</b>			
No-formal	105	54.1	
Primary	76	39.2	
Secondary	13	6.7	
Total	194	100	
<b>Quantity of land under irrigation(ha)</b>			
≤ 1	142	73.19	1.0832
- 1.5	19	9.79	
1.5 - 2.0	20	10.33	
2.1 - 2.5	14	7.2	
<b>Irrigation farming income (Naira)</b>			
≤ 100000	125	64.43	116,881.44
100000 – 200000	54	27.84	
210000 – 300000	12	6.18	
310000 – 400000	3	1.55	

### **Membership of Social Networking on the Use of Irrigation**

The result in Table 3 showed that all (100%) respondents are members of the water user association, have contact with Agricultural Extension Service, neighbourhood and family members. Majority (91.2%) of respondents have contact with input suppliers, 82.5% were members of a religious group while 66.5% are members of cooperative societies. The results on Table 3 further showed that all the respondents were members of the water users association. Also, all the respondents had sound relationship and regular contact with the agricultural extension agency, neighbours and there were strong cohesion within their families, the farmers' motive of becoming members of these social networks is to increase their productivity and standard of living. The result is in agreement with Moser (1996) reported that those who are members of social networks and civic associations are in a stronger position to confront poverty and vulnerability and take advantage of new opportunities (Isham, 1999).

### **Level of Participation**

The result in Table 4 showed that family has the highest (3.86) means score. This is followed by water user association with mean score of 3.82, Agricultural extension service with mean score of 3.69, Religious group with mean score of 3.66, input supplier with mean score of 3.49, Cooperative societies (2.88), Farmers group (1.79), Community based organization (1.57) and Non-governmental agencies (1.27). The farmers participated and involved themselves in social networks so as to have access to resource (credit, inputs, irrigation farmland etc) for irrigation farming and subsequently increase their productivity. These findings were similar to what Narayan (2000) reported that strong networks and membership based organizations extended beyond the family and immediate community are essential to

help poor people gain access to other assets and resources.

### **Respondents' Perception on the Effectiveness of Social Networking**

Results of analysis in Table 5 showed that agricultural extension agency is the most effective social network with majority of the respondents (89.7%) and mean score of 2.85. This result is followed by water user association with mean score of 2.82, Neighbourhood with mean score of 2.78, religious groups (2.68), Family (2.65), Cooperative societies (2.55), input suppliers (2.07), farmers group (2.04), CBOs (1.80), and NGO (1.76). Agricultural extension agency is the most effective social network in irrigation farming. The reason may be because Agricultural extension agents give farmers relevant information and innovation for irrigation farming. This finding is in line with Rivera and Alex (2003) reported that extension agents are the primary source of information about the existence and merits of any new farming technology including irrigation techniques. Moreover, Ukoha *et al.* (2010) reported that productivity is increased by contact with extension agents, membership of cooperative societies and access to credit.

### **Motivation for undertaking Irrigation Farming**

Analysis of results in Table 6 showed ranked motivating factors for undertaking irrigation as; all year round employment with the mean score of 1.95 was ranked first, followed by availability of market and additional income with mean score of 1.93 respectively, access to information on irrigation 1.60, hobby 1.57, access to input with mean score of 1.52 and access to credit facilities had mean score of 1.40. Practicing irrigation farming especially during the dry season when rain-fed farming is over could engage farmers in all year round farming which will provide additional income and therefore reduce poverty of the farmers. The

result is in line with what Kimenyi (2002) reported that all year round farming and technical efficiency towards increased agricultural production made possible by irrigation reduces poverty drastically especially in agrarian economies. Also, Lipton *et al.* (2003) reported that irrigation reduces poverty by offering employment

especially to rural households, ensuring food security and by stabilizing (or lowering) food prices both in the rural and urban markets. In addition, similar finding was reported by Akinsorotan and Adesiji (2001) of job security as motivating factor for village extension agents.

Table 3: Distribution of Respondents Based on Membership of Social Networking on the Use of Irrigation

Social networking	Yes		No	
	Frequency	Percentage	Frequency	Percentage
1 Water user association	194	100	-	-
2 Cooperative society	129	66.5	65	33.5
3 Agriculture extension service	194	100	-	-
4 Input supplier	177	91.2	17	8.8
5 Non-governmental agency	22	11.3	172	88.7
6 Farmers groups	66	34	128	66.0
7 CBO	10	5.15	184	94.85
8 Religious group	160	82.5	34	17.5
9 Neighbourhood	194	100	-	-
10 Family	194	100	-	-

Table 4: Distribution of Respondents based on their Level of Participation in Social Networking

Social networking	High		Moderate		Low		No participation		Mean	Rank
	N	%	N	%	N	%	N	%		
1 Family	180	92.8	7	3.6	-	-	7	3.6	3.86	1
2 Water user association	173	89.2	7	3.6	14.0	7.2	-	-	3.82	2
3 Agric extension service	151	77.8	24	12	10	5.2	58	29	3.69	3
4 Religious group	150	77.3	30	15.5	7	3.6	7	3.6	3.66	4
5 Input supplier	130	67.0	47	24.2	-	-	17.0	8.8	3.49	5
6 Neighbourhood	110	56.7	67	34.5	10	5.2	7	3.6	3.44	6
7 Cooperative societies	102	52.6	33	17	3	1.5	7	3.6	2.88	7
8 Farmers group	33	17	27	13.9	-	-	134	69.1	1.79	8
9 CBO	30	15.5	10	5.2	-	-	154	79.4	1.57	9
10 NGO	9	4.6	13	6.7	-	-	172	88.7	1.27	10

Note: N=frequency, %=percentage

Table 5: Respondents' perception on the effectiveness of social networking in providing access to resource for irrigation farming

Social networks		Effective		Undecided		Ineffective		Mean	Rank
		Freq	%	freq	%	Freq	%		
1	Agric. extension agency	174	89.7	10	5.2	10	5.2	2.85	1
2	Water user association	170	87.6	14	7.2	10	5.2	2.82	2
3	Neighbourhood	154	79.4	37	19.1	13	6.7	2.78	3
4	Religious group	144	74.2	37	19.1	13	6.7	2.68	4
5	Family	138	71.1	44	22.7	12	6.2	2.65	5
6	Cooperative societies	136	70.1	29	14.9	29	14.9	2.55	6
7	Input suppliers	89	45.9	30	15.5	75	38.7	2.07	7
8	Farmers group	69	35.5	63	32.5	62	32	2.04	8
9	Community based organization	32	16.5	91	46.9	71	36.6	1.80	9
10	Community based organization	30	15.5	88	45.4	76	39.2	1.76	10

Table 6: Distribution of respondents based on their motivation for undertaking irrigation farming

Motivational factor		Yes		No		Mean	Rank
		freq.	%	freq.	%		
1	All year round employment	184	94.8	10	5.2	1.95	1
2	Availability of market	181	93.3	13	6.7	1.93	2
3	Additional income	181	93.3	13	6.7	1.93	2
4	Access to information on irrigation	117	60.3	77	39.7	1.60	4
5	Hobby	111	57.2	83	42.8	1.57	5
6	Access to input	101	52.1	93	47.9	1.52	6
7	Access to credit facilities	78	40.2	116	59.8	1.40	7

### Testing of Hypotheses

**Hypothesis 1:** there is no significant relationship between their motivation for undertaking irrigation farming and their level of participation in social networking in irrigation farming.

Table 7: The result of correlation between motivation for undertaking irrigation farming and their level of participation in social networking

Variable	r value	p value	Decision
Motivation for undertaking irrigation farming	0.159 *	00279	Significant

\*significant at 0.05 %

The result in table 7 showed that there is significant relationship between motivation for undertaking irrigation farming and their level of participation in social networking, ( $r=0.159$ ;  $p=0.027$ ). This study therefore rejects the null hypothesis one. This implies that the participation of farmers' in social networking has significant influence to motivate farmers to be engaged in irrigation farming.

**Hypothesis 2:**  $H_0$  there is no significant relationship between the motivation for undertaking irrigation farming and their irrigation farming income

Table 8: The result of correlation between motivation for undertaking irrigation farming and their irrigation farming income

Variable	r value	p value	Decision
Motivation for undertaking irrigation farming	0.304*	0.001	Significant

\*significant at 0.01 %

The result shows in table 8 shows that there is significant relationship between their motivation for undertaking irrigation farming and their irrigation farming income (  $r=0.304$ ;  $p=0.001$  ) hence, the null hypothesis was rejected. This shows that their irrigation farming income will motivate farmers to be engaged in irrigation farming.

### Conclusion

The Participation of farmers in social networking was discovered to be effective in motivating farmers to be involved in irrigation farming in north central Nigeria. The result showed that Agricultural extension Agency is the most effective social networking while all year round employment was ranked as the highest motivational factor in undertaking irrigation farming. Farmers' participation in social networking was high, however there was poor participation of farmers in CBOs and NGOs.

### Recommendations

The following recommendations were suggested; farmers engaged in irrigation farming should come together to form functional groups that can access resources for irrigation farming, there should be regular training of farmers and extension officers, Agricultural Extension Agency should help farmers access credit facilities, The Government should encourage community based organization, Non-governmental organizations and other stakeholders to empower farmers that are involved in irrigation farming, and Government should encourage farmers through extension agent and other social media to participate in

programmes that are carried out by NGOs, CBOs and farmers groups.

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