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Research paper

Impact of loans to farmers on rice production in funtua local government area katsina state, north west Nigeria

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Abstract

This research examined the impact of loans to farmers on rice production in Funtua Local Government Area, Katsina State. Three hypothesis; there is no significant difference in the loans lend to farmers for their rice production; there is no significant difference on those farmers that collect loans for rice production and those that did not; there is no significance difference, that loans lend to farmers can affect their production, were tested. The quasi experimental-control group design involving pre and post-tests were used. The target population for this study was thirty thousand, two hundred and thirty one (30,231) farmers within the study Area. The sample of the study consists of one hundred and fifty (150) farmers randomly drawn from five (5) selected towns/villages within the study Area. The data was divided into experimental and control groups. Questionnaire was used in gathering data, the respondents will chose the right opinion running from strongly agreed, agreed, uncertain, disagreed and strongly disagreed based on their experience or perception. Percentage score, Mean and standard deviation of differences between the mean impact of loan to farmers on rice production of experimental and control group and gender were used to answer research questions. The null hypothesis were tested with the aid of SPSS Package using ANOVA and t-test at p =0.05 level of significance. The result obtained shows that: there is no significant difference between farmers that collect loan and those that did not within the mean of 2.4533 and 1.8800 respectively.

Keywords: *Funtua; Loans; Farmers; Rice production; Profits*.

Introduction

Agriculture is the mainstay of most developing countries' economies. On average, the sector accounts for 70% of full-time employment, 33% of national income, and 540% of total export earnings in Africa (*Otsuka et al., 2013*). Therefore, increasing agricultural productivity, especially in countries facing land constraints, requires the intensification of farming systems through yield-enhancing technologies and strategies (*Borlaug. 2001; Diao et al., 2007*). Rice is the most strategies food crop in West African because of its contribution to food security of the populations and its impact on the economy of households and countries (*Seck et al., 2013; FAO, 2013*). In response to the 2016/2017 recent food crisis, Nigeria, like several other African counties, developed policies and programs to boost agricultural production through the intensification of farming systems with particular emphasis on rice sector development (Republic of Nigeria, 2011; 2007; MAEP, 2010). One of the major orientations of these programs is the development of thirteen promising sectors including rice. The objective is to produce 385 000 tons of milled rice by end of 2017. In addition, with the support of the African Coalition for Rice Development (CARD), Nigeria developed its National Rice Development Strategy (NRDS) in 2010 (*MAEP, 2011)*. In all these rice sector development programs, one of the key strategies for rice production intensification is to improve access of small rice farmers to suitable and timely credit.

Indeed, it is generally recognized that loans plays a crucial role in economic development in general and agricultural development in particular (*Diagne and Zeller, 2001; Diagne, 2002; Honlonkou et al., 2005; Simtowe and Phiri, 2007; Fall, 2008; Simtowe et al., 2008; CTB, 2012)*.

Therefore, a loan appears as a solution to the weakness of rural savings by allowing producers to cover the expenses related to production. According to *Diagne (2002)*, the continuing inadequate and limited access of African farmers to loan is believed to have significant negative consequences for various aggregate and household-level outcomes, including technology adoption, agricultural productivity, food security, nutrition, health and overall household welfare. In Nigeria, access to agricultural loan is one of the major constraints that limit agricultural development. According to *Deveze (2000)*, loan constraint is very crucial in the African agricultural sector because of weather and land constraints, but also the unstable socio-economic environment.

Other studies have shown that most of the Microfinance Institutions (MFI) excludes farmers whose internal rate of Return (IRR) is lower than the cost of the loan, which is high in Africa. This limits farmers' productivity and therefore affects their income and livelihood. Indeed, the intensification of rice production requires a higher use of inputs (seed, fertilizers, labor, pesticides), especially in rain fed rice farming. According to *Diagne (1999)*, without a well-functioned financial market, there is unlikely to be a significant improvement in agricultural productivity and the livelihood of African rural populations. Furthermore, access to loans and its use in rice farming may significantly improve the demand for and use of suitable inputs (*Fall, 2008).* Thus, farmers who have access to loans and use it in rice

farming could easily manage to get fertilizers, pesticides, labor and other inputs in required quantity and in a timely manner, especially when the credit is obtained before the cropping season. This would improve their productivity and income (*Morduch, 1998; Robinson, 2001; Kodjo et al., 2003; Honlonkou et al., 2005)*. Like many developing countries, several initiatives have been taken and implemented by Nigeria's government and its partners to facilitate access to rural and poor populations, including rice farmers.
These initiatives include the National Fund for Agricultural development (*FNDA),* the Municipal Development Support Fund (*FADEC),* the Emergency Program for Food Security Support (*PUASA),* the credit component of the National Company for Agricultural Promotion (*SONAPRA*), the National Fund for Promotion of Enterprise and Youth employment (*FNPEEJ)*. These initiatives have been undertaken and implemented by the government and aim to provide loan to vulnerable development actors including farmers and agricultural entrepreneurs. In addition to these governmental initiatives, rice farmers get agricultural loans from local and private initiatives such as Local Banks of Agricultural Credit and Mutual (*CLCAM)*, the Rural Banks for Savings and Loan (*CREP),* and various NGO and rural development projects. According to *OCS (2010),* the implementation of these initiatives has improved the access of farmers to agricultural credit, but the rate is still low**.**

1.1. Statement of the problem

Agriculture plays a critical role in the country's economy. Improvement of the economic condition of the farmer to be self-sufficient and self-reliant in food production is therefore necessary by providing support to them, especially in the procurement of inputs (Edodu, 1981). Credit institutions have over the years shied away from lending to the farmers who form the larger part of the farming population, citing reasons such as high default rates, difficulty in monitoring numerous individuals whose loans do not provide much return on investment, as well as not being cost effective. Here in Nigeria only a few empirical studies have been carried out to quantify the effects loans has in stimulating agricultural output and productivity in order to provide a sound basis for a micro credit advocacy as a strategy for rural development.
The main objective of the Funtua Agricultural Development Project are: to achieve incremental food and cash crops production through rain fed and dry season agriculture, as well as livestock, fisheries and rice production which will increase the income base of the farmers and improve the standard of living.
This study sets out to fill this important information gap, especially by comparing those who have access to micro-credit with those who do not in area such as input use, agricultural output and income particularly rice production. It is hoped that using those who have no access to credit as a control group in the study will show clearly whether loans makes or does not make a difference to agricultural output among farmers.

1.2. Objectives of the study

1) To examine the influence of loans lend to farmers for rice production.
2) To determine the difference between farmers that collect loans for rice production and those that did not.
3) To investigate the importance of loans lend to farmers for rice production.

1.3. Significance of the study

In Nigeria the larger population is engaged in agricultural production, which has bedeviled with financial problems over the past two decades. Government has made several efforts to address these problems; it has come up with numerous policies over the years as well as created financial institutions such as the Nigerian Agricultural Cooperative and Rural Development Bank (NACRDB) and guarantee schemes such as the Agricultural Credit Guarantee Scheme (ACGS) just to provide loans to farmers and guarantee their loans respectively. It is necessary to find out if lending to farmers increases their productivity.
This study was carried out to examine impact of loans to farmers on rice production in Funtua Local Government Area of Katsina State increased production levels of such farmers. It is hoped that recommendations from this and other loans impact studies would contribute towards policy changes by government where it would pinpoint and rectify areas of weakness in its loans policies, which would subsequently lead to the uplifting of agriculture in the country.

1.4. Scope and limitation of the study

The research is primarily concerned with an investigation of impact of loans to farmers on rice production in Funtua Local Government Area of Katsina State. This research was carried out within Katsina State particularly in Funtua Local Government Area.

1. Methodology

2.1. Research design

The study employed the quasi experimental control group design involving pre and post-test. Both experimental and control group were pre-tested (O_1) on impact of loans to farmers before the administration of data. Pre-test was to ensure equivalent in terms of level of ability between experimental and control groups. Since the study was an assessment on impact of loans to farmers on rice production in Funtua Local Government Area of Katsina State. This method was adopted because it is the best in view of the vast nature of data to be collected and analyzed.

2.2. Population of the study

In statistical term, population means the aggregate of objects or persons under investigation. According to Winslow (1998), population refers to "a group of individual or items that share one or more characteristics from which data can be gathered and analyzed".
The population of this study comprises almost all farmers that used to cultivate rice within Funtua Local Government Area of Katsina State. Though, there are about eleven (11) towns/villages that used to cultivate rice within Funtua Local Government Area with their population which is estimated to be about thirty thousand, two hundred and thirty one (30,231) farmers (Table 1).

Table 1: Showing the Location and No. of Farmers Involved in Rice Production in Funtua Local Government Area

S/N	Towns/villages	No. Of farmers
1	Funtua	4,676
2	Rafin Kaya	2,421
3	Dan layi	1,760
4	Dikke	3,884
5	Gwaigwaye	2,000
6	Kwangai	3,321
7	Shirwaje	1,880
8	Layin Ajiya	2,261
9	Mahuta	4,191
10	'Yar Tafki	1,529
11	Layin na bukka	2,308
	Grand Total	30,231

Source: Field, 2017.

2.3. Sample and sampling techniques

For an accurate and precise sampling, the simple random sampling was adopted for this study. Simple random sampling is a sampling procedure through which individuals are chosen in such a way that each person has an equal chance of being selected.
Similarly, in undertaking this research work, the sample size was obtained from a given population which was estimated to be about thirty thousand, two hundred and thirty one (30,231) farmers out of this population, a sample size of one hundred and fifty (150) farmers will be targeted and used as experimental and control group of the study i.e. thirty (30) farmers from each of the below mentioned five (5) towns/villages and when adding up the need sample size has been one hundred and fifty (150) respondents (farmers).
The respondents (farmers) for this research work was selected from the population of the study using simple random sampling technique for more accuracy and precision, such that every element of the entire estimated population of thirty thousand, two hundred and thirty one (30231) farmers were given equal chances of being represented or selected in the sample from these towns/villages and the size was estimated to be about one hundred and fifty (150) farmers which was used as experimental and control group (Table 2)

Table 2: Sample of the Study

S/N	Selected Towns/Villages	Experimental	Control	Total
1	Funtua	14	16	30
2	Mahuta	14	17	31
3	Dikke	13	15	28
4	Kwangai	12	16	28
5	Layin na bukka	15	18	33
	Total	68	82	150

Source: Morgan and Krejcie (1970) table of determining sample size.

2.4. Instrumentation

The data for this research was collected through the use of the questionnaire titled "Impact of Loans to Farmers on Rice Production (ILFRP)". Questionnaire is a research instrument which consist a series of questions and other prompts for the purpose of gathering information from respondents. The questionnaire comprises of twelve (12) items or questions and two sections. Section "A" deals with the demographic data of the respondents while section "B" covers the issues and opinions of the respondents with regard to the research questions.
The respondents will give their answers or responses based on their experience and/or perception by simply choosing the right opinion running from strongly agreed, agreed, undecided, disagreed and strongly disagreed.

2.5. Validity and reliability of the instrument

To determine the reliability of the instrument, test and retest method with an interval of two weeks were conducted during pilot testing. The result of the tests were compared and correlated. Reliability coefficient of the instrument was determined using Pearson Product-Moment Correlation Coefficient (PPMC) method using SPSS Package. From the result obtained, reliability of the instrument was found to be 0.6. Thus, the instrument is consistent and reliable for the study which aimed to find out the effect of loans given to farmers on rice production.

2.7. Data collection

The questionnaires were administered to the sampled respondents after sensitizing them on the essence and significance of the research to them. The researcher has made every effort to make the environment receptive at the beginning and throughout the period of the administration of the instruments. The test material was checked appropriately and adequate preparations of the venues were made. On the first day and after all the necessary arrangement the researcher was administered pretest to the respondents of both experimental and control group at least three days to the treatment for the researcher to go round the three areas. After the pretest the test were marked and recorded.
Then after the pretest the researcher were commenced the treatment for two weeks in both experimental and control group. After then, the same instruments were re-administered to the same respondents to determine the effects (if any) of the independent variables on the dependent variables. The test item were marked and recorded. Thereafter the two-recorded scores of two sets of tests were subjected to analysis.

2.8. Data analysis

Percentage score mean and standard deviation of differences between those farmers that collect loans for rice production and those that didn't of experimental and control group and gender were used to answer research questions. The null hypothesis were tested with the aid of SPSS Package using ANOVA and t-test at P=0.05 level of significance.

2. Data presentation, analysis and discussion

3.1. Data presentation

3.2.1. Answering research questions

Percentage score, Mean and Standard deviation of differences between the mean impact of loan to farmers on rice production of experimental and control group and gender were used to answer research questions as follows:
RQ1. Does loans lend to farmers has influence on their rice production?

Table 3: The Percentage Score Regarding Loans to Farmers to Provide Enough Capital for the Production of Rice

Responses	Frequency Experimental	Control	Total	Percentage
SA	25	35	105	70%
A	21	24		
UD	1	2	3	2%
SD	8	19	42	28%
D	6	9		
Total	61	89	150	100%

SA: Strongly agreed; A: Agreed; UD: Undecided; SD: Strongly Disagreed; D: Disagreed.

Table 3 shows that one hundred and five (105) respondents/farmers with the percentage of (70%) strongly agreed/agreed that loans to farmers help to provide enough capital for the production of good rice, while three (3) respondents/farmers with the percentage of (2%) are undecided, and forty two (42) respondents/farmers with the percentage of (28%) strongly disagreed/disagreed that loans to farmers help to provide enough capital for the production of good rice.

Table 4: Percentage Scores of Farmers' Responses Regarding Loans Given to Farmers to Enable Them Buy A Very Large Farmland for an Improved Rice Production

Responses	Frequency Experimental	Control	Total	Percentage
SA	38	40	120	80%
A	18	24		
UD	0	1	1	0.7%
SD	2	11	29	19.3%
D	7	9		
Total	65	85	150	100%

Table 4 indicates that one hundred and twenty (120) respondents/farmers with the percentage of (80%) strongly agreed/agreed that loans given to farmers enable them to buy a very large farmland so that they can produce enough rice in the area. While only one (1) respondent/farmer with percentage of (0.7%) is undecided, but twenty nine (29) respondents/farmers with the percentage of (19.3%) strongly disagreed/disagreed that loans given to farmers enable them to buy a very large farmland so that they can produce enough rice in the area.
Purchase of modern farm tools/machine: From the analysis, ninety six (96) respondents/farmers with percentage of (64%) strongly agreed/agreed that some of the farmers cannot afford new modern machines/tools for their production of rice due to the monetary problem, but with the loans given to them enable them to purchase such new modern machines/tools, and five respondents/farmers with percentage of (3.3%) are undecided, while forty nine (49) respondents/farmers with the percentage of (32.7%) has strongly disagreed/disagreed that some of the farmers cannot afford new modern machines/tools for their production of rice due to the monetary problem, but with the loans given to them enable them to purchase such new modern machines/tools.
Farmers' responses regarding the microfinance bank's emphasis for collateral security: The analysis indicates that eighty (80) respondents/farmers with the percentage of (53.3%) strongly agreed/agreed that due to the microfinance bank's emphasis for collateral security when a farmer wants to collect loan from the bank in case of the farmer fails to repay the loan make some farmers not collect loan, and four (4) respondents/farmers with the percentage of (2.7%) are undecided, but sixty six (66) respondents/farmers with the percentage of (44%) has strongly disagreed/disagreed that due to the microfinance bank's emphasis for collateral security when a farmer wants to collect loan from the bank in case the farmer fails to repay the loan make some farmers not collect loan.
RQ2. What are the differences between those farmers that collect loans for rice production and those that didn't?
RQ2. What are the differences between those farmers that collect loans for rice production and those that didn't?
Impact of loan on the rice production and standard of living: eighty five (85) respondents/farmers with the percentage of (56.7%) were strongly agreed/agreed that those farmers that used to collect loan for the rice production have high standard of living that those farmers that do not, while only (2) respondents/farmers with the percentage of (1.3%) are undecided, but sixty three (63) respondents/farmers with the percentage of (42%) were strongly disagreed/disagreed that those farmers that used to collect loan for the rice production have high standard of living than those farmers that do not.
Assessment of Loan for enhanced rice production and improved profit: one hundred (100) respondents/farmers with the percentage of (66.7%) were strongly agreed/agreed that in terms of gaining, those farmers that collect loan in order to enhance their rice production gain more profit in rice production than those farmers that didn't collect the loan and also none of the respondent/farmer was undecided, but there was fifty (50) respondents/farmers with the percentage of (33.3%) were strongly disagreed/disagreed that in terms of gaining,

those farmers that collect loan in order to enhance their rice production gain more profit in rice production than those farmers that didn't collect the loan.

Drought as a problem: ninety one (91) respondents/farmers with the percentage of (60.7%) were strongly disagreed/disagreed that if drought occurs in the areas that usually produce rice, it may cause huge problem to those farmers that collected loans for their rice production more than those that didn't collect the loan, and also five (5) respondents/farmers with the percentage of (3.3%) were undecided, while fifty four (54) respondents/farmers with the percentage of (36%) were strongly disagreed/disagreed that if drought occurs in the areas that usually produce rice, it may cause huge problem to those farmers that collected loans for their rice production more than those that didn't collect the loan.

RQ 3: How does loans lend to farmers can affect their rice production?

High interest rate and difficulty in repayment of the loan: sixty seven (67) respondents/farmers with the percentage of (44.7%) were strongly agreed/agreed that high interest that usually put in the loan given to farmers, find it difficult in the repayment of the loan, while only six (6) respondents/farmers with the percentage of (4%) were undecided, but seventy seven (77) respondents/farmers with the percentage of (51.3%) were strongly disagreed/disagreed that high interest that usually put in the loan given to farmers, find it difficult in the repayment of the loan.

Sufficiency of loan given: sixty four (64) respondents/farmers with the percentage of (42.7%) strongly agreed/agreed that sometimes loan given to farmers is not sufficient for their rice production, but four (4) respondents/farmers with the percentage of (2.6%) are undecided, while eighty two (82) respondents/farmers with the percentage of (54.7%) were strongly disagreed/disagreed that sometimes loan given to farmers is not sufficient for their rice production.

The loan, enhance production and standard of living: one hundred and three (103) respondents/farmers with the percentage of (68.7%) were strongly agreed/agreed that loan given to farmers for their rice production enhance their production as well as standard of living, and none of the respondents/farmer respond undecided, while forty seven (47) respondents/farmers with the percentage of (31.3%) were strongly disagreed/disagreed that loan given to farmers for their rice production enhance their production as well as standard of living.

Low yield and poor financial return: fifty one (51) respondents/farmers with the percentage of (31.3%) were strongly agreed/agreed that a time low yield of rice production which in turn leads to poor financial return after production cause some farmers collect loan, but only one (1) respondent/farmer with the percentage of (0.7%) is undecided, and also ninety eight (98) respondents/farmers with the percentage of (68.7%) were strongly disagreed/disagreed that a times low yield of rice production which in turns leads to poor financial return after production cause some farmer s to collect loan.

3.2. Data analysis

Table 5: One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
Loans to farmers provide capital for production	150	2.4533	1.48634	.12136
Low yield hinders farmers from collecting loans	150	1.8800	1.16964	.09550

Table 5 shows that experimental group has a mean of 2.5 and Standard Deviation of 1.5, which is greater than the mean control group of 1.8 with standard deviation of 1.2. The result shows that loans to farmers provide capital for production and also low yield hinder farmers from collecting loans.

Table 6: One-Sample Test

	Test Value = 0					
	T	Df	Sig. (2-tailed)	Mean Difference	95% Conifdence Interval of the Difference Lower	Upper
Loans to farmers provide capital for production	20.215	149	.000	2.45333	2.2135	2.6931
Low yield hinder farmers from collecting loans	19.686	149	.000	1.88000	1.6913	2.0687

Table 6 shows that result of table 4.3.1 which shows the experimental group has a mean of 2.6 and Standard Deviation of 1.5, which is greater than the mean of control group of 1.9 with standard deviation of 1.2. The result shows that loans to farmers provide capital for production and also low yield hinder farmers from collecting loans. T-value is 20.2 and p-value is 0.05 at degree of freedom of 149.

To determine whether there is significant relationship between the loan given to farmers and the low yield of production. One simple t-statistics is used to find the difference between the means.

H0: There is difference between farmers that collect loans and those that did not.

H1: There is no difference between farmers that collect loans and those that did not.

P value = 0.05

Since the t-calculated = 0.00 which is less than p value of 0.05 we therefore accept H1 and conclude that there is no significant difference between farmers that collect loans and those that did not collect, with the mean of 2.4533 and 1.8800 respectively.

Crosstabs

Table 7: Case processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Loans to farmers provide capital for production Low yield hinder farmers from collecting loans	150	100.0%	0	0.00%	150	100.0%

Table 8: Loans to Farmers Provide Capital for Production * Sometime Loan Given to Farmers Is Not Sufficient Enough Cross Tabulation

	Sometime loans given to farmers is not sufficient enough					Total
	Strongly Agreed	Agreed	Undecided	Strongly Disagreed	Disagreed	
Strongly Agreed Count	33	16	2	0	3	54
Strongly Agreed Expected Count	25.9	21.2	1.4	3.2	2.2	54.0
Undecided Count	15	29	0	0	0	44
Undecided Expected Count	21.1	17.3	1.2	2.6	1.8	44.0
Strongly Disagreed Count	2	1	1	0	0	4
Strongly Disagreed Expected Count	1.9	1.6	.1	.2	.2	4.0
Disagreed Count	8	8	1	9	0	26
Disagreed Expected Count	12.5	10.2	.7	1.6	1.0	26.0
Total Count	14	5	0	0	3	22
Total Expected Count	10.6	8.7	.6	1.3	.9	22.0
	72	59	4	9	6	150
	7.0	59.0	4.0	9.0	6.0	150.0

Table 9: Chi-Square Tests

	Value	Df	Asymp. Sign. (2-sided
Pearson Chi-Square	78.781[a]	16	.000
Likelihood Ratio	64.569	16	.000
Linear-by-Linear Association	5.138	1	.023
N of Valid Cases	150		

A.17 Cells (68.0%) Have Expected Count Less Than 5. The Minimum Expected Count Is 11.

Table 10: Symmetric Measures

	Value	Asymp. Std. Error[a]	Approx. T[b]	Approx. Sig.
Interval by Interval Pearson's R	.186	.093	2.299	.023[c]
Ordinal by Ordinal Spearman Correlation	.141	.087	1.739	.084[c]
N of Valid Cases	150			

To determine if the loans given to rice farmers influence their production, a chi-square test of independence is used.
H0: Farmers production depend on loans.
H1: Farmers production is independent of loans
P value = 0.05
Since the chi-square calculated = 0.93 which is greater than p value of 0.05 we therefore accept Ho (Null hypothesis) and conclude that loan to farmers depend on their production.
This clearly shows that loans plays a vital role in the production of rice in the study area, it is therefore recommended that more loans should be given the rice farmers so as to enhance their productivity.
The hypothesis concluded that there is no significant difference between farmers that collect loans and those that did not collect. The result of this finding is in agreement with that of Diagne, A. (1999), Diao, X. (2007), Hazell, P. (2007), Resnik, D. (2007), Thurlow, J. (2007), Fall, A.A. (2008), Otsuka Keijiro (2013), Donald F. Larson (2013), and Peter B. R. Hazell (2013).

3. Summary/conclusions

From the result obtained, a detail summary shows that:

1) Majority of the respondents/farmers strongly agreed/agreed that loans lend to farmers has influence on their rice production.
2) Majority of the respondents/farmers are strongly agreed/agreed that there are differences between those farmers that collect loans for rice production and those that didn't.
3) Majority of the respondents/farmers strongly disagreed/disagreed that loans lend to farmers can affect their rice production.
4) The null hypothesis one was conclude that loan to farmers dependent on their production which clearly shows that, loan plays a vital role in the production of rice in the study area.
5) The hypothesis one is accepted and concluded that there is no significant difference between farmers that collect loans and those that did not collect, with the mean of 2.4533 and 1.8800 respectively.

It is a natural fact that without food and raw materials for our industries no other sector of the economy can thrive. Nigerian rural farmers and farmers generally should be given adequate loan to excel. They should be laws accompanied with monitoring and evaluation that will enable the various financial institutions live up to their statutory mandates towards agricultural excellence. Banks should open up branches in rural areas and avoid unnecessary stringent credit conditions that will discourage farmers from borrowing.

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References

[1] Deveze, J.C. 2000. Comment promouvoir le fianncement des exploitation families? Graindesel nº16-november 2000.

[2] Diagne, A. 1999. Impact of Access to Credit on Household Technical efficiency and Productivity in Growing Maize and Tobacco in Malawi. Visiting Research Follow Report. Food Consumption and Nutrition Division. Washington, D.C.: International Food Policy Research Institute. 28p.

[3] Diagne, A. and Zeller, M. 2001. Access to Credit and Its Impact on Welfare in Malawi. Research Report 116 International Food Policy Research Institute Washington, D.C. 169p.

[4] Diagne, A. 2002. Impact of Access to Credit on Maize and Tobacco Productivity in Malawi. In Manfred Zeller and Richard L. Meyer (eds.). The Triangle of Microfinance: Financial Sustainability, Outreach and Impact. The John Hopkins University Press, Baltimore and London.

[5] Diao, X., Hazell, P., Resnick, D., and Thurlow, J. 2007. The role agriculture in development: implication for sub-Saharan Africa. International Policy Research Institute (IFPRI) Research Report 153. IFPRI, Washington DC.

[6] Fall, A.A. 2008. Impact du credit sur le revenue des reziculteurs de la valee du fleuve Senegal. These pour l'obtention du diplome de Doctorat en Economie et Gestation du Development Agricle, Agro-alimentaire et Rurale. Universite Montpellier I.

[7] FAO (Food and Agriculture Organization of the United Nations). 2013. Rice Market Monitor. Agricultural Statistics. FAO, Rome.

[8] Hounlonkou, A.N., Acclassato, D., and Kokou, R. 2005. Impacts de la Microfinance sur la Reduction de la Pauvrete au Benin. Rapport d'etude. Association Nationale des Practiciens de la Microfinance- Consortium Alafia. Benin.

[9] Kodjo, M.K.Z., Abiassi, E.H., Allagba, M.C. 2003. Le financement de l'agriculture beninoise dan un context de liberalization: contribution de la micro finance. ELIFID, Benin. MAEP (Ministere de l'Agriculture, de l'Elevage et de la Peche). 2011. Strategie Nationale pour le Developpement de la Riziculture (SNDR) au Benin, Cotounou, Benin.

[10] MAEP (Ministere de l'Agriculture, de l'elevage et de la Peche), 2010. Plan Strategique de Relance du Secteur Agricole (PSRSA). MAEP, Cotonou, benin. 69p.

[11] Manski, C.F. and Pepper, J.V. 2000. Monotone Instrumental Variables: wityh an Application to the Returns to Schooling. Econometrica 68 (4): 997-1010. https://doi.org/10.1111/1468-0262.00144.

[12] Morduch, J. 1998. Does Microfinance Really Help the Poor? New Evidence from Flagship Programs in Bangladesh. Working Papers 198, Pinceton University, Woodrow Wilson School of Public and International Affairs, Research Program in Development Studies. OCS (Observation du Changement Social), 2010. Rapport Profile Social National, edition 2009: Microfinance et pauvrete. MPDEPP-CAG, Cotonou, Benin.

[13] Otsuka Keijiro, Donald F. Larson, and Peter B. R. Hazell. 2013. An overview. In *A Green Revolution in Sub-Saharan Africa: Finding Ways to Boost Productivity on Small Farms.* Edited by Keijiro Otsuka and Donald F. Larson. 318 pp. Springer, Dordrecht, Heidelberg, New York, London. ISBN-13: 978-9400757592.

[14] Robinson, P.R. 2001. Observational Studies. Second Edition. Agricultrue and Human Values, Spinger-Verlag. New York.

[15] Seck, P.A., Togola, A., Toure, A., and Diagne, A. 2013. Propositions pour une optimization des performances de la riziculture en Afrique de l'Ouest. Cah agric 22: 361-8. Doi 10.1684/agr.2013.0646. https://doi.org/10.1684/agr.2013.0646.

[16] Simtowe F. and Phiri, M.A.R. 2007. To what extent are credit constraint responsible for nonseparable behavior at household level. Evidence from rural Malawi. Journal of Applied Sciences 6(7): 1377-1399.

[17] Simtowe, F., Diagne A., and Zeller, M. 2008. Who is credit constrained? Evidence from Rural Malawi, Agricultural Finance Review 68(2): 255 – 272. https://doi.org/10.1108/00214660880001229.

[18] Solesbury, W. 2003. Sustainable Livelihoods: A Case Study of the Evolution of DFID Policy. Working Paper 217. Overseas development Institute, 111 Westminster Bridge Road, London, SE1 7JD, UK.