

# Information Trend on Kola Production and the Need for Kola Rehabilitation Techniques in Nigeria

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**Abstract**— The kola industry had in the 60s and 70s contributed greatly to Nigeria's GDP. The discovery of oil in the country had unfortunately led to the neglect of agriculture. Study was carried out in respect of information trend on kola production between 2007 and 2016, with the aim of evaluating the causes of decline and fluctuation in kola production. The results show no consistence with regards to kola production in terms of year and countries quarterly productions. Average kola production ranges between (100,000) in 2007 to (144,900) in 2010. Nigeria was the highest kola producer with about (143,829) tonnes while Sierra Leone produced (8,128) tonnes. This trend has adverse effect on Nigeria kola industry; hence something needed to be done to reduce the domination of kola plantations by old trees of low yield and/or prone to pests and diseases infestation through adoption of rehabilitation techniques. It has become evident that these techniques could only be achieved through effective information dissemination and farmers' group participatory approach.

**Index Terms**— Rehabilitation techniques, landraces of kola, production trend and information dissemination.

## I. INTRODUCTION

Most kola farmers in Nigeria and globe has little or no knowledge on techniques of rehabilitating kola as the one the practices of bring back old moribund and unproductive kola back to full production. Kola nut (Cola) is a nut of the kola tree, a genus of trees native to tropical rainforests of Africa and classified into the family Sterculiaceae with over 40 species in West Africa alone. However, only two species: Cola acuminata and Cola natida are of major economic importance (Oladokun, 1982).

Kola nuts have been an important trade commodity in the West African region and sub- region for many years. The nuts are valued in many cultural activities: as a sign of friendship and peace, and are consumed (broken) during reunions, during meetings, ceremonies and festivals. It is also the only stimulant allowed and consumed by religious faithful (Asogwa et al., 2006). For this reason, kola is being traded from the humid southern regions to the northern arid parts of West Africa. Kola is an important economic cash crop to a significant proportion of the world population who are involved in kola farming, trading and industrial utilization.

Nigeria produces about 70% of world kola nut with an annual production of 200,000 metric tonnes of fresh nuts, mostly in the South-West, Middle Belt, South-East and part

of South-South.Kola producing State in Nigeria are Edo, Ogun, Ebonyi, Anambra Oyo, Ondo, Osun, Ekiti, Kogi, Nasarawa, Abia, Delta, Imo, Cross River, Alkwa- Ibom and Kwara. In kola producing regions, there are markets that specialize in the bulk trade of kola nuts which is being patronized by long distance wholesale traders. The long distance traders of kola nuts earn the highest profits, since they are merchants who determine the price and they are from far who has access to transport facilities and capital resources.

## II. TECHNIQUES AND PRACTICES OF KOLA REHABILITATION

Opeke (2005) explained rehabilitation as the act of renewing a tree crop like kola that has become derelict either because of old age, low soil fertility, or because of pests and diseases. The method of rehabilitation adopted will depend on the cause which necessitated it. The methods used to rehabilitate kola farm plantations such as fertilizer application, pruning, coppicing, insecticide application, weeding, proper harvesting method, pollination control, ring weeding, replacement of dead seedlings with improved/resistant varieties, removal of chupon, mulching among others. These techniques if properly carried out will help to prolong the life span of the kola trees and also increases the kola yield, income, and livelihood of the kola farmers. In response to this, Cocoa Research Institute of Nigeria (CRIN) has developed various rehabilitation techniques for the purpose of rehabilitating old kola trees on kola plantations in Nigeria. To further achieve this, CRIN considered information transfer on kola farm rehabilitation (KFR) as a significant approach through collaboration with of other organisations.

## III. REHABILITATION OF KOLA TREES BY GRAFTING

Kola is mostly propagated by many farmers through nuts, either directly on the field or raised in nursery for onward transplant into field. With the advent of modern rehabilitation techniques, grafting is one of the methods in kola rehabilitation as it leads to accelerate vegetative growth, remove incompatibility and also maintain desirable genetic traits (Amoah et al., 2004). However, other methods of vegetative propagation such as budding and stem cutting seem not produce desire result in kola trees (Amoah et al., 2004). Grafting as a method of rehabilitation could be adapted on over age trees, incompatible trees, pest and disease affected trees and low productive among others. The grafted seedlings are planted in between the old and less

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productive trees which later give way for proper growth of young grafted seedlings. Grafted seedlings make management of canopy architecture very easy.

According to Umar et al. (2006) communication is the bedrock for effective teaching and a vital tool in promoting knowledge. This was corroborated by Uwagboe et al. (2006) in his findings that new technologies and innovations reach larger proportion of farmers through personal contacts such as visits by extension agents.

Despite ranking of kola nut among economic commodity in the world, its production still remain poor, unstable, and even stagnated due to farmers' socio economic characteristics which include old age of plantations and the long gestation period in addition to poor adaption of rehabilitation techniques.

This study therefore focused mainly on the assessment of kola production trend and the need for rehabilitation techniques towards reactivating old moribund kola plantations and thus, enhances kola production in Nigeria.

Specific Objectives are to:

- (i) Ascertain the level of production trend in kola.

- (ii) Investigate the causes of low kola production with a measure to enhance kola productivity.

Methodology

A survey was carried out on kola nut farm in Edo State, Owan West and Owan East Local Government area of Ondo State as a baseline study. Edo State is part of kola producing community in Nigeria. The State is located between longitudes 6.5438 norths and 5.8987 East of Greenwich Meridian. Edo State has a land mass of 17,802km, bounded in the North and South (Kogi and Delta States ) and bounded with Western part of Nigeria (Ondo State). As an Agrarian state, the main occupation of the people in the State is farming. The major crops produces are cassava, rice, yam, rubber, Cocoa, Oil palm, Plantain, kola nut cocoa, cashew and all kinds of fruits crops and vegetables. Secondary data were collected and used for this study. Information obtained were analysed using SPSS statistical software

Below are some illustrations of kola plantations that need rehabilitation as it is being infested by pests and diseases, mistletoes, plant climbers and poor farm sanitation.



Plate 1: Diseased kola tree that needs rehabilitation.



Plate2: Kola tree infested with plant climbers that needs rehabilitation





**Plate 3:** Kola tree infested with mistletoe







Plate 4: Kola plant that needs rehabilitation through pruning



Plate 5: Moribund and unproductive kola farm that needs rehabilitation.

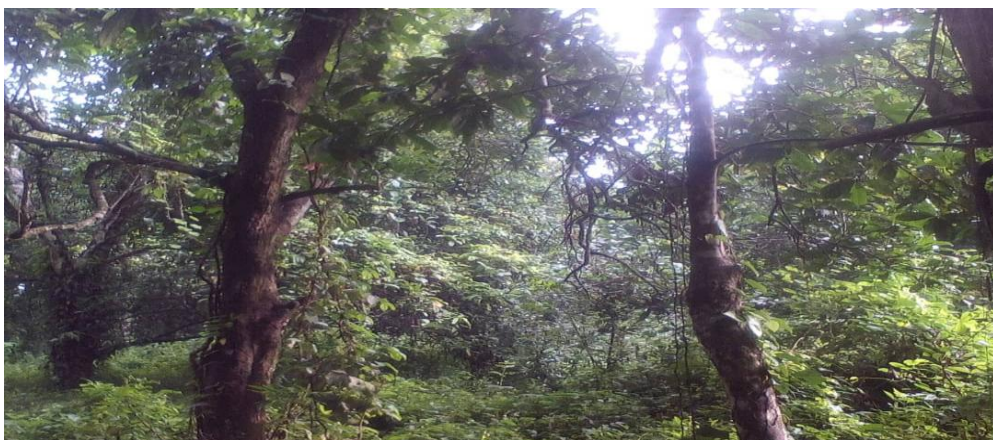


Plate 6: Abandoned and unproductive kola plantation that needs rehabilitation

However, the above pictures have shown that kola farmers in Nigeria need to be educated on the need to adopt rehabilitation techniques on the abandoned kola farms and also to establish new kola farms by replacing existing old kola plantation so as to increase their production and to improve their livelihood.

#### IV. RESULTS AND DISCUSSION

Table 1 Depicts the production trend of kola in Nigeria with variations of figures in metric tonnes from 2007 – 2016. From the Table below, year 2014, 2009 and 2015 production was (167,686), (162,080) and (161,966) kola tonnes as against 2016 with production of (143,829) tonnes of kola

production. This indicates that climatic conditions were favourable including human factors. The average production trend in tonnes of kola production is between (132,000) to (144,950) tonnes of kola, while the least was in 2008 and 2007 which falls between (120,000) and (100,000) tonnes of kola.

However, since environmental factors and human activities are major constraints that militate against kola production, it is therefore suggested that rehabilitation techniques will help to revitalized old moribund and disease kola farms plantation to full production capacity. Table 1: Kola Production Trend in Nigeria 2007-2016

Year	Production (Metric tonnes)
2016	143,829
2015	161,966
2014	167,686
2013	132,000
2012	135,000
2011	138,000
2010	144,950
2009	162,080

2008	120,000
2007	100,000

Source: FAOSTAT, 2016.

Table 2 Shows that Ivory Coast with 6,968 kola nut yield/ ha ranked second while Nigeria, with 5,658 yield/ ha ranked first among the leading kola producing countries of the world, while Sierra Leone, with 2,970yeild/ha ranked fifth. This finding shows that farm land size in hectare does not really influence yield of Kola, but rather Good Agricultural Practices (GAPs) in addition to rehabilitation techniques will enhance kola production and other tree crops in Nigeria, which will result into improvement in the economy.

Table 2: Kola nut, Production Quantity (tonnes) and yield by hectare for leading Countries in the world from 2007 to 2016

World/Countr ies	Tonnes	Yield / ha	Ranki ng
Nigeria	143,829	5,658	1 <sup>st</sup>
Ivory coast	55,238	6,968	2 <sup>nd</sup>
Cameroon	43,274	4,251	3 <sup>rd</sup>
Ghana	23,624	2,812	4 <sup>th</sup>
Sierra Leone	8,128	2,970	5 <sup>th</sup>

Source: FAOSTAT, 2016

Trend analyses showing stagnating and or decline growth rates for kola production. The trend below shows the analytical trend of kola productivity between 2007 and 2016 in selected kola producing countries around the world. The analytical line graph below (Figure 1) shows quarterly production of kola-nuts against yield (for leading countries between 2007 and 2016). This Figure shows that there is a weak correlation between the two variables. It further indicates that there is a fall and noticeable fluctuations in kola nut production across the countries concerned.

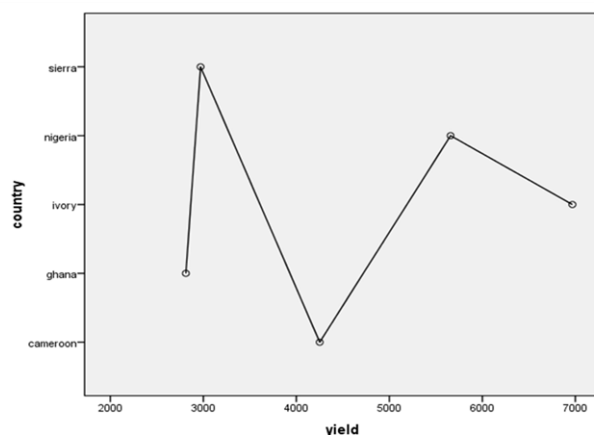


Figure1: Analysis on kola-nuts quarterly (tonnes) and yield by hectare for leading countries (2007-2016)

Figure 2 shows the analytical graph of tonne of kola yield. The graph explained that there is a weak relationship between two variables. This means that, there is no pattern to the

points indicating that yield of kola nuts has effect on the quantity (metric tonnes) produced (i.e. as metric tonnes increases, the yield of production decreases.



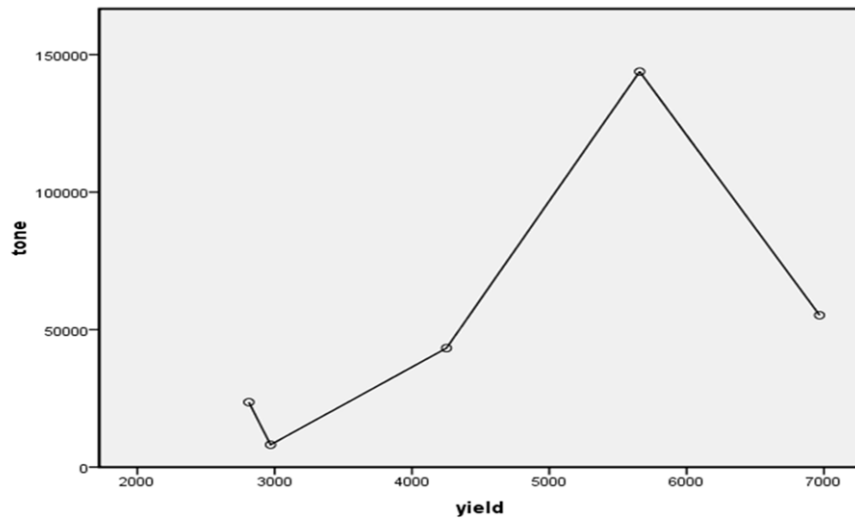


Figure 2: Analytical graph of kola yield and production

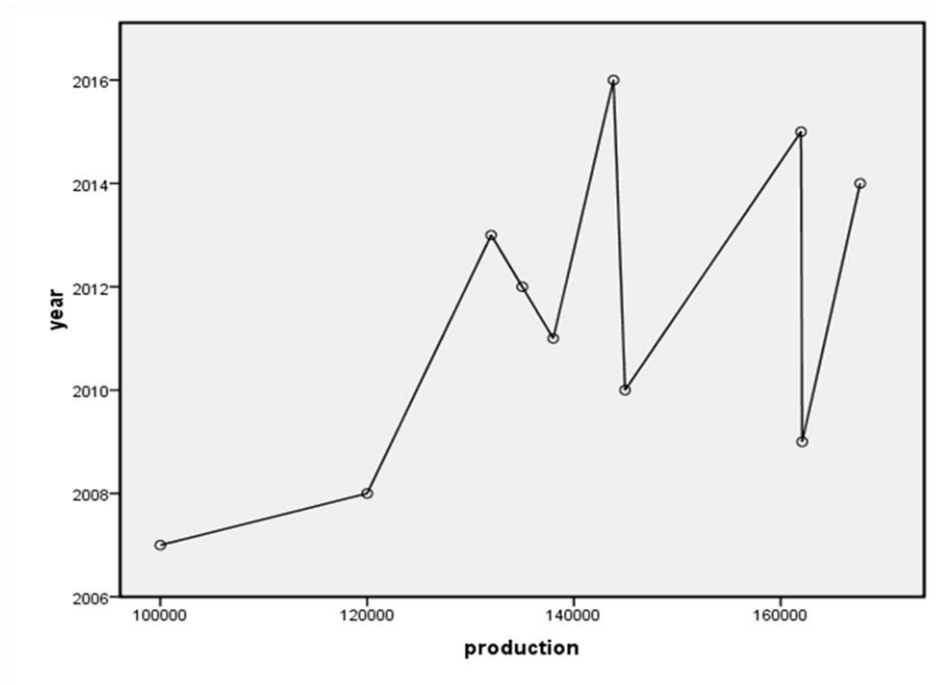
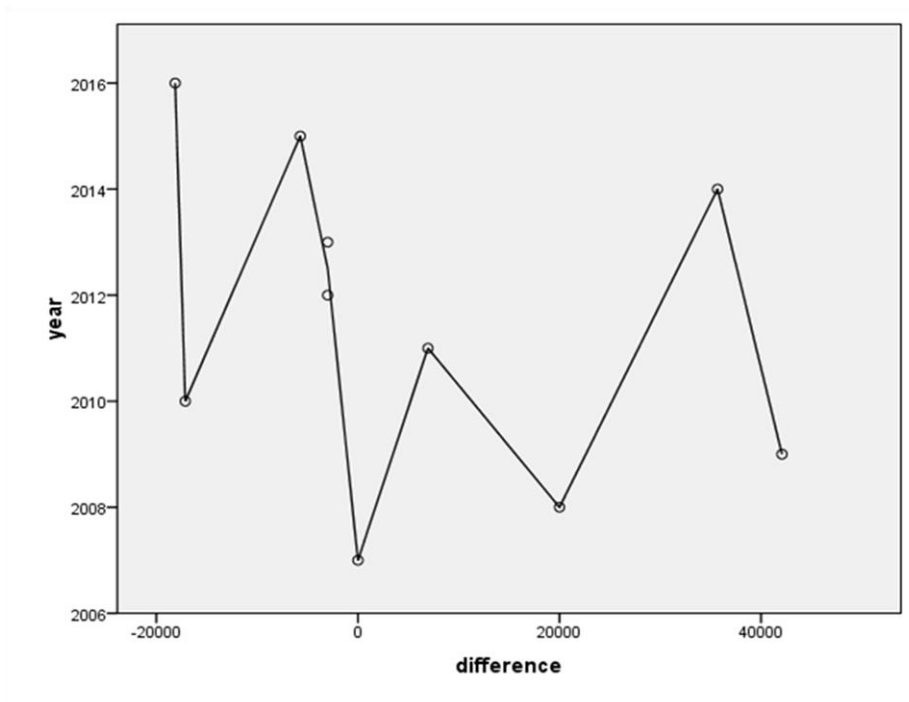


Figure 3: Kola and year of production

The plot of production against years is scattered (Figure 4). This is an indication that there is a weak correlation between the two variables. This further shows that as the year increases the production decreases and fluctuate steady. The study revealed fluctuation in kola production within the years in the study areas.

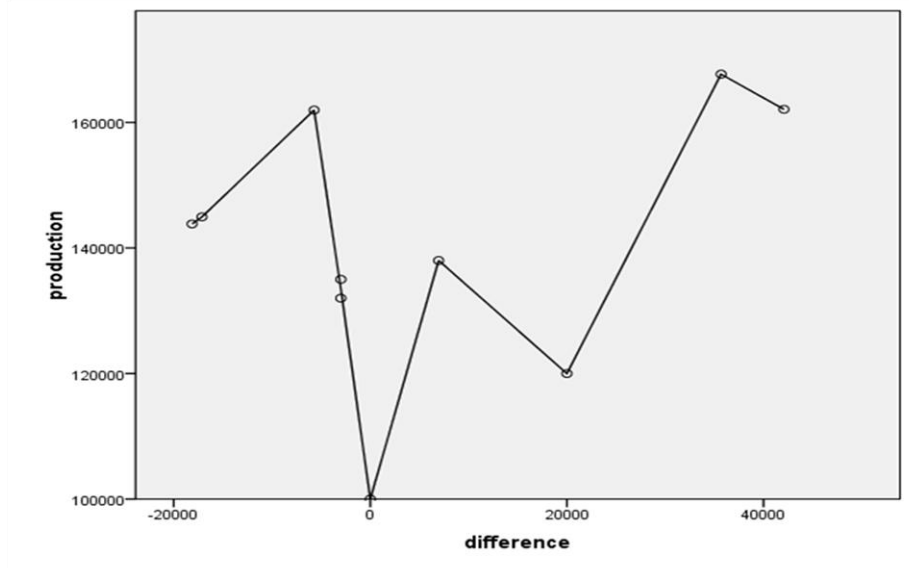
Due to the observed variables, there is no pattern to the points indicating the year's effect on each of the differences. This shows that as the years increase the differences decrease and fluctuate on different bases. Thus, there is fluctuation with respect to differences in year and kola production.



**Figure 4:** Difference on yield

Figure 5 shows the plot of difference and production are scattered. By this, it further indicates that there is weak correlation between two variables. This result has shown that there is no pattern to the points that production has effect on

each of the difference. This further explains that production and difference i.e. as production increases the difference decrease and fluctuates.



**Figure 5:** Difference on production

Figure 6 below shows that there is no pattern indicating that the country of production has effect on the quantities (tonnes) of kola produced. This further shows that there is no

relationship between country and tonnes (Figure 6).

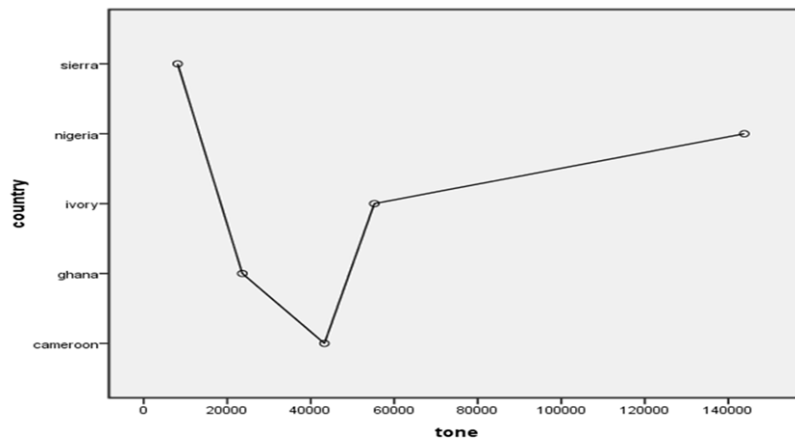


Figure 6: Kola nut production (tonnes) per country

V. CONCLUSIONS AND RECOMMENDATIONS

Based on the findings and outcomes of this study, global kola production trend in Nigeria has been found to be unstable. The factors include, aged of kola plantation farms, socio-economic characteristics, decline in soil fertility, pests infestation and diseases, low pricing of kola nuts by buyers, low rain fall and sun light, removal of over grown chupons, climbers, mistletoes, post harvest operations, lack of rehabilitation techniques such as coppicing, ring weeding, regular weeding, pruning, sterility and incompatibility, fertilizer application, removal of mistletoes and plant climbers, supply of quality hybrid kola materials, and insufficient farm labour/financial cost among others. To solving these problems, regular farm maintenance practices must be adopted. This will not only lead to yield increase but also enhance kola farmers’ finance and standard of living.

The attitude and perception of farmers must change towards kola production. The crop needs to be given a pride of place among other tree crops like cocoa, oil palm, cashew, coffee, and tea. Efforts should also be geared towards the reduction of the crop’s gestation period which is presently between 7-11 years. Rehabilitation of old kola plantations should also be done on a regular basis since little efforts are currently being put into establishing new kola plantations to replace old/moribund kola ones.

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