

Analysis of Formal Micro-Credit Utilization for Rice Technologies Adoption in South East Nigeria

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Abstract: *Analysis of formal micro-credit utilization for rice technologies adoption was carried out in southeast Nigeria. The study employed a systematic random sampling technique in the selection of the 360 respondents that was used for the study. Primary data used for the study were collected through the use of well structured questionnaire that was administered to the 360 systematically selected respondents. Descriptive statistics was used to analyze the study objectives. The result of the analysis showed that 66.1% of the beneficiaries did not utilize the entire amount acquired for rice technologies adoption as about 21.0% utilized the entire amount acquired for rice technologies adoption while about 13% of the beneficiaries did not utilize any of the amount acquired for rice technologies adoption. The study also showed that the major areas where the micro-credits were utilized were for fertilizer, improved seeds, agro-chemicals, land preparation technologies, rice processing technologies, crop protection technologies and planting techniques. However, the result of the analysis revealed that the major areas where the acquired loans were utilized other than the proposed area (rice technology adoption) was for household consumption, renting of land for agricultural purposes and non-farm economic activities. Based on the findings, it was recommended that micro-credit disbursed to farmers for rice technologies adoption should be properly monitored and supervised in order to encourage them to fully utilize it on the specified area in which it was approved. This would help to increase the outputs and productivities of rice thereby leading to actualization one of the Millennium Development Goals of reducing poverty in Nigeria by 2020.*

Keywords: Micro-credit, utilization, rice technologies, rice farmers, adoption.

1. Introduction

In Nigeria today, the level of poverty is alarmingly in the increase especially among smallholder farmers to the extent that most of them cannot boast of three square meals not to talk of catering for other household necessities such as housing, clothing, medication and education. The above paradigm has necessitated the influx of farmers in the production of various crops prominent among them is rice in a bid to provide enough food their households in order to alleviate poverty in the land generally. Globally, rice (*Oryza sativa*) is the most important food grain as it provides more than 50% of the calories in the diets of about 1.6 billion people (Mikkelsen and Datta, 1990). In Nigeria, the product has become a national commodity because of its contribution to the diets of majority of its citizens who live and depend on the products for their livelihoods (Ogundele and Okoruwa, 2006; Hawksworth, 1985). Today, despite the abundant land area and conducive environment suitable for rice production in the country, the demand for the products far outweigh its production (Akpokodje, Lancon and Erenstein, 2000) and the country ranks third (after Philippines and China) among the major rice importing countries in the world (Awe, 2006).

The probable reason for the lacuna between the demand and supply of the products in Nigeria could be because rice production in the country is mainly in the hands of smallholder farmers who due to lack of fund among other factors are unable to produce optimally and thereby leading to low outputs and productivities. This therefore created a gap between production and demand thus, leading to massive increase in importation of the product into the country. For instance, import bill on rice rose from US\$100,000 in 1970 to US\$800 million in 2005 (Bamidele, Aboyemi and Esther, 2010). In view of the foregoing,

successive Governments of Nigeria were forced to take several steps in redressing this ugly trend. Such steps ranged from planning a total ban on the importation of rice to the implementation of initiatives towards increasing domestic production. A typical example is the development and dissemination of improved rice technologies which could help to improve the outputs and productivities of rice *vis a vis* the overall well-being of farmers in Nigeria. Nowadays, with the help of national and international research centres as well as donor agencies, at least 57 different Improved Rice Varieties (IRVs) have been developed and disseminated to farmers in Nigeria through different programmes and projects (Awotide, Diagne and Omonona, 2012; Ogundari, 2006). Among the several new improved technologies developed to improve crop production including rice, are technologies for natural resources management, soil management techniques, water management techniques, technologies for crop improvement, annotated gene-sequencing technologies to overcome biotic constraints, disease suppressant technologies to mention but few (Awotide, Diagne and Omonona, 2012).

The need for micro-credit is evident as it plays a significant role in agricultural production, income and wealth generation *vis-à-vis* the overall productivity of the sector (Afolabi, 2010). Thus, micro-credit seems to be a catalytic engine of rural agricultural development as its usage span from input procurement, farm production, processing, distribution, marketing and general wellbeing of the farming households. Consequently, micro-credit has been variously acquired and utilized for agricultural technologies adoption in general and in particular for rice technology adoption in Nigeria.

According to Riaz, Khan and Ahmed (2012), micro-credits have been utilized by farmers for the purchase of improved varieties of inputs such as fertilizers, seeds as well as purchase of agro-chemicals, hire labour, feeds and farm constructions. This was confirmed by the findings of Adesiji, Mataanmi, and Folala et al (2011) which inferred that youth farmers in Pirigi Local Government Area of Kwara State utilized micro-credit for the procurement of fertilizer, seeds, hiring of tractors and for the purchase of post harvest equipment. Apart from the noted usage, it has been reported that farmers utilized micro-credit for economic purposes and other family affairs (Lodhi et al, 2006; Cheston and Kuhan, 2002) while to LU and Hassan (2011) micro-credit is mainly used for agricultural related ventures. Justifying further, Riaz, Khan, Ahmad, (2012); Shah, Khan, Jehanzeb and Khan (2008) posited that micro-credit apart from direct usage in agricultural production are used in other areas such as consumption, construction of household houses, repair of agricultural machineries, renting of land used for agricultural production and for other household needs necessary for the family upkeep. Furthermore, considering the importance of micro-credit in the growth and development of agriculture and the entire economy at large, the need to acquire and utilize credits by rice farmers in order to process and adopt appropriate technologies needed for higher outputs and productivity becomes more apparent.

Nevertheless, though the role played by micro-credit in boasting rice production may have been well understood, but the amount of loan utilized for technologies adoption in the study area are not yet fully explored. There is therefore the need for a study of this nature in order to fill the gap in knowledge on the utilization of micro-credit for technologies adoption by rice farmers in South-East Nigeria. In a bid to proffer solution to the above problems, the study determined the extent of usage of micro-credits for rice technologies adoption, determined areas of utilization of micro-credit for rice technologies adoption and determined other areas of use of micro-credit obtained for rice technologies adoption in the zone.

2. Methodology

The study was carried out in South-East, Nigeria which is one of the six geopolitical zones of the country. The area has five States which include Abia, Anambra, Ebonyi, Enugu, and Imo and occupies an approximated land mass of 58,214.7 square kilometres and a total population of 16.4 million people (NPC, 2006). The zone lies between longitude $6^{\circ} 50'$ and $8^{\circ} 30'$ E, latitude $4^{\circ} 30'$ and $7^{\circ} 5'$ N and bordered by Cross-River, Delta, River, Benue and Akwa-Ibom States in the east, west, north and south respectively. The area is within the rainforest and derived savannah regions of the country and it is characterized by two major seasons. The rainy season last from April to October and the dry season sets in November and lasts till March with the atmospheric conditions of the area fluctuating from 18°C to 34°C within the year. The people of the area are predominantly farmers and the major crops grown in the area are rice, yam, cassava, cocoyam, maize, potatoes and vegetables. There is the presence of formal micro-credit institutions operating in the area.

The area has a total of 4200 farmers that obtained micro-credits. From this number a sample of 360 farmers were systematically selected with the aid of a list of the beneficiaries collected from the micro-credit institutions under review. The data used for study which were basically of primary source were collected using structured questionnaire administered as interview schedule. The construction of the research instrument was based on the study objectives. Simple descriptive statistics in form of percentages was employed in the analysis of the data collected.

3. Results and Discussion

3.1 Extent of Utilization of Micro-credit for Rice Technologies Adoption in the Zone

The use of micro-credits acquired by the farmer micro-credit-beneficiaries were analysed based on outright, partial and non usage of rice technologies adoption in order to identify the extent of micro-credit utilization in the area (Table 1). Result of the analysis showed that the majority (66.1%) of the beneficiaries did not utilize the entire amount acquired for rice technologies adoption, about 21.0% utilized the entire amount acquired for rice technologies adoption while about 13% of the beneficiaries did not utilize any of the amount acquired for rice technologies adoption. The overwhelming majority of the beneficiaries having not utilized the entire amount acquired solely for rice technologies adoption implies that the farmers have other pressing needs which they may have no other sources of fund to accomplish other than the acquired micro-credit funds. Also, some of the beneficiaries diverting the entire loan to other areas of needs instead of rice technologies adoption in which the loans was approved for, could be due to lack of proper monitoring and supervision by the lenders coupled with high rate of poverty ravaging the farmers in the area. This result conformed to the findings of Girabi and Mwakaje (2013) which showed that the loan acquired by small-holders for agricultural production had multiple uses and not necessarily for the intended purpose in which it was approved for only. According to the report, only 26.5% of the total loan acquired for agricultural production went to the sector while a higher proportion (73.5%) were utilized for other pressing needs such as food, health, education etc. Also, Oboh and Ekpebu (2012) reported that about 44% of the loan amount acquired for agricultural production was diverted to non-farm activities and this has led to the failures of most farms in producing optimally, thereby lending to non-repayment of loan as at when due. This could lead to non sustainability of the entire credit delivery system which may lead to non adoption of appropriate rice technologies needed for enhanced productivity of farms. The above assertions is also similar to the opinions of Madugu and Bzugu (2012) who in their study on the role of micro-finance banks in financing agriculture in Yola North L. G. A of Adamawa State, Nigeria showed that majority (60.5%) of the respondents used the loan obtained for the purpose for which it was approved which was for the purchase of farm inputs such as fertilizers, agro-chemicals, improved seeds etc. They further reported that 10.5% did not use the loan for the purpose for which it was approved, which may be as a result of family obligation due to large number of

dependents, poverty and irresponsibility on the part of the farmers while about 28.9% did not utilize any of the amount acquired on the area in which the loan was approved, rather they diverted all the loan to other activities different from intended project. It was also in view of the foregoing that Riaz, Khan and Ahmad (2012) argued that credit acquired by farmers for a specific purpose are sometimes used for other purposes which according to them is not only inappropriate, immoral and unethical but also illegal. According to their findings, majority of the farmers utilized the credit fully for the purpose in which it was obtained; reasonable number utilized it for other purpose while fewer numbers of the respondents did not utilize any of the amounts on the targeted activity.

Table 1: Distribution of the farmer according to extent of micro-credit utilization

Option responses	Frequency (360)	Percentage
Outright usage	75	20.8
Partial usage	238	66.1
Non usage	47	13.1

Source: Field Survey, 2016

3.2 Areas of utilization of micro-credit for rice technologies adoption

This section analyzed the various areas in which the micro-credits acquired by the farmer beneficiaries were utilized. The result of the analysis (Table 2) showed that the major areas where the micro-credits were utilized were the purchase of fertilizer, improved seeds and agro-chemical. Other areas are on land preparation technologies, rice processing technologies, crop protection technologies and planting techniques. The unprecedented number of the beneficiaries that utilized their loans for the purchase of fertilizers, improved seeds and agro-chemicals among others imply that those technologies were the most widely known, cost effective and adopted rice technologies in the area. However, about 21% and 25% of the beneficiaries utilizing the loans acquired for mechanization and irrigation respectively could be as a result of the size of the loan obtained by the beneficiaries which is very small and too

3.3. Other Uses of Formal Micro-Credit Acquired for Rice Technologies Adoption

This section examined other various activities in which the acquired loans were utilized other than for rice technologies adoption by the beneficiaries. The result of the analysis on Table 3 revealed that the major areas where the acquired loans were utilized other than the proposed area (rice technology adoption) was for household consumption, renting of land for agricultural purposes and non-farm economic activities. The non utilization of the entire loan volume for the appropriate purpose in which the loans were procured could be as a result of high rate of poverty among farmers in the zone. This corroborates Onoja and Emodi (2012) who argued that there is high tendency for the farmers especially the poor ones to divert their loans to other teething problems such as payment of school fees, health facilities, feeding instead of utilizing it for the growth of the business under whose title the loan was acquired. This probably explains why most banks check the poverty status

meagre to embark on the adoption of such capital intensive technologies. This result is in tandem with the findings of Lodhi, Lukman, Javed and Asif (2006) which inferred that the amount of credit disbursed to female farmers under National Rural Support Programme (NRSP) in 1999 which was approximately Rs845 billion were for the purchase of agricultural inputs, livestock development enterprise and small infrastructural development in the area. The result of this study is also justified as Madugu and Bzugu (2012) reported that that 21.3% of the respondents used the loan they obtained in 2010 to purchase improved seeds, about 19% and 21% utilized theirs for the purchase of agro-chemicals and other farming inputs respectively while 8.8% of the beneficiaries used the acquired loan for family obligations which was essential in maintaining the welfare of the individual farmers' households. In confirmation of the validity of this result, Mbam (2016) reported that micro-credit is utilized for the purchase of improved seeds, fertilizers, pesticides, small tools and for payment of hired labour for planting and harvesting. The report from the above extract further argued that provision of agricultural credit is like putting "soul" in form of capital into agricultural production which could help the sector to grow astronomically if well managed.

Table 2: Distribution of the farmers according to areas of micro-credit utilization for rice technologies adoption

Rice Technology	Frequency (N=313)*	Percentage
Fertilizers	308	98.4
Improved seeds	296	94.6
Agro-chemicals	231	73.8
Rice processing technologies	215	68.7
Planting techniques	189	60.3
Crop protection technologies	206	65.8
Land preparation technologies	220	70.3
Irrigation	78	24.9
Mechanization	65	20.8
Sustainable land management practices	107	34.2
Harvesting technologies	57	18.2
Storage technologies	48	15.3

*Multiple responses recorded

Source: Field Survey, 2016

(collateral or security owned) of the loan applicants before advancing loans to them. Also, Mamun, Malarvzhi, Wahab and Mazumder (2011) who argued that clients' ability to use credit in income generating activities ultimately determine the level of socio-economic benefits they received after participating in credit schemes enlisted the uses of micro-credit to include: purchase of food for the family, clothing, health expenses, house or land maintenance and saving against emergency or for the hard days. Furthermore, in agreement with this result, Owuor and Shem (2012) argued that although households usually indicates productive investments during loan procurement but eventually uses large proportion of the loans for non productive activities at the long run. This was exemplified by their findings that about 22% of the loan acquired were used for non-productive activities such as fees, social events e.g. weddings and other un-identified uses. Similarly, the result of Afolabi (2010) reported that about 67% of the sampled small scale farmers used the loan obtained for the payment of hired labour, purchase of implements, fertilizers, seeds

and other forms of farm inputs while the remaining 31% utilized theirs for their household purposes which include: payment of children's education and medical treatment,

Table 3: Distribution of the beneficiaries according to other uses of formal micro-credit acquired

Other Usage of Micro-Credit Acquired	Frequency (N=285)*	Percentages
Household consumption (feeding)	232	81.4
Household properties	27	9.5
Festivities	48	16.8
Construction of household houses	34	11.9

4. Conclusion and Recommendations

The study was the analysis of formal micro-credit utilization by farmers for rice technologies adoption in South-east Nigeria. The result of the analysis revealed that reasonable amount of micro-credits obtained for rice technologies adoption was diverted to other areas of needs such as feeding, rent for land, non- farm economic activities, health facilities, saving for hard days etc. Nevertheless, the major technologies where the farmers utilized the acquired formal micro-credits were fertilizer, improved seeds, land preparation, rice processing technologies among others. Based on the findings, it was recommended that there should be proper monitoring and supervision of loans disbursed to farmers in order to encourage them to fully utilize it on the purpose in which it was approved. This would help to increase the outputs and productivities of rice thereby leading to actualization of the Millennium Development Goals of reducing poverty in Nigeria by 2020.

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about 2% of the respondents spent their loan proceeds on meeting the expenses of feeding and clothing.

Health facilities	96	33.7
Renting of land for agricultural production	208	73.0
Savings for hard days	71	25.0
Payments of outstanding debt	56	19.6
Non farming economic activities	153	53.7

*Multiple responses recorded.

Source: Field Survey, 2016

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