

## EFFECT OF AGRICULTURAL MECHANIZATION ON GROWTH OF AGRICULTURAL COOPERATIVE IN NIGERIA.

**Okonkwo, Mike C.**

Department of Cooperative Economics and Management,  
Federal Polytechnic, Nekede, Imo State.

*Email: dodopre@yahoo.com*

**Aligbe, Thelma**

Department of Cooperative Economics and Management,  
Federal Polytechnic, Nekede, Imo State.

*Email: thelma\_aligbe@yahoo.com*

### ABSTRACT

The inadequate presence of agricultural mechanization in the agricultural co-operative sector has contributed to the low level of agricultural production in Nigeria compared with the population of the country. This work critically examined the relevance and contribution of agricultural mechanization in the development of the agricultural sector of the economy. The study equally examined the benefits of credit for agricultural mechanization; the roles of co-operatives in agricultural mechanization as well viable recommendations were suggested. In the context of trade liberalization and globalization. The cooperative approach is one of the best means of self-protection for small farmers mainly due to its self-help concept and member's participation. It is therefore vital for government to strengthen cooperative credit and improves the efficiency of agricultural credit supply.

**Keyword:** Agriculture, Agricultural Mechanization, Cooperatives, Agricultural Cooperatives.

### INTRODUCTION

The Nigeria domestic economy is partly determined by agriculture which has experienced rapid growth in the past 8 years. Agriculture has remained the fastest growing sector in the non-oil sector. Agriculture has recorded the growth rate well above 5% in recent years compared with the less than 2%- growth of early 80's. In 2005, agriculture contributed 6.8% out of the 8.2%

growth rate recorded by the entire non-oil sector. The same year, the sector also employed about 65 million persons and contributed about 41% of the gross domestic product (GDP). The agricultural GDP is contributed by crops (85%), livestock (10%) and fostering economic development in Nigeria.

Nigeria with a population of about 190 million people and a growing rate of 3.2% per annum, if not checked, the population of Nigeria would double in less than 25 years. This alarming growth rate is a challenge in a country where more than 90% of the agricultural output is accounted for by small-scale farmers with less than two hectares under cropping. About 75% (68 million hectare) of estimated total Nigeria land has potential for agricultural activities' but only about 33 million hectare is under cultivation. Similarly of the estimated 3.14 million hectare irrigable land area only about 220,000 hectares (7%) is utilized.

In addition, more than 90% of Nigeria agricultural output is accounted for by households with less than hectare with typical farm size ranging from 05 hectare in the south to 4 hectare in the north, supply of agricultural input has also been generally sub optimal fertilizer consumption of 7kg is one of the lowest in sub-Saharan Africa, less than 10% of irrigable land is under irrigation, farmers have limited access to credit and the existing extension services are grossly inadequate. There is currently one extension worker for 500-1000. Mechanized assistance is also grossly inadequate. There are only about 30,000 tractors for all 14 million farming groups/families in Nigeria.

Also it is estimated that over 86% of Nigerian farmers and over 90% of farm operations, including bush clearing, land preparation, planning, weeding, pest control, harvesting and primary processing are still carried out using hand tools. It is further estimated that in the north about 85% of total area cultivated per year employed hand tools, about 6% employed animal power while about 8% are cultivated with the use

of motorized tractors and about 30-40% of agricultural produce is lost owing to poor post-harvested handling, storage and processing methods. Therefore, the forging underscores the importance of agricultural mechanization as a policy instrument in the growth and development of Nigeria's agriculture and need to explore the constraints to agro-mechanization and its consequent effects on agricultural cooperative. This study further attempt to review these issues and the roles cooperatives and credit could play in agricultural mechanization of Nigeria.

### **Agriculture Mechanization:**

The traditional technology employed in agriculture holds the investments of land, labour and capital below a profitable margin which can promote full utilization of resource in Nigeria. This therefore calls .for mechanized agriculture. In order to make agriculture profitable and productive, priorities and strategies should be shifted to the use of modern mechanization technologies suitable for both the small and medium scale farmers.

Agricultural mechanization therefore means the application of agricultural engineering principles and technology by the use of mechanical systems in the process of food, feed, fibre, fuel production, protection, processing, handling and storage. It also refers to the replacement of manual labour and simple hand tools with human, animal, electrical and internal consisting engine powered machinery. RTJK and FAO summarized the purpose and aims of agricultural mechanization as follows: >

- Increase the power inputs to farming activities, hence putting more land into land production.
- Reduce drudgery in farming activities, thereby enhancing lifestyles.
- Improve the timeliness and efficiency of farm operations.
- Accomplish tasks that are difficult to perform without mechanical aids.
- Improve the quality and value of work, produce and processed products.

- Provide employment (entrepreneurship) and sustainable rural live hoods.
- Provide agricultural-led industrialization and markets for rural economic growth.

**Credit for Agricultural Mechanization:** Agricultural production generally is capital intensive and in developing countries like Nigeria, small scales farmers' need to inject capital into agriculture to increase production. The critical role of credit in economic development has never been in doubt either directly or indirectly in building the capacity of the small-bolder farmers in increased agricultural mechanization for household food security and poverty alleviation. With adequate supply of credit to farmers, the retarded agricultural credit can stimulate the growth of agriculture, enhanced productivity and promotes standard of living by breaking vicious cycle of poverty in small scale farmers. It also enables the commercial agriculture, (Adebayo and Adeola 2008).

Regrettably, the availability of credit to the agricultural sector has over the years remained inadequate and even more so for the agricultural mechanization sub-sector. The analysis below gave an insight of the cumulative trend of loans granted to agriculture under Agriculture Credit and Guarantee Scheme Fund (ACGSF) 1996-2005.

**Table 1: TREND OF LOANS GRANTED AGRICULTURE UNDER CREDIT AND GURANTEE SCHEME FUND (ACGSF) 1996-2005**

Year	No. of Beneficiaries	Total amount grant's #000	Average
1996	19,439 ‘	25,466.3	1.3100
1997	17,839	27,577.5	1.5459 .
1998	6,428	17,480.6	2.7194
1999	12,657 ‘	19,444.0- -	1.5362
2000	244,495	29,566.0	0.1209
2001	20,298	46,861.8	2.3087 ' .
2002	23,681	31,428.7	1.3272
2003	24,304	13,951.0	0.5740
2004	35,035	2,065,738.1	58.9483.
2005	37,733	3,046,738.1	80.7447

Source: CBN Statistical Bulleting 2006

It can be concluded from the above that formal financial lender do not favour investment in agricultural mechanization probably due to economic and risk considerations as well as due to limited

### **Role of Cooperatives in Agricultural Mechanization**

Cooperative organizations play very important role in the socio-economic life of the nation. Cooperative can be identified as an autonomous, association of • persons united voluntarily to meet their common; economic, social and cultural need and aspirants business, but they also deal with other support series such as input supply, marketing and purchasing which is critical to agricultural mechanization.

The agricultural cooperative handles all kinds of credit including short, medium and long-term credit. It has mobilized a large amount of funds both from rural and urban areas and supplied an increasing amount of credit to farmers. Cooperative organizations have helped to reduce some of the problems frequently faced by small scale farmers in obtaining loan such as high interest rate; collaterals, lack of repayment moratorium and undue bureaucratic bottlenecks. Therefore, the roles expected of cooperatives organizations for the effective realization of agricultural mechanization aims/objectives are as follows:

- Cooperative organizations are expected to provide the appropriate avenue for the demonstration of the modern technologies to meet farmers needs in agricultural production and processing.
- Cooperative organizations are also to serve as effective intermediaries in the delivery of credit.
- Cooperative organization are expected to serve as effective intermediaries to serve as avenue for more easier accessibility and provision of farm inputs needs of farmers.

- Training and adoption of agricultural technologies is made easier through cooperative organizations.
- Accessing credit facilities is easier and faster through cooperative.
- Cooperative organizations also enhance farmer's standard of living/reduce poverty alleviation and increase farm productivity.

## **Empirical Reviews**

Adebayo and Adeola (2008), in their study, Sources and Uses of Agricultural Credit by Small Scale Farmers in Surulere Local Government Area of Oyo State, analysed different aspect of agricultural credit. The role of credit in agricultural economy is crucial and its constraint which can affect farmer's investment behaviour necessitated the investigation of sources of agricultural credit and its uses in Surulere Local Government area of Oyo State. One hundred and twenty respondents randomly selected from twenty villages were interviewed using structured questionnaire. The study found that most of the respondents obtained loans through informal sources with co-operative societies being the most popular source. The results also showed that payment for labour wages consumed the larger percentage of the credit obtained by most of the respondents. Accessibility to agricultural credit was constrained by certain factors identified in the study. However, to ensure effective utilization of available sources of credit, establishment of agricultural and community banks in the rural areas with simple procedures of securing loans was recommended. Also, mobilization of farmers into formidable groups in order to enjoy the benefit of collective investment of group savings was also recommended.

Asoegwu and Asoegwu (2007). In their study, An Overview of Agricultural Mechanization and Its Environmental Management in Nigeria, discussed the dynamics of agriculture and the important role of mechanization in providing the needed boost. The national agricultural policies and their impact on Nigeria's agriculture were highlighted emphasizing the previous and present roles of various

organs of the government. After discussing the assets and liabilities of Nigeria's agriculture, the paper posits that the agricultural environment must be properly managed for sustainable agricultural productivity in view of emerging information technology. The future expectations and challenges facing the Nigerian agricultural engineers, agriculturists, scientists and environmentalists were also highlighted.

In studying the performance of agricultural cooperative societies under the National Programme on Food Security in Enugu State, Nigeria, Onugu and Abdulahi (2012), described National programme on Food Security (NPFS) as a special programme introduced by the Federal government of Nigeria on agricultural activities in order to increase food production in the country. This study therefore appraised the performance of agricultural cooperative in the National food security programme. The study was carried out in Aniri Local Government Area of Enugu State. The specific objective of the study are to ascertain the socio-economic characteristics of farmers; identify the services available to farmers in the NPFS; determine the extent agricultural services are accessible in the NPFS, appraise the effect of using agricultural cooperative societies in the implementation of NPFS as well as examine the challenges. Data were obtained from both the ADP staff and cooperative farmers using a structured questionnaire. Simple percentage and statistical package for social sciences (SPSS version 17) was employed in analyzing the data and correlation analysis was used to pair the two variables (farmers and extension workers) and t-test was used to test the hypothesis. The study revealed that agricultural cooperative societies are effective means of accessing agricultural services under NPFS. The study also revealed that both farmers and ADP extension workers encountered some challenges in their bid to achieve the goal of the programme. The study therefore recommends that there should be proper publicity and awareness on NPFS programme, adequate fund should be made available for the success of the programme and the youth should be encouraged to embrace agriculture as a means of employment.

## Conclusion

Nigeria's agricultural cooperative with multipurpose function, has played a substantial role in breaking vicious cycle of poverty, by supply of agricultural cooperative credit. In the context of trade liberalization and globalization. The cooperative approach is one of the best means of self-protection for small farmers mainly due to its self-help concept and member's participation. It is therefore vital for government to strengthen cooperative credit and improves the efficiency of agricultural credit supply.

To further exploit the benefit of credit facilities through cooperatives organization to boost agricultural mechanization in the country the following are suggested:"

- Farmers in the country should be advised and encouraged to join cooperative;
- Credit facilities through agricultural cooperative should attract lower interest rate of at least 2- 3%.
- Financial institutions should endeavour to provide friendly customer service such as reducing bureaucratic bottlenecks and transaction costs.

## references

- Adebayo, O.O. and R.G. Adeola, (2008). Source and Uses of Agricultural Credit by Small Scale Farmers in Surulere LGA of Oyo State. *Journal of Anthropologist*, 10 (4):313-314 (2008). DOI: 10.1080/09720073.2008.11891069.
- Ajav, E.A. (2011). Animal Tractor as a source of power for Agricultural Development in Nigeria <http://www.Atnesa.org>. Retrieved 18/08/2011 9.30p.m
- Aseogwu, S.N (1998). Agricultural Field Implements and Mechanization, pp: 1-15.
- Asoegwu, S. N. and Asoegwu A. O.(2007). An Overview of Agricultural Mechanization and Its Environmental Management in Nigeria. Available from: [https://www.researchgate.net/publication/267839288\\_2007\\_An\\_Overview\\_of\\_Agricultural\\_Mechanization\\_and\\_Its\\_Environment\\_Management](https://www.researchgate.net/publication/267839288_2007_An_Overview_of_Agricultural_Mechanization_and_Its_Environment_Management) [accessed Jul 30 2019].



- Falusi, A.O. (2008). Sustainable agriculture in sub Saharan Africa: A critical look into the constraints and prospects. Paper presented at IARSAF conference IITA, Ibadan.
- FAO, (2011). Agricultural Mechanization in Africa: Time for Action. Food and Agriculture Organization of the United Nations [http://www.unido.org/fileadmin/usermedia/publications/pubfree/agriculturalmechanisation in Africa, pdf](http://www.unido.org/fileadmin/usermedia/publications/pubfree/agriculturalmechanisation_in_Africa.pdf). Retrieved 20/08/2011.
- FMAWR, (2008). Federal Ministry of Agriculture and Water Resources national programme for food security.
- Mohammed, B.T. 2009. Issues and Problems of Agricultural Credit to Small Scale Farmers in Nigeria. Proceedings of 43rd Annual Conference of the Agricultural Society of Nigeria, Abaja, pp: 427-429.
- NEEDS (2008). National Economic Empowerment and Development Strategy (2008-2011): the seven point agenda.
- NBS, (2007). National Bureau of Statistics: Agricultural Survey Report 1994/95-2005/06. Retrieved on July 2019 from [www.nigerianstat.gov.ng/](http://www.nigerianstat.gov.ng/)
- Oladipupo, L. (2008). Nigerian Population growth rates a looming disaster. Sunday Punch. 21st September, 2008.
- Onugu Charles Uchenna and Abdulahi Taiwo Olabisi (2012). The Performance of Agricultural Cooperative Societies Under The National Programme On Food Security In Enugu State, Nigeria. *Review of Public Administration and Management* Vol. 1, No. 2, November 2012.
- Paul, Mari Bdiya, (2009). Increased agricultural productivity: Road-map to Achieving Food Security in Nigeria. Paper presented at the national workshop on "promoting appropriate mechanization technology for improved agricultural productivity in Nigeria " held at NCAM, ILORIN, NIGERIA 24th -25th November, 2009.
- Rijk, A.G. 2011. Agricultural mechanization strategy: [http://www.unapeaens.org/publication/CIGR APCAEM WEBSITE.pdf](http://www.unapeaens.org/publication/CIGR_APCAEM_WEBSITE.pdf).
- Wikipedia (2011): Agricultural mechanization. <http://en.wikipedia.org/wiki/mechanization>.