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COMMUNICATING FADAMA AGRICULTURE FOR COMMUNITY DEVELOPMENT: A STUDY OF AGRICULTURAL DEVELOPMENT PROGRAMME'S INTERVENTION IN GWAMMA BUNKURE LGA KANO STATE

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Abstract

Fadama agriculture over the years, has been a viable tool for food security, income generation and a veritable source of employment for people in Nigeria especially those in rural communities. Termed as a catalyst for community development, it has been used as an instrument to contend against hunger, malnutrition and poverty in rural communities. Despite its strategic role in improving the living standards of farmers in Kano state and Bunkure Local Government Area specifically, there has been a number of obstacles militating against the smooth and effective practice of this peculiar agricultural method. Some of these obstacles include poor access to information by farmers and the feeble handling cum management of the farming practice by governmental and non-governmental organizations. In view of this, this study is therefore aimed at assessing Kano State Agricultural Development Programme methods of communicating fadama with a view to achieving enhanced productivity among the fadama farmers and community development as a whole. In addition, the study largely relied on quantitative and qualitative approaches to investigate fadama practice within the study locations and generate data for the study. The study concludes that the effective use of communication and proper mobilization of farmers is key to greater productivity and community development especially in locations where fadama farming is currently being practised.

Keywords: Fadama Agriculture, Communication, Fadama Project IIIAF, Agricultural Development Programme, Community Development

Introduction

Nigeria is among the African countries with very low irrigated lands despite the fact that it is highly commended for having the largest arable and the highest percent of available and renewable surface water in West Africa (Zaki, Ali, Rossi, Xenario & Klove, and Babatunde 2012). It is one of the countries in Africa with huge agricultural potentials and Ogen (2007) points out that Nigeria is endowed with 68 million hectares of arable land, fresh water resources covering about 12 million hectares, 960 kilometres of coastline and ecological diversity, which allows the country to produce a wide variety of crops, livestock, forestry and fisheries products. Before the oil boom, agriculture was more than a means for livelihood; it was the primary contributor to the nation's economy accounting for over 60 per cent of her Gross Domestic Product (Alkali,1997). However, the 1970s made a

significant mark in the Nigerian agro-industry; not only did the oil boom substitute the role of agriculture to the economy but the drought of 1970 to 1975 became a catalyst for the need to create alternate water resource for cultivation than the conventional rainfall. Irrigable agriculture famously referred to as 'fadama', became one of the significant ways through which this goal would be achieved (Ugalahi, Adeoye and Agbonlahor 2015; Izougu and Atasie 2015).

'Fadama' which is a Hausa name for irrigated land, was first adopted during the colonial era but became popular during the period of drought that hit Nigeria in the 1970s. The idea of fadama especially during its earlier practice was primarily traditional as the sole aim was to maintain water flow for the sustenance of planted crops. It was earlier conceived by small scale farmers who used calabashes, buckets, and pumps with no government aid or private donor assistance to water their farms. The need for irrigable agriculture grew between 1972 and 1974 and three pilot public irrigation schemes were developed namely: Bakolori scheme, Kano river irrigation scheme and the Chad Basin scheme (NINCID, 2015). The success of these pilot irrigation schemes which was aimed at mitigating the effect of this drought, led to the insightful development of 12 River Basin Development Authorities (RBDAs) across the country. The advent of this innovation placed a demand on communication since farmers in Nigeria are mainly unlearned rural dwellers who predominantly practise rain-fed agriculture. Consequently, the years that preceded the establishment of these dams brought the formulation of policies that allowed the establishment of extension service in 1976 and one of the cardinal roles of this service system is to provide information about agro-innovation; educating farmers about new trends in Nigerian agriculture and the world at large.

Agriculture in Nigeria is largely rural and the northern region occupies a cardinal position in the sector. The total cultivable area in Nigeria is estimated at 61 million hectares, accounting for 66 per cent of the total area in the country. Situated across 65 per cent of the country's 923,768sq km landmass, the Northern region is home to about two-thirds of the country's 250 ethnic groups. It is blessed with a vast fertile land which employs 90% of her rural population allowing the cultivation of a variety of crops (Frenken 2005 & Pate, Dauda 2013). However, Northern Nigeria lies in the Sahel region of the country and is characterized by short wet seasons and long dry season. In recent years, evidence of stern decline and randomness of rainfall which is mostly followed by dry spells that cause a backward shift in the planting dates have been recorded. This climatic fluctuation affects the lengths of

growing season causing the crop to yield poorly (Farauta, Egbule, Idris and Agu 2011). Yamusa, Abubakar and Falaki (2015:3) corroborate that:

> Early dry spells in the season is a break in rainfall immediately after the first few rains. The period of significant rainfall deficit is more pronounced in Northern Guinea Savannah ecological zone and usually occur between the first and last decades of May while midseason spells occur around June and July. The period of occurrence and duration keeps varying in recent times bringing a backward shift and reduction in planting opportunities. Early season dry spells affect soil water retention which negatively impacts crop germination.

These challenges constitute a justification for the establishment of Fadama Projects III and IIIAF with special focus on increase productivity through fadama agriculture in Northern Nigeria (Akinleye, Awoniyi and Fapojuwo, 2015). Fadama Project III Additional Funding (Fadama III AF) is a continuation of Fadama Project III with specific interest on rural farmers, increased production, community development and fadama agriculture (World Bank 2016). The state's Agricultural Development Programme (ADPs) were adopted by the Fadama project to execute and facilitate the implementation of the Project's agenda at the state and Local levels. Kano State ADP which is significant to this study has been responsible for communicating fadama agriculture to the farmers in the communities of Kano state. However, it is instructive to note that it's been over a decade since the adoption of Kano ADP and questions still abound on the effectiveness of the communication intervention and the approaches used by ADP Kano to promote and facilitate fadama agriculture within the State.

The case is worse in Gwamma community of Bunkure Local Government Area where low per capita income ranks high among the factors preventing the rural farmers from acquiring irrigation equipment even with the 80% subsidy from the government (ADP Kano Co-ordination Unit, 2019). Gwamma community is considered in this paper because of the evident presence of Fadama Project III AF intervention within the community. As one of the beneficiaries of Fadama Project III AF, the community have water ways which facilitate fadama agriculture (ADP Fadama Project, Kano Co-ordination Unit 2019). However, considering the abundant fadama resource in Gwamma community, it is difficult to understand the reason behind the low irrigated lands and poverty which are prevalent in the Local Government Area. Therefore, this study seeks to understand how ADP

communicatesfadama agriculture in Gwamma community of Bunkure Local Government Area and the effectiveness of such communication for the strengthening of fadama farming and enhancement of productivity.

Aim of the Study

The aim of this study is to assess Kano state ADP's methods of communicating fadama farming with a view to achieving enhanced productivity and community development.

Objectives of the Study

1. To examine the existing communication approaches of Kano ADP in facilitating fadama agriculture and its effectiveness on productivity within the study locations.
2. To identify the communication constraints affecting the adoption and practice of fadama agriculture within the study locations.

Study Area

Bunkure Local Government Area is one of the beneficiaries of the Fadama Project as executed by Kano ADP and is located at 11°24N, 8° 33'E with an area 487 km^2. The population of Bunkure Local Government Area is 170,891 as culled from the 2006 census (National Population Commission, 2010). However, using the annual growth rate of 2.63% as prescribed by United Nation's Department of Economic and Social Affairs, Population Division the estimation of the present population using the figure above would give the total sum of 228,652 in 2019 (United Nation's Department of Economic and Social Affairs, Population Division, 2019). Kano River irrigation project is located in the LGA and it is one of the beneficiaries of the Fadama Project III AF. Bunkure is significant to this study because it is endowed with the required resources for fadama agriculture (FAO 2014; Sani, Yakubu and Bello, 2010). Gwamma community is located in Gwamma ward and is home to a majority of the fadama farmers in Bunkure LGA. It shares favourable boundaries with the waters in the community and cultivates variety of crops like tomato, onion, cucumber and rice through fadama agriculture.

Methodology

This study relied on both quantitative and qualitative research methods to carry out this research and the study was conducted in Gwamma community of Bunkure LGA Kano state, Nigeria. Purposive and simple random sampling techniques were used hence the study is specific to fadama famers where the instruments of the study were randomly administered to the respondents of this study. The population of study was 4180 and raosoft sample size calculator pegged the sample size of this study at 354 samples. The research adopted the use of Questionnaire and Focus Group Discussion to conduct this study hence fadama farmers within Gwamma community were administered questionnaire. While 352 questionnaires were administered, 326 were returned and SPSS version 2.0 was use to analyses the data resulting in frequencies and percentages. Also Focus Group Discussion was conducted with 8 fadama farmers within the study location and descriptive thematic method was applied to transcribe the qualitative data.

Demographic Data

The result for sex distribution of the respondents shows that 325(99.7%) respondents who in Gwamma community are male while 1(.3%) is a female respondent. Therefore, it can be deduced that the result on the sex of the respondents is typical of agrarian communities in Northern Nigeria where male are expected to handle cultivation of crop while the women handle processing and harvesting of crops. Concerning the age of the respondent; the result from Gwamma community shows that the respondents were between 21 and 60 years old. Consequently, 154 (47.2%) respondents in Gwamma community, fell within the ages of 41-50 years while 123(37.7.0%) fell within the ages of 31-40. Concerning the respondents within the ages of 51-60, the data shows that they are 9 (2.8%) and those within the ages of 21-30 are 40 (12.3%) in the community under study. The result on the ages of the respondent is indicative of the fact that youth in Gwamma have very low interest in agriculture.

The result of this study shows that a majority of 230 (70.6%) respondents in Gwamma community attended Quaranic School while 71(21.8%) respondents attended primary school. The table also reveals that 25(7.6%) respondents attended post primary school and none of the respondents attended tertiary institution. The paucity of farmers with formal education in Northern agrarian communities remains an issue of concern as the result points out and this is another factor militating against effective flow of agro-information for better decision cum productivity.

Regarding the marital status of the respondents, the data collected from the sample shows that 300(92%) respondents in Gwamma community are married while 26(8.0%) respondents are single. The table also indicate that none of the respondent in Gwamma community is a widow as is the case in most typical agrarian communities because children are often considered as key source of labour for rural agriculture.

Discussion of Findings

Fadama plays a vital role in fostering the economic viability of agricultural production in rural communities, especially in arid/semi-arid states like Kano. Over the years, fadama has suffered impaired productivity due to paucity of agro-information, socio-economic and a host of other environmental factors. These constraints, along with the increasing demand on food, feed and fiber, necessitated the need to provide farmers with information to improve fadama practices for optimal agro-productivity. Fadama Project III Additional Financing responded to this need by providing communication support and Kano state was one of its core beneficiaries. Having rendered this support for several years, the nascent rural poverty and food security challenges in Nigeria question its efficiency in boosting agriculture productivity. It is against this background that this research studied fadama communication; assessing ADP Kano's methods of dealing with fadama farmers in Gwamma community of Bunkure LGA.

Regarding the Objective that deals with the adopted communication approach of ADP Kano,the finding of this study on the utilization of Fadama User Group (FUG) in communicating fadama shows that a majority of 74.5% respondents in Gwamma, held that this approach was not adequately utilized to communicate Fadama to them while 23% disagreed to this fact. This finding is similar to that of Ja'afar-Furo, Bello, Mshelia and Hammanyaji (2013) that, no FUG received information on marketing of agricultural products through the advisory services as claimed; the implication of this finding is that the methods of accessing information among the FUGs were basically minimal. Fadama User Group is one of the core elements of Community Driven Development model which was adopted by Fadama Project III AF to facilitate the active involvement of the farmers as primary stakeholders and beneficiaries of the project. However, from this finding, it can be deduced that the active participation of the farmers in communication and need assessment within the study communities leaves much to be desired.

Despite this potency FUG, there are certainties that it might produce minimal impact if it is not effectively utilized and properly structured by the ADPs at the state level. The FGD discussant corroborates thus:

> I am a leader in one of the farmers' association in this community and we were encouraged to mobilize the members of our associations and that after this was done that, we were expected to inform the Fadama representative through telephone but when we called them they do not pick our calls and we have not seen them too(Paraphrased response from FGD participant in Gwamma community, Bunkure LGA, Kano state).

Judging from the findings of this study, it is safe to say that the information disseminated through this communication method to the farmers in the study communities had minimal effect on fadama their practice.

Another approach deployed by ADP Kano in communicating fadama to the farmers in the study communities is radio. Radio is one of the choicest methods for communicating agro-information within the Northern region of Nigeria because of the ardent listenership it has recorded within its rural settings. It is termed a veritable tool for communication among rural farmers because of its in-expensiveness to own and its ability to reach a wider audience. Most community development projects in Northern Nigeria have adopted the medium because of these peculiarities and Fadama Project III AF was one of them. Therefore, the method was deployed by ADP Kano to communicate fadama to the farmers within the communities of study. Consequently, this study found that a majority of 58.1% respondents in Gwamma held that radio was not efficiently used to communicate fadama in the community. While 40.2% of the respondents agreed that radio was used to communicate fadama agriculture to them.

This finding affirms the result of Olajide, Raheem and Oyedele (2014) in their study on livestock Fadama Users' Access to Information on selected livestock technologies in Oyo ADP Zone that, radio which is the traditional and readily available source of agricultural information occasionally provided information to livestock farmers in the study area (as indicated by 91.3% respondents). Perhaps, Fadama radio programme was not persistently on air and due its implementation hitches, was not regularly sponsored by Fadama programme. This finding does not refute the efficacy of radio as a veritable medium for communicating with rural farmers rather it maintains that how it is utilized determines its impact within any

adopted community. Hence, it can be deduced from this finding that radio has not been put to effective use in service delivery to Fadama farmers within the community of study. The FGD expounds thus:

> I became aware of the radio programme through my friend but I have not received any information from them concerning fadama farming or any related issue. From the day that I was told about the programme (Ina Manoma) I have been trying to tune in but I have not been able to connect with the broadcast and I listen to Radio Kano a lot (Paraphrased response from FGD participant in Gwamma community, Bunkure LGA, Kano state).

Fadama is one agricultural technology that demands effective communication because of the knowledge-base that is required to use the technology in crop cultivation. However, when fadama communication is poorly handled and its methods underutilized, the rural famers and their agricultural activities would remain inefficient and unproductive.

Furthermore, visit was one of the approaches adopted by ADP Kano to communicate fadama to the farmers in the communities of study. Categorized under interpersonal communication methods, visit has been termed as a very effective approach for communicating with farmers in rural communities. Fadama Project III AF also utilized this method through the ADPs at the state level and the study found that a majority of 74% respondents in Gwammaheld that visit was not adequately utilized in communicating fadama within their respective communities. While 20.9% of respondents agreed that regular visit was deployed to communicate fadama agriculture. This result validates the findings of Ominikari, Onumadu, and Gideon (2017) concerning National Fadama Project III in Bayelsa state that, a larger proportion (38.7%) of the entire sampled farmers were visited by Extension Agent twice while fewer proportions (8.7%) were visited thrice. However, 53 participants which constitute 35.3% were not visited by the Extension Agent(s) at all. This implies that extension visit to the farmers in the study area is very poor. Therefore, it can be deduced from the finding of this study that regular visits as utilized by ADP Kano in communicating fadama to the farmers within the study communities leaves much to be desired. The FGD discussant corroborates thus:

> When the ADP Workers from Fadama Project III AF came to this community in 2017, we pleaded with them to keep interacting with us through visiting and training but we did not see any of them. We have been

> waiting for them and we are still waiting (Paraphrased response from FGD participant in Gwamma community, Bunkure LGA, Kano State).

It is important to note that fadama, more than any other method of agriculture fadama will make minimal impact on development without effective communication. Unlike the conventional method of agriculture, fadama uses artificial water supply system which adopts a variety of water pumping machines that can destroy crops when inefficiently applied hence the role of communication in scaling-up productivity through fadama cannot be over-emphasized.

The study also found that 76.1% of the respondents held that the communication intervention of ADP Kano is not inclusive and interactive enough to involve fadama farmers in its design. While 21% of the respondents agree that ADP Kano communication approaches is inclusive and interactive enough to involve them in its communication design. Consequently, it can be deduced from this result that fadama farmers are not conceived as central to the communication intervention of ADP Kano and this explains why her communication approaches were not effective in bridging the agro-information gap of the farmers. The inextricable link that fadama share with communication cannot be over-emphasized. Hence a poorly handled communication approach would adversely result to an epileptic fadama practice, rendering it deficient in serving community development agenda. In view of this finding, it can be concluded that the paucity of fadama information is one of the leading factors hampering the optimal practice of fadama for development in the study community. The Focus Group discussant substantiates that:

> I am not aware of anytime that ADP workers came to this community to ask us what we want and to involve us in the communication for fadama farming. Infact, what we are asking for is the consistent flow of communication between us even if they do not ask our opinion but this has been very difficult to do(Paraphrased response from FGD participant in Gwamma community, Bunkure LGA, Kano state).

Therefore, it can be concluded that the communication between the farmers and the officials through this method still maintained a top-bottom flowhence it justifies its minimal effect on the fadama practice of the farmers in the community.

A lot of factors have been identified as constraints to fadama farming in Nigeria and prominent among them is ineffective communication. Low farmer's

involvement in communication process especially information need assessment is termed a key contributor to ineffective agro communication as this study points out. Therefore, the study collected data from the farmers concerning some of the areas of communication needs in their practice of fadama inthe community which are identified as the communication constraints affecting the practice and adoption of fadama agriculture. Consequently, the study found out that a majority of 90.5% respondents in Gwamma, held that lack of communication on technical know-how in handling modern irrigation system affects their practice of fadama. While 6.7% of the respondents agree that lack of information on technical know-how does not affect fadama practice. Supporting this finding, the study of the Department for International Development (2016) concurs that, poor communication also contributes to the low interest of farmers in using irrigation methods. This is one of the factors responsible for deterioration in the performance of irrigation system in Napel. Therefore, this justifies the low level of cash and labour investment by the farmers in irrigation.

Another area where communication was identified by the farmers as a constraint is funding. Fundsare essential aspect of fadama farming because running a fadama system requires some infrastructures which are cost implicative. Hence information on access to fund becomes imperative because majority of fadama farmers within rural communities can rarely afford these infrastructures. To this end, the study found out that a majority of 91.7% respondents in Gwamma, held that lack of information on how to access funding is an aspect of fadama where communication is needed. While 5.8% of the respondents disagree to the need of information in this area. This finding validates that of Ominikari, Kuforiji and Abasiama (2017) in their assessment of fadama III in Bayelsa state that lack of fund, non-regular training, poor communication channel and delays in being attended to by the delivery agency were the top constraints faced by farmers in National Fadama III Project. The overall cost of running fadama farming system per 1 hectare of land is valued at $4,800 (? 1,728,000) which rarely includes other cultivation expenses as was also observed by Inocencio, Kikuchi, Merrey, Tonosaki, Maruyama, de Jong, Sally, and Penning de Vries (2005). This is indicative of the fact that a lot of rural farmers might not be able to practise fadama optimally even though it is termed a catalyst for community development. Consequently, macro level communication is brought to fore because it plays an intermediary role and enhances farmers' access to credit facilities and support. This intermediary role deals with intimating other agricultural stakeholders like the policy makers and agro-investors on the funding

needs of the rural farmers. By communicating through advocacy, seminars and workshops on specific issues affecting the optimal practice of fadama in rural communities, agencies like ADP Kano create a levelled ground that allows these stakeholders to understand the importance of funding fadama agriculture within rural communities.

Poor information on market prices and opportunities constitutes one of the communication constraints identified by the fadama farmers within the communities of study. Consequently, the study found that a majority of 89.6% respondents in Gwamma, held that poor information on market prices and opportunities are some of the constraints they face in their fadama practice. While 6.7% of the respondent disagree to the need of information in the area of market price. This finding validates that of Boluwaji (2014) who studied the role of Fadama Project III in empowering women in Benue state that, 32% of the respondents indicated that poor access to market information is a key challenge affecting them within the area of study.The sales of farm produce is a key contributor to farmer's income but the prices at which they are sold determine the income size of the farmers.

Most rural farmers assume that the sales of produce are equal to income increase/profit but an evaluation on the cost of production seldom proves that this is not true (Kahan 2008). This is because for buyers, the prices of fadama produce are mostly determined by crop yield (crops scarcity or excess availability) than the cost of production. Hence rural farmers stand the risk of being exploited especially when they are not guided by adequate information on market prices and opportunities. The FGD discussant corroborates thus:

> We have not received any information from Fadama Project III AF on how to sell and manage our income neither have any buyer told us that the Project connected them to us. Also we have not been counseled by ADP Kano on how to manage sales and market opportunities for fadama produce (Paraphrased response from FGD participant in Gwamma community, Bunkure LGA, Kano State).

Consequently, it can be concluded that the paucity of information on market prices and opportunities is one of the reasons why the practice of fadama in the study communities has not made notable impact on her development. The finding from this study explicates an inextricable link between communication and fadama for community development. Consequently, it can be established that for fadama

agriculture to make notable impact on community development, effective communication on market prices and opportunities structured to accommodate farmers' interest is imperative.

Conclusion

Fadama agriculture has been established as a panacea for increased crop production and community underdevelopment but a host of other conditions have been identified by this study as needs to be satisfied before this can be achieved. However, poor management and communication has been a key obstacle militating against its ability to contribute to food supply and food security in rural community as this study points out. Consequently, there is a need for the rejuvenation of the structures established to communicate fadama for community development in Northern agrarian communities and by extension Nigerian communities as a whole.

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