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The Tragedy of Forestland Sustainability in Postcolonial Africa: Land Development, Cocoa, and Politics in Côte d'Ivoire

Symphorien Ongolo [1,*], Sylvestre Kouamé Kouassi [2], Sadia Chérif [3] and Lukas Giessen [4]

[1] Chair Group of Forest and Nature Conservation Policy, Georg-August University, 37077Göttingen, Germany
[2] Department of Geography, University Alassane Ouattara, BP V 18 01 Bouaké, Côte d'Ivoire; kouamsylvestre@yahoo.fr
[3] Department of Sociology, University Alassane Ouattara, BP V 18 01 Bouaké, Côte d'Ivoire; scherif@gmx.fr
[4] European Forest Institute, 53113 Bonn, Germany; Lukas.Giessen@efi.int
* Correspondence: songolo@uni-goettingen.de; Tel.: +49-551-39-33410

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Abstract: Tropical countries are often blamed for not managing their natural resources sustainably. But what if overexploitation is inherent in political structures and policies—rooted in foreign colonial order—and is consistently detrimental in the contemporary use of forestlands? This article argues that post-colonial land development policies and related political interests seriously impede the sustainability of forest ecosystems in Côte d'Ivoire. Methodologically, the study builds on a historic contextualisation of forestland use policies in Sub-Saharan Africa, with Côte d'Ivoire serving as a case study. The results indicate that the increasing development of so-called rent crops clearly follows the historical dynamics of 'land grabbing' and a post-colonial agrarian model. This situation benefits agribusiness entrepreneurs and, more recently, sustainability standards. The study discusses the findings based on recent literature and empirical evidence. In conclusion, the post-colonial heritage and the manipulation of the related patterns by elites and policy-makers largely explains the present-day unsustainable forestland conversions in Côte d'Ivoire.

Keywords: land politics; forestland governance; African politics; development; Côte d'Ivoire; Deforestation

1. Introduction

In tropical zones, the dynamics of economic prosperity and development are closely connected to forestland use. They are often guided by the logic of expanding or intensifying agricultural models of a type applied to perennial shrub-land crops [1–4]. In short, the notion of forestland refers to an area of land covered by trees or forest ecosystem and that can be used for other specific purposes such as farming, natural resource extraction, hunting zone, ecotourism, or building.

This paper analyses why and how the stakes of ecological sustainability have often been marginalised in 'capitalisation' policies or forestland use strategies in tropical Africa. In most cases in tropical Africa, the plantation economy, [5] with its postcolonial dynamics, is usually supported by a cycle of massive conversion of forestlands into croplands given to more or less long occupancy (oil palms, cocoa, rubber, etc.). This hasty replacement of forest ecosystems by crops in the tropical areas is also part of a relatively recent process called 'land grabbing' [6]. As for the relation with the market economy, the dynamics of the plantation economy precede, or in some cases, follow the increased appeal of the agricultural sector for private investment, and business companies' transnationalisation of the agricultural production circuits [1,7].

Besides pressure from the business world, connected to the capitalistic development of the plantation economy [5,8,9], the large-scale transformation of tropical African forestlands is also bolstered by several political lines of logic for ecological adjustment. Coupling the consolidation of the plantation economy guided by the logic of capitalism on the one hand and the politisation of forestland use in tropical Africa on the other, forms the foundation of what can be called: "the political capitalisation of forestlands".

In most tropical regions, intact forestlands and biodiversity are declining. An estimated 80% of the new agricultural lands (including plantations) are taken from the forestlands [10]. This situation has major social and environmental consequences for the local people who depend on the forestlands for their daily survival [11], and at the global level in terms reduction of greenhouse gas emissions. In Sub-Saharan Africa (SSA), pressure from agriculture and changes in the vocation of the forestlands accelerate deforestation [12]. Côte d'Ivoire is a significant example of a country where land use policies based on large-scale agrobusinesses (in this case cocoa) almost wipe out the majority of the national forestlands.

From a paleo-ecological perspective to contemporary studies, the African continent has been a very informative case study to understand the complex interactions between plants and societies. To scrutinize how cultural developments affect environmental transformations in the long-term such in-depth understanding requires interdisciplinary approach including historical, social perspectives as well as agrarian and ecosystem diversity studies [13]. To better understand the diachronic evolution of land development practices and strategies in SSA since the end of the 19th century, this article has adopted an analytical approach based on historical sociology and agrarian studies. This approach requires scrutinisation, identification, and rigorous selection of lines of logic that have been documented in literature related to the topic addressed. The aim is to better understand contemporary realities and the dynamics of the recent past and the present in SSA land use policies. We are interested in the question of the history of economic thought on agricultural rent, the colonial heritage of agricultural dynamics in SSA as of the end of the 19th century [14]; The impact of the "State privatisation" processes [15–18] in the 1990s; The extraversion capacities [19] of the postcolonial state and the capacity of their state bureaucracies to pretend [20] when confronted with external demands for 'good governance' of forestlands.

2. Methodological Approach: Analysing the Present Using the Logics of History

This article is rooted in the complexity, pluralism and apparent political disorder that characterize the postcolonial societies. More specifically, post-colonialism here refers to "a given historical trajectory that of societies recently emerging from the experience of colonization and the violence which the colonial relationship, par excellence, involves" [21].

Our focus on forest sustainability in the postcolonial African context emerged from the recurrent debates and disputes between domestic actors who viewed forests as resources and potential farmlands on the one hand, and the increasing global actors' view of forests as service providers [4]. Second, many independent postcolonial countries in tropical Africa have often claimed their right to use forestland as a sovereign resource that should be exploited for national development policy purposes [5,22,23]. Since the 2000s, this discourse has been strongly supported in tropical African countries by proponents of the goal for these countries to reach the emerging economic nation status in 10, 20 or 30 years. In our two cases, Côte d'Ivoire is a good example of how state bureaucracies can promote deforestation as a policy for economic development.

This article uses a rationale based on the historic contextualisation of forestland use policies in Sub-Saharan Africa. We combine history and political sociology, and treat them as complementary disciplines. This combination, historical sociology, entails the analysis of the temporality of social facts and transformations of the present time, using carefully identified and contextualised variables that are contingent on their past. Despite the similarities between earlier situations in reference and the situations we are focusing on, we are not trying to position the present in a simple chronological series

based on a type of path dependency [24]. The brief is the opposite. We need to find a historical logic that can better explain the complexity of what is observed at a given moment in time. The purpose of this approach, for us, is to construct a meticulous analysis that includes historicity, in other words, the importance of temporalities in the development of land exploitation policies in the countries of the former French colonial empire in Africa.

From an empirical viewpoint, our reflection is based on the expansion of export crops, e.g., cocoa in Côte d'Ivoire. This country was also selected mainly because the authors have spent many years researching the question of land politics, and agricultural and forest policies there. Our choice of case study and the field observation is also justified by the symbolic, pioneering role that Côte d'Ivoire have played in the way land development policies are imagined in postcolonial context. The degree of politicisation of the stakes and challenges of sustainability in the forestlands of the former French colonial empire in tropical Africa was also one of our motivation to focus on this country.

In our analysis, we use a twofold approach that combines a comprehensive, critical analysis of the qualitative data together with a descriptive statistical analysis of the quantitative data. Our field observations include consulting experiences and first-hand data in Côte d'Ivoire. Other data come from scientific empirical research including doctoral studies of two of the authors carried out in Côte d'Ivoire between 2008 and 2016. The most recent field observations and the interviews were carried out in the Nawa region, (last major cocoa production basin in Côte d'Ivoire) in May 2016 and have contributed greatly to this article.

In qualitative terms, we reviewed the genealogy of the logic behind land "optimisation" in the history of the political economics of agricultural dynamics on the one hand and the African development policies on the other. Besides this historiographic analysis that covers the end of the 19th century to the contemporary forestland transformation, we reviewed the scientific literature on the uses and exploitation of these spaces in tropical Africa in general and especially in Côte d'Ivoire.

In quantitative terms, our statistical analyses (selection of databases, graphic representations, and interpretation) are supported by long series of data on the evolution of the forest covers and the deforestation rate in Côte d'Ivoire [25,26]. The official monitoring data of the Food and Agricultural Organization [27] were used to study the historical path of cocoa production in Côte d'Ivoire from 1960 to 2014. Although the quantitative data we use is official, we recognise their potential limits [28,29].

In the case of the FAO, the academics have debated the question of the validity and reliability of statistics on monitoring the evolution of global forest resources [30,31]. Since there are no uncontested equivalent data, it is almost impossible, even in social science, to avoid using FAO quantitative data, especially to support empirical observations and evidence by comparing them to measurable long-term dynamics in the agricultural and forestry sectors [3,32]. With regard to 20th c. deforestation rates in West Africa, [33] pointed out the potential for exaggeration since global quantitative analyses have a limited capacity to assess local realities. In this article, where we use a method that combines qualitative and quantitative approaches, we constantly cross data and our angles of interpretation. To a certain extent, this enables us to substantially reduce the risk of introducing a bias to our analyses and the related results.

3. Theoretical and Conceptual Frameworks

Depending on the context and the subject of discussion, the notion of "optimisation" can refer to a process of creation or consolidation, or a process of relative or absolute increase in the value of tangible or intangible goods or entities. In this article, *land optimisation* refers to a colonial doctrine that equates the intrinsic value of the land to the value of its uses, the utilisation method and the nature of the investments granted by a legitimate or illegitimate land user.

3.1. The Colonial Roots of 'Land Enhancement' in Tropical Africa

The French colonial empire in tropical Africa, that created Côte d'Ivoire in its present political system, nurtured the "capitalisation" principle for its colonies based on a production and development

process for the territories that had been conquered in the 1870s. This does imply the total absence of pre-colonial forestland structures, e.g., the example [34] of the local shea butter production systems in northern Ghana. This paper, however, focuses on the impact of colonial patterns on the postcolonial dynamics of forestland use. In his book on the development of the French colonies, Albert Saraut [35], the then Minister of the Colonies, made a distinction between two components of the French colonial government's land enhancement policy. The first component focused on developing 'human skills', in other words, the capacity to use and draw maximum benefits from the 'indigenous workers', be they works supervisors, soldiers, or simple labourers. The second component concerned the capacity to benefit from the natural wealth of the land, in other words the capacity to (over)exploit the soil and subsoil resources in the colonies to enrich, the 'motherland', mainland France.

We are mainly interested in the second component and what it bequeathed to the postcolonial agricultural policies in the former French colonies, using Côte d'Ivoire as an example. There are very few pioneer studies devoted to plantation economies in Sub-Saharan Africa [8,36] and more specifically in Côte d'Ivoire [14,22,37–40], in addition to contributing in a comprehensive understanding of this issue, this article seeks to analyse the sustainability stakes and challenges relating to the forestland enhancement processes in Côte d'Ivoire.

3.2. Land Value and Political Economy Theory

With reference to the "good" use of land, the most widespread and widely supported idea for the last two centuries has been that the best way to capitalise land assets is to assign them multiple uses that can generate a maximum of revenue as pointed out by Johann von Thünen [41]. From the conceptual vantage point, the question of land enhancement was an important issue until the beginning of the 20th century because of the central importance of agriculture and land transactions as part of economic activities of that era [42]. Economic thought first considered the subject of land value at the beginning of the 19th century. The works of David Ricardo on the theory of land rent, then Karl Marx on the links between the agrarian question and capital-labour were actually precursors to the problem of forestland enhancement under pressure from agriculture, the question that concerns us in this article. For Ricardo [43], the question of rent for the property owners can be summarised by these latters' quest for payment for the use of their land and for the scarcity factor of the fertile land they had to offer.

Since the quantity of fertile lands was limited, their intrinsic value, —as basic capital for agriculture, —rose, especially since the demand for agricultural products had to keep abreast of growing population figures. This situation led to constant emphasis on the need to start by making the fertile lands profitable, and then turn to the less fertile, more readily available lands [44,45]. Marx partly inspired by Ricardo, explains how the tension connected to controlling and using the lands is expressed through various transactions. The landowners, organised as an oligarchy of as an oligopoly, offer their lands to capitalistic agro-entrepreneurs in exchange for a rent [18,46,47]. Regardless of differences in context and era, this short summary of the earliest economic thought on the theory of rent is especially enlightening for our reflection on forestland enhancement policies in Sub-Saharan Africa. In the Ivorian example, the rent logic applied to land use for agriculture is explicit or underlying, depending on the case. Deforestation has been long accepted as a legitimate way to draw profit from 'forest rent' and to increase the productivity of the cocoa crops. Cocoa being considered as a 'cash crop', similar to other export crops like coffee and rubber, was produced mainly for foreign industrial and commercial markets.

3.3. On the Dominant Logics of African Land-Use Policies

The creation, control and clearing of forests have often been at the heart of land access strategies in tropical zones [48,49]. In tropical Africa, plantations of slow-growing trees and the production of perennial crops that take many years to develop and bear their fruits are examples of strategies that implicitly suggest land ownership. In some cases, e.g., the wood industry and the control of forest areas are closely tied to the stakes of land control that must last at least long enough to guarantee a return on investment. Similarly, clearing and deforestation of wooded lands are ways to materialise

controls and privatise lands. The stakeholders use this method to show their exclusive user rights and, hence, the right to exclude any third party from the land concerned.

The logics of soil and sub-soil exploitation outweighing forest ecosystem sustainability is the basis of one of the popular and influential slogans about land development in Africa: "the land belongs to those who work it" [14]. This slogan has almost become synonymous with the name of Houphouët-Boigny the first president (1960–1993) of Côte d'Ivoire who was also considered to be the pioneer of postcolonial plantation economies in Africa. The principle of these economies was to consolidate the status of territories given to natural resources extraction from 'quarries' and to agricultural production for the benefit of industrial and commercial circuits belonging to the former colonial powers. Although the magnitude, form and degree of dependency of these plantation economies has changed, the status of the territories has not; enterprises belonging to the former colonial powers continue to wield their influence and produce (or obtain) raw materials. One of the changes is clearly shown through global land grabbing practices. Some scholars [50,51] provided mode details on this subject in their works on the domination of the capitalist logic in land transactions in developing countries.

3.4. On Sustainable Use of Forestlands in Tropical Africa

In most cases, the land control use or access strategies in tropical Africa are carried out at the expense of resource sustainability. Despite the differences between the dry tropical zones (forest resources very scarce) and the humid tropical zones (much of the forestland relatively undisturbed) disputes and conflicts are often connected to the management of the available resources. But the implementation of these reforms has often brought out the severe politisation of the stakes of sustainability in forestland governance in topical Africa.

To understand the stakes and evolutionary process of forestland use sustainability in tropical Africa requires both observation of the recent dynamics as seen in Côte d'Ivoire, and a detailed analysis of the historical narrative of earlier dynamics of the precolonial, colonial and postcolonial ages in this country. In this domain, the aim is to critically examine the evolution of public policies for the agricultural and land sectors and to understand their effects on forestland sustainability. The originality of this research lies in its conceptual contribution based on extensive literature review and empirical evidence about the links between sustainability and what we call 'the political capitalisation of forestlands' in tropical Africa from the colonial to the contemporary period. One of the paradoxes of postcolonial land development policies in Sub-Saharan Africa is that they emerged from and still co-exist through a set of conflicting forestland uses including logging, hunting, agro-industrial concessions and protected areas for biodiversity conservation. These complex dynamics have major environmental, social and socio-political effects on forest ecosystems, domestic political systems and the livelihoods of forest-dependent people.

Hardin [47] pointed out that concessionary regimes in tropical Africa were characterized by a mix of brutality, privilege, cronyism and patronage. In the case of the Congo basin region, for example, intense rivalry between German and French colonial forces led to overexploitation of forestlands, captive workers of logging companies, coercive expropriation of local lands for the creation of protected areas mainly dedicated to leisure-time activities of European settlers such as sport-hunting [47,52,53]. This model of forest overexploitation combined with privileged use of forests by dominant local and western elites for their enjoyment have strongly influenced the politics of forestland use in postcolonial tropical Africa since the 1960s [54,55].

The hypothesis put forward in this article is that the postcolonial land development policies are one of the main impediments to the sustainability of forest ecosystems in tropical Africa. Empirically, this paper draws on a case study of the relations between cocoa development policies and deforestation in Côte d'Ivoire. The main reason for selecting Côte d'Ivoire from the former French colonial empire was its long experience in forest clearing as a strategy to legitimate access to and control over the forestland for agricultural development.

4. Why Forest Sustainability Does Not Matter in Postcolonial Africa

Beginning in the early 1960s many postcolonial states in Africa including Côte d'Ivoire adopted the principles of land in the 'public domain', in other words, the so-called vacant land (*terres vacantes*) or lands that are not officially registered automatically belong to the State. This situation provided the basis for a system called 'land grabbing' in the former French colonies after they became independent states [56]. One of the effects of this land grabbing system has been the establishment of vast state-owned or semi-state-owned agro-industrial plantations in the forest areas, or else the peasants' hastily clearing the parts of their ancestral lands that are wooded to incontrovertibly establish their family property or to develop export crops production.

As a reaction to the anthropic and commercial pressure on natural resources globalisation of ecological stakes has become more intense and has given rise to an urgent demand for greater sustainability, especially with regard to the forest ecosystems in tropical Africa. In Côte d'Ivoire where most of the forestland biodiversity was destroyed by agriculture and especially cocoa plantations, the hope of saving the last intact forest refuges will probably depend on at least two important policy measures: the capacity and political interest of state bureaucracies to reinforce the rule of the law (or a positive use of coercion) for a sustainable use of forestlands and the generalisation of long-term and significant incentives to maintain biodiversity in the agricultural systems. Incentives for the environmental services include sustainable development and certification standards especially designed to bring about changes in agrarian practices, encouragement for tree plantations and/or the development of niche markets for the cocoa products labelled 'fair trade and sustainable'.

4.1. The Expansion of 'Rent Crops' as the Post-Colonial Agrarian Model

The notion of 'rent crops' is commonly used in the former French colonies to refer to agricultural export products whose production system was keyed to providing mainland France with products from the colonies. In the land capitalisation doctrine, one of the levers of rent crop expansion (cocoa, cotton, rubber, oil palm, sugar palm, sugarcane, etc.) was promises that farmers and agricultural entrepreneurs who developed their lands would be given secure access and right of use. This promise was also supported by the implicit principle of "the land belongs to those who cultivate it". This historical background is discussed in earlier sections of this paper.

Colonial archives reveal that Côte d'Ivoire was one of the first postcolonial African states to test the above-mentioned "the land belongs to those who cultivate it" doctrine. If we take this doctrine a step forward, the fact that the forestland is assimilated to 'vacant' land that is not exploited, i.e., converted to an assigned use, or has not been registered in the land registry office automatically puts it in the State's 'private domain'. Since the 1960s, the rise of the cocoa plantation economy has contributed to the accelerated decline of forest ecosystems and the collapse of the biodiversity. The development of cocoa cropping stems largely from the 'forest rent' principle, in other words, the influx of agricultural entrepreneurs looking for newly cleared forestlands whose soil fertility was still intact. This seriously contributed to reducing the Ivorian forests from about 12 million hectares in the 1960s to around 1 million in 2014.

4.2. Cocoa in Côte d'Ivoire: From Economic Success to Ecological Disaster

By choosing to build economic prosperity on the cocoa sector, at the expense of the forest ecosystems, Côte d'Ivoire played the hand of the agricultural entrepreneurs. This started in August 1960, the country's Independence Day [57,58]. The postcolonial government condoned deforestation as a tool for good land management. Emphasis was officially given to the accelerated conversion of forestlands by the then President, Houphouët-Boigny in a speech to the Ivorian National Assembly on January 1962.

To heed the President's political will the National Assembly (dominated by the PDCI, the State's party) voted a law on 20 March 1963. At the 6th Congress of the Côte d'Ivoire Democratic Party (PDCI),

on 30 October 1970, Houphouët-Boigny confirmed his determination and introduced the slogan on land development:

> *"Côte d'Ivoire is three-fifth the size of France and has a population of 5 million people, including our foreign brothers. There is enough cultivatable land for all of us; what we lack is manpower. The Government and the Party have thus decided, in the interest of the country, to grant to all Ivorian nationals by birth or adoption, the right of enjoyment to a piece of land he has developed, regardless of size. This right is final and transmissible to the person's heirs"* [59].

There were several interpretations of this decisive speech which was summed up as *the land belongs to those who cultivate it!* Since the 1970s this slogan has become a powerful political mantra that affects the evolution and/or the status quo of land tenure regimes and forestland use policies in tropical Africa. Many exaggerated interpretations have had detrimental effects on speeds of forestland conversion and biodiversity loss in Côte d'Ivoire.

The pace of deforestation and forestland conversion into farmlands and cocoa plantations has soared. The Ivorian forestlands, that were estimated at about 15.8 million hectares in 1880 were down to 11.8 million in 1956, in other words, a loss of 4 million hectares in 76 years. In 1986 the forest cover in Côte d'Ivoire amounted to a mere 2.9 million hectares, which meant a loss of close to 8.9 million hectares of forestland in 30 years. This acceleration in the pace of deforestation during the second period, —annual figures are more than five times higher than during the first period, —coincides with the first boom in cocoa production in Côte d'Ivoire (Figure 1).

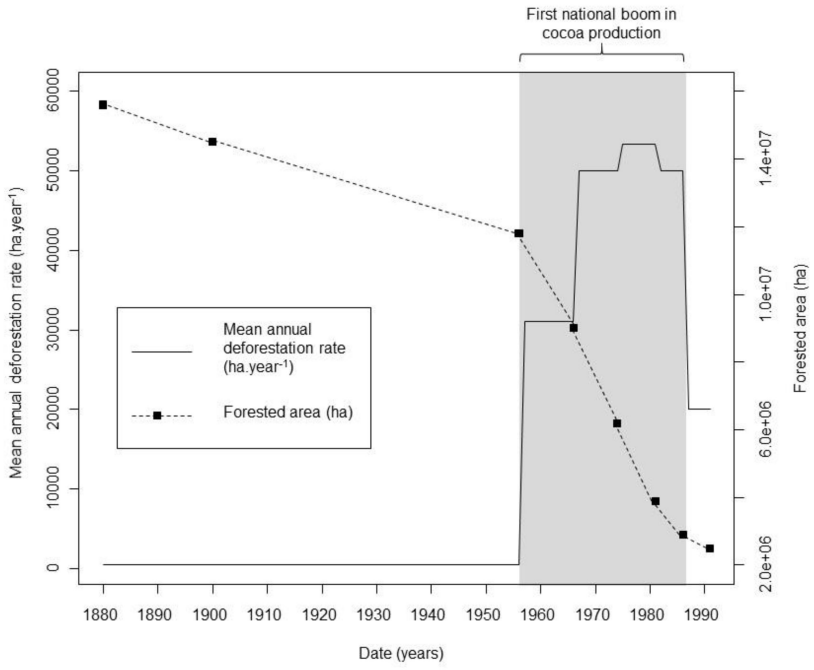

Figure 1. Evolution of deforestation and forestland cover in Côte d'Ivoire from 1880 to 1991. Source: authors (based on data from [25,27]).

These free land access policies were boosted by the encouragement given to the neighbouring countries, especially Burkina Faso, to send thousands of peasant workers to the cocoa plantations. These migratory flows were tragic for the Ivorian forests [58,60,61]. Deforestation dynamics in the Marahoué National Park (MNP) is a good example MNP, created in 1968, is a protected area of about 101,000 hectares located in an area approximatively 300 km northeast of Abidjan. A decade prior to the creation of this protected area, the *Gouro*, the major indigenous populations of the Marahoué region, were forcibly expropriated from their ancestral forestlands by colonial and early postcolonial administrations to impose MNP as a nature conservation policy instrument. A few years later,

while the Gouro continued to claim their lands, the Ivorian postcolonial state bureaucracies and elites encouraged the installation of irregular camps of migrants in the MNP. By supporting and even facilitating the establishment of the Baoulé (internal migrants from the centre region of Côte d'Ivoire) and most importantly Mossi (from Burkina Faso), the postcolonial administration was implementing its doctrine of the land belongs to those who cultivate it without implementing its postcolonial land development policy.

In 1989 when the government decided to evaluate the situation, notably because of the increasing pressure on global environmental sustainability, the forest bureaucracy reported that 1397 migrants had developed cocoa plantations on the MNP land mainly Baoulé (49.6%), Gouro (29.6%), Mossi (17.8%) and about 3% of other local minorities. In 1999 this number was estimated at 2,635 migrant-farmers. Because of a 10-year politico-military crisis that struck Côte d'Ivoire in 2002, about 30,000 migrant-farmers and their families were established in the MNP in 2016. This population included 35% Baoulé, 32% Mossi, while the Gouro native populations decreased by 16% [62].

As a result of these active forestland conversion to agriculture and 'free land access' policies, implemented by massive flows of internal and external migrant-farmers, the country of Houphouët-Boigny has become the world leader in cocoa production. The national cocoa production rose from 85,000 tons/year in 1961 to 180,700 tons/year in 1969. By 1977 Côte d'Ivoire had become the world leader with an annual production of 303,621 tons. From then on, the cocoa production rate rose exponentially and exceeded 500,000 tons per year as of 1984. At the death of Félix Houphouët-Boigny in December 1993, the annual cocoa production in Côte d'Ivoire was 803,799 tons/year. In 2000, Côte d'Ivoire produced 1.4 million tons (Figure 2). The Ivorian miracle, in other words, the terrific economic prosperity obtained from the great productivity of one export crop became, more than ever before, the economic model for the other countries in tropical Africa.

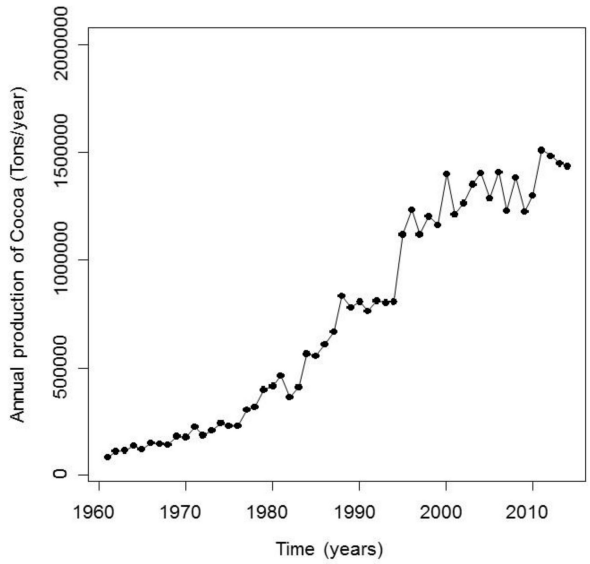

Figure 2. Evolution of cocoa production in Côte d'Ivoire from 1961 to 2010. Source: Authors (From [27] data).

Besides consolidating its position as leading producer of cocoa worldwide, Côte d'Ivoire raked in other economic trophies for several export crops that strongly violated the forestlands. The country of Houphouët became one of the main coffee producing countries, the top African bananas, pineapples, and oil palm producer and was in second place for rubber in the 1980s and1990s [63].

More than half a century after the beginning of the 'Ivorian miracle', in 2016, cocoa still occupied close to 2,000,000 hectares, managed by some 1,000,000 planters and provided about 40% of the world offer. Cocoa, thus, is a driver of economic prosperity in Côte d'Ivoire, providing more than half the export earnings and more than 10% of the national GDP [64,65].

Moreover, the attractiveness of the 'Ivorian model' and its influence over countries with large forest cover such as the countries of Central Africa portends an accelerated pace of forestland conversion in these countries. In most of them, the governments praise medium term 'emergence', which amounts to a quest for economic prosperity based on faster exploitation of natural resources and the conversion/development of 'available' forestlands.

Setting aside the short-term effects of price fluctuations on the world cocoa market, deforestation was encouraged by the gradual return of political stability in Côte d'Ivoire, the macro-economic situation that was affected by the structural adjustment programmes. This can be notably explained by the increase in the number of agricultural entrepreneurs and a 'return to the land' tendency stemming from the fact that the wages of the former civil servants had been halved and many had lost their jobs. As a result of this fast pace of forestland conversion, Côte d'Ivoire has been one of the countries with the highest deforestation rates in tropical Africa.

4.3. State Fragility and Ecological 'Adjustment'

President Houphouët-Boigny had reigned for 33 years. When he died, in December 1993, Côte d'Ivoire lapsed into a period of political and economic crisis and insecurity that lasted until 2012, when the first signs of peace and emergence reappeared. Between 1980 and 2000 the introduction of 'good governance' of people (human rights), institutions (democratisation), and goods (accountable natural resources management) seriously shook the African countries. This 'good governance' doctrine was based on a series of suppositions including the widely held postulate that breaking down State hegemony by making the bureaucracies weaker would lead to optimal co-management of public goods in the countries receiving official development aid.

In Côte d'Ivoire, external pressure from the Structural Adjustment Programmes (austerity policies) affected the pace of forestland conversion. The tendency to use soil and sub-soil resources for utilitarian purposes, encouraged during the colonial period and perpetuated by the postcolonial State bureaucracies, became especially common as of the 1970s. Forestlands were more readily and rapidly given to agriculture and the ecosystems were more readily, rapidly and formally exploited. The purpose of this accelerated conversion rate was either to increase export growth and earnings for governments facing reimbursement obligations under the structural adjustment scheme during the 1980–2000 period, or else as an alternative for civil servants who lost their jobs thus as part of a government streamlining plan. In other cases, this enthusiasm for forestland conversion or exploitation reflected the peasants' internal organisation strategies in a sector where the withdrawal of the State had been especially harmful. The farmers reacted by cultivating the newly cleared forestlands where the primary fertility compensated for the lack of farm inputs that were no longer subsidised for crops such as cocoa.

During the structural adjustment period, the international financial institutions including the World Bank and the International Monetary Fund were very anxious for the African governments, the 'clients' of their debt contraction or debt repayment programmes, to become creditworthy again. As Jarret et Mathieu [66] pointed out with regard to Côte d'Ivoire, by the end of the 1980s, measures to boost the export crops led to "surplus production of coffee and cocoa [in Côte d'Ivoire] which, together with surplus production in other African (. . .) and Asian countries that used the same model, led the market to collapse".

In the early 1990s, the World Bank reacted to the boost in cocoa and coffee production especially in Côte d'Ivoire that had prevented a return to growth by adopting a series of measures that were the opposite of the decisions that had led to the collapse of the market prices. The order was to do everything possible to lower the cocoa and coffee production levels, in particular through drastic decreases in the price support for the planters. In the 1990s, the World Bank forced Côte d'Ivoire to abandon its price stabilisation fund system by making this a prerequisite to the Ivorian debt relief negotiations.

From the ecological angle, besides the growing deforestation of the 1970s (see Figure 1), the upheavals in the cocoa and coffee sectors were equally harmful to the life of the forest ecosystems. Unable to lower the speed of deforestation in a country where the so-called 'cocoa loop' had already consumed large parts of the forestlands, the macro-economic pressure on the cocoa sector supported, or even reinforced the forest and biodiversity destruction process in the name of the 'land capitalisation' doctrine.

Actually, the prosperity of the cocoa crops and the related tragedy of forest ecosystem sustainability in Côte d'Ivoire can also be traced to a type of land development whose main goal is to benefit from the 'forest rent', in other word, rapid and excessive use of the primary fertility reserves from the recently cleared forestlands to boost growth in the young cocoa plantations. This approach to forestland development to serve the cocoa plantation economy contributed to the destruction of the Ivorian forests. Schematically, the estimated direct impact was: one ton of cocoa produced for one hectare of forestland destroyed. For more information on the connection between 'forest rent' and cocoa plantation economy in Côte d'Ivoire, consult the [57] study and Francois Ruf's works. After more than half a century, the relentless search for more 'forest rent' finally got the better of the Ivorian forests. This includes the forests with relatively restricted use ('classified forests') and the protected areas. Forest cover losses in the protected areas were also recorded during the post-structural adjustment period; between 2001 and 2004, the protected areas apparently lost about 38,000 ha/year in Côte d'Ivoire (Figure 3).

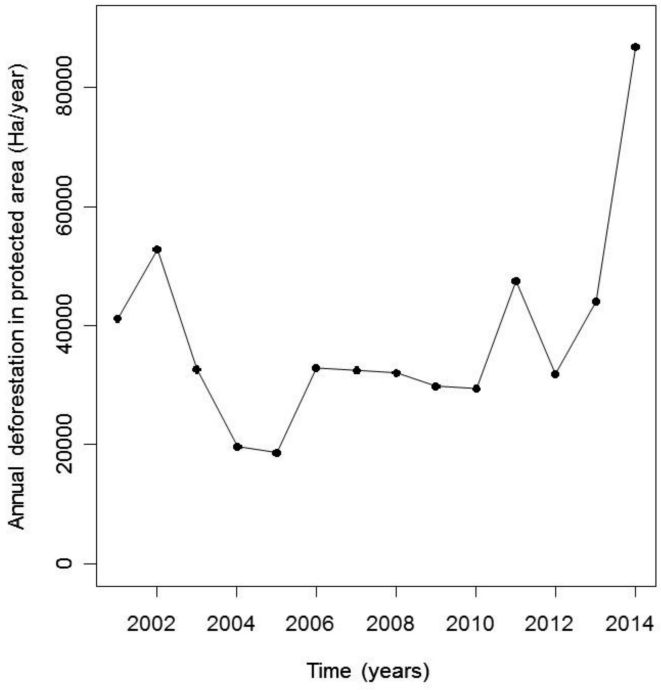

Figure 3. Recent trend of forest cover loss in protected areas in Côte d'Ivoire (From [26] data).

4.4. The Nawa Region, Rupture and Continuity

The paradox of the Nawa region is that it is home to both the last major intact block of primary rainforest in West Africa—the Taï national park (a protected area that contains the major last intact primary forest ecosystem in Western Africa. This park consists of about 454,000 hectares.)—, and the country's region that most recently developed major cocoa production. As such, the Nawa region is a very interesting case study to understand recent developments and future perspectives of forestland policies in Côte d'Ivoire. Despite the difficulty in obtaining reliable long-term quantitative data on the monitoring of forest cover and agricultural activities for the Nawa region, a recent study, co-authored by the lead author of this paper, provided an informative overview of the situation of land use in this region (Table 1).

Table 1. Mapping of land use cover/change in the Nawa region of Côte d'Ivoire in 2015 (From [67] data).

		Area (ha)	Ratio
Non-croplands	Dense forest	122,636	12.5%
	Degraded forest	47,121	4.8%
	Habitat	9107	0.9%
	Watercourse	35,640	3.6%
Sub-total of non-croplands		214,505	21.9%
Cropland and fallow	Cocoa	296,353	30.3%
	Coffee	105,417	10.8%
	Rubber	149,040	15.2%
	Oil palm	48,615	5.0%
	Food crops	75,972	7.8%
	Fallow land	88,668	9.1%
Sub-total of croplands		764,065	78.1%
Total (ha)		978,569	100.0%

Between 2003 and 2015 the total area of croplands was increased from 302,789 to 675,397 hectares, in other words, about 70% of the total forestlands of this region (apart from the Taï national park) were turned into farmland by 2015. Approximately 30% (296,353 hectares) was used for cocoa production making the Nawa region the largest major cocoa production region in Côte d'Ivoire. The remaining potential of degraded forests represented approximatively 5%, which means the prospects to continue expanding cocoa production by drawing on forestlands has largely dwindled away. As a result, the future of the last intact forest ecosystems, especially the Taï national park, in the Nawa region is threatened more than even by the cocoa pioneers (Figure 4).

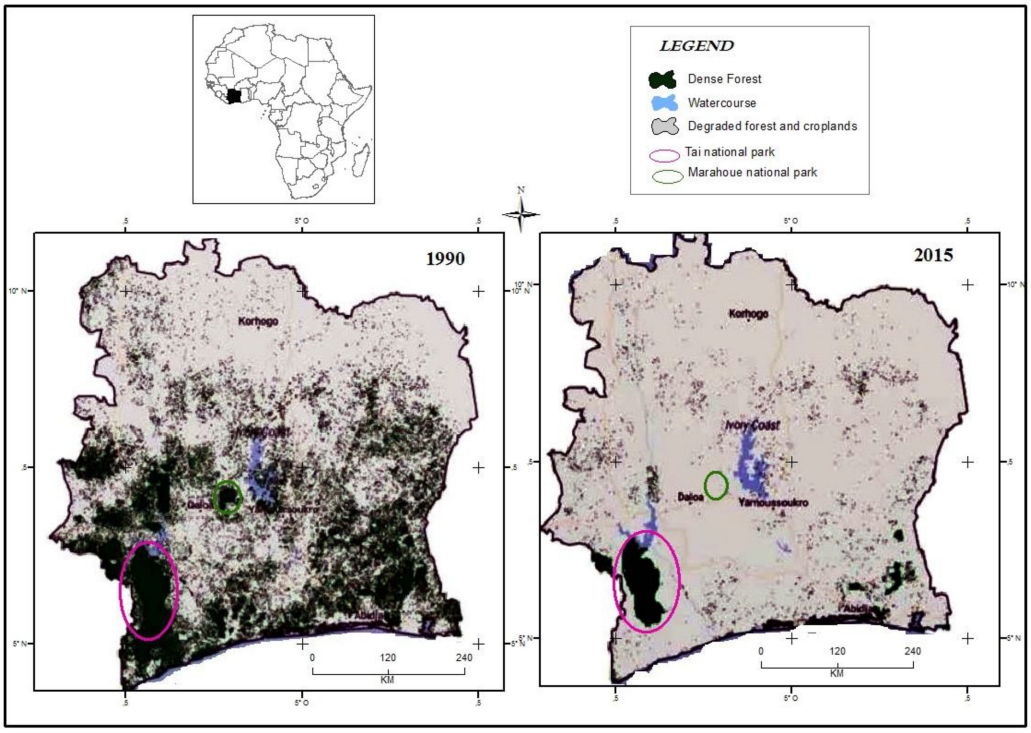

Figure 4. Visualisation of the deforestation dynamics in Côte d'Ivoire from 1990 to 2015 (source: adapted from [68]).

The dynamics of forestland conversion in the Nawa region and other similar contexts, a tragedy to forest sustainability, is likely to continue for at least three reasons. First, given the status of the main cocoa production region in Côte d'Ivoire, local and migrants farmers will try to continue

benefiting from deforestation to maintain high cocoa production levels. As such, the tragic option to stay the course of this extensive production model will increase pressure to convert Taï national park. Our field observations indicated that farmers, elites and bureaucratic authorities considered the forestlands of this protected area as a good reserve of 'vacant land' potentially available for regional development projects. Second, the tragedy of forest sustainability in the Nawa region can be traced to state bureaucracies' claim to ownership of most of the lands but without a sufficient capacity and political interest to ensure regulated access or sustainable use of these lands. The Marahoué national park is an example of how such a situation can produce social dispute while destroying forest biodiversity. The exceptionally strict conservation of the Taï national park has been mainly due to massive external aid and the geographical isolation of this park 'thanks' to poor access roads. Third, population growth and migration flow in the Nawa region are a decisive variable that will contribute to reversing or reinforcing the business-as-usual ecological tragedy of cocoa production and the related social and political risks in the region. The deforestation rate in tropical regions rises most sharply when the population density exceeds 8.5/km^2 [12]. In the Nawa region, the population in 2015 was about one million people, in other words, about 102/km^2, with an estimated population growth rate of 3%/year.

4.5. On the Promise of Sustainability Through Environmental Labelling

Environmental certification standards first appeared in 1993 with the creation of the Forest Stewardships Council (FSC). In most cases, the principle of these environmental standards or labels is based on a voluntary decision to try to improve business practices whose production lines may affect the social systems equity and ecosystem durability [69]. The proliferation of certification standards often introduced by transnational conservation NGOs can be explained by the lack of public regulations to genuinely solve the problem of damage done by resource exploitation to both the society and the environment. The purpose of these standards is to produce customer guarantees that the products offered by the producers, who aspire to the labels, meet a set of predetermined ethical, social and ecological norms that are verified independently by a certification body.

In Côte d'Ivoire, certification standards for the cocoa industry include social and environmental measures such as respect for workers' rights and biodiversity preservation in the production systems [70,71]. Cocoa certification initially concerned micro-sectors such as responsible production and consumption connected to fair trade. Since 2000 however, this certification also applies to the 'classical' production sector in Côte d'Ivoire. Responding to pressure from conservation NGOs like Rainforest Alliance and the chocolate agro-food industries that increasingly look to buy raw materials from sustainable sources, a series of socio-ecological criteria were adopted. The main elements are ethics, improving the working conditions of the workers, and being more mindful about minors working on the Ivorian plantations. From the ecological angle besides the drastic reduction in the use of pesticides, producers applying for the sustainability labels have to improve their cropping techniques so as to reduce their impact on deforestation. On this last point, the planters are requested to make their production methods respect agro-forestry type systems, in other words, while producing cocoa, leave a reasonable number of forest trees standing so that in time the forest can reconstitute itself after the cocoa production cycles have ended.

But at this stage, it is difficult to say that the certification system in Côte d'Ivoire assures greater respect for the forest through major changes in agricultural practices for the cocoa sector. The system needs to pay more attention to some of the most critical issues affecting the sustainable use of forestlands such as land tenure. It is not clear, and conflict over the legal provisions still encourage strategies advocating conquest and land appropriation through deforestation, in some cases mounting tension between migrant-farmers and indigenous populations. In addition to the critical issue of land tenure system, the majority of the cocoa producers in Côte d'Ivoire do not belong to cooperative, and continue to operate without certification. Some of the labelling criteria for private standards give great importance to the involvement of the planters in the local bodies that organise sectors with cooperatives.

Despite these limits, there is a tendency to support the development of the sustainability mechanisms in the Ivorian cocoa sector. Besides the incentive measures (bonuses to planters based on kilogrammes of certified cocoa, access to niche fair-trade markets, etc.), the public authorities seem to be supporting the sustainable and certified cocoa production process in Côte d'Ivoire while other African governments are sceptical about these private governance mechanisms advocated by western conservation NGOs.

5. Discussion and Conclusions

This article argues that post-colonial land development policies and related political interests seriously impede the sustainability of forest ecosystems in Sub-Saharan Africa. The argument is conceptualised using notions from political economy, post-colonial studies, political anthropology and sustainable forestland use theories. Much of the reason for the lack of sufficient attention to forest ecosystems sustainability in SSA can be traced to the land use policies introduced during the colonial period and perpetuated by the postcolonial authorities. In countries of the former French colonial empire in Africa, the formulation and implementation of public actions related to agricultural policies were often influenced by external/foreign stakeholders. Krott's works [72,73] pointed out the constellation of actor groups with substantial power resources (coercion, incentive/disincentive, dominant information) who often benefit the most from the exploitation of forest resources. This may include private companies, specific categories of workers and citizens, associations and political parties as well as state bureaucracies. In the case of this research, our work revealed that the ecological tragedy of cocoa production in Côte d'Ivoire mainly benefits agribusiness actors, farmer-migrants, political elites. More recently, environmental entrepreneurs with their agri-environmental and sustainability standards have become the new players of the game. In some cases, the impact of these external interventions has been detrimental to forest sustainability. We find examples in the rush of the new rural residents (including foreign migrants) to overexploit the forestlands even inside protected areas, e.g., Marahoué national park.

But putting the demands of sustainability on a back burner and favouring a development model based on overexploitation of forestlands for large-scale consumerism is not specific to Sub-Saharan Africa, including Côte d'Ivoire of course. In some Southeast Asian regions with high potential tropical forests, agribusinesses have already led to the destruction of the biodiversity and the degradation of forestlands. And the race to first place on the world soya and beef production and sales markets is accelerating the destruction of the forest ecosystems in the countries of the Amazon basin.

Along the same line, literature abounds with examples of the impact of external—especially World Bank—interference in forestland use policies in developing countries. There are many examples of this type of postcolonial domination in domestic politics in western and other tropical countries. For example, the World Bank played a similar role in the natural resources exploitation policies of post-Soviet Armenia [74], and strongly influenced public development aid agencies in forest and biodiversity governance in Bangladesh [75]. While together, the WB and IMF exercised pressure on the formulation of forestland use policies in Indonesia [76].

In the case of Côte d'Ivoire, most of the recent deforestation is also closely connected to the post-electoral and security situation during the last decade. According to a United Nations Environment Programme report [77], the 2002–2010 'political-military' crises had a strong impact on forest ecosystem sustainability in Côte d'Ivoire. The number of classified forestlands ('forêts classées') that were transformed into agricultural lands doubled during the crisis period, according to the UNEP estimations from 575,300 ha in 2002 to close to 1,300,000 ha in 2012. Populations figures for these forests more than doubled during this same period (from 90,600 to 229,500 persons). Changing forestlands into farmlands had a considerable impact on wood removal as firewood that the resident populations needed more than ever for their survival during this period of great uncertainty and insecurity, connected to the war. This example of the post-conflict situation in Côte d'Ivoire reflects several other cases of more or less intense conflicts that in most cases added pressure to ecosystem sustainability and the dynamics of natural resources offtake in Africa.

However, the relative unsustainability of forest ecosystems management in Sub-Saharan Africa cannot be attributed solely to factors connected to its colonial heritage or to some form of path dependency although they have a considerable effect on the more-or-less contemporary use and misuse of forestlands in postcolonial Africa, as we showed in this article. We also need to consider several forms of logic based on private interests and cunning governments [78] that contributed to the major delay in the adoption of legislation to ensure a certain balance between the exploitation and preservation of forestlands in tropical Africa. This line of logic, which is based on private interests and the manipulation of rules related to forestland use policies, in some situations could be equated to 'gecko politics' [79] intentionally supported by the state bureaucracies. The gecko politics, in such a context, refers to tactics based on cunning, taking advantage of the fragility of domestic institutions or adopting a 'laisser-faire' position that banks on erratic policy coordination. This is similar to what happens in the land use policies in African countries that must deal with external pressure pushing for policy reforms in the forest governance domain. In sum, the challenges to forest ecosystems sustainability in Africa tend to become deeply marginalised when institutional 'disorder' in land use policies, undermined State authority, and other forms of deregulation, (whether endured, orchestrated or manipulated) are able to generate short-term individual benefits to the people in power.

In this situation, the arrival on the scene of other forms of 'hybrid governance arrangements' [80], such as those proposed by the certification standards could contribute to ensuring the inclusion of sustainability in land use policies in tropical Africa, on the condition that the standards' system of self-management provides autonomy and avoids the risk of a certain cronyism connected to their business model, i.e., the principle that allows the client being certified to pay the certifier. Since most tropical forestlands are owned by the State, it is essential to rally the State bureaucracies to the sustainability principle. In tropical countries with highly centralised political systems like those in tropical Africa, this is a precondition to achieving a resources management system that is socially more equitable and primarily concerned with preserving the countries' forestland potential and long-term value of their above- and below-ground resources.

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