



# Comparative Assessment of Impact of Agricultural Cooperatives on Agricultural Efficiency in Ugwunagbo Local Government Area, Abia State, Nigeria.

Okoro, CN<sup>1\*</sup>; Amaechi, ECC<sup>1</sup>; Chijioke-Okoro, CG<sup>1</sup>; Eze, CG<sup>1</sup>

<sup>1</sup>Department of Cooperative Economics Technology, Imo State Polytechnic Umuagwo, Nigeria.

## ARTICLE INFO

Article No.: 111021120

Type: Research

Full Text: [HTML](#); [EPUB](#)

Accepted: 13/11/2021

Published: 23/11/2021

### \*Corresponding Author

Okoro, Chijioke Nwankwo

E-mail: [vieng663@hotmail.com](mailto:vieng663@hotmail.com)

**Keywords:** Agricultural Cooperatives, Farm Income, Farm Size, Output and Productivity

## ABSTRACT

The study assessed the impact of Agricultural Cooperatives on Agricultural Efficiency decomposed into Farm Income, Farm size, Output and Productivity in Ugwunagbo Local Government Area, Abia State, Nigeria. To ascertain this, a sample size of 216 respondents was chosen from the members of agricultural cooperatives and same was also done for farmers who do not belong to cooperative societies. It was necessitated by the curiosity to establish the economic differences between farmers who belong to cooperatives and those who do not, to aid proper policy formulation in agricultural practice and productivity. A paired Z-statistic was employed to compare the values of the test variables from both cooperators and non-cooperators of 432 respondents on farm income, farm size, output and productivity. The result showed that the impacts of agricultural cooperatives on food production, farm income, farm size, output and productivity were significant using a Z-statistic to compare cooperators and non-cooperators. The variable means for the first three were in favour of cooperators; while, non-cooperators' productivity was higher than those of cooperators. The study recommends a policy framework that will encourage sensitization of the practitioners of agricultural production on the benefits of cooperative ideology that aids group action for increased common gains.

## INTRODUCTION

The standard of living in Nigeria with regards to nutrition would be understood from recent times that the presentation of standard meals on the table has become a battle of life (Ahaotu and Mbaegbu, 2017). Very low food output is witnessed. Cooperative farming/Agricultural Cooperatives suggest a way out owing to collective bargaining power (Okoro, 2005). Cooperative farming includes all those jointly undertaken

activities in agriculture which go beyond the provision of auxiliary services, such as marketing, supply and credit, and which directly influence the primary production process. Cooperative farming denotes collective pooling of lands, which the farmer does not always connote, showing that collective farming is a subset of cooperative farming. Cooperative farming is the commonest type of group farming referring to an administratively non-formalized kind of agricultural activities normally involving one or very specific farm

tasks (Igbozuruike 1985). It shares with formal cooperative agriculture the common attribute of mutuality.

In reaction to the continuing agricultural crisis, government in many countries of the developing world, non-socialist as well as socialist has recently turned to some form of cooperative agricultural production as a means of coming to grips with the complex problems of rural and agricultural development (Reed, 1985; Ahaotu *et al*, 2015; Ezeafulukwe *et al*, 2017). Arua (1985) sees a lot of possibilities for modern large-scale agricultural production through farmers' cooperatives. In the opinion of Downey and Trockey (1981), the cooperative movement "more than any other agency, is in the best position to stimulate food production through the extension of credits to the cooperators as well as the financing of large scale food production schemes in the rural areas". Frequently, it is argued that the cooperative system of agriculture constitutes a radical improvement over traditional farming practices.

Traditional farming or agriculture as Knapp (1963) explained ranges from minimum level of commercial interest as against strong level of commercial orientation. The requirement of the family unit is first of all met before the commercial interest could be considered. It has been gathered that over 80% of Nigerian farmers do so at subsistence level. Only little portions are cultivated solely for commercial purposes using mostly manual farm tools and sometime improvised. As opined by Knapp (1963), the traditional farming or traditional agriculture is sometimes hazy so that some description is needed.

### **Agricultural Cooperation versus Traditional Farming Practice**

The intent of this comparison is to analyze the relative importance of the farming practices of the cooperative farmers as against the traditional farmer listing what, when, how and why of the production processes and outputs. Agricultural Cooperation as has been noted above are societies that are engaged in the production, processing, distribution and marketing of agricultural produce. To Onwuchekwa (1985) they are organized fundamentally to assist member farmers to improve their production and marketing activities. It is a conglomeration of individual family farm units into a joint large farm unit.

### **The Concept of Traditional Farming of Agriculture**

The expression "traditional farming or traditional agriculture" is sometimes hazy, so that a brief descriptive characteristics is necessary. It is frequently known as subsistence agriculture. By subsistence, it means that all but a small amount of output is consumed by the farmer himself, while a negligible proportion of production is

sold. Knapp (1963), who has discussed it at length, classified it into three.

### **Classification of Traditional Agriculture**

According to Knapp (1963) traditional agriculture is classified into:

1. Subsistence farming, which comprises
  - a. Pure subsistence
  - b. Subsistence plus earnings for taxes
2. Quasi-Subsistence Farming not more than 25% of working time devoted to cash crops.
3. Semi-Subsistence Farming: 25% to 50% of working time is devoted to cash crops.

The principal issue this classification brings out however is the occurrence of distinct gradations of traditional agriculture. A strong level of commercial interest from that, with a minimum of commercial content to that, marks the range.

### **Comparison of the both Farming System**

In reaction to the continuing agricultural crises, government in many countries of the developing world, non-socialist as well as socialist has recently turned to some form of cooperative agricultural production as a means of coming to grips with the complex problems of rural and agricultural development, Reed (1985). Back to Nigeria, Arua (1985) sees a lot of possibilities for modern large-scale agricultural production through farmers' cooperatives. In the opinion of Downey and Trockey (1981), the cooperative movement "more than any other agency, is in the best position to stimulate food production through the extension of credits to the cooperators as well as the financing of large scale food production schemes in the rural areas". Frequently, it is argued that the cooperative system of agriculture constitutes a radical improvement over traditional farming practices. Anyway, this paper will compare these two systems of agriculture, with a view to:

- a. Determining the significant differences between the two
- b. Ascertaining the responsiveness of these systems to the challenges of the revolution programme.

### **Cooperative Farming System**

As had always been argued, that cooperative system of agriculture constitutes a radical improvement over traditional farming practices, if however given appropriate scientific guidance and managerial input, the chances of effective ecological reorientations are high in cooperative agriculture. This has been a characteristic feature of the modern farmer over traditional farmer. It is

also far easier for a cooperative society to borrow or hire, say, a bulldozer and a power-saw from the centre than it is for the unorganized traditional farmers to do the same. This case results primarily from the cooperatives' collective and officially recognized bargaining power which, in turn, derives largely from its large capability for capital accumulation and its overall resource mobilization ability. Furthermore, under normal circumstances the cooperative operates a larger and less fragmented farm than does the traditional farmer. A large terrain has inherent economy of scale. For example, the utilization of machinery and labour here is less costly per unit of space, if only the cost of elimination of inter-fragmental commuting. Such commuting consumes a very considerable proportion.

Essentially, the comment in regard to farm inputs is applicable to farm produce. With each larger bargaining power and more importantly, it's greater organizational capability, the cooperative out distances the traditional farmers. It is efficient in the collection and disposal of produce. Equally important as Igbozuruike (1985) saw, the cooperative is eminently well-placed to integrate farm production with agricultural produce processing.

There exist a very wide scope for the processing at rural village or cottage industry levels, of farm produce from grains and vegetables to sugarcane and root crops (Mittal 1983). Concerning the possibilities of such integration of farm and industrial activities, he rightly observed that the cooperative system of agriculture has a strong edge over traditional agriculture.

Obiechina (1985) has diagrammatically presented the analysis of alternative rice farming practices using the ADA cooperative farmer as a case study. He observed that ADA cooperative farmer produces firstly for the market and secondly for food and seed requirement; contrasting that of the private traditional farmer who markets the surplus (if any) after the food and seed requirements are met. Once again, the Researcher wants to put that, from this research cooperative organization is a fusion of some traditional farm family unit. Making reference to some of the above mentioned points, it was gathered that the cooperative farming system is classified into three farming societies, namely cooperative collective society, cooperative joint farming society, cooperative part-joint, part collective societies.

**TABLE 1. ANALYSIS OF ALTERNATIVE RICE FARMING PRACTICES**

Farming Questions	Private/Traditional Farmers	ADA Cooperative Farmer
What?	Economic, environmental and private consideration, 5 rice varieties, Late exposure to opportunity and technology.	Economic, environment, private/public considerations, 9 rice varieties, early exposure to opportunity and technology.
How?	Resources: underdeveloped land, rained water, cutlass, sickle, hoe and limited loan facilities.	Resources: developed land, irrigation facilities, tractor and implements, cutlass, sickle and soft loan.
	Activities: fertilizer application, hand puddling and human hauling of harvested paddy.	Activities fertilizers, insecticides and herbicides applied at levels and intervals, tractor ploughing, harrowing, rotovating and puddling, close supervision.
When?	Environmental and personal consideration.	Environmental and personal/public consideration.
Why?	Food basket, seed and market. Middlemen.	Market seed, food basket. Direct market, integration.

Source: Okoro (1985), Cooperative and Nigeria Economy.

### Traditional Farming System

Traditional farming or agriculture as Knapp (1963) explained ranges from minimum level of commercial interest as against strong level of commercial orientation. The requirement of the family unit is first of all met before the commercial interest could be considered. It has been gathered that over 80% of Nigerian farmers do so at subsistence level (Berko, 2001). Only little portions are cultivated solely for public consumption using mostly manual farm tools and sometime improvised (Umebali, 2006). As opined by Knapp (1963), the traditional farming or traditional agriculture is sometimes hazy so that some description

is needed. Having identified it as subsistence agriculture, explains that all but a small amount of output is consumed by the farmer himself. Noted above is the classification of such agriculture into:

- Subsistence farming comprising of pure subsistence plus earnings for taxes etc.
- Quasi subsistence farming where 25% of working time is devoted to cash crops.
- Semi-subsistence farming: where 25% to 50% of working time is devoted cash crops.

Igbozuruike (1985) had elaborated on a concept of traditional agriculture called the concept of reciprocity, or

the idea of reciprocal relationship between farmers. In traditional agriculture, he said, "this relationship often entails an ad hoc gathering of farmers. These people after performing a specific task e.g. land clearing or mound making for a member of the group, move on to do an identical or comparable kind of job for the other member. They disperse as soon as the agreed-upon job circuit is completed". In Nigeria, land clearing appears to be the commonest traditional farm task in which reciprocal group activity features. It is quite a heavy work. This factor coupled with the relative crudeness of the predominant implements (cutlass, axe and hoe) and the expensiveness of labour, spells the need for many unpaid lands to be engaged simultaneously. In fact, while the traditional cultivator devotes some forty man days to clearing a hectare of forestland, it takes the agricultural cooperative as little as one to two man days, mainly because of direct or indirect government involvement in its affairs. Igbozurike (1985) clarified that, "of course, an individual or traditional farmer can have the same degree of access to the same farm inputs as the agricultural cooperative has. But then he (traditional agriculturist) needs to be relatively wealthy, own or have or use a large space and possess a certain amount of 'savior fair'. Though he put that such farmer who have all these three characteristics could never be classified as a traditional agriculturist. Thus, the small-scale traditional farmers all the while, becoming fewer and older, find themselves cultivating shrinking hectares, with a decreasing or at best stagnating aggregate crop outputs. Few, old, and usually illiterate and poor; these traditional farmers often appear inflexible in the face of necessary technological change. They possess a very low bargaining power. This deficiency as Igbozurike (1985) found reflected, for instance, in their patent inability to fix, enforce and sometimes even influence farm commodity prices beyond the farm gate. More pitiable is their insignificant degree of access to modern farm inputs-be they compound fertilizers, mealy bug resistant cassava stems, or advice from extension personnel. Farm commodity output per capita is expectedly low. "Still, many traditional farmers are known to respond positively and with commendable alacrity to agricultural innovation accompanied by clear economic incentives (Igbozurike, 1985).

Igbozurike (1985) clarifying this opinion said that, "it is regrettable, though, that such positive response never seems to last long enough to spawn and sustain desirable momentum towards 'bigness'". This however is not to say that big farms are always preferable to small ones or (that all things being equal) the small scale farmer cannot perform better than his large scale counterpart". As clarified above it explains that the farmer can have the same degree of access to farm inputs as the agricultural cooperatives but should be bought out financially, own enough lands and have the ability to do right thing in any situation. Though, this

according to him can never remain a traditional agriculturist.

### **An Overview of the Outcome of the Comparison**

Having seen the characteristic features of the both farming practices, the cooperative agriculture as a fusion of some traditional farm family units has been used as a basis to provide a comparative framework of farming practices. Where the traditional farming practices create resource disequilibrium in the agricultural sector, the cooperative system of farming is intended to correct the imbalance.

The same fundamental difficulty facing an industrial firm or any other organization aggregating human beings from outside of one nuclear family confronts the modern cooperative agriculture. It is a recurrent problem emanating from differences in personal backgrounds, interests and expectations. This problem is rare or non-existent in the traditional agriculture where the basic functional unit is a farm family or less commonly an individual. However, the provision and exercise of appointing managerial and supervisory skills will minimize this difficulty in cooperative farming.

This problem aside, the cooperative (in sharp contrast to the traditional farmer) has immense potentials for contributing to the success of the Green Revolution programme. Its farm resource mobilization capability is large. It can operate at medium to large scale. It has a high degree of access to farm inputs. It is readily adaptable to changing economical and technological circumstances. More often than not, enrolment in the cooperative movement is the genuine expression of participants' desire for socio-economic development.

As noted earlier, the desirable attributes of the cooperative system can be extended beyond agricultural production to the processing of (its own and other) agricultural produce. Processing can be initiated on a small scale and decentralized basis. In terms of immediacy, the farmer will realize a higher income and experience higher food security. There will be a greater measure of rural employment. With time this agro allied industrial base will expand, and the rural-urban migration will decline, as it is certain when there is acceleration of the transition from traditional to modern cooperative agriculture. Here again, serious official policy-making and greater practical support for agricultural cooperatives are called for bearing in mind that the Federal Department of Agricultural Cooperatives was established to carry out the objectives of the Green Revolution programme which majorly is to increase food production.



## METHODOLOGY

The Researchers in this study employed the use trained enumerators to collate data from both members and non-members of Agricultural Cooperative Societies in the study area with the aid of a descriptive survey design. The study was carried out at Ugwunagbo L.G.A, Abia State; which was predominantly occupied by farmers that deal on food crops, palm produce, vegetables; and traders who facilitate the exchange of the agricultural produce with final consumers.

To aid effective study deductions, 216 Agricultural Cooperators, and 216 Non-Cooperative Farmers were selected for the study using a multi-stage sampling technique. The objective on the impact of Agricultural Cooperatives on farm income, farm size, output and productivity was analyzed using a paired Z-test statistic, impinging on the fact that the sample is large ( $n > 30$ ) which is a veritable condition for the use of the test statistic.

### Model Specification

The multiple regression models of which its four functional forms were tried is specified in explicit form as follows:

The paired Z-test statistic is specified thus:

$$Z = \frac{\bar{X}_1 - \bar{X}_2}{\sqrt{\frac{S_1}{n_1} + \frac{S_2}{n_2}}}$$

Where: Z = Z-test statistic

$\bar{X}_1$  = Mean value of output, farm income, farm size and productivity of Cooperators.

$\bar{X}_2$  = Mean value of output, farm income, farm size and productivity of non-Cooperators.

S1 = Sample variance of Cooperators

S2 = Sample variance of non-Cooperators

n1 = Sample size of Cooperators

n2 = Sample size of non-Cooperators.

### Data Presentation and Analysis

To assess the impact of agricultural cooperatives on farm income, farm size, output and productivity; paired Z-test statistic was employed. It compared the values of the test variables from both cooperators and non-cooperators as shown in table 2.

**Table 2. Paired Z-test for farm income, size, output and productivity.**

Variables	Variable Mean	Mean	Paired Diff Std. Dev	Z-test
Income (Coop)	70175.47	-58063.92	131239.67	-6.442
Income (Non-Coop)	12111.55			
Farm size (Coop)	3.26	-0.45	2.07	-3.165
Farm size (Non-Coop)	2.81			
Output (Coop)	323.63	-103.25	185.93	-8.162
Output (Non-Coop)	220.38			
Productivity	0.007	3.54	4.29	10.964
Productivity	3.61			

Source: Computed from field survey, 2009.

Std. Dev = Standard Deviation.

From table 2, it could be observed that the test variables namely from farm income, farm size, output and productivity were statistically significant at 1% probability level as confirmed by the Z-values. The variable means of income, farm size and output for cooperators were higher than those of non-cooperators. This implies that agricultural cooperative exerted a positive impact on the cooperators and that justifies the differential in means, in favour of the cooperators. However, the productivity level of non-cooperators was higher than that of

cooperators and it indicates that agricultural cooperatives never impacted on it. This result is similar to the findings of Nwachukwu and Ezeh (2007) who assessed the impact of related development programmes on poverty alleviation; and those of Salah and Onyegbami (2008) who evaluated agricultural production among cooperatives and non-cooperatives in Oyo State.

## CONCLUSION / RECOMMENDATIONS

This study on agricultural cooperatives and agricultural efficiency is a revelation of the instrumentality of agricultural cooperatives on food production. Agricultural cooperatives by this study are found to assume a positive ground for food production only when their operational variables are properly put in place. A strengthening of the ability of cooperatives in accessing production facilitating variables will achieve the objective of a hunger free economy. This means the encouragement of collective farming as against traditional farming system. This is the focus of Fadama to enable farmers sustainably increase their income. Deductions from the objective of Fadama support the idea of a formalized collective action of farmers for accessing grants for agricultural activities. It is unequivocal that group action leads to achievement of a corporate goal.

To assess the impact of agricultural cooperatives on food production, farm income, farm size, output and productivity were significant using a Z-statistic to compare cooperators and non-cooperators. The variable means for the first three were in favour of cooperators, non-cooperators productivity was higher than those of coopeartors. Generally, agricultural cooperatives need to be strengthened. From the research outcome, the Researchers recommend the development of a policy framework that will encourage the formation of group farming activities like Cooperatives, for increase in farm sizes, farm income and output.

## REFERENCES

- Ahaotu, E.O and Mbaegbu, I. (2017). Effects of Water Leaf (*Talinum triangulare*) Shoot Meal on the Performance of Weaner New Zealand White Rabbits. *Greener Journal of Animal Breeding and Genetics*. Vol. 3 (3): 18-24. DOI: <http://doi.org/10.15580/GJABG.2017.3.071217084>.
- Ahaotu, E.O., Adeyeye, S.A. and Nnorom, N (2015). Effects of *Amaranthus spinosus* (green leaf) on the performance of broiler chicks. *Scientific Journal of Veterinary Advances*, 4(3): 21-24. Doi:10.14196/sjva.v4i3.1851.
- Arua E.O (1986). "The Politics of Cooperative Development in a Developing Country like Nigeria", in Okoro Okereke (ed) Cooperatives and the Nigerian Economy, Enugu.
- Berko S.Y (2001). "Agricultural Producer Cooperative and Agricultural Development in Nigeria" Okeke E.U (ed): *Nigerian Journal of Cooperative Economics and Management* (NJCEM) voi.1 No 1.
- Downey, W. D. and J. K. Trockey (1981). *Agribusiness Management*. McGraw-Hill, Inc. Tokyo.
- Ezeafulukwe, C.F, Onuoha, L.C and Ahaotu, E.O. (2017). Growth Performance of *Clarias gariepinus* (Buchell 1822) Fed Varying Inclusion Levels of Cassava Flour. *Greener Journal of Biological Sciences* Vol. 7 (5): 45-49. DOI: <http://doi.org/10.15580/GJBS.2017.5.081417104>.
- Igbozuruike U.M (1985). "Cooperative Farming Practices", in Okoro Okereke (ed), Cooperatives and the Nigerian Economy, Enugu, UNN press.
- Knapp, J. C (1963)...farmers in Business and Cooperative Enterprise. American Institute of Cooperation, Washington DC.
- Mittal, J. P. (1983). Agricultural Produce Processing Systems at Village Level in Nigeria. A Paper Presented at the National Seminar on Quality of Life in Rural Nigeria. Ilorin.
- Nwachukwu, I. N. and C. I. Ezeh (2007) Impact of Selected Rural Development Programmes on Poverty Alleviation in Ikwuano LGA of Abia State. *African Journal of Food, Agriculture, Nutrition and Development*. 7(5).
- Obiechina C. B. O (1985). A Comparism of Traditional Farming Practices with Cooperative System in Okoro Okereke (1985). Cooperatives and The Nigerian Economy. Enugu, UNN press Nsukka.
- Okoro C. N (2005). Agricultural Cooperatives; A Strategy for High Food Production. A B.Sc Project Submitted to the Department of Cooperative Economics and Management, Nnamdi Azikiwe University, Awka.
- Onwuchekwa C. I (1985). *Agricultural Cooperatives and The Problem of Transition*. Sweden, University of Stockholm.
- Reed I. (1985). Organizational Issues in Group Farming in South Korea; in Okoro Okereke eds. Cooperatives and The Nigerian Economy. Enugu, UNN press Nsukka.
- Salahi, B. F. and A. Onyegbami (2008). Agricultural Production Among Cooperative and Non-Cooperative Farmers Revisited in Oyo West Area, Nigeria. *Journal of Sustainable Development*. 5 (1/2)

Umebali, E. E. (2004). Agribusiness and Financial Analysis. Computer Edge Publishers, Lagos. .

**Cite this Article:** Okoro, CN; Amaechi, ECC; Chijioke-Okoro, CG; Eze, CG (2021). Comparative Assessment of Impact of Agricultural Cooperatives on Agricultural Efficiency in Ugwunagbo Local Government Area, Abia State, Nigeria. Greener Journal of Economics and Accountancy, 9(1):10-16,