BUSINESS PROFITABILITY OF FARMERS' COOPERATIVES UNDER COMMERCIAL AGRICULTURE DEVELOPMENT PROJECT IN CROSS RIVER STATE, NIGERIA.

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Abstract
This study analyzed the business profitability of farmers' cooperatives under Commercial Agriculture Development Project (CADP) in Cross-River State, Nigeria. It aimed at closing knowledge gap in literature on business profitability of farmers' cooperatives. Thus specifically, it analyzed the profitability of the farmers' cooperatives under CADP Cross-River State. The hypothesis that the business of farmers' cooperatives under CADP is not profitable guided the study. Secondary data from CADP office on 219 purposively sampled farmers' cooperative societies along the value chain lines of cocoa, rice and oil palm that benefited from the CADP were collected. Percentage and Contribution Margin analysis of the break-even/profitability analysis were employed in the data analysis. Thus, the percentage contribution margins of approximately 74%, 44% and 100% respectively were obtained for the value chain lines of cocoa, rice and oil palm. With a positive contribution ratio of 99% on the aggregate, it was concluded that the businesses of the farmers' cooperatives were profitable. It was recommended that the project be replicated in all the states of the federation as well as incorporating more value lines of agriculture production.

Keywords: business, profitability, farmers' cooperatives, CADP

Introduction
The knowledge of the profitability status of any business is as important as the financial investment into the business. Nevertheless, people often times seem to invest into businesses without feasibility studies or prior knowledge of how profitable such ventures could be. Illiteracy, ignorance, poverty among others could be contributory to this. Also, when government rolls out a project, farmers tend to key-in. Their involvement most times, is not because they are aware of its profitability, but a bandwagon move with the trend of being where others are or doing what others are doing to keep 'body and soul together'. This is worse among resource poor farmers; who do farming as a culture rather than business.
Indeed, laudable agricultural policies, programmes and projects of the past administrations in Nigeria such as National Accelerated Food Production Project (NAFPP) of 1972, Operation Feed the Nation (OFN) of 1976, Green Revolution (GR) of 1980 among others experienced many farmers embracing them, and impressive harvests were made at the initial stages . However, government's withdrawal of support/aid, gradually resulted in the farmers' businesses shrinking in volume and at the extreme closure following farmers' inability to sustain the businesses financially. Thus, farmers after participating in projects that were designed to increase their capital bases and usher economic prosperity, discontinued and eventually relapsed into impoverishment. This brings to doubt the profitability of some acclaimed programmes and projects, especially at the farm level with the farmer's total ownership and control. In line with this, Omonijo, Toluwase, Oludayo and Uche, (2014) in their study cast doubt on the probability of Agricultural Development Programmes resulting in increased foodstuff for rural dwellers in Nigeria and submitted that it needed to be ascertained. This by extension should go for other programmes, Commercial Agriculture Development Project (CADP) inclusive.
The CADP emerged in April 16, 2009, and was piloted in only five (5) states; Cross-River, Enugu, Kaduna, Kano and Lagos, Nigeria. It was initially a comprehensive five-year project that lasted till December 31, 2014, but is currently renewable. The Federal Ministry of Agriculture and Water Resources (FMAWR) in collaboration with the World Bank and other stakeholders developed the project to help participating small and medium scale commercial farmers access improved technology, infrastructure, finance and output markets (National Food Reserve Agency (NFRA), 2009). According to CADP (2014), the project aimed at strengthening agricultural production systems and supporting the dissemination and adoption of new technologies for targeted value chains among small and medium scale commercial farmers. Interestingly, cooperatives dominated the group that participated under the CADP in Cross-River State. Cooperatives are business enterprises or organizations formed, owned and controlled by a group of people who are members; with the aim of rendering services for their mutual benefit (Adegeye and Dittoh, 1985; Youdeowei, Ezedinma and Onazi, 1986). While voluntary membership is a feature of the organization, pulling of resources by members remains strength to the cooperative body.

According to Nwokoye (2000), commercialization means to market a product on a large scale and Byerlee (2011) noted that Africa's commercial agriculture farming is dominated by small and medium scale commercial producers. Going by the name Commercial Agriculture Development Project, commercialization or commercial production is emphasized. This means that the cooperatives under the CADP, are expected to produce not only for their members, but the general market also. Therefore, it is expected that the businesses of the cooperatives under the CADP has to be profitable; even as the cooperatives participated along the value chain lines of rice, cocoa and oil palm. According to Battistin and Zac (2014), the CADP was the first of its kind in Nigeria that reflects new emphasis on agricultural growth and diversification of the economy into the non-oil sectors and represents an important attempt to make Nigeria's growth sustainable, increase employment and reduce poverty in rural areas, and to boost investment in new technologies. This is not likely to come true if the businesses of cooperatives under CADP are not profitable.

Attempt to answer the question whether the businesses of the Rice value cooperatives, Cocoa value cooperatives and Oil Palm value cooperatives that participated under CADP in Cross-River State were profitable requires empiricism and thus remains the drive for this study. This study seeks to fill the prevalent knowledge gap on the business profitability of Farmers' Cooperatives under CADP in Cross-River State, Nigeria occasioned by dearth of empirical data, contribute to the existing literature and to providing benchmark for intervention and advocacy. Information about the planning of commercial agriculture projects by this study is provide for financiers and evaluators of CADP as well as the government. Thus specifically, this study aimed to analyse the profitability of the farmers' cooperatives under CADP Cross-River State, Nigeria with the hypothesis that the businesses of farmers' cooperatives under CADP are not profitable.

Materials and Methods

This study took place in Cross River State, Nigeria; with capital at Calabar. The state lies between; latitudes 5^0 32′ and 4^0 27′ N of the equator and longitudes 7^0 50′ and 9^0 28′ E of Greenwich Meridian. It occupies an area of 20,156 square kilometers (7,782 sq mi) and shares boundaries with Benue State to the North, Enugu and Abia States to the West, to the East by Republic of Cameroon and to the South by Akwa-Ibom State and the Atlantic Ocean (C-GIDD, 2008). The state had a population of 1,911,297 according to the 1991 population census, but grew to 3,337,517 in 2011 with a population density of 170/km^2 (430/sq mi); ranking 28th out of the 36 states of Nigeria (C-GIDD, 2008). The population growth trend therefore shows a 9% growth rate (166,876 persons approximately/annum). Thus, a 2019 population figure for the state is estimated to be 4,672,528. The state is characterized by the tropical humid climate with an average temperature range of between 15^{0}C – 30^{0}C; and a high annual rainfall which varies within the delta; with a range of 1300mm-3000mm (CBN, 2012).

Agriculture features prominently in the economy of the state; accounting for approximately 42% of the state GDP (CBN, 2012). To this end, CADP (2014) reported that "Cross River State from the North to the Central and down to the Southern part is undeniably blessed with abundant natural resources. These natural resources according to the report distinctively portray the high agricultural and ecological value of the state; for which agriculture is considered the mainstay of the economy of the state. The peculiar and favorable agricultural environment accordingly, provided the platform for the inclusion of the state among the other four states of CADP while the very rich alluvial soil that supports swamp agriculture and cultivation of oil palm, cocoa and rice; the priority focus of CADP in the area is a typical endowment for enhancing efficiency in the processing and marketing also (CADP, 2014). Tree crops such as citrus, pear, avocado pear, mango, African star apple among others are produced also in the area.

The State is composed of three major ethnic groups: the Efik, Ejagham, and Bekwarra. The Efik language is widely spoken in Cross River State. Among festivals and tourist sites of importance in the State, are the Yakurr Leboku Yam festival held on 28 August annually, Tinapa Business Resort and Obudu Cattle Ranch. The renowned cultural activities and tourists sites are important to the farmers' cooperatives under CADP because they attract local and international tourists. These could offer business windows and opportunities to link-up markets and perhaps make inroads in both direct and indirect exports through tourists' demand of their products.

A non-probability sampling method was used to purposively sample 219 farmers' cooperatives (comprising the three value-addition chain lines of oil-palm, cocoa and rice; the priority focus of the CADP in Cross River State) identified from CADP Office list. The value chain line cooperatives that had received full funding implementation from CADP were used to ensure collection of apt and relevant data, adequate coverage, comprehensiveness and representation of the crops and farmers' cooperatives involved in the value chains. Where there is lack of archival or secondary forms of financial performance data, researchers agree that the use of self-reported measures of firm financial performance in relation to competitors in the industry provided by respondents could be put to use (Dess and Robinson, 1984; Matsuno and Mentzer, 2000; Davis *et al.*, 2002). Thus, secondary data obtained from the CADP Office were computed using percentage and Contribution Margin Analysis and presented in table and chart. The Contribution Margin in line with Farris, Bendle, Pfeifer and Reibstein (2010) is specified as;

C = P – V……………………………… 1

Where;
C = Contribution Margin
P = Revenue
V = Variable Cost;

$$\text{CMR} = \frac{\text{C}}{\text{P}} = \frac{\text{P}-\text{V}}{\text{P}} = \frac{\text{Unit Contribution Margin}}{\text{Price}} = \frac{\text{Total Contribution Margin}}{\text{Total Revenue}} \quad \ldots 2$$

Where; CMR = Contribution Margin Ratio,
P = Price
V = Variable Cost;
UCM = Unit Contribution Margin
TCM = Total Contribution Margin
TR = Total Revenue

Result and Discussion

Profitability Analysis of Farmers' Cooperatives under CADP

Table 1: Contribution margin analysis of farmers' cooperatives under CADP by value chain lines

ITEM	COCOA	RICE	OIL PALM
Sales (₦)	2,498,978,103.00	1,782,288,00.00	23,354,321,603.00
Less Variable Costs			
Cost of Seedlings(₦)	630,366,000.00	47,689,600.00	36,400,224.00
Other Variable Costs(₦)	19,200,000.00	51,920,000.00	12,329,500.00
Total Variable Costs(₦)	649,566,000.00	99,609,600.00	48,729, 724.00
Contribution Margin(₦)	1,849,411,103.00	1,682,678,400.00	23,305,591,880.00

Source; Computed from CADP secondary data, 2018.

From Table 1 above, the Oil palm Value chain Cooperative, made the highest sales of Twenty-three billion, three hundred and fifty-four million, three hundred and twenty-one thousand, six hundred and three Naira (₦23,354,321,603.00). This was followed by the Cocoa value chain Cooperatives which made total sales of Two billion, four hundred and ninety-eight million, one hundred and three thousand Naira (₦2,498,978,103.00). The least sales of One billion, seven hundred and eighty-two million, two hundred and eighty-eight thousand Naira (₦1,782,288,00.00) was made by the Rice value chain cooperatives. On the other hand, the Cocoa value chain Cooperatives spent the highest sum of Six hundred and thirty million and three hundred and sixty-six thousand Naira (₦630,366,000.00) on seeds, followed by the Rice value chain cooperatives which spent the sum of Forty-seven million, six hundred and eighty-nine thousand, six hundred Naira (₦47,689,600.00) and lastly by the Oil palm Value chain Cooperatives which spent the sum of Thirty-six million, four hundred thousand, two hundred and twenty-four Naira (₦36,400,224.00). Again, the Rice value chain cooperatives spent the highest sum of Fifty-one million, nine hundred and twenty thousand Naira (₦51,920,000.00) on other variable costs, Cocoa value chain Cooperatives spent Nineteen million, two hundred thousand Naira (₦19,200,000.00) and Oil palm Value chain Cooperatives spent Twelve million, three hundred and twenty-nine thousand, five hundred Naira (₦12,329,500.00). Thus, total variable costs and contribution margin respectively amounted to Six hundred and forty-nine million, five and sixty-six thousand Naira (₦649,566,000.00) and One billion, eight hundred and forty-nine million, four hundred and eleven thousand, one hundred and three Naira (₦1,849,411,103.00) for Cocoa value chain Cooperatives, Ninety-nine million, six hundred and nine thousand, six hundred Naira (₦99,609,600.00) and One billion, six hundred and eighty-two million, six hundred and seventy-eight thousand, four hundred Naira (₦1,682,678,400.00) for Rice value chain cooperatives and Forty-eight million, seven hundred and twenty-nine thousand, seven hundred and twenty-four Naira (₦48,729,724.00) and Twenty-three billion, three hundred and five million, five hundred and ninety-one thousand, eight hundred and eighty Naira (₦23,305,591,880.00) for Oil palm Value chain Cooperatives. The high contribution margins obtained for the value chain cooperatives taken as good performance. Performance assesses how well firms' activities are carried out, and successfully accomplished in line with its main objectives (Adegeye and Dittoh, 1985; Youdeowei, *et al.*, 1986).

Contribution Margin Ratio of farmers' cooperatives under CADP value chain lines

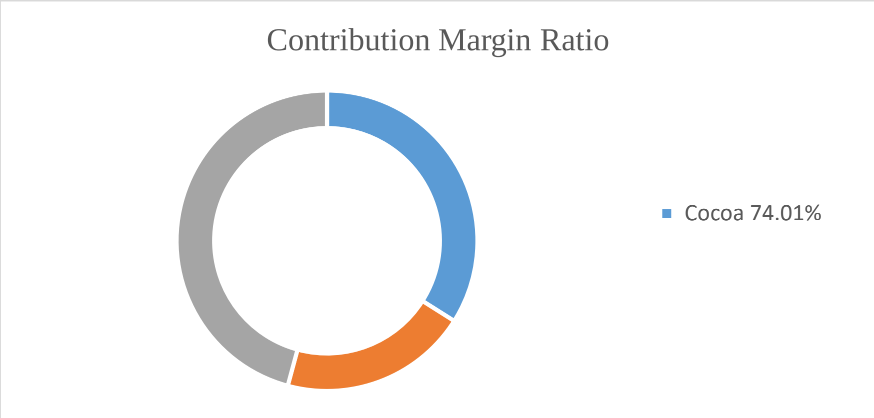

Figure 1: Contribution Margin Ratio of farmers' cooperatives under CADP value chain lines
Source; Computed from CADP secondary data, 2018.

The Figure 1 above presents the percentage contribution margins of farmers' cooperatives under CADP value chain lines. From Figure 1, approximately 74%, 44% and 100% respectively were obtained for the value chain lines of cocoa, rice and oil palm. The positive results of approximately 74Kobo (cocoa value chain cooperatives), 44Kobo (rice value chain cooperatives) and ₦1.00 (oil palm vale chain cooperatives); entail the fraction of sales that contributes to the offset of fixed costs or simply put; the amount each unit of sale adds to profit. Although this indicates that the businesses of the farmers' cooperatives were profitable, yet the margins could hold serious implications in terms of comparative advantage as regards the value lines of importance to the state vis-a-vis other states. With palm oil value chain cooperatives receiving 100% returns to investment, oil palm plantation/production retains a lead in the ranking of economic crops of importance in Cross-River state. This is corroborated by the findings of Agom (2012) in his baseline survey's final report of the Commercial Agriculture Development Project in Cross-River State, that the highest yield was obtained in oil palm farms and asserted that more money is therefore being expected from the oil palm than other crops in Cross River State. This however does not suggest that other crops should be neglected, or avoided; since absolute cost advantage is not the only consideration for foreign or interstate trade. The production of other crops could still be promoted. Further analysis shows that a contribution margin ratio of 96.94% was for the entire project. This again shows profitability. Sequel to the finding that the businesses of the farmers' cooperatives' are profitable, the hypothesis that the businesses of the farmers' cooperatives' under CADP Cross-River State are not profitable, was therefore rejected and the alternative accepted.

Summary, Conclusion and Recommendation

Contribution margin ratios of approximately 74%, 44% and 100% for the various value chain lines of cocoa, rice and oil palm as well as 99% for the entire project entailed business profitability. Therefore, it is concluded that the businesses of farmers' cooperatives under CADP, Cross-River State is profitable. Stakeholders in agricultural sector should therefore think of replicating this project in all the states and also design innovative ways to attract and retain actual and potential commercial agriculture farmers' groups.

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