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Problems and Prospects of Commercial Small and Medium Scale Cocoa and Oil Palm Production in Cross River State, Nigeria

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Abstract: A study of the problems and prospects of commercial small and medium scale cocoa and oil palm production in Cross River State, Nigeria was carried out. Purposive and random sampling methods were used in the selection of farm firms based on certain criteria for the study. The primary objective of the study is to identify the problems and examine the prospects for the commercialization of small and medium scale cocoa and oil palm production in the state. Survey results showed that most of the cocoa and oil palm enterprises in the state are small to medium scale in size. Many inherited the former government plantations which are sub-divided and given to private producers. With respect to processing, there are a good number of palm oil extraction technologies of different sizes (obsolete and modern) as well as palm kernel and palm kernel oil extraction mills in the state. In the case of cocoa, there is little or no commercial processors in Cross River State. Marketing of dried cocoa beans are done by itinerant country buyers who purchase them at the farm gate. Palm oil sales involve interstate trade from Cross River State to Abuja, Lagos and various parts of the northern states of Nigeria. Survey results showed that both cocoa and oil palm are profitable on the long run. The estimated net income per hectare were about N45,600.00 and N52,500.00 for cocoa and oil palm respectively T identified problems with respect to cocoa and oil palm production in the state include the use of low yielding varieties, limited land for cocoa and oil palm cultivation, high cost of establishing nurseries and plantations, high cost of labour and unavailability of skilled and unskilled labour. Other constraints were fluctuations in market prices, lack of market information as well as spoilage and low quality products, among others. Opportunities exist for mitigating these problems and promoting the development and commercialization of small and medium scale cocoa and oil palm production in the state through public-private partnership, linkage of the producers and processors to financial institutions and funding support to research institutes and other service providers and institutions in the state.

Key words: Production, Cocoa and Oil Palm, Problems and prospects, Nigeria.

INTRODUCTION

Nigeria with a population of 140 million people [1] is Africa's most populous country and agriculture is the centre of activity of her people. The natural and human resources available are considerable and this makes the nation the most promising economic and political entity in Africa.

With a GDP of about US$40 billion, Nigeria is Africa's second largest economy. Yet over two-thirds of the population live below the poverty line of US$1 per day, the majority residing in rural areas. Although Nigeria's economy relies heavily on the petroleum sector, which generates three quarters of government revenues and more than 90% of foreign exchange earnings, agriculture continues to play an important role in the economy. The sector currently contributes 26% to the GDP (2005), with crop production accounting for an estimated 85% of this total, livestock for 10% with remainder made up by forestry and fisheries. The agricultural sector generates about 90% of the non oil export revenues, employs about one-third of the total labour force and provides a livelihood for the bulk of the rural population [2].

Prior to the oil boom of the 1970s, Nigeria had been a major exporter of agricultural commodities, including cocoa, groundnuts, cotton, rubber, and palm oil. Current non-oil exports consist mainly of cocoa beans and butter, rubber, leather, and hide and skins. The sector's contribution to economic growth and sustained rural development remains to be fully exploited [2].

Nigeria's agriculture is characterized by small-holder farming. More than 90% of the agricultural output is accounted for by small-scale farmers with less than two (2) hectares under cropping. It is estimated that about 75% (68 million ha) of the total land area has potential for agricultural activities with about 33

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million hectares under cultivation. Similarly, of the estimated 3.14 million hectares irrigable land area only about 220,000 ha (7%) is utilized [3].

Agricultural productivity in Nigeria has not grown sufficiently due largely to under-investment in new technology, slow adoption of existing improved technologies, constraints associated with the investment climate, and lagging infrastructure. Public interventions to accelerate agricultural growth such as the Fadama programme have targeted poor producers engaged in largely subsistence production with modest interaction with the markets to the detriment of commercialization. The present government is well disposed to enhancing small and medium-scale commercial agriculture with assistance from the World Bank. This translates into the proposed Commercial Agricultural Development Project (CADP) which is being piloted in five states of the Federal Republic of Nigeria including Cross River State.

It is expected that the project would help to promote access of participating small and medium-scale commercial farmers to improved agricultural technologies, infrastructure, funds and product markets. It will also provide an investment climate through policy or regulatory mechanisms and other appropriate complementary instruments.

The major objective of the project is to promote the commercialization of agriculture on a sustainable basis that will positively enhance farm output and income. The income effect will largely depend on the appropriate value addition and marketing of the products. Marketing of agricultural products suffer from an array of problems ranging from improper pricing, poor market infrastructure, including rural roads and local markets, inappropriate storage and processing technologies to inadequate market information system. This paper is a contribution to this proposed project in terms of data or information requirement to facilitate the development of commercial agriculture in Nigeria with particular reference to Cross River State.

MATERIALS AND METHODS

Study Area: The study was conducted in Cross River State, Nigeria.

Geography: Located on Nigeria's southeastern frontier, the landscape descends precipitously from the ObanObudu rugged foothills (1000- 2000m) of the Cameroun Mountains on the east, into the Cross River Plains (30m) to the west, and down to the Bight of Bonny coastal plains to the south. Coastal mangrove wetlands interlaced with creeks, virgin rainforest on the Oban Obudu hills, montane parkland on the Obudu Plateau, and derived Savannah on the Cross River Plain, are all parts of the Cross River State vegetation and scenery.

Humid tropical climate (1300 -3000mm rainfall; 30°C mean annual temperatures) prevail over the State, except on the Obudu Plateau, where the climate is sub-temperate, with temperatures of 15°C -23°C. The vegetation ranges from mangrove swamps, through rainforest, to derived savannah, and montane parkland.

Demography: Cross River State was created in 1967 from the former Eastern Region, and was known as the South-Eastern State until 1976 when it adopted its present name and later in 1987, assumed the present status following the creation of Akwa Ibom state from the old Cross river. It is a coastal state in South-Eastern Nigeria. It has 18 local government areas (LGAs) with the state capital at Calabar. The state occupies a land area of 21,787 square km. It has a population of 2,888,966 in 2006 [4].

Population: Based on the 2006 census figures, the State has about 2.9 million people. [1]. About 74.9% of the population resides in the rural areas while 25.1% lives in urban locations. The overall dependency ratio of the population is about 104.4% for the rural areas and 88.7% for the urban.

Household Statistics: The mean household size is 4.8. According to the Federal Office of Statistics [6], the average household income in 1998/99 was N3, 131.00 with N3, 535.00 for males and N1, 797 for females. The mean household income by sector in 1996/97 stood at N5, 608.90 for urban dwellers and N3, 960.00 for the ruralites. In terms of poverty, 38.5% represented the non-poor, 36.2% moderately poor and 25.2% extremely poor.

Settlement Patterns: There are about 620 recognizable human settlements, 89.36 percent of which contain less than 5,000 inhabitants. Calabar has by far the largest population of 320,862 persons. Other major towns with great potentials for future growth and functional integration are Ogoja, Ikom, Obudu, Ugep, Obubra, Akamkpa and Odukpani.

The dominance of Calabar as the administrative, cultural and post- industrial centre has continued to attract new immigrants and investments to the state capital. The vast majority of the population lives in rural areas, in small nucleated settlements. Along the creeks and swamps of the lower Cross River valley, many of the small settlements consist of fishing camps which are occupied for only a few months in the year. With an average population density of about 65 persons per sq. km, Cross River State is about the most sparsely settled state in southern Nigeria.

The State also has great potential for marine fisheries and freshwater aquaculture. Because of the large rivers which drain areas with heavy rainfall, where the rocks are deeply weathered, the rivers are nutrient laden with elements and dissolved salts, for diverse forms of aquatic life. Indeed, these nutrients and vital elements support abundant shrimps, clams, periwinkles and fish in the lower courses of the rivers, and throughout the coastal swamps and shelf waters.
The sources of water supply in Cross River State are rainwater, groundwater, natural lakes, artificial reservoirs, ponds, small perennial streams, springs and rivers. Surface water supply is readily available but liable to guinea worm infestation in the northern parts of the state.

Agriculture and Natural Resources: Farming is the major occupation of the people. There are 291,131 farm families averaging 6.7 members per household. Food crops such as cassava, yams, soyabeans, cocoyams, sweet potatoes, rice, maize, and sorghum are grown in the State.

The State is also suitable and at comparative advantage for tree crop cultivation particularly oil palm, cocoa, rubber, cashew and citrus. It is estimated that about 800,000 hectares are under wild oil palm groves while more than 60,000 hectares have been cultivated with improved varieties. About 100,000 hectares are under cocoa while about 15,000 hectares are under rubber. The State also produces pineapples.

Crop production in the state is constrained by many factors. Cocoa, oil palm, pineapple and rice production are essentially affected by lack of processing facilities, low prices, poor production inputs and low technology utilization.

The State has a good prospect for a host of agricultural and mineral raw materials; but agricultural raw materials top the list. Palm oil and kernel and cocoa beans are already established plantation products, and the main raw material exports of the State. Soyabeans and food crops such as cassava, yam, rice, plantain, banana, and maize are produced in abundance. Already, the State is considering the feasibility of the following projects utilizing locally available raw materials: glucose (maize); egg powder (eggs); yam flour (yam); fruit juice (mango, orange, cashew, pineapples); cocoa products (cocoa); and baking yeast (palm wine).

Economic Potentials: Cross River State enjoys a healthy and attractive economic climate, primarily because of its large expanses of uninhabited land. Industrialists, who want to locate in the State, can easily acquire land especially in the industrial estates. Government can also assist private investors with feasibility studies. Some infrastructural facilities, such as access roads, drainage, water, electricity, and refuse disposal are available in Calabar and in other parts of the state. There are a growing number of banks supporting public and private sector initiatives.

A significant boost to industrialization in the State is the establishment of Nigeria's first Export Processing Zone (EPZ), based in Calabar Port. Over 35 local and foreign investors have expressed interest to the Nigeria Export Processing Zone Authority to invest in the Calabar EPZ.

However, the State suffers from poor accessibility and is without motorable roads and bridges. Sometimes canoes, tree trunks and ropes are the only means used by the natives to cross large rivers in remote settlements.

There are only nine post offices in the State. Telecommunication services are also grossly inadequate, as only a few towns like Ogoja, Ikom and Calabar enjoy automatic telephone services, with only Calabar having international direct dialing facilities.

Sampling Technique: Both purposive and random sampling methods were used in the selection of farm firms for the study. Specifically, the targeted commercial farms were both purposively and randomly sampled or selected for the study. They were selected based on certain criteria such as membership of Commercial Agriculture Development Association (CADA), scale of operation and commodity type, etc.

Methods of Data Collection:

Rapid Appraisal: Primary data were generated to provide data and annual targets for the checklist of key performance indicators as well as for assessing the beneficiaries' needs. The needs of the target groups were determined with respect to types of technologies and technical and business advisory services, capital grant requirement for investments, types of market facilitation required, capacity gaps and needs, network of rural access roads, energy needs of the commercial farms, institutional capacities, M&E structures on ground and specific studies.

It included data on various target groups for small and medium -scale cocoa and oil palm farms and agro- processors based on location, ownership, types of investment, level of sales, number of employees, access to financial support, and constraints to production and processing.

Consultation Meetings/ Focus Group Discussions: Meetings and discussions were organized with the various stakeholders and target groups in Cross River State. Guided discussions and oral interviews were conducted to elicit relevant data for the study.

Field Visits: These were meant to capture detailed information on relevant data, which could have been omitted. It was also used to validate or confirm the secondary and primary data collected.

Data Analysis: The study made use of both primary and secondary data. Analytical tools relevant to the study such as simple descriptive statistics (means, frequencies, cross tabulations, etc) were used to characterize and analyse the data generated from the study.

RESULTS AND DISCUSSION

Characteristics of Small and Medium Scale Cocoa and Oil Palm Production: Cocoa and Oil Palm Production activities in the state involved nursery establishment, transplanting, weeding, agro-chemical application, prunning and harvesting etc. The area under cultivation with oil palm in Cross River State is about 715,502 hectares with an estimated total production of 5,366,265 metric tones (ffb). Thus the productivity or output per hectare (yield) of oil palm in the State was estimated at 7.5 metric tones ffb). Oil palm seedlings production is about 1,356,000 annually. However, low yielding varieties are still planted in the state at high maintenance cost.

The area cultivated with cocoa was estimated at 113,274.25 hectares while the total output/production of cocoa beans stood at 56,184.88 metric tones.

Traditionally, the wealth of the state is built on oil palm and cocoa as important cash crops. However, the production of these commodities have declined and both are now characterized by the fact that plantation agriculture has died and the tree stock is old and well its productive peak.

Most of the oil palm and cocoa enterprises in the state are small to medium scale in size. Many oil palm producers inherited the former government plantations which are sub-divided and given to private producers. There are some individual owners that formed limited liability companies. These have younger plants/fields some of which are yet to fruit.

Most of the oil palm plantations are over 3o years. The present owners do not know where the seedlings were obtained. However, plantations got their Tenera seeds from the Nigeria Institute for Oil Palm Research (NIFOR) and some obtained theirs from Cameroon. Nursery is often established in the future oil palm plantations and it requires watering, fertilizer, and sometimes agrochemicals to avoid pest and disease infestation. The third stage in the chain is transplanting in the field. Thus requires detailed and extensive land clearing, sometimes involving the felling stumping and plant lay-out to give optimum plant population per hectare. Wire cellars are used to prevent rodents from eating transplanted plants. Fertiliser is also needed at this stage. Routine maintenance is carried out until harvesting of fresh fruit bunches (ffb). In the state, harvesting of fresh fruit bunches (ffb) is the final stage for most farmers.

Processing of Cocoa and Oil Palm Products: With respect to oil palm, a few farmers move the chain further to processing into palm oil and palm kernel. However, a few entrepreneurs are planning to establish palm kernel cracking and pressing mills which will result in production of palm kernel oil and cake.

In the case of cocoa, no further processing of cocoa occurs in the state.

There were many good palm oil extraction technologies of different sizes (obsolete and modern) as well as palm kernel and palm kernel oil extraction mills in the state. The estimated total production of palm oil at 14% extraction rate was about 751,277 metric tones, palm kernel (3% ffb), 160,988 metric tones and palm kernel oil (20% extraction rate), 32,198 metric tones.

Processors of oil palm products have adopted such technologies as palm oil extraction by pressing method, hi-technology palm oil extraction, palm kernel cracking technology and palm kernel oil extraction. These processors have never benefited from any relevant skill acquisition training to enhance their performance. Across the state, in terms of capacity utilization of processing activities for oil palm products, palm kernel extraction was about 55% while palm kernel oil extraction was estimated as 35%.

With respect to cocoa, there are little or no commercial processors in the state. Thus there are no processing technologies for cocoa available in Cross River State. However, in terms of capacity utilization in processing activities, 75% capacity was estimated for the fermentation and drying of cocoa beans and 85% for grading and storage.

There is a good linkage of oil palm producers to end-users as the identified number of processors (743) were available to handle the volume of products from about 4,562 producers in the state.

Marketing Structure and Marketing of Cocoa and Oil Palm Products: Final market outlets for cocoa beans are itinerant country buyers who normally purchase dried cocoa beans at the farm gates. These beans are moved out of Cross River State by these middlemen and sold to larger wholesalers who sell to manufacturers of beverage drinks and/or exporters. The grades of cocoa beans are usually low to medium as a result of drying problems. The same is true of palm oil where a greater percentage of it is used in interstate

trade. Palm oil from Cross River State is sold in Abuja, Lagos and various parts of the northern states. Because producers of cocoa and oil palm have not formed strong cooperatives, prices of fresh fruit bunches (ffb) and cocoa beans are relatively determined by the middlemen. The latter have market price information and are prepared to move the product wherever the site prices are optimal. A site price is the difference between target market price and transfer cost.

Survey results showed that both cocoa and oil palm are profitable on the long run. It also takes about four (4) years for initial output to be harvested and more than seven (7) years for an annual income to exceed annual costs. One Naira invested yields ₦1.2 to ₦1.8 in a cocoa plantation and ₦1.6 to ₦2.2 in an oil palm plantation. A lot depends on world and local prices for those products and the farm management practices employed. The average market price of cocoa was about ₦208,000 per metric tonne. The estimated net income per hectare was about ₦45,600.00. For oil palm, the estimated net income per hectare was about ₦52,500.00. The farm gate price was about ₦29,167.00 while rural and urban prices were ₦33,333.00 and ₦41,667.00 respectively.

Problems and Prospects of Small and Medium Scale Cocoa and Oil Palm Production: Identified problems or constraints were with respect to production, processing, storage and marketing of oil palm and cocoa products. Constraints to oil palm production relates to area cultivated, total production/output as well as seedlings production, marketing and market prices. Low yielding varieties are still planted in the state at high maintenance costs. The problem is aggravated by poor soil fertility due to erosion and leaching. Total oil palm production was adversely affected by low bunch production from wild oil palm trees as well as difficulty in harvesting from tall oil palm trees, and pilfering of oil palm bunches by thieves.

In terms of area under cultivation, critical constraints were identified to include limited land for oil palm cultivation, high cost of establishing plantations, high cost of labour and unavailability of skilled and unskilled labour.

Constraints associated with oil palm seedlings production include unavailability or insufficient hybrid Tenera NIFOR sprouted seeds or varieties, high cost of nursery establishment (capital intensive) and lack of technical skills and know-how on oil palm seedlings raising by local illiterate farmers.

Fluctuations in market prices, lack of market information as well as spoilage and low quality products which reduce market prices are critical constraints that adversely affect the upstream activities in oil palm production and processing.

With respect to the down stream activities, the most critical constraints to oil palm production and processing include high cost of palm oil extraction and palm kernel cracking technologies, lack of unimproved varieties of oil palm resulting in low output and low quality of products as well as limited access to market information and price fluctuations dictated by exchange rate of currencies and international market price of commodity.

In the case of cocoa, critical constraints associated with cocoa production at the upstream level were identified to include the use of low yielding varieties by most cocoa farmers, high cost of cocoa field maintenance or management, limited land for expansion and soil infertility due to erosion and leaching as well as high cost of plantation establishment. Other problems were lack of access to market information, price fluctuation and low quality of cocoa beans which forced prices down.

The above problems/constraints associated with the oil palm and cocoa production and processing notwithstanding there are prospects for the development and commercialization of this sub-sector in Cross River state.

First, opportunities exist for linkages between stakeholders in the supply chain. For example, producers linking up with processors of cocoa and/or oil palm by vertically integrating forward or processors integrating backwords. Producers can come together into effective producer groups that source for inputs and market outputs collectively. This will give farmers greater market power and counteract the powers of predatory middlemen. Producer associations can also link with others within or outside the state for market information and establishment of larger processing mills that give higher economies of size.

Secondly, there is also the prospect for public-private partnership in the commodities supply chain. Presently, in the oil palm sector, government has leased its former estates to private/individual operators. This arrangement also exists for cocoa plantations. In this arrangement, 5 ha are leased to individuals while 200 – 500 ha are leased to private limited liability companies. Government also had a programme of developing improved oil palm seedlings for supply to private developers at subsidized prices.

Government through the Cross River Agricultural Development Programme (ADP) can collect regular market information to be made available to relevant stakeholders through their various groups. Cocoa and oil palm are world tradeable and hence have world market, regional and local prices. Government and producer associations can come together to fight fake adulterated, dangerous and expired agro-chemicals.

Thirdly, there is the prospect for linkage of oil palm and cocoa producers and processors to a good number of financial institutions in the state for micro-credit support or loans to these operators for the expansion and effective operation of their farm enterprises.

Fourthly, there is also the prospect for the development and supply of relevant production (eg. improved seedlings) and processing technologies for cocoa and oil palm to producers and processors in Cross River State. NIFOR, Benin and NRCRI, Umudike can develop and disseminate these technologies through the Cross River ADP.

Finally, with the implementation of the proposed World Bank Assisted Commercial Agriculture Development Project (CADP) for which Cross River State is one of the five pilot states, she has the prospect of developing and commercializing small and medium scale oil palm and cocoa enterprises in the state. The proposed CADP is aimed at strengthening agricultural production, processing and marketed outputs among participating small and medium-scale commercial farms and agro-processors. The project will facilitate linkages between producers of priority commodities and markets as well as other agents within the commodity chain, particularly agricultural inputs and agro-processing agents and service producers.

Conclusion: In conclusion, there is great potential for the development and commercialization of cocoa and oil palm production in Cross River State. In order to achieve this, the following recommendations are proffered:

1. Research institutions such as the Nigeria Oil Palm Research Institute (NIFOR), Benin and National Root and Cereals Research Institute (NRCRI), Umudike should be adequately funded for the development and dissemination of appropriate agricultural technologies. The utilization of such available new production and processing technologies by cocoa and oil palm producers and processors will enhance their productivity, output and commercialization of cocoa and oil palm products in Cross River State.

2. Government should provide adequate rural infrastructure such as electricity, water supply, farm access roads through such donor-funded projects as the Commercial Agriculture Development Project (CADP), Rural Access and Mobility Project (RAMP) etc to promote investment climate for the commercial development of small and medium scale cocoa and oil palm production and processing in the state.

3. There is the need for a strong public-private partnership in order to encourage private sector participation in terms of input supply, technical and extension support as well as development of an effective marketing system, etc for enhanced commercial cocoa and oil palm production in Cross River State.

4. Cocoa and oil palm producers and processors should be effectively linked to available financial institutions in the state for provision of on-lending facilities to these stakeholders in terms of loans and micro-credit as well as technical support. These financial institution or commercial banks can also provide capacity building/training in the area of business plan development, project management, bank lending regulations and loan repayment, financial management and record keeping to these stakeholders to promote their business performance.

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