

# **AN APPRAISAL OF INVESTMENT AND TECHNOLOGY DECISIONS IN COCOA PROCESSING INDUSTRY IN NIGERIA**

**BY**

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### **DEDICATION**

This work is dedicated to the Almighty God with whom all things are possible.

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## ABSTRACT

The study examined the cocoa beans processing technologies adopted by farmers and processors in the cocoa processing industry in Nigeria. It further investigated the investment and technology decisions of cocoa in processing organization. This was with a view of developing appropriate framework to enhance the growth of cocoa processing industry and the cocoa rebirth programme.

The study covered 400 cocoa farmers purposively selected in five major cocoa producing States in Nigeria and six cocoa processing organizations. Questionnaire technique supplemented with oral interview of cocoa farmers and officials of cocoa processing organizations was used for the study. The questionnaire and oral interview elicited information on investment and technology decisions, post harvest activities of cocoa farmers, investment in modern farm implement, chemical and new planting, technology and funding decisions in cocoa processing organizations. Secondary data were collected from the annual reports and accounts of FTN Cocoa Processors Plc., Multitrex Integrated Foods Plc. and Stanmark Cocoa Processing Ltd. The data collected were analyzed using descriptive and inferential statistics.

The result showed that majority of the farmers (68.53%) did not ferment their cocoa for more than four days and as against the best practice of 5 to 7 days to ensure better product quality. Investment in quality spraying pumps, new planting herbicides were low with a rating indices of 2.78, 1.86, 2.32 on 5 point likert rating scale respectively. Investment in new planting were found to be profitable, the sensitivity analysis showed that at a minimum attractive rate of return (MARR) of 10%, the present worth of an hectare of cocoa farm over 25, 20, 15 and 10 years horizon were ₦712,817, ₦633,721, ₦486,540, and ₦249,484 respectively and a pay back period of 6 years but few farmers

invested on new planting of cocoa trees. Majority of the farmers invested less than 20% of their annual income on technology assets. About 50% of the incorporated cocoa processing companies in Nigeria were moribund. All the cocoa processing companies included in the sample did not exceed 60% capacity utilization for the period of 2007 to 2011 considered in the study. The operating companies had adequate investment in technology for processing activities which were acquired by purchase of technology with substantial borrowed fund. Lack of raw material was identified as major constraints to the operations of the cocoa processing companies. Investment in technology was found to impact positively on production efficiency (4.45); labour cost savings (4.18) and quality of products (4.26).

The study concluded that cocoa farmers did not invest adequately in technology assets and new planting because of lack of capital and non-ploughing back of income generated due to low income and social needs. Despite the substantial investment on technology by cocoa processing companies there were low capacity utilizations in the industry due lack of adequate working capital to stock pile cocoa b

## CHAPTER ONE

### INTRODUCTION

#### 1.1 Background to the Study

Nigeria used to rank as one of the leading cocoa producing countries in West Africa before the oil boom. Cocoa was a major export crop for the nation as it fetched a sizeable percentage of the nation's foreign exchange. The economy of the old Western State of Nigeria was once based on the funds from cocoa, regrettably crude oil displaced the agricultural sector of the nation's economy from the early 1970 and till date, the sector has been faltering. Despite the dwindling production of cocoa in Nigeria, the crop still contributes to the nation's economic development in terms of foreign exchange earnings. No single agricultural export commodity has earned more than cocoa. With respect to employment, the cocoa sub-sector still offers quite a sizeable number of employments both directly and indirectly. In addition, cocoa is an important source of raw materials, as well as source of revenue to Governments of cocoa producing states (Nkang *et al.*, 2009).

Successive government in Nigeria knowing the importance of this cash crop to the economy, continued to roll out plans to restore the glory of cocoa. The cocoa Development Committee was set up by the Federal Government in 1999, which was made of the 14 cocoa producing states in the country, to ensure increase in cocoa production. This initiative boost cocoa production by supplying high yielding seedlings and chemical to the farmers (Babatunde, 2012)

With the gradual increase in cocoa production, there is a need for the use of appropriate technology and investment in post harvest cocoa production and also adequate investment in up-to-date technology for the processing of the dry cocoa bean to ensure effective value addition.

Agriculture is of low benefit if there is no adequate investment in the agro processing. The real Gross Domestic Product (GDP) cannot grow if a country merely produces massive agricultural products which cannot be exploited for domestic use and exportation (Christianto and Smaranlanche, 2008). The development of agro processing industries is very important to the employment generation in Nigeria. Agro processing industries of which cocoa processing is one, normally create employment for many people and this accounts for the reason why Nigeria government placed premium on the establishment of agricultural companies. There should be conscious effort to ensure that all the initiatives of encouraging cocoa production in Nigeria also take into consideration the issues of technology and investment in post harvest activities to ensure production of high quality cocoa beans and the processing of the cocoa beans. A situation where the bulk of the cocoa beans produced in Nigeria cannot be processed locally or at least some value added, is not in the best interest of the nation. Nigeria has remained a major primary producer of cocoa for many decades and if the desired cocoa rebirth is to be achieved the issue of technology and investment in cocoa industry is very important.

Investment in technology is necessary for the growth of every sector of the economy most especially agro-processing which is supposed to be bedrock of the economies of most states in Nigeria. Technology is a set of tools both hardware (physical) and software (algorithm philosophical systems or procedures) that help us act and think better. Technology is designed to make the production of product or service more efficient (Ghosh, 2004). Therefore, organisations are supposed to make adequate provision for investment in technology either in the acquisition of technology or updating and maintenance of the existing ones. Technology changes with time, therefore an organisation that continues to make use of obsolete technology cannot guarantee efficient and effective operations and this may lead to the eventual collapse of such organisation. Hence, there is a need for constant decision making process that would ensure that the organisation position itself for the future. According to Stoner *et al.* (2005) decision making is the process of selecting a course of action to solve specific

problem. Management of an organisation should consciously and continually engage in the art of decision making, most especially technology investment decisions in shaping the course of the organisation.

## **1.2 Statement of the Problem**

The post harvest handling of cocoa is a very important consideration in ensuring production of high quality cocoa beans. The quality of cocoa beans is one of the determinants of production of high quality cocoa liquor, cocoa butter and cake which are produced by cocoa processors. Due to lack of usage of modern technology and required investment in facilities for effective post harvest processes of cocoa beans, there has been incidences of production of bad cocoa beans which has resulted in selling of Nigeria cocoa at a lesser grade in the world market. According to Michael and Nzeka (2011), most of the cocoa industry quality control mechanisms were severely compromised following the abolition of the Cocoa Board in 1986. The Cocoa Association of Nigeria and the exporters now play the critical role of enlightening farmers on appropriate quality management for the fermentation and drying of the cocoa beans. Ghana cocoa beans sell at significant premium in the world cocoa market due to rigorous state quality control through Ghana Cocoa Board (William, 2009).

Most previous studies on cocoa in Nigeria concentrated on incentives given to farmers to boost production of cocoa but the issue of the farmers' technology and investment decisions in post harvest activities to ensure the production of quality cocoa beans and increased production has not been properly addressed. African countries produce 70% of the world's cocoa but only 18% of it is processed in Africa compared to Europe which processes 41%. There is lack of adequate data and information on investment and process technology decisions in cocoa processing industry to know the reason for the processing of little proportion of cocoa produced in Nigeria. Only about 17% of Nigeria annual cocoa

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