AGRARIAN VISTA AND RURAL LIVELIHOOD SUSTAINABILITY IN SOUTHWEST NIGERIA

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Abstract
One of the major drivers of inclusive and sustainable development in the world today is rural livelihoods. The cocoa industry particularly provided a viable means of sustaining rural livelihood and improving economic development in various agrarian communities in southwest Nigeria through much of the twentieth century. However, the cocoa production has dropped drastically since the 2000s because of a flurry of problems. In Nigeria, various cocoa-producing plantations are moribund, due to various problems arising in the main from effects of climate change on the ecosystem and biodiversity, deforestation, dispossession and poor trade regulation of cocoa produce. These challenges have necessitated an unavoidable wave of rural to urban migration and diversification from cocoa farming to the cultivation of cannabis and other non-agrarian ventures. This paper, therefore, identifies and discusses factors militating against the growth and sustainability of cocoa production in Nigeria. In order to navigate discussions, a combination of quantitative and qualitative research methods was used to collect and analyse data. Data comprise farmers in cocoa plantations in Ifeodore Local Government Area of Ondo State. Structured questionnaires were administered to farmers at various Cocoa farms under study by using the random sampling method. Semi-structured questions were also employed to interview key informants. What is revealed is that cocoa production in Nigeria has declined drastically, and this will hamper livelihood and economic development in the rural areas in future. To this end, the paper recommends that Cocoa Board and other relevant regulatory agencies be reconstituted. It also suggests that government-owned Reserves for cocoa production in cocoa-producing statets in Nigeria should be created.

Keywords: *Cocoa, Production, Sustainability, Development & Nigeria*

Résumé
Les moyens de subsistance en milieu rural sont devenus l'un des moteurs les plus puissants du développement inclusif et durable à l'échelle mondiale. L'industrie du cacao a été un élément déclencheur pour la durabilité des moyens de subsistance ruraux et le développement économique dans les communautés agraires du sud-ouest du Nigéria tout au long du XXe siècle. Cependant, la production de cacao a stagné en raison de myriades de problèmes depuis les années 2000. Plusieurs plantations de cacao au Nigéria sont à la croisée des chemins en raison d'un certain nombre de problèmes, notamment les effets du changement climatique sur l'écosystème et la biodiversité, la déforestation, la dépossession et la mauvaise réglementation du commerce des produits de cacao. Cela a alimenté la migration rurale-urbaine effrénée et la diversification de la culture du cacao à la culture du cannabis et à d'autres activités non agraires. Cet article vise les facteurs qui entravent la croissance et la durabilité de la production de cacao au Nigeria. L'étude adopte une approche mixte, notamment des méthodes quantitatives et qualitatives dans la collecte et l'analyse des données. La population de cette étude comprend les agriculteurs des plantations de cacao à Ifeodore LGA, dans l'État d'Ondo. Des questionnaires structurés ont été administré aux agriculteurs de la zone d'étude sur la base d'un échantillonnage aléatoire dans les exploitations de cacao. Les enquêtés clés ont été interrogés à l'aide des questions semi-structurées. Les résultats montrent que la production de cacao au Nigeria décline rapidement et cela pose un grand défi aux moyens de subsistance ruraux et au développement économique à l'avenir. Cette communication recommande la reconstitution d'un conseil du cacao et d'autres organismes de réglementation compétents, en plus de créer des réserves publiques pour la production de cacao dans les États producteurs de cacao au Nigeria.

Mots-clés : la production de cacao, les moyens de subsistance en milieu rural, le développement durable, le développement économique, le changement climatique, le Nigeria.

1. Introduction

Cocoa is a major cash crop. It is commonly found in humid tropical environments, specifically between 10ºN and 10ºS of the Equator, where climatic conditions are suitable for its cultivation and growth. In general, about 6.5 million hectares of Cocoa is planted in 57countries across the world. Globally, eight countries are reputed for large-scale cocoa production. Out of the eight countries, four are in West Africa, namely: Ivory Coast, Nigeria, Cameroon, and Ghana. The eight cocoa-producing

countries in the world contribute not less than 90% of global production of cocoa (Dizolele, 2005; UNCTAD, 2009; ICCO, 2010). In Europe, the Netherlands is an important country in terms of its value chain and cocoa processing. Cocoa is therefore central to the Dutch economy. The Netherlands has the second-largest grinder and the largest chocolate production facility (Mars) in the world. The country also holds a market share of 37 percent, distantly followed by Germany (19 percent) and then Belgium (15 percent) (CBI, 2016).

In Africa, cocoa has been one of the major revenue earners which has boosted the economies of many West African countries in the early 1930s, especially Nigeria (Table 1). During this period, Cocoa farms in Western Nigeria produced the bulk of the commodity exported from Nigeria (Table 1). Cocoa production in Nigeria was first introduced in Calabar by a West African named Henry Henshaw from Fernando Po, (Colonial Reports—Annual No 284, 1897-1905). Other notable Africans such as Squiss Ibanigo, (Galletti, Baldwin and Dina, 1956) trading Companies and Christian missionaries would also plant Cocoa seeds at Bonny around 1874, at Nkissi in 1888, Asaba, Abutchi and Onitsha in 1889 (Ayorinde, 1965). In Southwestern Nigeria, many places in Lagos such as Okokomaiko, Apapa, Iju, and Agege also began to experience phenomenal growth in Cocoa plantations by the early 1880s, which attracted a large number of labourers from the Yoruba hinterland and changed the orientation of rural livelihood in some areas in Yorubaland (Berry, 1974).

The propagation of cocoa farming in Yorubaland was partly connected to Henry Venn and Buxton's doctrine of the Bible and the Plough on the one hand, and the Vent-for-surplus theory on the other hand. The spread of Christianity in Yorubaland through the activities of the Christian Mission Society supported by the British colonial government in Nigeria facilitated the adoption, spread and growth of Cocoa farming in the

Yoruba hinterland (Adesina, 2004). The CMS mission in Ibadan, Ife and Ondo provinces and districts, led by Bishop Charles Philips, played a significant role in this regard. (Adesina, 2004). By the 1900s, most of southern Nigeria had come under the British administration. In order to generate revenue and boost cash crop production, the colonial government emphasised the cultivation of quality cocoa, oil palm, cotton, palm kernel, and rubber to finance infrastructure development and ensure food security in Europe (Udo, 1976). Later, many Yoruba communities such as Idanre, Kisi, Ogbomoso, Saki, Ota, Oyo, Ife, Ibadan, Abeokuta, Ilesa, Ondo, Ile-Oluji, Oke Igbo, Ekiti, Akure, and several areas in Ijebu embraced cocoa cultivation as a new means of livelihood (Faluyi, 1995). *Theobroma cacao* was the earliest variety of crops cultivated in Nigeria. Prior to the exploration of oil, Cocoa served as a major foreign exchange earner. It was an important crop to the economy, not just in Nigeria but in Ghana, Ivory Coast, Cameroon and Togo.

Table 1. Cocoa Shipments in South-Western Nigeria (1939-1943)

Destination	1939/40	1940/41	1941/42	1942/43
	Tons	Tons	Tons	Tons
U.K. and Dominions	151.811	292,399	319,529	288,916
United State	134,739	162,210	327,101	829,113
Others	9,812	-	20,063	5,955
Total	294,362	454,609	674,693	577,984

Source: Olutayo, 1991

In terms of cultivation and spread across the country, not less than 50% of the total quantity of cocoa produced per annum was from Ondo State (Adegeye, 1996). Even within Ondo State, cocoa is not equally produced among the various towns (Idanre, Akure, Owo, Ondo, Akoko and Okitipupa). From 1960 to the 1970s, at the beginning of oil boom, cocoa-producing communities in Ondo State alone contributed significantly to the nation's capital formation and socio-economic development. During

the period of Nigeria's oil boom in the 1970s upward, rural cocoa production and exports slumped significantly in southwestern Nigeria, especially in Ondo State (Tables 2-4).

Table 2. Cocoa Gradings ('000 tonnes) from all Local Government Areas in Ondo State (1980-1988)

LGAs	1980	1981	1982	1983	1984	1985	1986	1987	1988
1. Akure	4,732	66,762	7,276	5,498	5,964	5,078	5,729	7,671	-
2. Idanre/	8,298	14,192	14,096	9,435	13,754	10,690	10,114	13,666	-
3. Ekiti south	4,599	8,772	7,837	6,744	6,058	6,618	5,798	5,018	-
4. Ekiti S.W	1,480	2,308	2,412	1,785	2,394	1,588	1,628	2,162	-
5. Owo	7,192	12,88	14,093	8,900	9,759	10,528	6,218	6,177	-
6. Akoko N	2,193	3,459	3,341	2,257	2,568	1,841	1,985	1,522	-
7. Akoko S.	602	937	1,122	740	753	628	628	482	-
8. Ekiti C.	1,022	2,086	1,999	1,749	2,000	1,789	1,743	1,865	-
9. Ekiti W.	926	1,349	1,331	892	1,441	927	1,133	855	-
10 Ijero	1,195	2,062	1891	1,129	1,760	1,164	1,329	1,145	-
11 Ero	133	287	198	88	167	69	30	60	-
12 Ekiti N.	1,245	2,089	1,297	1,485	1,554	957	985	1,004	-
13 Ekiti E.	1,897	3,524	3,331	3,222	3,391	3,436	3,928	3,305	-
14 Ondo	10,179	16,353	14,836	11,343	15,756	10,682	6,834	10,224	-
15 Ifesowapo	9,050	18,021	15,691	11,641	21,247	12,165	9,602	17,320	-

16 Ikale	47	96	70	33	126	62	22	120
17. Ilaje Ese Odo	-	-	-	-	-	-	-	-
Total	**5,490**	**95,19**	**91790**	**66,941**	**88,347**	**68,347**	**57,705**	**72,581-**

Source: Bola Akanji (1992)

Table 3. Production of Cocoa in Western state Nigeria 1966/67-1975-76 (tons)

Years	Oyo State	Ondo State	Ogun State	Total
1966/67	116,608	87,741	23,828	228,117
1967/68	110,649	97,189	22,038	229,876
1968/69	118,139	73,905	12,044	204,088
1969/70	93,844	92,463	9,369	195,67
1970/71	129,496	137,962	12,102	279,560
1971/72	110,462	109,777	11,800	232,039
1972/73	100,633	n.a	7,759	216,446
1973/74	96,900	81,473	9,485	187,858
1974/75	90,886	84,794	12,992	188,672
1975/76	73,025	70,310	9,816	153,151
Total	**1,040,642**	**943,668**	**131,233**	**2,115,543**

Source: Adegbola and Abe (1882).

Table 4. Comparative Cocoa Exports (1960-1976)

YEAR	NIGERIA	WORLD	PERCENTAGE
1960	159,503	896,000	17.8
1961	186,864	1,018,000	18.3
1962	197,774	1,037,000	19.0
1963	177,411	1,041,000	17.0
1964	199,977	1,035,000	19.2
1965	310,175	1,304,000	23,7

1966	193,266	1,110,000	17.4
1967	248,186	1,079,000	23.0
1968	208,885	1,051,000	19.8
1969	173,609	994,000	17.3
1970	195,679	1,118,000	17.5
1971	271,742	1,186,000	22.8
1972	227,536	1,231,000	18.4
1973	213,897	1,096,000	19.5
1974	197,125	1,152,000	17.1
1975	214,200	---------	----
1976	217,000	---------	----

Source: Gill and Dufflis (1977)

From 1970 to 1986, due to the effect of the Nigerian civil war, inefficient policies of the cocoa marketing board, the oil boom, and macroeconomic problems in Nigeria, labour relations and rural income in the cocoa belt of southwest Nigeria were affected. But with the policy of economic liberalization and abolition of the cocoa marketing board in 1986, rural populations in agrarian communities in Southwestern Nigeria began to witness unbridled accumulation, social mobility, and rural development. About 255, 000 tons of cocoa beans were produced annually from Nigeria between 1986 and 1995, compared to about 160,000 tons of cocoa beans produced in the 1977 to 1985 era. From 1986 to 1995, an average of 252,000 tons was produced. However, by 1999, the production of cocoa in Nigeria had declined significantly to 170,000 metric tons (Moujama, 2018). Since independence, cocoa production and export earnings in the country have declined. Nigeria reached its peak production in 1970, but thereafter it declined till 1982. At independence, cocoa was 80% of the country's earnings, but as of 1970, it was 64% (Olaniran, 2000).

In Nigeria, cocoa has been a major player in the country's development, especially within the Old Western Region (see Hokona, 1994; Opeke, 2007; Oyekale, Bolaji, & Olowa, 2009). The cultivation and sales of cocoa had a profound impact on rural livelihood sustainability and

society in the first hundred years of its cultivation in Nigeria. The performance of the commodity on the world market had a significant effect on rural income, productivity, employment, social mobility and rural development (Ajiola, 2016). In the early 1970s, production was concentrated in Ghana, Nigeria, Ivory Coast, and Brazil. However, it has now expanded to areas such as the Pacific region, where countries like Indonesia and Malaysia have shown spectacular growth rates in production. In Nigeria, apart from oil, agriculture is one of the major contributors to the economy (Central Bank of Nigeria, 2005). Cocoa export plays a pivotal role in this regard in Nigeria. However, since the 1970s, the trend of cocoa production in Nigeria has not been steady, due to various factors such as governance, agricultural-based problems, and environmental issues.

In Nigeria, the over-dependence on oil has been a major setback on the growth of the agricultural sector, especially the cocoa industry. Agricultural-based problems abound in Nigeria. Problems in this mode include crude farm implements, financing, point of sales, land tenure, produce processing and marketing, which are common in developing countries. Challenges relating to the environment began to occur as a result of climate change crisis. The changes in the environment affect agricultural output. The changes often lead to the reduction in foreign earnings on exportation. FAO (2010) estimated that cocoa production would grow at a rate of 2.2 percent from 1998-2010, as against a 1.7 growth rate during the previous decades. Nigeria's cocoa production and export improved steadily between 2011 and 2013, and stagnated in 2014. In 2015, Nigeria's cocoa production reached 280,000 metric tons, a feat achieved only in 1970/71, when the country produced 303,000 metric tons (Moujama, 2018). Despite the huge achievements recorded by the country in the early 20s from earnings from cocoa sales, the rate of cocoa production has not been maintained. Crude oil exploration has led to a total neglect of this important crop, necessitating a decline in its cultivation, production, and export (Adeogin and Oluyide, 2006; Daniel,

2009). Even though several scholarly researches have been done on cocoa both in Nigeria and in the world, there is still a decline in its production.

Given this background, efforts should be made to understand the peculiar challenge of various regions with respect to cocoa production. This is necessary in proffering solutions to problems associated with low productivity and dwindling incomes accruing from cocoa production in Nigeria. This study therefore give relevant insights into the agricultural system in Nigeria, especially the cocoa industry, so as to provide solutions to the challenges of cocoa production and sustainability. In order to fully understand the present situation and highlight emerging issues, the study focuses on Ondo State, which is a leading and dominant producer of cocoa in Nigeria. Ondo State is popularly known as the Cocoa belt or the land of cocoa farmers.

2. Methodology

2.1 Data Source

A mixed approach was used to conduct this research.. Structured questionnaires were administered to respondents through the technique of Key Informant Interview (KII). Eighty questionnaires and 10 KI were used to answer the research questions. Additionally, a Cocoa data analysis was collected from Ondo State Ministry of Natural Resources. The data for this study were collected and summarized on tables. Analyses were done in each table using the Statistical Package for Social Sciences. Simple percentage was employed where necessary to put qualitative arguments into quantitative facts and figures.

2.2 Administration

The primary data was collected by administering questionnaires and

interviewing selected Cocoa farmers, export companies and workers in the Ministry of Agriculture and Natural Resources in Ondo state. The sources of data for this study are both primary and secondary. The secondary sources are archival records and bulletins and records from the Ondo State Ministry of Agriculture and Natural Resources.

2.3 Study Population

The population of this study comprises farmers in Cocoa plantation in Ifeodore LGA, Ondo State. A structured questionnaire was administered to farmers within Ifedore LGA using based on random sampling. Cocoa farms were identified and randomly sampled. 80 structured questionnaires were administered randomly across Ifedore LGA. Of these 80 questionnaires, only 76 were used for the study. 14 could not be used because of major errors or wrong inputs. KII was also conducted using semi-structured question. This was used to gather additional information from selected Cocoa farmers, exporter companies, and workers in the Ministry of Agriculture and Natural Resources in Ondo state.

3. Results and Discussion

3.1 Land for Farming

76 questionnaires were administered. 68 (89.5%) of the farms were privately owned. 5 (6.6%) are publicly owned, while the remaining 2 (2.6%) are owned by the government. In regard to the acquisition of land, 16(21.1%) out of the total farmlands across the study area were acquired through inheritance, 45(59.2%) through purchase, 3(3.9%) through community, 11(14.5%) through leasehold and 1 through the government. Ownership and farming practices are in the hands of private farmers than government. This negatively affects the production and processing of Cocoa across the study area in particular and Ondo State in general. Most lands in the study area were acquired through purchase, with little or no

effort by government to support farmers in acquiring land. The issue of land tenure and household grip over land for agriculture is pervasive. Therefore, it can be said that the interest of government in Cocoa production is not substantial. Most of the study's respondents observed that government policy is one of the major challenges facing Cocoa production and sustainability particularly in Ondo State and Nigeria generally. They stated that:

> "*Incessant shift in government policies is a major challenge. Citing for example that issue of encroachment into government reserve areas has been a bane. There are no clear-cut fixed boundaries across some reserved areas and that they know, their lands are being cleared because they have encroached and this in a way reduces their yield"*

Additionally, 48 farmers possess 2 hectares of land. This accounted for 63.2% of the whole farmers in the study area. 17 farmers equally cultivate 5 hectares of land, with just 10 farmers using 9 hectares for Cocoa production. Based on the observation, majority of the farmers used small hectare of land for Cocoa production, which invariably accounted for 63.2% of the farmers in the study area. This indicates the total output due to small farm holdings. Small farm holdings are one of the problems facing agriculture in Nigeria. Despite government efforts, it is obvious that this problem persists. Farmers in the study area were asked to identify the problems they face in regard to land for Cocoa farming. Most of the respondents, in fact about 41percent of them, identified high cost of land acquisition, followed by inadequate land (28%), then the activities of speculators and land grabbing at 1.3 percent and 9.2 percent respectively. The major problem is high cost of acquisition, meaning that most of the problems faced by farmers is the inability to acquire land for Cocoa production, and this is a huge setback.

3.2 Productivity and Yield

Most of the farmers who are private owners across the study area

experienced bumper harvest in the first year of their planting season. This, however, decreases subsequently. This has been a consistent pattern in the last five years of planting season during the study. Therefore, the Cocoa yield continues to drop, and the reason for this is not be farfetched. It has been tied to the fact that Cocoa production is mainly in the hands of private individuals who do not have enough mechanical and logistic support to sustain products from Cocoa production. If the government can be more involved in the production, there would be substantial changes in the production. Government has enough finance needed to sustain consistent Cocoa yield, both for local and international demand. One of the officials of the Ministry asserted that, "Government should provide lands, modern equipment, agricultural loans for the people who are ready to farm."

What this means is that government has not been forthcoming in helping local farmers in Cocoa production. It also suggests that government should provide what farmers need to boost cultivation and growth of cash crop. As revealed through the interviews conducted in this study, most farmers sold their products through produce merchants, irrespective of their level of education, compared with other outlets like rural markets and industrial concerns. This may be because they are the major available outlet for their product which saves them cost of transportion to urban centres and avoid industrial bureaucracy. There is hardly any farmer who will not be satisfied with reducing cost of production in order to maximise profit.

3.3 Relationship between Income yield and size.

The strength of the model (Income = 2.98 + 0.44Yield + 0.46Size) (Tables 5 and 6) is significant and show that yield and size contribute jointly about 37% (Table 5) to the income of Cocoa farmers within the study area (Table 6). The model also reveals a positive association between the variables (yield and size) and income, in the sense that the higher these two variables, the higher the income. It, therefore, suggests

that if the government and Cocoa farmers are ready to sustain Cocoa production in the country and enhance its economic value, there is a need for mechanized farming to help cover a large expanse of areas (size) with improved seedling and better management practices (yield) to tackle challenges facing Cocoa sustainability and production in Nigeria. If these are done, the income generated from Cocoa production will increase, and this will encourage farmers and help government to revive the almost dying cash crop (Cocoa) in Nigeria.

Table 5. Regression model summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.607	.368	.351	.37164

Table 6. Regression Model

		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	t	Sig.
1	Constant)	2.982	.268		11.124	.000
	T_Yield	.529	.113	.437	4.679	.000
	T_Size	.852	.173	.460	4.924	.000

4. Discussion

5.1 Cocoa: challenges and sustainability issues

One of the major challenges in Cocoa production is inadequate basic infrastructure. This is predominant in the rural areas where Cocoa is produced, especially in Africa (Ajiola 2021). Some of the basic infrastructures are electricity, roads, and water. In essence, most cocoa-producing areas in Nigeria are not attractive. This encourages rural migration. The neglect of the rural areas by government continues to

occur (Bryceson, 2002; High, pers. comm., February 13, 2015). Education and illiteracy are also major problems facing Cocoa production in Nigeria (Figure 1). As observed in Figure 1, farmers with no formal education constitute over 35% of the entire population identified. It has been observed that lack of proper education impair transfer of knowledge and innovations (Nestlé, 2012).

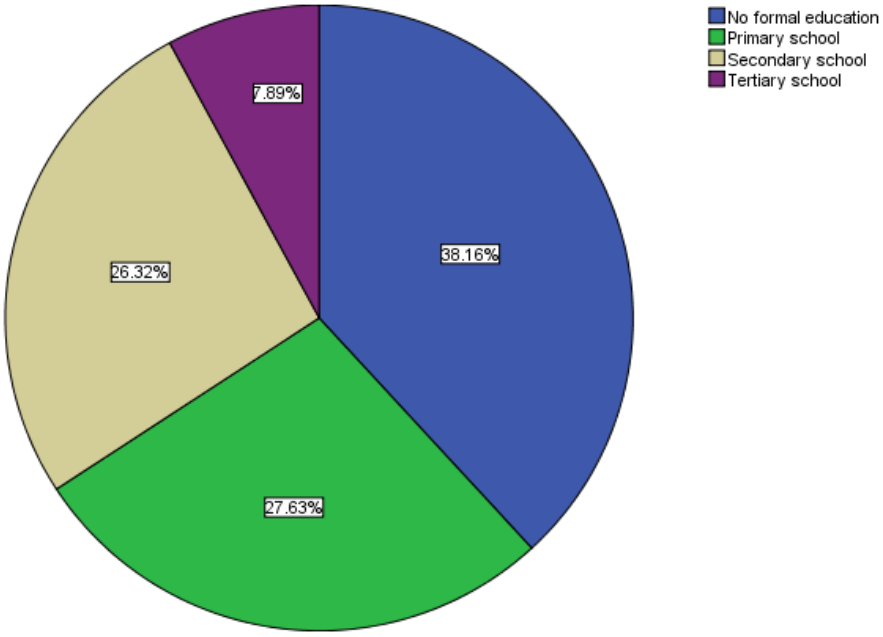

Figure 1. Level of education among Cocoa farmers in the study area

The level of illiteracy among cocoa farmers precipitates the use of outdated farming methods such as allowing cocoa trees to grow too tall, having little or no experience as regards how to handle pests and diseases adequately and limitations as to how to apply fertilizers and pesticides (C.B.N, 2009; Nestlé, 2012; Ajiola, 2018). One of the interviewees also corroborated the problem of illiteracy among Cocoa farmers. The

interviewee itemized factors which militate against the production and sustainability in the area studied. He revealed: "poverty, lack of modern technology and the inability of the government to develop rural areas to make it conducive for individuals to dwell have posed a major threat to Cocoa production."He clarified further that:

> Poverty has hindered the majority of Cocoa farmers to be able to embark on large-scale production because of financial constraints. Also, the lack of modern technology is a menace to the sustainability of Cocoa production, there are no adequate modern implements to support the sustainability of Cocoa production meanwhile most potential farmers still rely on the old implement because they could not afford these modern implements.

The interviewee further added:,

Migration is another contention in the area of Cocoa sustainability, he claimed that the rate of rural-urban migration is an issue because rural migration to the urban areas inhibits Cocoa farming in rural areas. He also stated that the idea that farming is the job of the illiterate impedes the sustainability of Cocoa production in the study area.

Smallholder farming cannot provide the much-needed economic growth that would sustain Cocoa production (Halba, 2013). In the light of climate change and the nature of smallholder farming such as expertise, over-cultivation leading to reduced soil fertility and tough economic conditions (FLA, 2012), there is need for upscale and sustainable investment in Cocoa production (Halba, 2014; Andres et al., 2014). In the area of study, pests and disease account for about 49 percent of production risk. This is closely followed by lack of access to inputs. Environmental factors such as soil conditions and climate factors also inhibit Cocoa production. This becomes noticeable with smallholder farming. Another interview conducted with an official of government revealed thus:

> Cocoa grows well in well-nourished and fertile soil, for this will determine the continuous yield in the Cocoa production and this has

been a very serious problem in the sustainability of Cocoa production since the available fertile soil has been reduced. However, recessive rainfall and sunshine are contending environmental factors against Cocoa production. He asserted that the climatic condition must be moderate to be able to sustain Cocoa production in the study area.

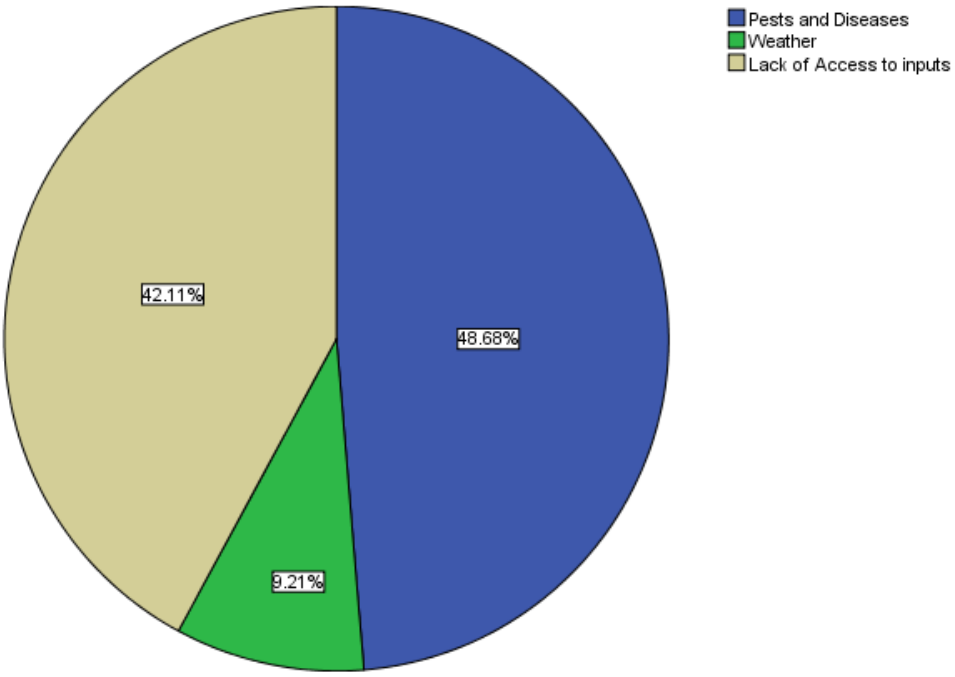

Figure 2. Cocoa production risk

Certain factors such as disappearing livelihoods, deteriorating income, and soaring rural unemployment rate have contributed immensely to problems faced by rural agrarian communities in Nigeria. Presently, there is a steady decline in Cocoa cultivation and sales, due to a combination of ecological, systemic and environmental factors (ICCO, 2006; Läderach et al., 2013; Oral Interview, February 13, 2015; Ajiola, 2016; 2021). If Nigeria experienced massive drastic rural-urban migration

between the 1970s and 1990s, due to an unprecedented rise in oil revenue and concomitant industrial and urban economic opportunities, ecological, monoculture, and climatic changes would ultimately lead to a decline in interest in the Nigerian cocoa industry in less than two decades.

The issues which have to do with cultivation of cocoa affect ecological sustainability. The agro-forestry method practiced under shade-grown cocoa trees and sustained through organic waste and animal dung is ecologically sustainable. However, once farming practices deviate from this method to other forms such as monoculture, issues such as loss of primal forests, intensive cultivation, soil depletion and biodiversity loss began to come up. Here, the crops become stressed, attached by pests and diseases, and the soil becomes infertile. These ecological problems have been attributed to monoculture (ICCO, 2006), a typical system of smallholder farmers. One aspect considered to have a huge impact on Cocoa production is climate change (Oyekale, 2012; Ofori-Boateng et al., 2014). Under the regular scenario of the Inter-governmental Panel on Climate Change (IPCC), it has been observed that fluctuations in weather patterns could have grave concerns for the cultivation and growth of some crops such as Cocoa. The main driver of climate change impact on Cocoa is increasing temperature. If this is not checked by more rainfall, higher temperatures might lead to evapotranspiration which can increase the risk of droughts to which Cocoa is highly vulnerable (Läderach et al., 2013).

Conclusion

As of 2019, Nigeria led other West African countries in earnings made from the exportation of cocoa. Cocoa traders in the country earned about N220.5 billion as proceeds from the sale in 2019. While their competitors in Ghana and Cote D'Ivoire had issues with incidences of high black pod disease and the introduction of a cocoa price floor, respectively, they made good proceeds in the international market. Instructively, the International Cocoa Organisation (ICCO) in its forecast for 2020 noted

that Nigeria's cocoa output is estimated at 260,000 tonnes for the 2020/2021 season. However, with contemporary poor agricultural productivity, climate change, land grabbing, dispossessions, mass poverty, growing misery and food insecurity in the rural agrarian communities, Nigeria is far from achieving sustainability in Cocoa production and rural livelihoods. The country is likely to soon experience a protracted stagnation and collapse of the cocoa industry. The inability of state government to facilitate greater involvement of the private sector and farmer organizations; ensure greater competition in input and output markets; improve productivity through research and development, extension, and technology dissemination; and seek value addition through market development and processing of cocoa into diverse by-products could also make the Nigerian cocoa industry to slide into a moribund state.

To boost and sustain cocoa production in Nigeria, government and stakeholders should donate seedlings and agro-inputs including sprayers, and agrochemicals. They should also organise capacity building on integrated pest management for cocoa farmers and processors. There is equally need to organise workshops for cocoa farmers and stakeholders in major cocoa-producing agrarian communities and towns, notably Idanre, Akure, Ile-Oluji in Ondo State; Oshogbo, Ife, Ilesa in Osun State, Umuahia, Abia State, Uyo, Akwa Ibom State and Ikom, Cross River State. As a matter of necessity, Nigeria should collaborate with other major cocoa-producing towns in other countries, especially in Cameroon. This will help in the formation of a regional bloc that might help to determine the quality of both countries' cocoa exports and price differentials. Most significantly, it is important to harness intellectual, social, economic, and professional resources in refining cocoa into several finished products. This will revamp the subsector and re-absorb the burgeoning army of unemployed youths and farmers in various agrarian communities in Nigeria.

Declarations

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Conflict of Interest
No potential conflict of interest was reported by the authors.

Data Availability
Apart from data provided in the manuscript, any other data related to this work are available on request.

Ethical Approval
Clearance was given by the Department of Geography, Osun State University. Within the study area, permission was sought from farmers before commencing the study.

Informed Consent
All respondents were duly informed of the nature of the research and their consent was given before proceeding. The names of respondents were not revealed. They were not also compelled to participate in this research.

Human and animal rights
Animals were not involved in the study.

References

Adefila, O. (2013). Spatial Effect of Cocoa Production on Rural Economy of Idanre-Ifedore Local Government Area, Ondo State

Nigeria, *Asian Journal of Agriculture and Rural Development.*

Adesina O.C. (1994), Indigenous Participation in the Economy of Western Nigeria, 1900-1970, Ph.D Thesis, Department of History, Obafemi Awolowo University, Ile Ife, p 83.

Adesina O.C. (2004). Modern Agriculture in Nigeria: A Historical Exegesis, *Benin Journal of Historical Studies*, Vol 4, No 1-2 & Webster J.B, 1963, the Bible and the Plough, Journal of Historical Society of Nigeria, Vol 11, 4

Ajiola, F.O. (2016). Cocoa Production and Rural Development in Idanre, Pre-field Seminar Paper presented at the Staff and Post graduated Seminar Series, Department of History and Strategic Studies, University of Ibadan.

Ajiola, F.O. (2021). Cocoa Production and Rural Development in Idanre, Southwestern Nigeria 1900-1996. PhD Thesis Department of History, University of Ibadan. p206

Ajiola, F. O. (2018). Accumulation and Dispossession: Cocoa Production, Rural Development and the Structural Adjustment Programme in Southwest Nigeria, 1986 – 1996, *Lagos Historical Review, Vol 18.* p 132.

Amarjit K. (1995). The Origin of Cocoa Cultivation in Malaysia, *Journal of the Malaysian Branch of the Royal Asiatic Society, Vol 68, No 1*, p 70

Andres, C., Perez, E., Alcon, F., Choque, R., Trujillo, G., Milz, J., & Schneider, M. (2014). Cocoa Yield in Bolivian On-Farm Trials 2010-2013–Monitoring Outstanding Farmers and Comparing Clones and Sites. *Tropentag 2014, Book of Abstracts-Bridging the gap between increasing knowledge and decreasing resources*, 26.

Avelino, J., ten Hoopen, G. M., & DeClerck, F. A. (2012). Ecological mechanisms for pest and disease control in coffee and cacao agroecosystems of the Neotropics. In *Ecosystem Services from Agriculture and Agroforestry* (pp. 125-152). Routledge.

Ayorinde J.A. (1965). Historical Notes on the Introduction and

Development of the Cocoa Industry in Nigeria, *Nigerian Agricultural Journal*, *Vol 3*, *No 1* p18

Berry S.S (1975). Cocoa and Economic Development, *Agricultural Development in Africa*, Vol 10.

Berry S.S. (1974). The Concept of Innovation and the History of Cocoa Farming in Western Nigeria, *Journal of African History*, Vol 15 No 3,

Bryceson D.F. (2002). The Scramble in Africa: Reorienting Rural Livelihoods, *World Development*, 30.

CBI. (2016). CBI Trade Statistics: Cocoa in Europe CBI Market Intelligence:The Netherlands

C.B.N. (2009). Annual Reports and Statement of Accounts, Abuja Nigeria.

Colonial Reports—Annual, No 284, 1897-1905, Digital Content Created by the University of Illinois-Urbana-Champaign, 2010 p 10.

Denneth, R.E. (1919). Agricultural Progress in Nigeria, *Journal of the Royal African Society*, *Vol 18*, *72*, p 280

Dizolele, M. (2005). Eye on Africa: Cocoa Market. *Retrieved from the World Wide Web http://www. globwalsecUritynews. com*.

Fair Labor Association. (2012). Sustainable Management of Nestlé's Cocoa Supply Chain in the Ivory Coast - Focus on Labor Standards. Retrieved from http://www.fairlabor.org/sites/default/files/documents/reports/cocoa-report- final_0.pdf

Faluyi E.K. (1995). A History of Agriculture in Western Nigeria: Phd Thesis Submitted to the Department of History, University of Lagos, p 144

Galleti R, Baldwin K.D.S and Dina O. (1956). *Nigerian Cocoa Farmers*, Oxford University Press

Gervase W, & Clarence-Smith (2000). Cocoa and Chocolate, 1765-1914, London: Routledge, p 1

Del Greco, A., Oliveira, S., Demers, N., & Weise, S. F. (2012). Rapid

Biodiversity Assessment Methodologies Project: Literature Review.

Gustaf, A.W. (1962). *The First Cacao Trees in Ghana*, London: Longman p19

Hokana, F. (1994). World Cocoa Bean Production. World Agricultural Production (!994). No. 10, 36-39

ICCO (International Cocoa Organization) (2010). Quarterly Bulletin Cocoa Statistics. Vol. XXXVI. 2009/2010

Jean-Pierre. C. (1997). Cocoa as Innovation: Local Contexts and Agro-ecological Conditions in the History of Cocoa Cultivation in West African Forest Lands, 1850-1950, *Mitteilungenzur Kulturkunde, Vol 43* pp. 122

Kwaku-Ofosu, A. (2011). Trade Liberalisation, Globalisation and the Cocoa Industry in Ghana: the Case of the Smallholder Cocoa Farmers, A Phd Thesis, School of Social Sciences, Humanities and Languages, University of Westminster, p 160

Kwaku-Ofosu, A. (2011).Trade Liberalisation, Globalisation and the Cocoa Industry in Ghana: the Case of the Smallholder Cocoa Farmers, p 162

Läderach, P., Martinez-Valle, A., Schroth, G., & Castro, N. (2013). Predicting the future climatic suitability for cocoa farming of the world's leading producer countries, Ghana and Côte d'Ivoire. *Climatic change*, *119*(3), 841-854.

Motamayor, J. C., Lachenaud, P., e Mota, J. W. D. S., Loor, R., Kuhn, D. N., Brown, J. S., & Schnell, R. J. (2008). Geographic and genetic population differentiation of the Amazonian chocolate tree (Theobroma cacao L). *PloS one*, *3*(10), e3311.

Moujama, O.G, (2013). Nigerian Cocoa Exports and Global Capitalism, 1914-1960, Ph.D Thesis, Department of History, p 20

Nestlé (2012). Growing sustainable fine cacao. Country: Ecuador. Available at: http://www.nestle. com/csv/case-studies/ AllCaseStudies/Sustainable fine-cocoa-growing-Ecuador.

Ofori-Boateng, K., & Insah, B. (2014). The impact of climate change

on cocoa production in West Africa. *International Journal of Climate Change Strategies and Management*.

Olayide, S. O., & Falusi, A. O. (1975). Economics of cocoa production and the future of the cocoa industry in NigeriaProceedings. In *5. International Cocoa Research Conference1975Ibadan (Nigeria)*. Cocoa Research Institute, Ibadan (Nigeria).

Oluyole, K. A., & Sanusi, R. A. (2009). Socio-economic variables and cocoa production in Cross River State, Nigeria. *Journal of Human Ecology*, *25*(1), 5-8.

Onyejela P, 2014, Nigeria: World Bank and Structural Adjustment Programme, Nigeria: Crown Cross Press.

Opeke.L.K, (2007). Cacao: Origin and Spread, Annual Bulletin of the Cocoa Research Institute of Nigeria (CRIN) p 6

Oseni, J. O. (2010). *Effects of deregulation policy on cocoa marketing in Ondo State, Nigeria* (Doctoral dissertation, Federal University of Technology Akure).

Otuonye, A. H., Adeoti, A. Y. A., Agbeniyi, S. O., Aikpokpodion, P. O., Enikomehin, O., & Popoola, T. O. (2007). Evaluation of the susceptibility of local cocoa germplasms in Nigeria to Phytophthora pod rot disease using the leaf discs technique. *Journal of Food Agriculture and Environment*, *5*(3/4), 327.

Oyekale, A. S., Bolaji, M. B., & Olowa, O. W. (2009). The effects of climate change on cocoa production and vulnerability assessment in Nigeria. *Agricultural Journal*, *4*(2), 77-85.

Rice, R. A., & Greenberg, R. (2000). Cacao cultivation and the conservation of biological diversity. *AMBIO: A Journal of the Human Environment*, *29*(3), 167-173.

Ruf, F. O. (2011). The myth of complex cocoa agroforests: the case of Ghana. *Human ecology*, *39*(3), 373.

Udo, R. K. (1965). Sixty years of plantation agriculture in Southern Nigeria: 1902–1962. *Economic Geography*, *41*(4), 356-368.

UNCTAD. (2009). "Foreign Direct Investment database." http://www.unctad.org/.

Waldron, A., Justicia, R., Smith, L., & Sanchez, M. (2012). Conservation through Chocolate: a win-win for biodiversity and farmers in Ecuador's lowland tropics. *Conservation Letters*, *5*(3), 213-221.

World Bank. (2013). *Reaching the Rural Poor. A Renewed Strategy for Rural Development*, Washington DC. 39.

World Bank (2011). Africa Development Indicators, Washington DC, Report 20433.