

Comparative Analysis of Farm Enterprises Performance in Two Agro-Ecological Feuding Zone of Nigeria

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Abstract—The two agro-ecological zones became the focus of the study because of violent nature of the incessant conflict in the zones. The available register of farmers association was the sampling frame work where ten percent (61) farmers per state were randomly sampled. Data were collected and analysed using z-test. The research findings revealed tree crops and grains production enterprises ranked higher in Osun (rain fed zones) and Taraba states (savannah zones) respectively. Osun state entrepreneur felt the effect of the conflict on their enterprises more than Taraba state. The reasons adduced for severity of the conflict on enterprises are majority (77.0%) migrated and (75.5%) of them were not allowed to enter their farms during and when conflict deescalated unlike situation in Taraba state. The different in enterprises production level between the two agro-ecological zone was statistically significant at $p < 0.05$. The conflict had severe impact on farm enterprises.

Keywords—Conflict, severity, entrepreneurs, farm enterprises and production level.

I. INTRODUCTION

IN Nigeria peasant farmers constitute a substantial proportion of the total population and they produce the largest quantity of the nation's output. Agriculture enterprises employ about three quarters of the Nigeria's working population. It is the predominant source of livelihood for 80% to 90% of the population that resides in farm households [5]. Nigeria depends upon small scale farmers for over 80% of its food production and revenue generation. Available records show that a total of 365,233.8 metric tones of agricultural products were exported in 1996 and ₦14, 802 billion was generated from agricultural products exported to foreign countries [2]. It's contribution to Gross Domestic Product (G.D.P) between 1980-85 averaged ₦25, 229.20 million and this contribution to G.D.P rose to ₦41, 694.7million in 2003[3].

TABLE I
AGRICULTURAL CONTRIBUTION TO NIGERIAN GROSS DOMESTIC PRODUCT
G.D.P CONSTANT FACTOR COST 1981-2003 N = MILLION

Period	Total	Agric. G.D.P	Agric. % of total
1981 – 1985	67,773.02	25,229.2	37.0
1986 – 1990	78,681.42	32,228.20	41.0
1991 – 1995	98,275.10	37,367.18	38.0
1996 – 2000	107,202	41,786.67	39.0
2001 – 2003	103,309.28	41,694.7	40.4

Source: Computed from C.B.N. Statistical Bulletin Vol. 14, December 2003

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Like any other enterprise, two main goals of peasant farmers in Nigeria include, striving to satisfy the family units consumption demands and secondly to earn income from a miniature business or entrepreneur in a partially monetize market economy (Bolarinwa, 2007).

In order to achieve the entrepreneur goal they would have to employ not only the limited resources, but also hire extra labour in addition to self-exploitation and other inputs. These two goals of the peasant farmer economy give way to profit maximization. Farm enterprise is any piece of work that is undertaken or attempt activities undertaken as part of commercial enterprise. In the classical sense, an 'entrepreneur' is a person who owns (and is in effective control of) an enterprise. Entrepreneurship' is everything which the entrepreneur does in order to obtain good results from the enterprise. Specifically the 'agricultural entrepreneur' (the farmer) needs to have a many-sided (versatile) mind. In the case of a farm with no hired labour, the farmer takes care of all the manual work that has to be done on the farm. Apart from doing manual work, the farmer is organizer, administrator and manager at the same time. On top of this the farmer is usually the person who provides the necessary capital and who bears the financial risk of the enterprise. Hence, in the agricultural sector the entrepreneur is often the person on which the whole enterprise depends. Some of the main activities that occur at each stage of farm enterprises operations has identified by [7] and [9] include the following:

Input supply: This stage is concerned with the sourcing of raw materials required for agriculture production, processing, and trade. Inputs may either be procured locally or imported. The final value of an input at its place of use includes all manufacturing costs, transportation costs, customs duty and tax, and unofficial payments incurred up to that point. The efficiency of a country's input supply system therefore has a major bearing on the performance of the entire farm enterprise operations [7].

Farm production: This stage is concerned with primary agricultural production and ends with the sale of a raw commodity at the farm gate. These transactions may occur literally at the farm gate or at some other point where the farmer hands over ownership of the product to the next value chain participant. Depending on the crop, some type of primary processing (such as the shelling or bagging of dry grain) may take place at the farm level [7].

Assembly: This stage involves the collection of agricultural produce from many farmers and delivery of the raw material

to a factory for industrial processing or packaging. In the case of livestock operations, assembly is defined in a broader sense to include the feed lot process for delivery of fattened animals to an abattoir. Bagging and simple grading of crops can also occur at this stage depending on arrangements made at the first point of sale [7].

Processing: The processing stage involves the transformation of agriculture raw materials into one or more finished internationally locally made traded goods. Raw commodities, of course, are also traded and this stage may not apply to every crop.

Domestic and international logistics: The logistics stage is concerned with the delivery of traded commodities to their final market destination. This may either be a foreign market in the case of exports, or a local market for import substitutes. For import substitutes, the logistics stage ends at the domestic level, but the analysis is still concerned with the cost of importing a similar product from the nearest or most competitive country. Land is the most important input for agricultural enterprises but it is generally not believed to be abundant relative to other inputs [7, 9].

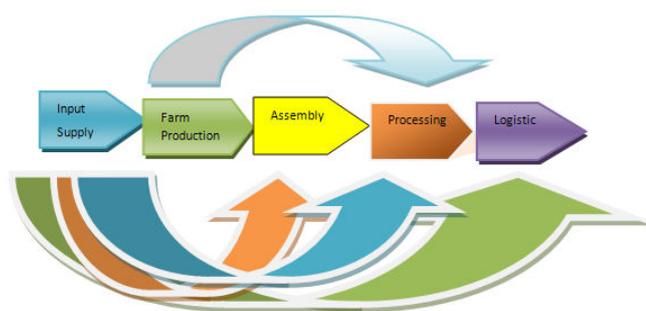


Fig. 1 Stages of the farm Enterprises operations adapted from (Keyser, 2006)

TABLE II

SELECTED OUTPUT OF MAJOR AGRICULTURAL COMMODITIES IN NIGERIA 1981-2003 (000 TONNES)

	Cocoa	Coffee	Rubber	Maize	Sorghum	Beans	Rice	Yam	Cassava
1981 – 1985	770	819	213	5318	19,915	2847	86.8	23,982	27,025
1986 – 1990	1004	988	1076	21,992	27,992	4893	89.75	42,460	78,251
1991 – 1994	1189	1388	990	24,842	23,524	5885	11,978	81,523	116,285
1995 – 2000	1328	1253	1270	38,874	48,194	11970	20,404	147670	167,936
2001 – 2003	516	615.7	859.7	20,309.5	29,424.5	7852	12,33.7	8298.9	114,109

Source: Computed from Central Bank of Nigeria, Statistical Bulletin (2003) Volume 14.

These goals are reflected in the reaction of farmers to increase in price of cocoa, which led to increase in cocoa output from 100,000 tonnes in 1986 to 256,00 tonnes in 1998 [8]. Further investigation revealed that Modakeke declined to be reallocated to another place because their present land is suitable for planting cocoa their only income generating enterprise. In the postulation of [10], change in cocoa output was attributed to farmers' rehabilitation of abandoned farms and planting of improved cocoa varieties as well as expansion of cocoa farms. Similar situation occurred in Taraba state where Tiv tribes that is regarded by Taraba land lord declined to go back to their state.

Village-level entrepreneurs (farmers) create enterprises such as crops and livestock which create jobs, and economic growth in the villages. Farmers embark on crops enterprises for the purpose of consumption and sale to generate income that could be expended on acquisition of livelihood essential amenities. Crops enterprises in Nigeria include tree crops and annual crops. The tree crops such as Cocoa, Kola, Coffee, Cashew, Oil palm, Mango, Citrus, produce seeds and fruits, which are of a great commercial importance [6]. Annual crops such as vegetable melon, yam, cassava, rice, groundnut, pepper and onions are also cash crops, which furnish much income to the farmers. Tree crops thrive well in Southern part of Nigeria where Osun state is one of the states that contributed greater percentage to the production of tree crops in Nigeria. Grains thrive well in the Northern part of Nigeria where Taraba state is regarded as the food basket state in Nigeria[4]. Available record from [3] as indicated below revealed crops production in Nigeria started increasing from 1986 when Structural Adjustment Programme (SAP) was introduced into Nigeria economy. Increase in farmer crops production level was attributed to placement of embargo on importation of locally produced crops, increase in the prices of agricultural commodities and encouragement government gave to exportation of crops[4].

According to [11] annual police reports between 1979 and 1995 indicated that various types of public disturbances arose for a variety of reasons in Nigeria. These ranges from, chieftaincy and land disputes to clashes between civilians and soldiers outside barracks. Others are violent clashes between the Fulani cattlemen, and sedentary farmers over alleged destruction of crops. These are the prominent features of conflicts situation in Nigeria.

A case in point is of tenant/ landowner violent conflicts between Ife – Modakeke in Osun state and Tiv Jukun conflict in Taraba State, which started as far back as 19th Century, and escalated over the years. It worsened between 1996 to early part of the year 2000 in Osun state and 1999 – 2002 in Taraba

state. Both have claimed thousands of lives and properties worth millions of naira for both farmers and non-farmers alike. Several reports and narrative studies have been written on these conflicts. The dearth of empirical data concerning effect of the conflict on farmers' enterprises necessitates this study. The study provides insight into the similarities and differences in conflict impact on performance of farmer' enterprises in two socio-cultural and agro-ecological locations in Nigeria by: identification of type of farm enterprises in the two zones, compare farmers migration patterns, farmers accessibility to their farms, performance of enterprises operations, test whether farm enterprise production level in the two agro ecological zone is statistically different and make recommendation base on the findings.

II. MATERIAL AND METHODS

The target population of the study is all entrepreneurs' (farmers) in the 2 agro-ecological violent conflict zones. Entrepreneurs were selected from a list of farmers compiled by farmers Agricultural association in each village. In core conflict area of Osun state, out of 54 villages 31 had violent conflict while out of 62 villages in Taraba state violent conflict area, 37 villages had violent conflict. Base on intensity of damages of properties recorded in each village, 5 and 6 villages were purposively selected in violent conflict areas of Osun and Taraba states respectively. Out of 6120 and 6121 entrepreneurs in Osun and Taraba violent conflict areas 10% (61) entrepreneurs were selected in the 2 agro ecological areas. Interview schedule using structured questionnaires was used to collect data from entrepreneurs while z-test statistical tools was used to established difference in performance of enterprises in the tow ecological zones for 10 crops enterprises seasons which is five years.

In order to prevent crops from overwhelming outweigh by the other, the six crops raw weight were first transformed into common units in each zone before they were added together. Summation of the six crops in each conflict zone is the farmers' production level. Data were collected during conflict de-escalating period and variables were quantitatively measured.

III. RESULT AND DISCUSSION

A. Farm Enterprises in the Two Agro-Ecological Zones

The result in Fig. 1 indicated that the entrepreneurs concentrated in the production of trees crops of which cocoa enterprise ranked higher in Osun state rain feed agro-ecological zone while annuals crops and vegetables enterprises strived well in Taraba state the savannah agro-ecological zone. Maize and cassava production farm enterprises ranked higher in Taraba state the Savannah region of the country. The implication of the finding is that tree crops enterprise strived well in rain feed agro- ecological area of the country while annual crops and vegetable farm enterprise strived well in savannah region of the country. Viewing agro-ecological influence from economic point, it is economical to site tree crops enterprises in rain feed zone of Nigeria while arable

crops enterprises would be more suitable in savannah region of the country if the goals of entrepreneurs as sited by [1] will be achieved.

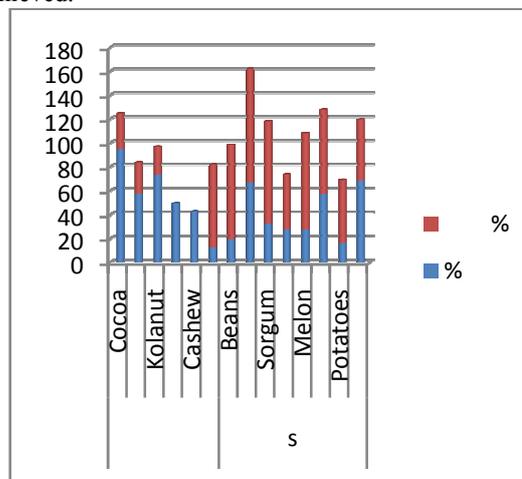


Fig. 2 Distribution of Entrepreneur by Farm enterprises embark on in the two ecological zone

B. Distribution of Entrepreneurs by Their Migration Pattern in the Two Agro-Ecological Zones During and when Conflict Deescalated

Seasonal migration is a common sustainable livelihood coping mechanism among farmers. In other words, migration is the movement of the people from one place to another for a sustained or permanent sojourn in the place of destination [6]. Table III revealed that, majority (86.9%) and 42.7% of entrepreneurs in Osun and Taraba states respectively migrated during and when the violent conflict deescalated.. The implication of the findings is that the surrounding peaceful states witness unbearable upsurge of conflict refugees. Also, migration pattern as indicated in Table I revealed that 77.0% of the entrepreneurs in Osun state migrated to other states villages unlike 83.6% of the entrepreneurs in Taraba state did not migrate outside the villages within the state. The implication of the finding is that the violent conflict nature is not the same while entrepreneurs were totally displaced from their farm in Osun state the entrepreneurs in Taraba state were not totally displaced from their farms. Since entrepreneurs were displaced production capacity of the farmers may be reduced despite factors of production is suitable for production in both regions. Hence, these factors should be put into consideration in case farm enterprises will be established in an area not just considering factors of production.

TABLE III
PERCENTAGE DISTRIBUTION OF ENTREPRENEURS BY MIGRATION PATTERN IN OSUN AND TARABA STATES

Migration Pattern	Osun		Taraba	
	Freq	%	Freq	%
Migration to villages in other state	47	77.0	7	11.4
Migration to other state	20	32.8	10	16.2
Migration to neighbouring town	14	22.9	12	19.6
Migration to other villages within the states	10	16.3	51	83.6
Do not migrate	8	13.1	35	57.3

Entrepreneur's accessibility to their farm enterprises when violent conflict de-escalated in the two agro-ecological zones.

Table II indicates that a very low percentage 24.0% of farmers in core conflict area of Osun State had access to their farms when conflict de-escalated compared to majority (78.9%) of farmers in Taraba state who had access to their farms enterprises. The implication of this finding is that in core conflict area of Osun state 76.0% of farmers were displaced from their farm while 22.8% of entrepreneurs were displaced from their farm in Taraba state when conflict de-escalated. Hence, Osun state landowners may be very hostile to tenant because majority (76.0%) of them were prevented from entering their farms, unlike fewer farmers 23.0% that were prevented from entering their farms in Taraba state. The implication of the finding is that tenant/landowner hostility should be incorporated into production factors analysis when farm enterprises will be established in an area's most especially in conflict prone areas.

TABLE IV
ENTREPRENEURS ACCESS TO FARM ENTERPRISES INPUTS (FARM LAND) DURING AND WHEN CONFLICT DEESCALATED IN OSUN AND TARABA STATES

Access to farm enterprises		Osun state		Taraba State	
		Freq	%	Freq	%
Free access to farm land	Yes	15	24.0	48	78.9
	No	46	75.5	13	21.1

C. Enterprises Production Level in Violent Conflict Strata; In The Two Agro-Ecological Zones

The computed six crops standard mean farm enterprises production index in Osun state as shown in Table V revealed that entrepreneurs in the area have farm enterprises mean yield weight of 1276.0 in compared to higher crops mean yield weight of 2440 recorded in Taraba state. The violent conflict accounted for the low farm enterprises production in Osun state, since 76.0% of the entrepreneurs did not have access to their farm while 77.0% of the farmers migrated to villages in other states. Parade-toxically, entrepreneurs the Taraba state have higher mean yield because 778.9% of the entrepreneurs have access to their farm during and after violent conflict and majority (83.6%) of them did not migrated to villages in other states. It is noteworthy, that the zone has consistently maintained high food production status over the years, hence conflict notwithstanding. Another factors attributed to declined in farms enterprises productions index is harvesting period for arable crops which required short duration and permanent tree crops which required longer time may have accounted for the variation farm enterprises production index in Osun and Taraba states. Therefore, mediation and transformation mechanisms to be introduced to the people should be accompanied with appropriate livelihood enhancing and poverty alleviation strategies such as introduction of high yielding crop varieties. The impact of the conflict on each farm enterprises is shown in Fig. 3.

TABLE V
FARMERS STANDARDIZED SIX CROPS MEAN INDEX IN THE TWO AGRO-ECOLOGICAL ZONES

State	Farm Enterprises	Six crop enterprises raw mean weight
Osun	Cocoa Kola nut, maize, sorghum, rice and cassava	1278.8
Taraba	Cocoa Kola nut, maize, sorghum, rice and cassava	2440.6

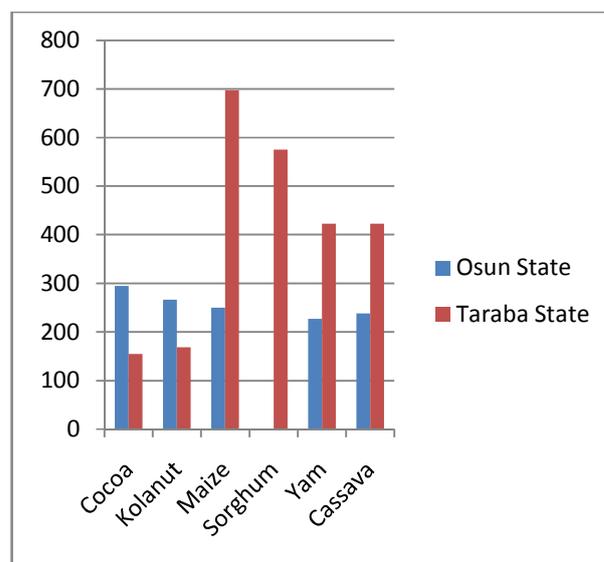


Fig. 3 Comparative Analysis of Farm Enterprises Performance in the two Agro- Ecological zone

D. Z- Test Analysis of Farm Enterprises in the Two Agro-Ecological Zones

Farmers' standardized six crops mean index as shown in Table VI indicates that there is a significant difference between the farms enterprises output of entrepreneurs in the two agro-ecological zones. The difference is statistically significant in at $p < 0.05$). The higher mean index of 2440.6 recorded in the Taraba state confirms the impact of the violent conflict on crop production in Osun state where lower crops mean yield index of 1,278.8 was recorded while it is assumed that other factors remain constant.

TABLE VI
Z- TEST ANALYSIS OF PERFORMANCE OF FARM ENTERPRISES IN THE TWO AGRO-ECOLOGICAL ZONES

State	No of cases	Mean	Mean Diff	Z-cal	P
Osun	61	1276.6	1169.4	3.34	1.96
Taraba	61	2446.0			

IV. CONCLUSION AND RECOMMENDATION

The study shows that farm enterprise production is basically carried out in the two agro –ecological zone with higher percentage of tree crops farmers in Osun state and higher percentage of grains entrepreneurs in Taraba states. The result further show that majority of entrepreneurs migrated to other

state in Osun state as against higher percentage of entrepreneurs that did not migrate to other villages in other state. It could also be observed in the study that tree crops farm enterprises strived well in Osun state the rain fed areas of Nigeria while grains farm enterprises strived well in Taraba state.

Also violent conflict impact was severe on farm enterprises in Osun state whereas in the Taraba state it was not. The reason adduced to discrepancy in conflict impact severity on farm enterprises in the two agro-ecological zones are: Taraba entrepreneurs did not migrate from their villages as soon as the conflict deescalated farming business start. Moreover the entrepreneurs have access to their farm as soon as the conflict deescalated. Since they are planting annual crops with short duration on the field the violent may not fell into the planting season or the parties in conflict did not go to the extent of destroying their farm produce. In Osun state history has that cocoa tree crops were cut and salt was pour on it to prevent regeneration of the crops. More over majority (75.5 %) of entrepreneurs were not allowed to enter their farms and some cocoa farms were set ablaze. In a nut shell the land owner in Osun state was hostile to tenant's farmers in the area.

Hence, formation of farmer's conflict mediation consultative committee should be encouraged in the two states. Such a committee will be in a vantage position to feel the pulse of the people and prevent emergence of conflict situations in the area before it escalates further to any damaging level. Farmers request for provision of credit facilities to improve the situation of their destroyed farms and farm buildings should be granted by private and government financial institutions. Also, federal and state government agencies with mandate for housing provision; should help to procure building materials to be sold at subsidized rates to farmers affected by the conflict in the two states. Moreover capacity building for farmers should be encouraged through formation of rural cooperative societies or related associations to facilitate farmers' access to loan facilities with fewer burdens for collateral security requirements. The type of economic policies that governments choose plays a significant role in determining the likelihood of conflict. Government policies that aim to promote growth should also act as agents for conflict prevention.

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